

INGLISKEELSED POSTRID



KOHAPEAL ÜLE 40 000 ERINEVA VÕõRKEELSE TIITLI. Võimalus tellida kõikide Inglise, Ameerika, Austraalia, Kanada, Saksa, Prantsuse, Austria, Hispaania, Itaalia ja Ladina-Ameerika kirjastuste raamatuid.

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Allesto AS, Juhkentali 8,
Tallinn 10132
E-R 9.00-18.00, L 11.00-16.00



AJALUGU	
ALGÕPETUS	
GEOGRAAFIA	
ARVUTIÕPETUS	
INFO- JA SIDETEHNOLOOGIA	
INGLISE KEEL	
INGLISE KIRJANDUS	
HISPAANIA KEEL	
PRANTSUSE KEEL	
SAKSA KEEL	
INIMESEÕPETUS	
KEHALINE KASVATUS	
KUNSTIÕPETUS	
LOODUSTEADUSED	
KÕRGEM MATEMAATIKA	
MATEMAATIKA	
MOTIVATSIOON	
MUUSIKAÕPETUS	
NÄITEKUNST	
PEREKONNAÕPETUS	
PSÜHHOLOOGIA	
SOTSILOOGIA	
TANTSUÕPE	
TEHNOLOGIA JA DISAIN	
USUNDIÕPETUS	
ÄRIÕPETUS	
ÜLDOSKUSED	

- 3-14 Daydream Education valikusse kuulub enam kui 800 värvikirevat ja õpetlikku postrit A1 (594 x 841 mm) suuruses.
- 15-21 51-68 Vajalik info on jagatud visuaalselt kergestihaaratavateksinfoväljadeks, mis hõlbustavad arusaamist ning teema kiiret kordamist.
- 22-32 69-72 73-74 75-78 79-80 81-90 91-104 105-115 116-133 134-136 137-154 155-156 157-165 166-172 173-175 176-180 181-185 186-187 188-195 196-211 212-219 220-222 Valikus leidub postreid erinevas vanuses, tasemel ning erinevate õpivajadustega õpilste jaoks.
- Postrid on saadaval nii paberplakati kui lamineeritud plakatitena.



Chronology

paberplakat HI001
lamineeritud HI001L



The Iron Age

paberplakat HI003
lamineeritud HI003L



The Stone Age

paberplakat HI002
lamineeritud HI002L



The Calendar

paberplakat HI004
lamineeritud HI004L



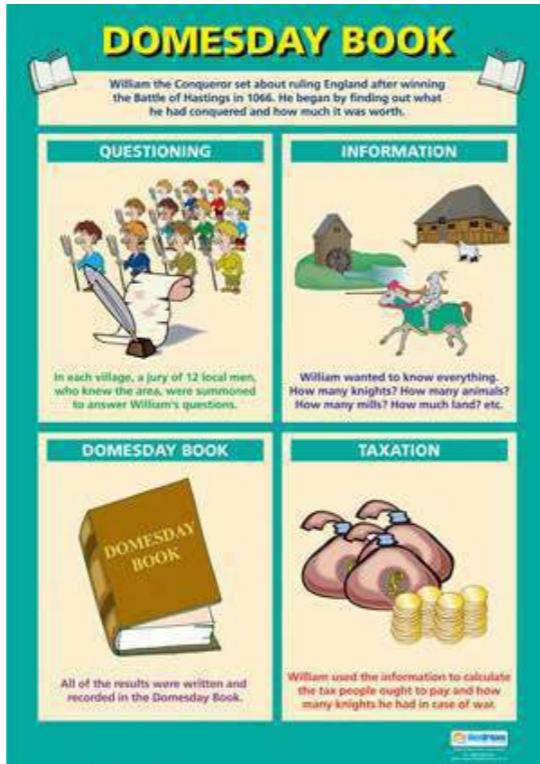
A Time Line

paberplakat HI005
lamineeritud HI005L



Centuries

paberplakat HI006
lamineeritud HI006L



Invaders

paberplakat HI007
lamineeritud HI007L



Castles

paberplakat HI009
lamineeritud HI009L



Doomsday Book

paberplakat HI008
lamineeritud HI008L

The Feudal System

paberplakat HI011
lamineeritud HI011L

Attacking Castles

paberplakat HI010
lamineeritud HI010L

Law and Order

paberplakat HI012
lamineeritud HI012L

RELIGION IS...

An expression of faith, belief and worship.

Faith: People believe in a God or Gods.

Holy Books: Each religion has its own holy writings.

Places of Worship: People worship at home or in a special building.

Symbols: Each faith has a special symbol as its identity.

Clothes: Some people wear special clothes which identify their religion.

Special Times: Every religion celebrates special occasions.

Many elements of world religions are similar.

TRAVEL THROUGH TIME

Throughout history people have sought to make journeys swifter and easier. Developments in technology have meant that we can travel further than our ancestors. Travel has given mankind the opportunity to explore and discover new peoples and places.

EARLY SETTLERS: Early settlers travelled to new lands by boat. Boats could carry many people and supplies.

VILLAGE TO TOWN: Once settled, people travelled shorter distances. The urge to explore was less and they made use of animals such as horses or camels.

CITY TO CITY: During the industrial revolution new technologies were developed. This made travelling great distances easier and led to international travel.

EARTH TO SPACE: Relatively recently, space flight and exploration have been achieved.

PHYSICAL EVIDENCE

ARCHAEOLOGY: Archaeology helps us understand our distant ancestors.

BUILDINGS: Buildings tell us about the lives of their former occupants.

MONUMENTS: Monuments record important local and national events.

TOMBSTONES: Tombstones mark the inevitable transition, especially dates of birth and death.

POTTERY: Household objects help us picture what life was like years ago.

IMPLEMENT: The tools people used tell us about their working lives.

Remember: How accurately can you date your evidence, within 1, 5, 10 or 100 years?

VISUAL EVIDENCE

RIVERS: Rivers frequently prove up ancient river crossings, bridges and towns.

ROADS AND CANALS: Roads and canals are key routes of communication and transport.

OLD PHOTOGRAPHS: One picture is worth a thousand words.

PAINTINGS: Paintings often contain lots of interesting information in the background.

MOUNDS: Many mounds indicate past human habitation, trade and conflict.

AERIAL PHOTOGRAPHS: Aerial photographs show clearly the profile of early fortifications.

Reminder: The historian needs to be critical and imaginative.

Religion

paberplakat	HI013
lamineeritud	HI013L

Travel Through Time

paberplakat	HI014
lamineeritud	HI014L

TYPES OF EVIDENCE

PRIMARY EVIDENCE: Primary evidence is direct evidence about the past and happens first-hand.

SECONDARY EVIDENCE: Secondary evidence is evidence that has already happened.

ORAL EVIDENCE: Spoken evidence of past events that can happen now or before yesterday.

VISUAL EVIDENCE: Visual evidence of past events that can happen now or before yesterday.

WRITTEN EVIDENCE: Written evidence in form of documents.

PHYSICAL EVIDENCE: Physical evidence from objects, environments or people.

Always check the reliability and validity of your evidence.

ORAL EVIDENCE

MEMORIES: What my gran told me and what her gran told her.

FRESHHAND EXPERIENCE: My grandad's adventures in the army were very interesting.

SONGS AND POETRY: Songs and poems describe events in the past.

NURSERY RHYMES: Some nursery rhymes refer to historical events, like the Great Plague of 1665.

FOLKLORE: Folklore contains the history of ordinary people.

TRADITIONS AND CUSTOMS: Traditions and customs often contain a kernel of historical truth.

Reminder: Always check the reliability and completeness of your evidence.

WRITTEN EVIDENCE

MANUSCRIPTS: Manuscripts are hand-written documents. Copies are costly and time-consuming.

PRINTED BOOKS: Printing began in Germany in the 15th century. Copies can be produced quickly and easily.

DIARIES: Diaries record personal experiences and thoughts.

LETTERS: Letters sometimes include references to important events.

LEGAL DOCUMENTS: Legal and court documents give the official version of events.

INVOICE/RECEIPTS: Payments left us a great trail about how people lived years ago.

CHRONICLES: Chronicles record more person's version of history.

MAPS AND PLANS: Maps and blueprints show what a place looked like at a given time.

Reminder: Always ask yourself why a document was produced.

Types of Evidence

paberplakat	HI015
lamineeritud	HI015L

Oral Evidence

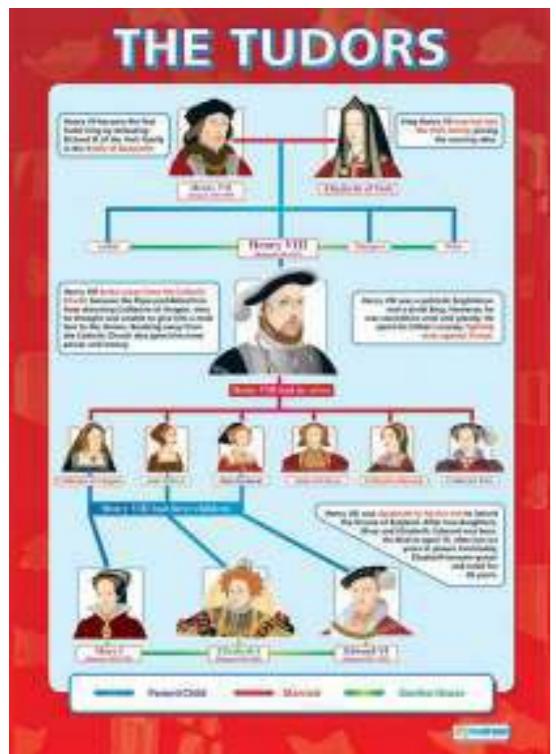
paberplakat	HI016
lamineeritud	HI016L

Written Evidence

paberplakat	HI019
lamineeritud	HI019L

The Wars of the Roses

paberplakat	HI020
lamineeritud	HI020L



The Tudors

paberplakat HI021
lamineeritud HI021L

THE SIX WIVES OF HENRY VIII		
THE QUEEN	THE MARRIAGE	THE END
Catherine of Aragon	1509 - 1533	Divorced
Anne Boleyn	1533 - 1536	Executioned
Jane Seymour	1536 - 1537	Died
Anne of Cleves	1540 - 1540	Divorced
Catherine Howard	1540 - 1542	Executioned
Catherine Parr	1543 - 1547	Survived

The Six Wives of Henry VIII

paberplakat HI022
lamineeritud HI022L



The Romans

paberplakat HI025
lamineeritud HI025L



Norman Conquest

paberplakat HI026
lamineeritud HI026L



Black Death

paberplakat HI027
lamineeritud HI027L



The Great Fire of London

paberplakat HI028
lamineeritud HI028L

Henry VIII and the Church

paberplakat HI023
lamineeritud HI023L

Tudors and the Church

paberplakat HI024
lamineeritud HI024L

INDUSTRIAL REVOLUTION

This poster highlights the Industrial Revolution's impact on Britain, showing how it transformed agriculture, industry, and society. It includes sections on the Industrial Revolution, its effects, and key figures like Queen Victoria and the Duke of Wellington.

Industrial Britain

paberplakat HI029
lamineeritud HI029L

BRITISH HOME FRONT
SECOND WORLD WAR (1939–1945)

This poster details the British Home Front during World War II, covering topics like evacuation, rationing, and the Blitz. It features historical photographs and maps.

British Home Front

paberplakat HI031
lamineeritud HI031L

FIRST WORLD WAR WARFARE

This poster explores various aspects of First World War warfare, including trench warfare, gas attacks, and naval battles. It features a timeline and maps of major conflicts like the Somme and Gallipoli.

Trench Warfare

paberplakat HI030
lamineeritud HI030L

THE HOLOCAUST

This poster provides a comprehensive look at the Holocaust, from its origins to its final stages. It includes a timeline of events, maps of concentration camps, and portraits of key figures like Adolf Hitler and Heinrich Himmler.

The Holocaust

paberplakat HI032
lamineeritud HI032L

THE ORIGIN OF THE FIRST WORLD WAR

This poster traces the complex causes of the First World War, from the assassination of Archduke Franz Ferdinand to the entry of the United States. It features a detailed timeline and maps of European alliances.

The Origin of the First World War

paberplakat HI033
lamineeritud HI033L

THE LEAGUE OF NATIONS

This poster examines the League of Nations, its formation, and its challenges. It includes a timeline of its history, a chart of its main organs, and portraits of key figures like Woodrow Wilson and Franklin D. Roosevelt.

The League of Nations

paberplakat HI035
lamineeritud HI035L

THE TREATY OF VERSAILLES

This poster details the Treaty of Versailles, its terms, and its consequences. It includes a map of Europe after the war, portraits of the 'Big Three' (Wilson, Lloyd George, and Clemenceau), and a section on the Treaty's impact on Germany.

The Treaty of Versailles

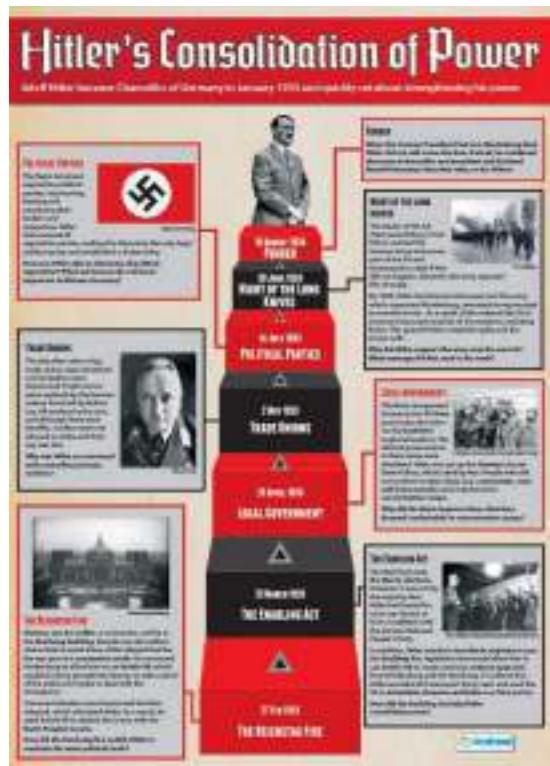
paberplakat HI034
lamineeritud HI034L

HITLER'S RISE TO POWER

This poster tracks Hitler's rise to power, from his early political career to his appointment as Chancellor and the start of World War II. It includes a timeline, portraits of Hitler and Mussolini, and sections on Nazi extremism and antisemitism.

Hitler's Rise to Power

paberplakat HI036
lamineeritud HI036L



Hitler's Consolidation of Power

paberplakat HI037
lamineeritud HI037L



The Russian Revolutions

paberplakat HI039
lamineeritud HI039L



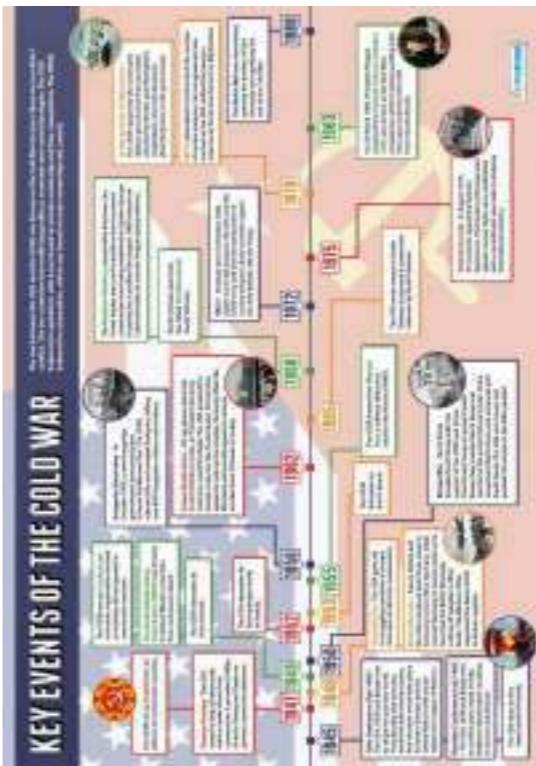
The Russian Civil War

paberplakat HI038
lamineeritud HI038L



Stalin

paberplakat HI040
lamineeritud HI040L



Key Events of the Cold War

paberplakat HI041
lamineeritud HI041L



The Great Depression

paberplakat HI043
lamineeritud HI043L



The Roaring 20s

paberplakat HI042
lamineeritud HI042L



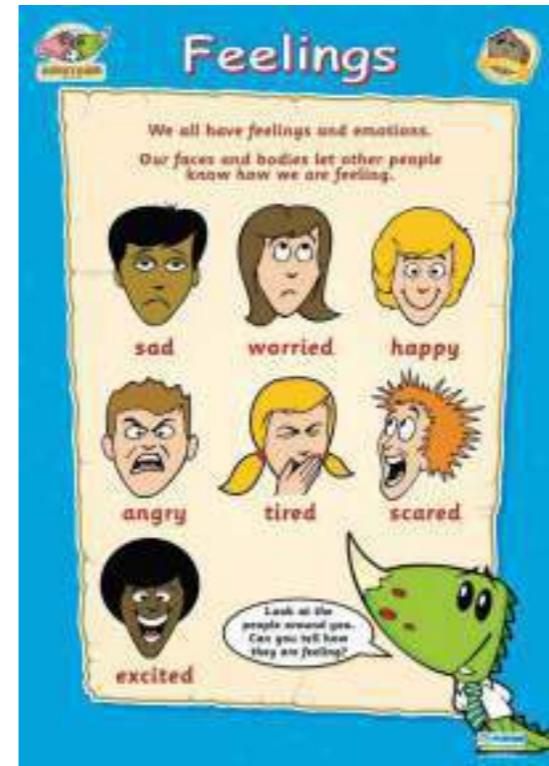
African-American Civil Rights: Key Events

paberplakat HI044
lamineeritud HI044L

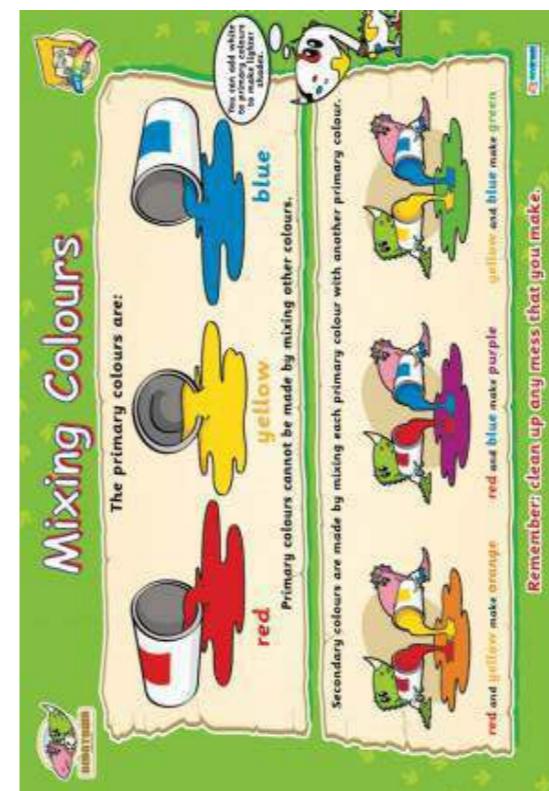


**African- American Civil Rights:
Key Figures**

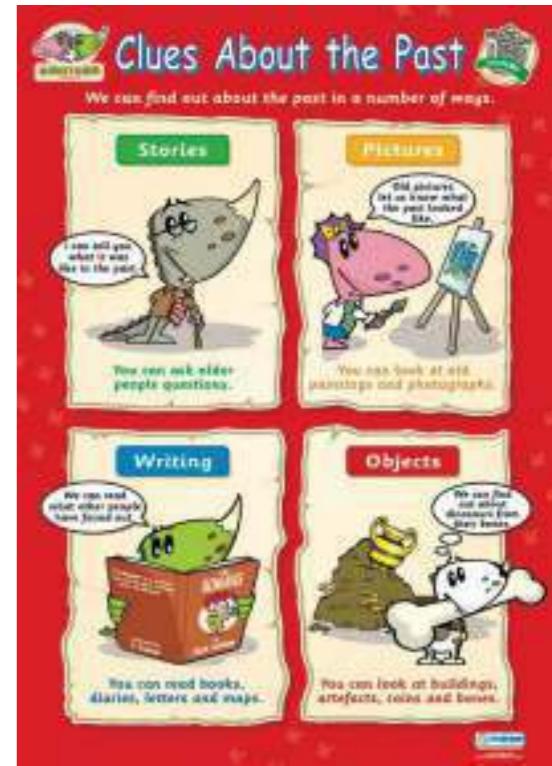
paberplakat HI045
lamineeritud HI045L



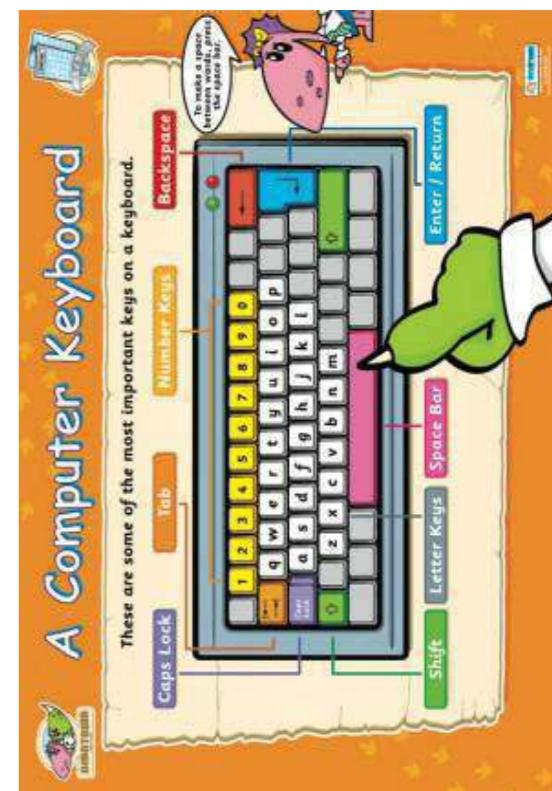
Feelings
paberplakat DIN001



Mixing Colours
paberplakat DIN003



Clues About the Past
paberplakat DIN002



A Computer Keyboard
paberplakat DIN004



Numbers

paberplakat

DIN005



100 Square

paberplakat

DIN006



Shapes

paberplakat

DIN009



Telling the Time

paberplakat

DIN010



Maths Signs

paberplakat

DIN007



Measurement

paberplakat

DIN008



Days of the Week

paberplakat

DIN011



The Alphabet

paberplakat

DIN012

Capital Letters

Capital letters are the big letters at the start of some words. Here are examples of when to use capital letters.

October	Monday	Bin Town
Months of the year	Days of the week	Place Names
Starting sentences	Talking about yourself	The Life of Dinosaurs
Book Titles	Joanne	Dr. Subu
Surnames	Names	Titles
My name begins with a capital letter: Dollie .		

Capital Letters

paberplakat DIN013

Question Words

Question words often begin with a 'W'!

When?	What?
When did the Romans invade?	What is the time?
Where?	Who?
Where is the beach?	Who made it?
Why?	Which?
Why is it cold?	Which balloons do you want?

Question Words

paberplakat DIN015

Sentences

A sentence is a group of words put together to make a complete thought. It always starts with a capital letter and ends with a full stop. It also contains commas and spaces between each word.

Once upon a time, in a land far away, there lived a pirate. The pirate was 'Big Jake', called 'Big Jake', and he had an old ship.

Remember: a sentence is a group of different words, it must make sense.

Sentences

paberplakat DIN014

Scientific Investigation

Results: What did you find out? Can you explain it? Make comparisons. Should you have done anything differently?

Obtaining Information: Make sure it is a fair test. Follow instructions. Note observations and measurements. Make a clear record of results.

Planning: What will you observe or measure? What will you compare with? Are there any hazards or risks? What might happen?

Scientific Investigation

paberplakat DIN017

The Human Body

Here are some of the main body parts:

head, eye, nose, mouth, chin, ear, neck, shoulder, chest, stomach, arm, elbow, back, hand, leg, knee, ankle, foot, toes.

How do humans keep healthy? They exercise and eat the right types of food.

The Human Body

paberplakat DIN018

Book Covers

The cover of a book tells you what the book is about and who wrote it.

title, illustration, author, spine, blurb, Illustrator.

Remember: always put books back with the spine facing towards you.

Book Covers

paberplakat DIN016

Plants

Plants need light and water to grow.

petal, flower, stem, leaf, roots.

What is a seed? Plants produce seeds which, in turn, produce new plants.

Plants

paberplakat DIN019

Forces

A force is a push or a pull. A force always moves in a direction.

Push: PUSH →

- using a light switch
- kicking a ball

A push or pull can make something speed up, slow down, change direction or change shape.

Pull: PULL ←

- pulling a toy
- opening a drawer

When you hear 'bulletin' is it a push or a pull?

Forces

paberplakat DIN020



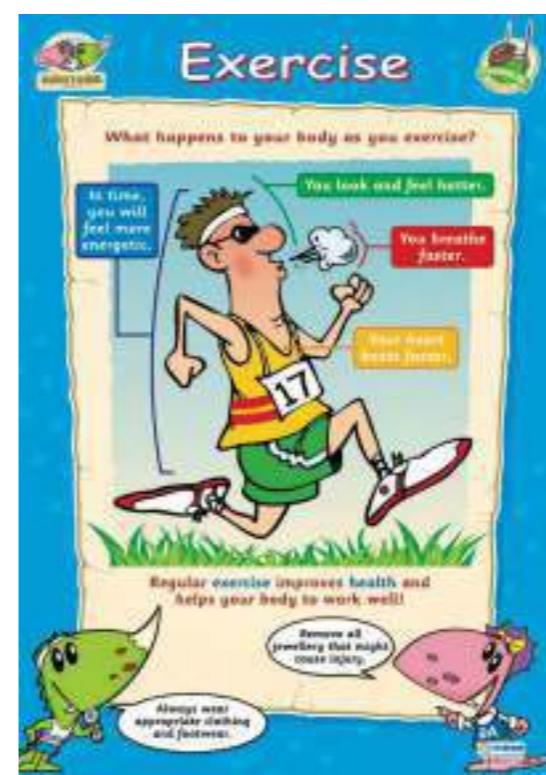
Day and Night

paberplakat DIN021



The Four Seasons

paberplakat DIN022



Exercise

paberplakat DIN025



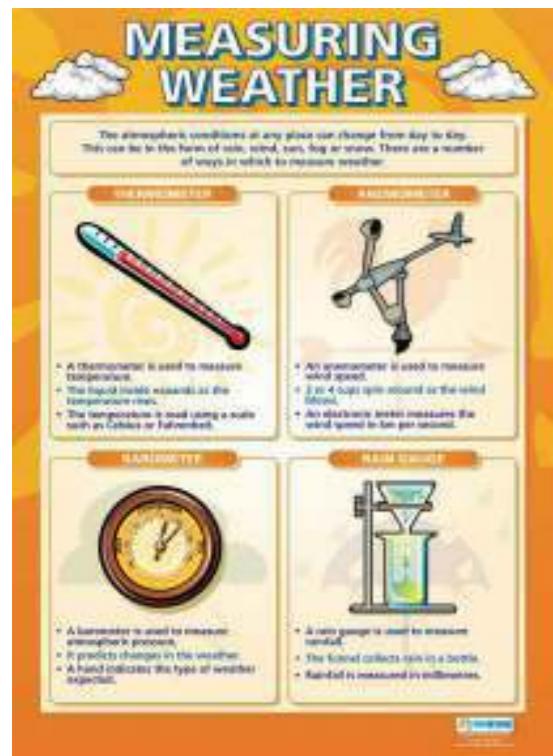
The United Kingdom

paberplakat DIN023



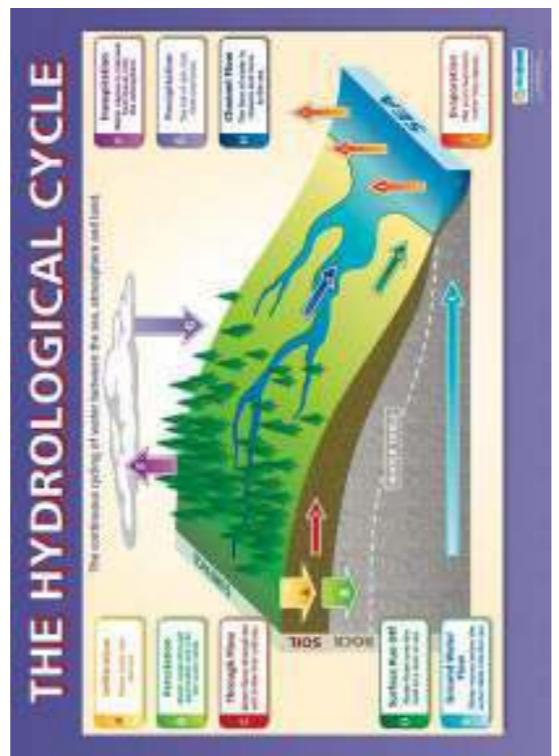
Musical Instruments

paberplakat DIN024



Measuring Weather

paberplakat GE001
lamineeritud GE001L



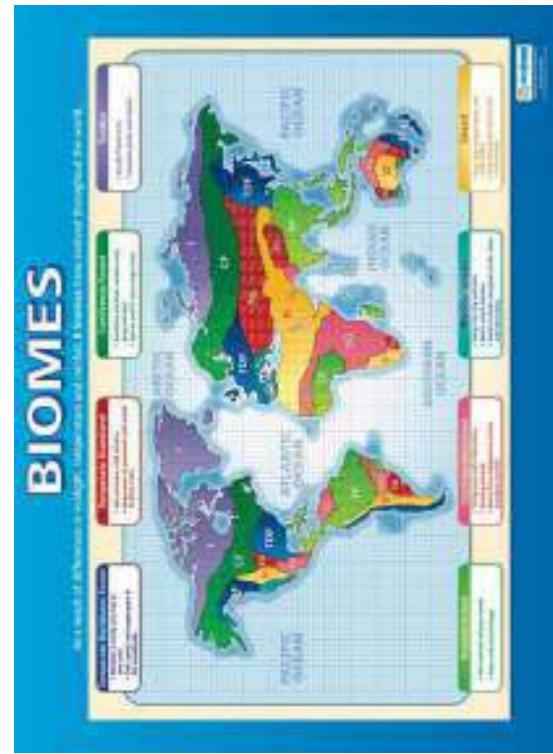
The Hydrological Cycle

paberplakat GE002
lamineeritud GE002L



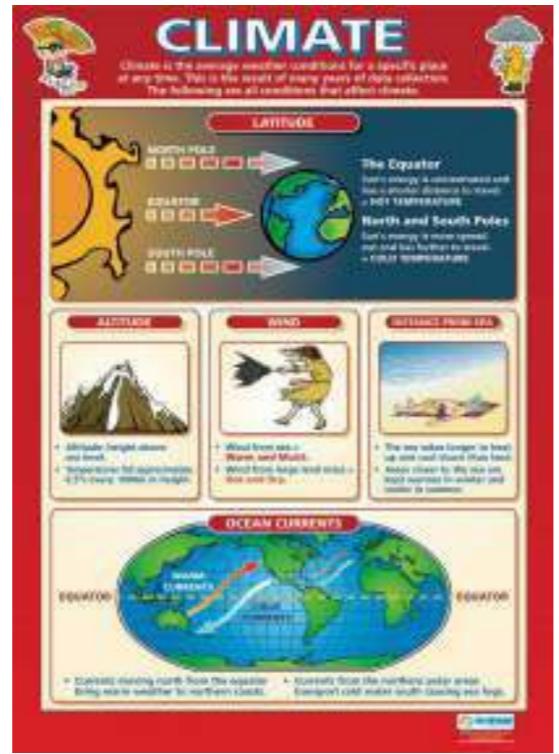
Coastal Protection

paberplakat GE006
lamineeritud GE006L



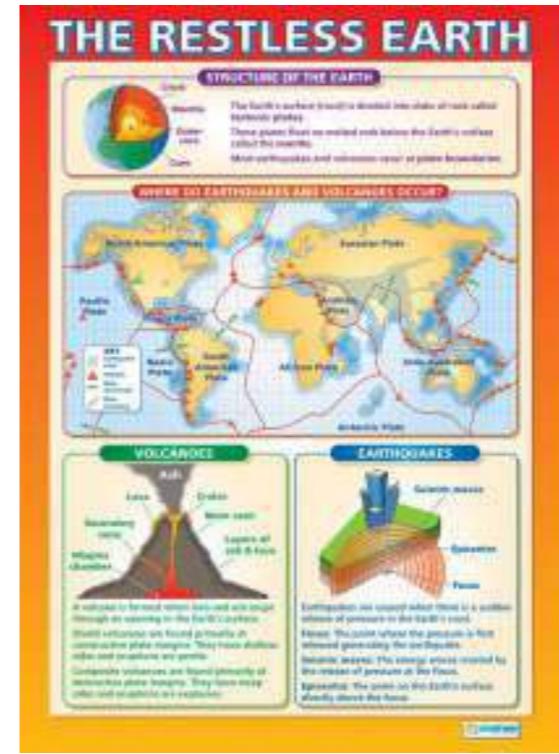
Biomes

paberplakat GE003
lamineeritud GE003L



Climate

paberplakat GE004
lamineeritud GE004L



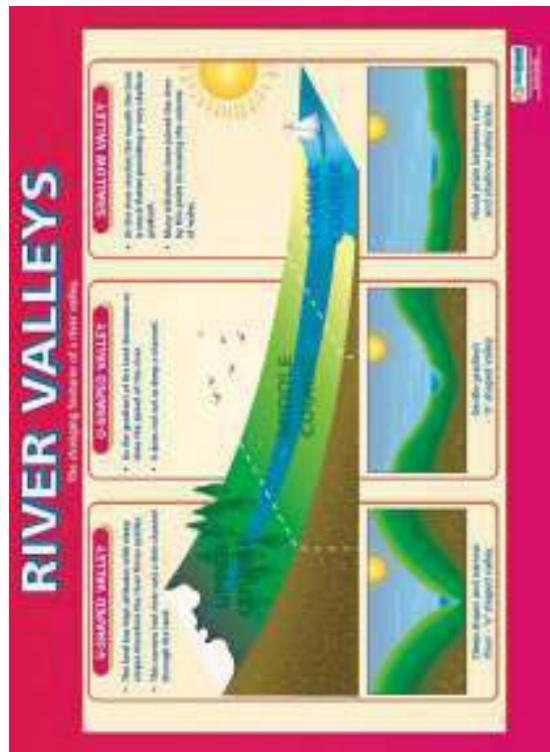
The Restless Earth

paberplakat GE007
lamineeritud GE007L



Volcanoes

paberplakat GE008
lamineeritud GE008L



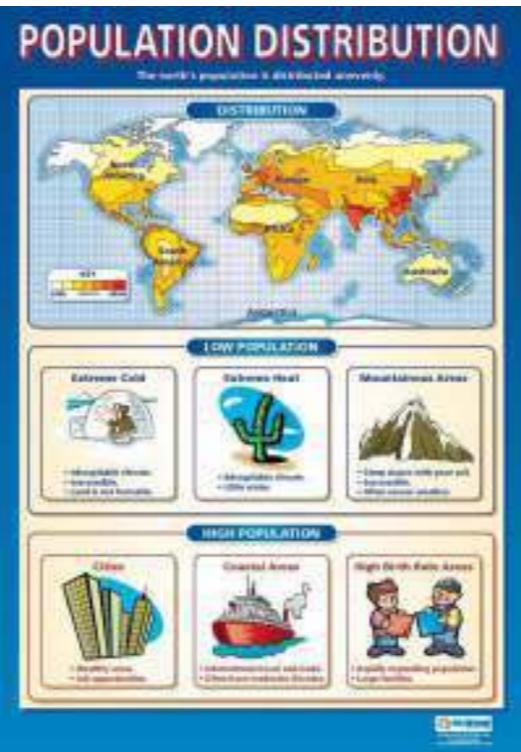
River Valleys

paberplakat GE009
lamineeritud GE009L



Brazil: The Amazon Rainforest

paberplakat GE010
lamineeritud GE010L



Population Distribution

paberplakat GE013
lamineeritud GE013L



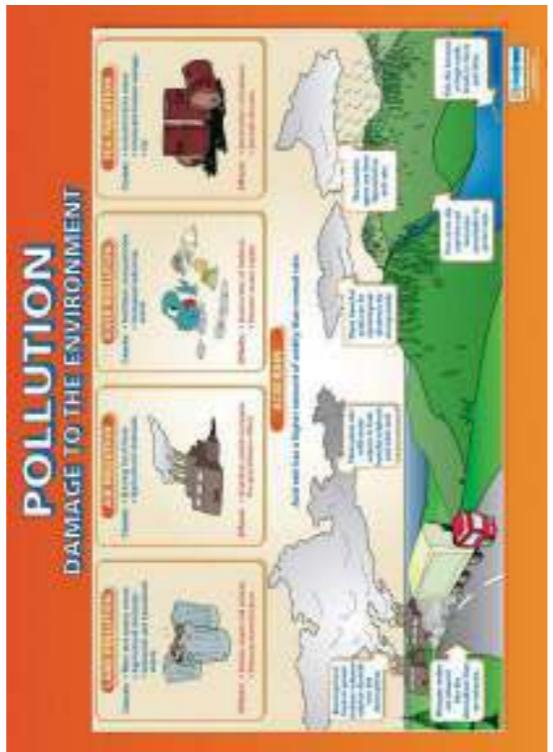
Settlements

paberplakat GE014
lamineeritud GE014L



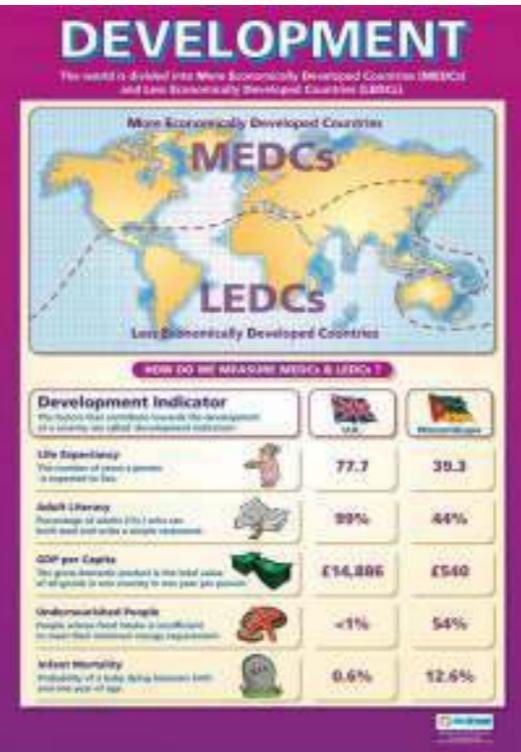
Energy

paberplakat GE011
lamineeritud GE011L



Pollution

paberplakat GE012
lamineeritud GE012L



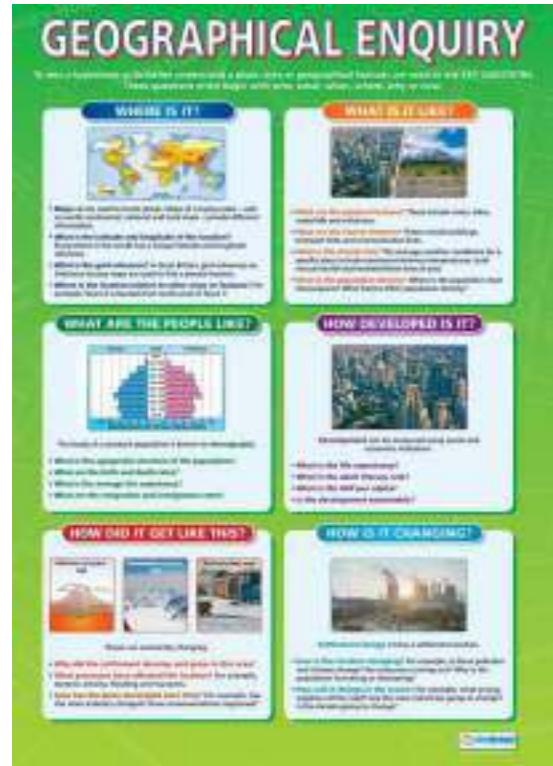
Development

paberplakat GE015
lamineeritud GE015L



Tourism

paberplakat GE016
lamineeritud GE016L



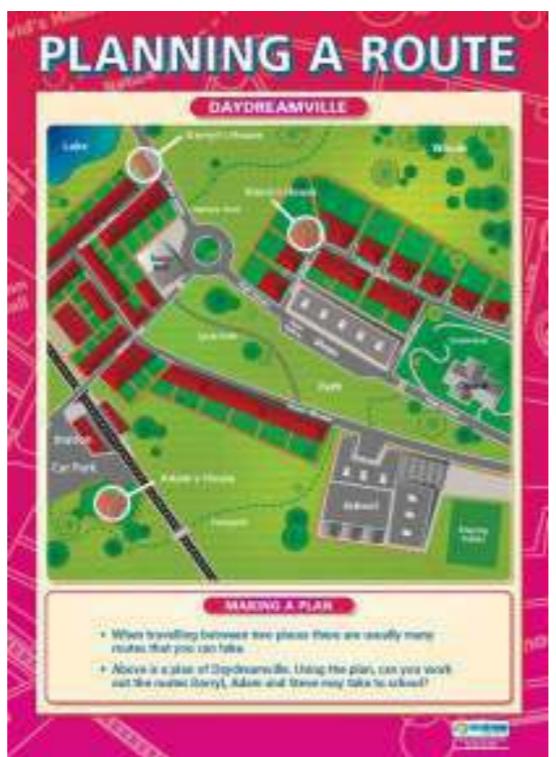
Geographical Enquiry

paberplakat GE021
lamineeritud GE021L



Map Symbols

paberplakat GE023
lamineeritud GE023L



Planning a Route

paberplakat GE022
lamineeritud GE022L



Longitude & Latitude

paberplakat GE025
lamineeritud GE025L



Mapping Skills

paberplakat GE024
lamineeritud GE024L



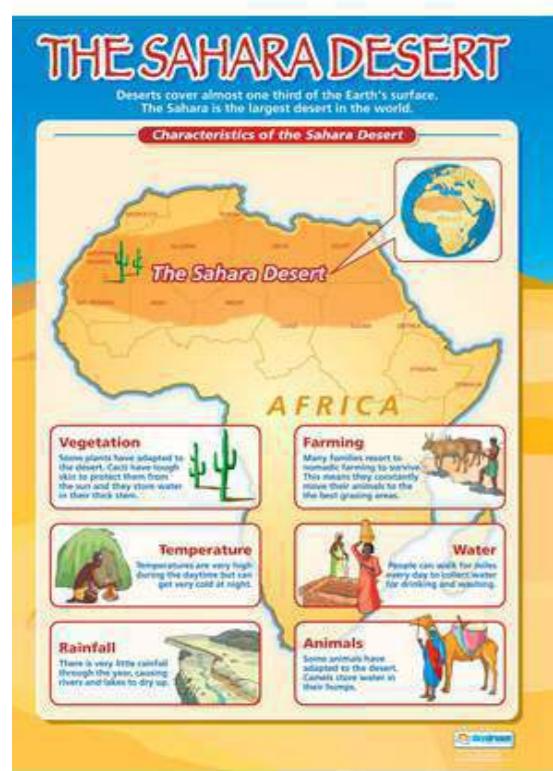
Four Seasons

paberplakat GE027
lamineeritud GE027L



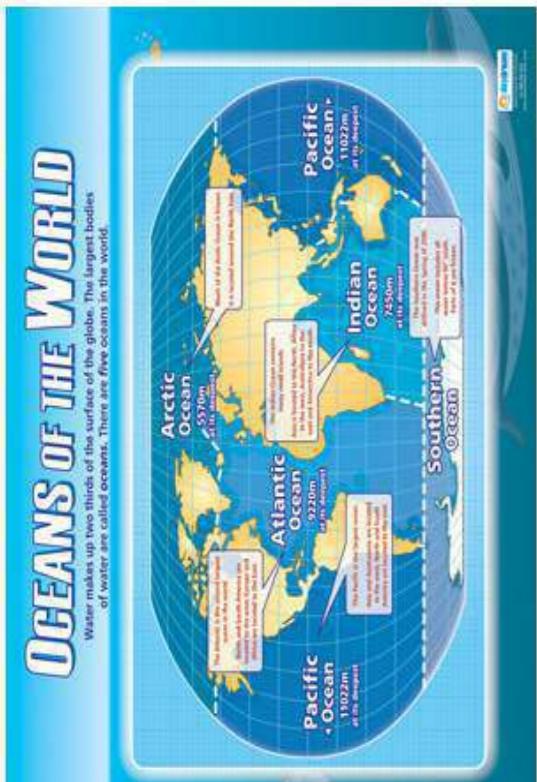
Extreme Weather

paberplakat GE028
lamineeritud GE028L



The Sahara Desert

paberplakat GE029
lamineeritud GE029L



Oceans Of The World

paberplakat GE031
lamineeritud GE031L



The Greenhouse Effect

paberplakat GE030
lamineeritud GE030L



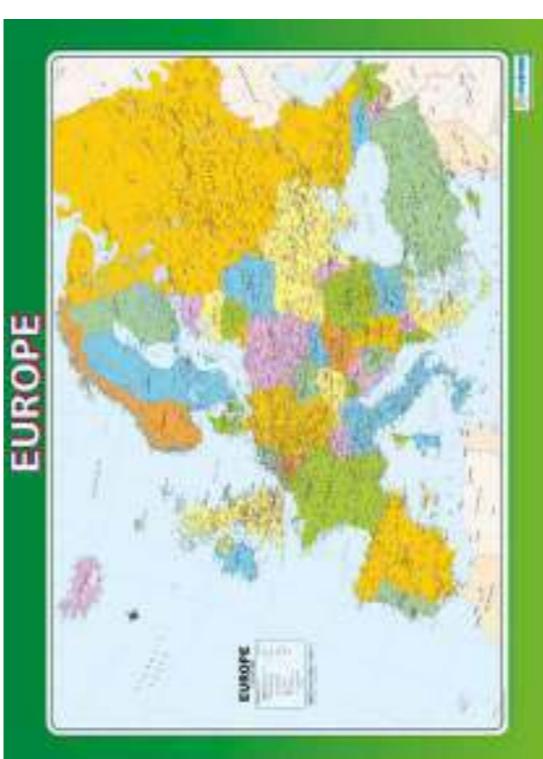
Describing Countries

paberplakat GE032
lamineeritud GE032L



Your Local Area

paberplakat GE033
lamineeritud GE033L



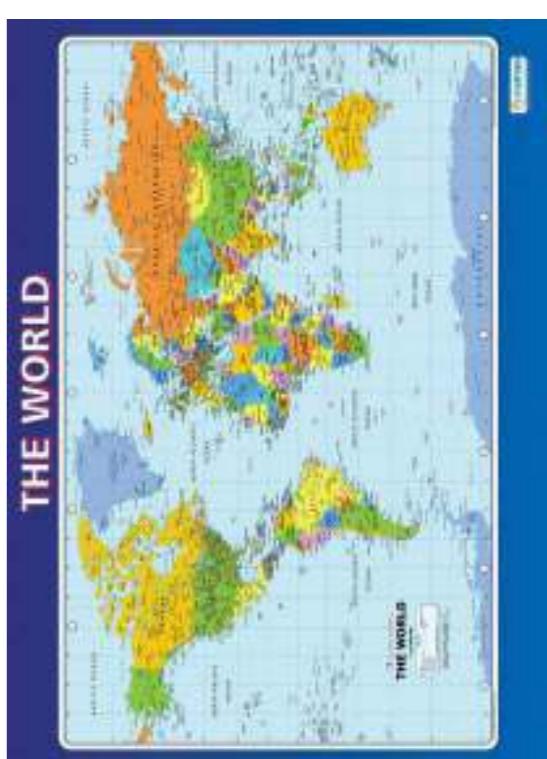
Europe

paberplakat GE035
lamineeritud GE035L



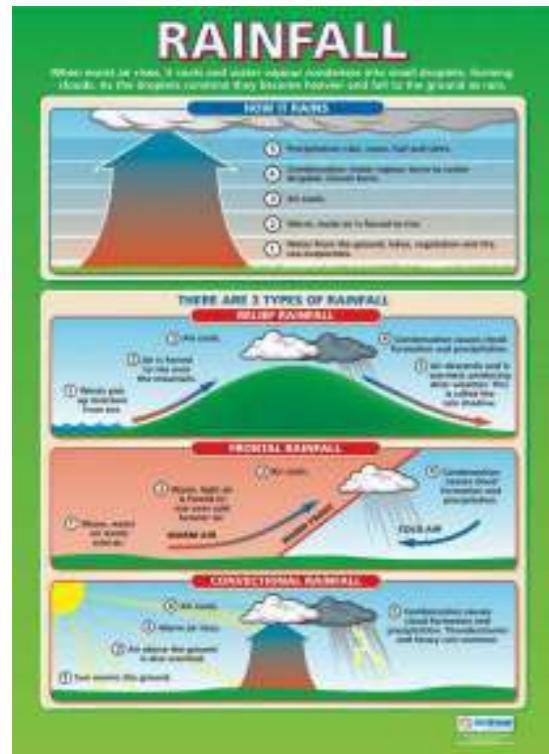
United Kingdom

paberplakat GE034
lamineeritud GE034L



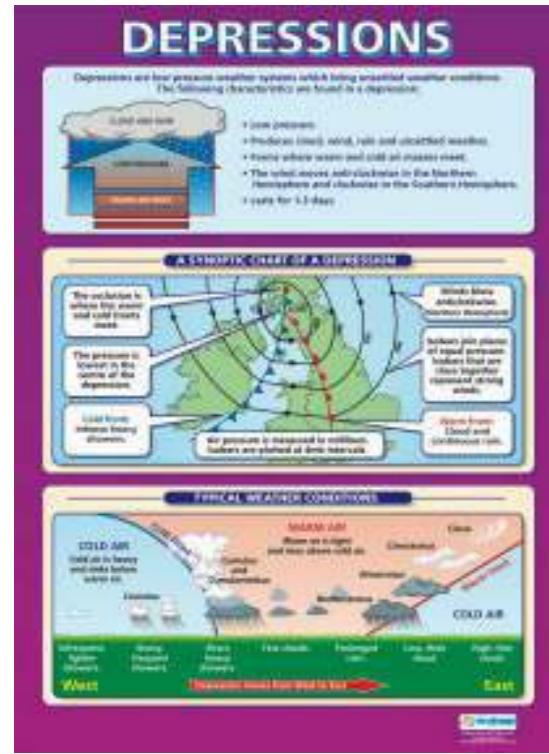
The World

paberplakat GE036
lamineeritud GE036L



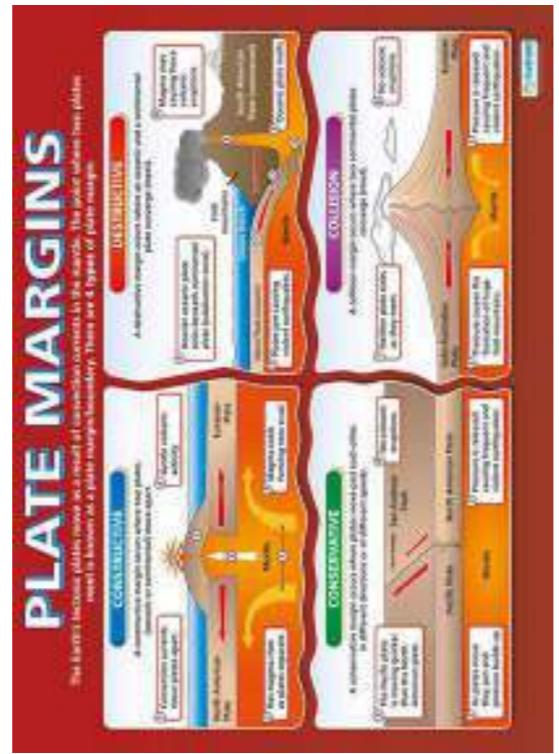
Rainfall

paberplakat GE037
lamineeritud GE037L



Anticyclones

paberplakat GE038
lamineeritud GE038L



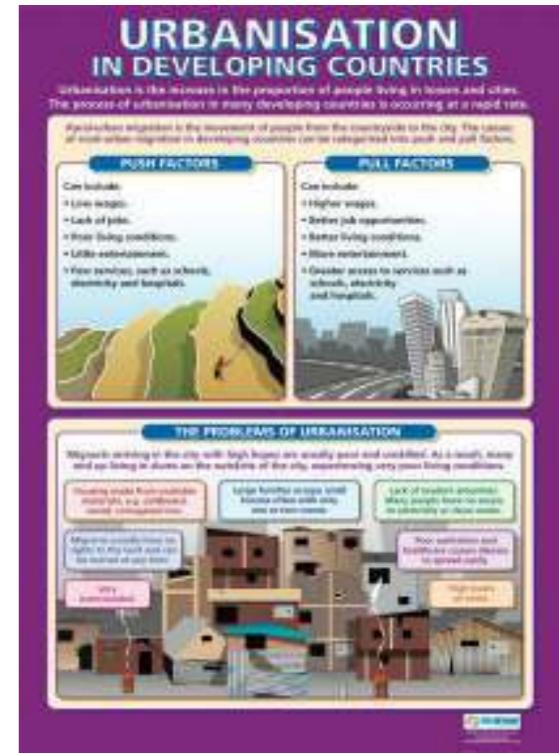
River Landforms

paberplakat GE041
lamineeritud GE041L



River Basins

paberplakat GE042
lamineeritud GE042L



Depressions

paberplakat GE039
lamineeritud GE039L

Plate Margins

paberplakat GE040
lamineeritud GE040L

Sustainable Development

paberplakat GE043
lamineeritud GE043L

Urbanisation in Development Countries

paberplakat GE044
lamineeritud GE044L



Counter urbanisation in Development

paberplakat GE045
lamineeritud GE045L



What is Computer Science?

paberplakat CS001
lamineeritud CS001L



Programming Languages

paberplakat CS003
lamineeritud CS003L



Computer Science Careers

paberplakat CS002
lamineeritud CS002L



Constants and Variables

paberplakat CS004
lamineeritud CS004L



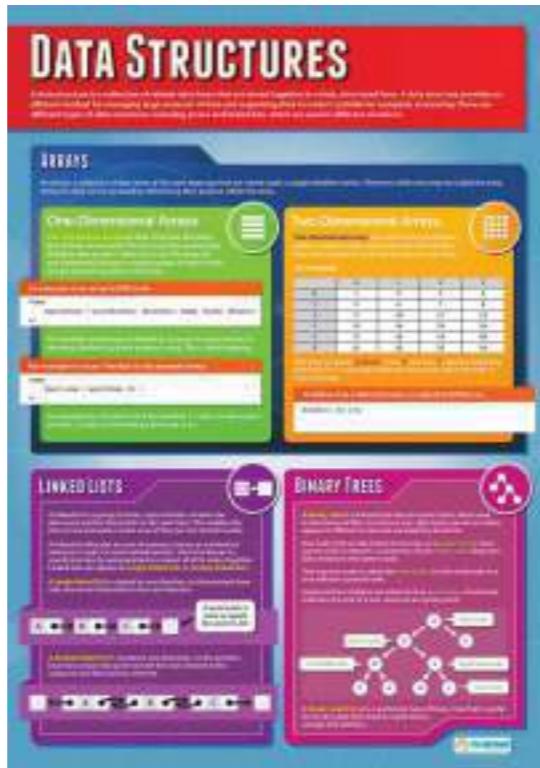
Data Types

paberplakat CS005
lamineeritud CS005L



Binary and Denary Numbers

paberplakat CS007
lamineeritud CS007L



Data Structures

paberplakat CS006
lamineeritud CS006L



Hexadecimal Numbers

paberplakat CS008
lamineeritud CS008L



The System Unit

paberplakat CS009
lamineeritud CS009L



Central Processing Unit

paberplakat CS011
lamineeritud CS011L



Peripherals

paberplakat CS010
lamineeritud CS010L



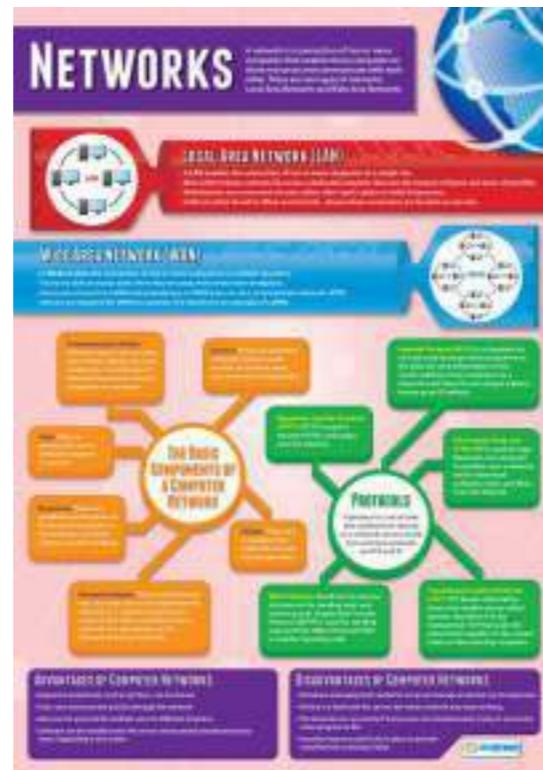
Memory

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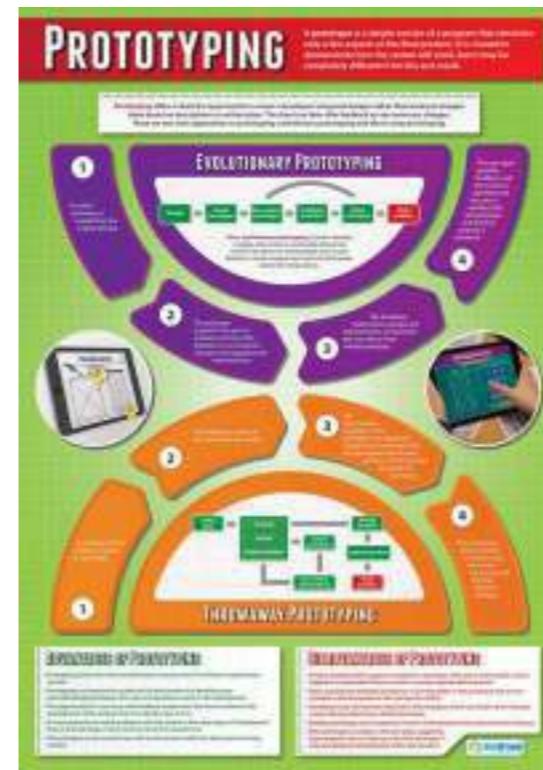
Secondary Storage

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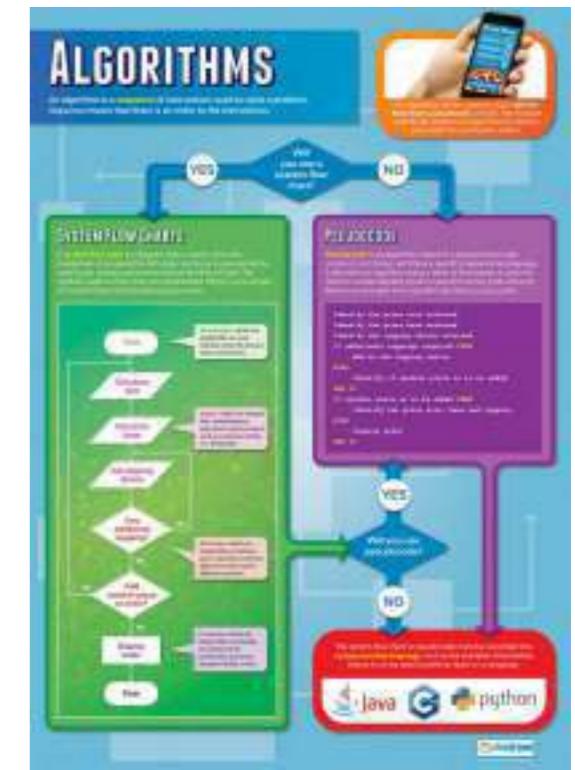
Networks

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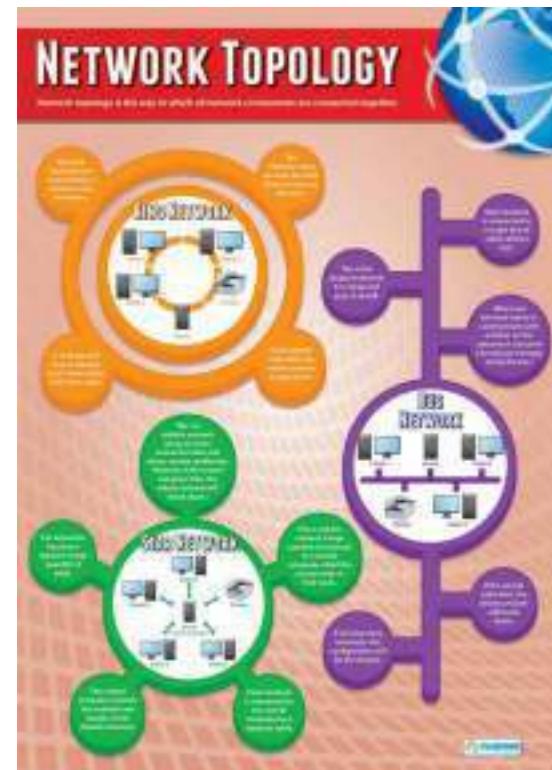
Prototyping

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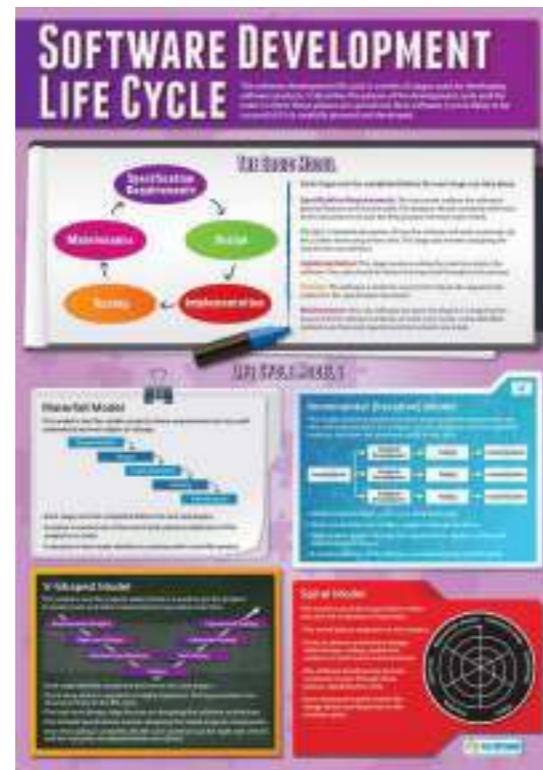
Algorithms

paberplakat CS018
lamineeritud CS018L



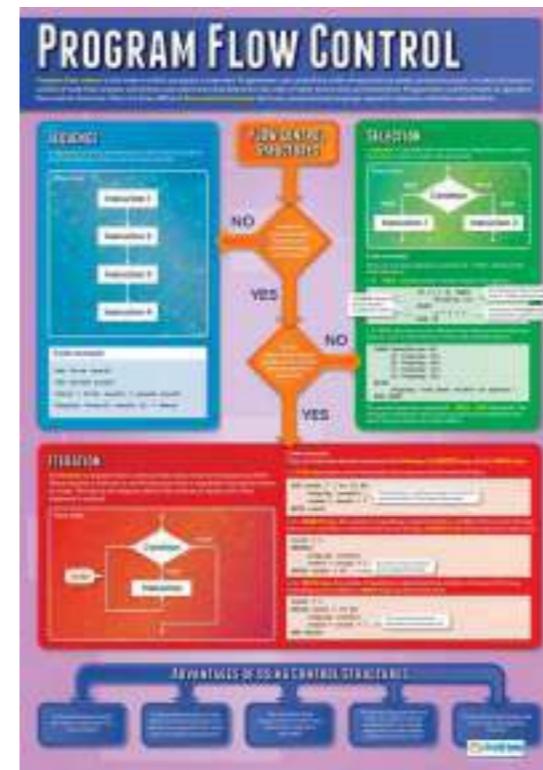
Network Topology

paberplakat CS015
lamineeritud CS015L



Software Development Life Cycle

paberplakat CS016
lamineeritud CS016L



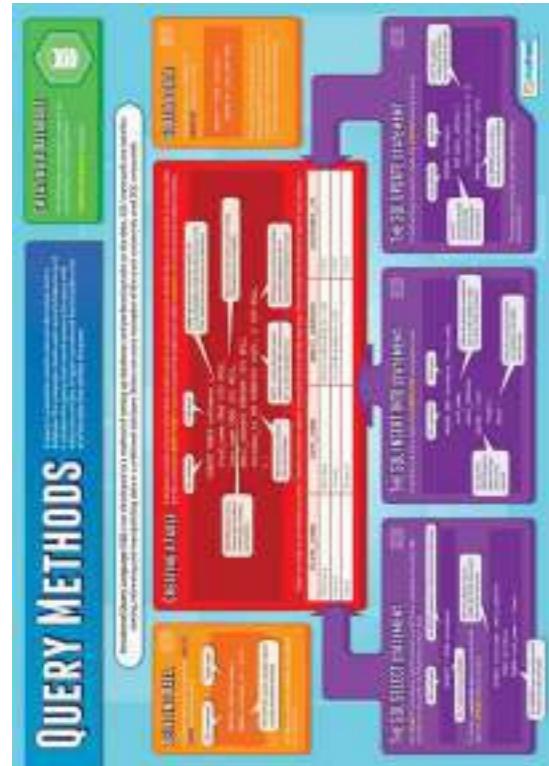
Program Flow Control

paberplakat CS019
lamineeritud CS019L



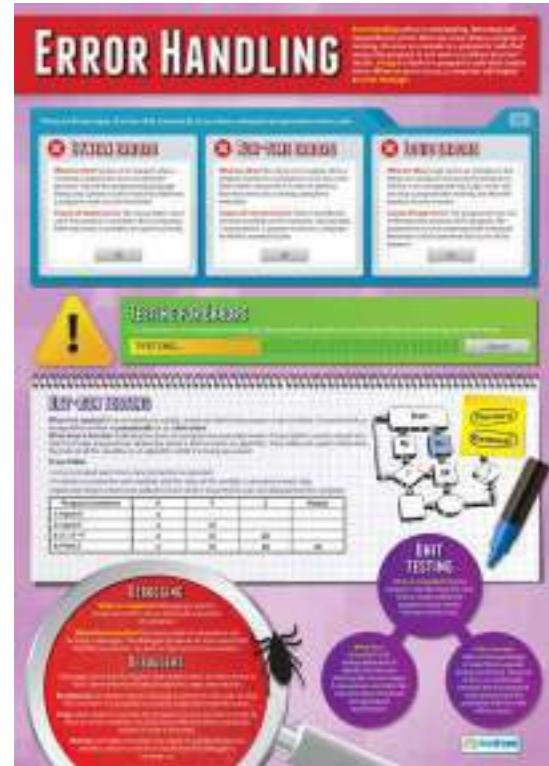
Basic HTML

paberplakat CS020
lamineeritud CS020L



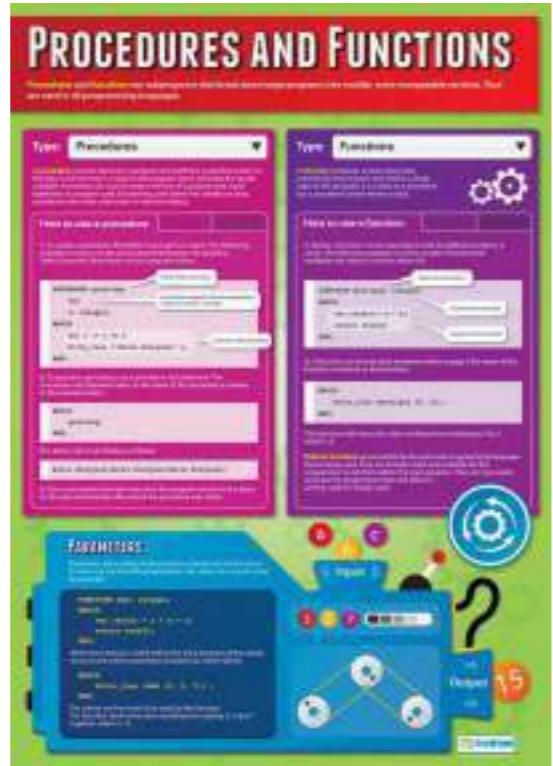
Query Methods

paberplakat CS021
lamineeritud CS021L



Error Handling

paberplakat CS023
lamineeritud CS023L



Procedures and Functions

paberplakat CS022
lamineeritud CS022L



What is I.C.T?

paberplakat ICT001
lamineeritud ICT001L



Computer Jargon

paberplakat ICT003
lamineeritud ICT003L



A Computer System

paberplakat ICT002
lamineeritud ICT002L



Storing Data

paberplakat ICT004
lamineeritud ICT004L

HARDWARE

Hardware refers to the physical elements inside and outside the computer's base unit, as well as the devices that plug into the computer.

ESSENTIALS

- Monitor
- Computer
- Mouse
- Printer
- Keyboard
- Speakers

OPTIONAL

- Digital camera
- External disk drive
- Modem
- Scanner
- Music Keyboard
- Joystick
- USB memory stick
- Microphone

Hardware

paberplakat ICT005
lamineeritud ICT005

INPUT

Input is the information the user puts into the computer. To do this the user needs input devices. Input devices are used to capture data that the user inputs into the computer.

Input

paberplakat ICT007
lamineeritud ICT007L

WHAT GOES WHERE?

Because so many different things can be plugged into a PC, it is sometimes difficult to know what goes where.

POWER SOURCE
Connected to the main supply.

MOTHERBOARD
Houses the components inside the case.

CPU
Lives on the motherboard.

RAM
Used for temporary storage.

HARD DRIVE
Lives on the motherboard.

OPTICAL DRIVE
Used for playing movies, listening to music and playing games.

POWER CONNECTOR
Connects the computer case to a PSU or power source.

CASE VENTILATION
Keeps your computer cool by taking a load off the fan.

MONITOR/VGA
Extends the monitor's field of view.

CASE GROUND
Grounds the system to earth.

CASE GROUNDING
Expands ground contact to new areas.

MONITOR
Used to connect to the computer via a video link.

CD/DVD
Reads the popular audio format and discs of information.

What Goes Where?

paberplakat	ICT006
lamineeritud	ICT006L

Output

Output is the data you receive after completing a process (word-processing etc.).
Output devices pass data back to the user from a completed process.

VDU

Projector

Printer

Video / DVD player

Motor

Robot

Speakers

MIDI

Output

paberplakat ICT008
lamineeritud ICT008L

Using a Keyboard

oaberplakat **ICT009**
amineeritud **ICT009L**

COMPUTER USES

A computer is not only for word-processing; it has many other important uses. Here are a few of the everyday things you can do with a computer.

Computer Uses

oaberplakat ICT011
lamineeritud ICT011L

A LAPTOP COMPUTER

Laptop computers, sometimes known as notebooks, are portable computers that can be shut down, briefcase and carried around. All the devices that plug into a standard computer system can also be plugged into a laptop and used in the same way.

Web Camera
This camera is built into the laptop. It is used to take pictures or video clips and send them over the Internet.

PC Cards
Used to expand the laptop's memory or add other functions such as a modem or a graphics card.

Memory Device
Used to store data and programs. It is usually a small chip that is inserted into a slot on the laptop.

Trackball
This device is used to move the cursor on the screen by moving the ball inside it.

Battery Pack
This rechargeable battery pack provides power to the laptop when it is not connected to an electrical outlet.

Optical Drive
Used for reading CD-ROMs or DVDs. These drives are used to store music, movies, and other data.

Hard Disk Drive
Used for storing data and programs. It is a magnetic disk that rotates and has a read/write head that moves across its surface to store information.

Keyboard
Used to type commands and data into the laptop.

LCD Display
The screen that displays the data and programs that are being run on the laptop.

A Laptop Computer

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lamineeritud	ICT010L

Software

paberplakat	ICT012
lamineeritud	ICT012L

GRAPHICS SOFTWARE

Graphics software is used to create or manipulate images. Computer graphics usually come in two formats: Bitmapped and Vector.

USES

- To create drawings and diagrams.
- To manipulate existing images.
- For special effects for films.
- For animation.
- To create visuals for websites.

TOOLS

- Graphics programs use tools to create images.
- Tools are usually selected from an on-screen toolbar or palette.
- Tools include: zoom, colour swatches, palettes, brushes, text, shapes and effects filters.

BITMAPS

- Images are represented as a sequence of dots called pixels.
- Each dot is stored separately and uses a lot of memory.
- Bitmapped files can be used in most programs.
- Image loses quality when enlarged.

VECTORS

- Images are stored as a sequence of instructions.
- Images can be reduced or enlarged without losing quality.
- Files do not use a lot of memory.
- Not all software is compatible with vector-based images.

Graphic Software

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lamineeritud ICT013L

WORD-PROCESSING

A word-processing program assists you in writing letters, stories and many other kinds of text. Below are some of the many features of a word-processing program.

TOOL BAR

LAYOUT

FILE EXTENSIONS

File Extension	Description
.doc	Word Processing Document
.docx	Word Processing Document
.rtf	Rich Text Format
.txt	Plain Text
.xls	Excel Spreadsheet
.xlsx	Excel Spreadsheet
.ppt	PowerPoint Presentation
.csv	Comma Separated Values
.mp3	MP3 Compression File
.aac	Advanced Audio Coding
.wma	Windows Media Audio
.flv	Flash Video
.mp4	MP4-AVCHD
.tif	Tagged Image File
.ai	Adobe Illustrator File
.png	Portable Network Graphics
.psd	Adobe Photoshop File
.html	Hypertext Markup Language
.css	Cascading Style Sheet
.htm	HyperText Markup Language
.zip	Zip
.pdf	Portable Document Format

Word-Processing

paberplakat ICT015
lamineeritud ICT015L

DATABASES & SPREADSHEETS

Databases are organised collections of data stored on a computer. Spreadsheets are used to perform calculations and to model situations.

DATABASES

SPREADSHEETS

Database and Spreadsheet

paberplakat ICT014
lamineeritud ICT014L

WAYS TO COMMUNICATE

There are many ways in which people can communicate. Here are some of the most popular ways:

Advantages	Disadvantages
Very little technology required.	Slow.
Large items can be sent.	Can be expensive.
Mobile voice talking.	Limited business hours.
Immediate contact.	Expensive long distance.
Saved words and phrases.	Show low usage documents.
Fast connection provided.	Large Faxes require longer.
Quick worldwide delivery.	Instant access required.
Send files as attachments.	Not secure and risk of viruses.
User friendly interface.	Needs regular recharging.
Send text messages.	Worries about recharges.
Accessible world wide.	Service providers required.
Wide range of information.	Can be hard to find information.
Widespread and general.	Initially expensive.
Large amounts of info.	Requires simultaneous meetings.
TV and business uses.	Expensive to license.
	Inappropriate to adults.

Ways to Communicate

paberplakat ICT017
lamineeritud ICT017L

INTERNET FEATURES

Here are just some of the many important features of the Internet:

- Chat Rooms**: Using an instant messaging program to communicate with others in real time.
- e-mail**: One of the most popular forms of communication, allowing us to send and receive messages via the Internet.
- File Transfer**: One of the most popular forms of communication, allowing us to send and receive files via the Internet.
- Internet**: A global computer network that connects millions of computers around the world.
- E-commerce**: Buying and selling products and services online.
- News Groups**: People who have similar interests can communicate with each other through newsgroups.
- Education**: Education is the process of learning knowledge, skills, values, beliefs, and more.
- Search Engines**: Search engines help us find the information we need on the Internet.

Internet Features

paberplakat ICT018
lamineeritud ICT018L

INTERNET USE

To get started using the internet, you will need hardware, software and a connection to an internet service provider.

HARDWARE

- External modem
- WAP
- Digital TV

SOFTWARE

- Advertising
- News
- Web space

SERVICE PROVIDER

- e-mail (Can be separate software)
- View interactive sites
- Store favourite sites

Internet Use

paberplakat ICT019
lamineeritud ICT019L

INTERNET JARGON

The language and terms used on the internet can sometimes be confusing. Here are some useful terms and explanations:

TERM	EXPLANATION
MODEM	A device converts digital data from a computer into analogue signals for transmission over telephone lines.
ROUTER	A router is used to route a local network (LAN) between different parts of the network. It also routes traffic between LAN and WAN.
ISP	An Internet Service Provider (ISP) is a company that provides Internet access.
BROWSER	A browser is a software application that allows you to view web pages.
WEBSITE	A website is a collection of related web pages on a single topic.
HOME PAGE	The home page is the first page of a website.
LINK	A link is a reference to another page or resource that can be followed by clicking it.
URL	A Uniform Resource Locator (URL) is a web address consisting of a protocol (e.g., http://), a domain name (e.g., www.google.com), and a path (e.g., /search).
HTML	HyperText Markup Language (HTML) is the language used to build web pages.
E-MAIL	E-mail is a way of sending and receiving messages via the Internet.
DOWNLOAD	The process of getting a file from the Internet to your PC.
KBPS	Kilobits per second (KBps) is the rate of download speed.
BOOKMARK	A bookmark is a favorite or a place to return to.
SEARCH ENGINE	A search engine is a website that helps you to find what you're looking for on the Internet.

Internet Jargon

paberplakat ICT020
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Internet Advantages

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e-commerce

paberplakat ICT023
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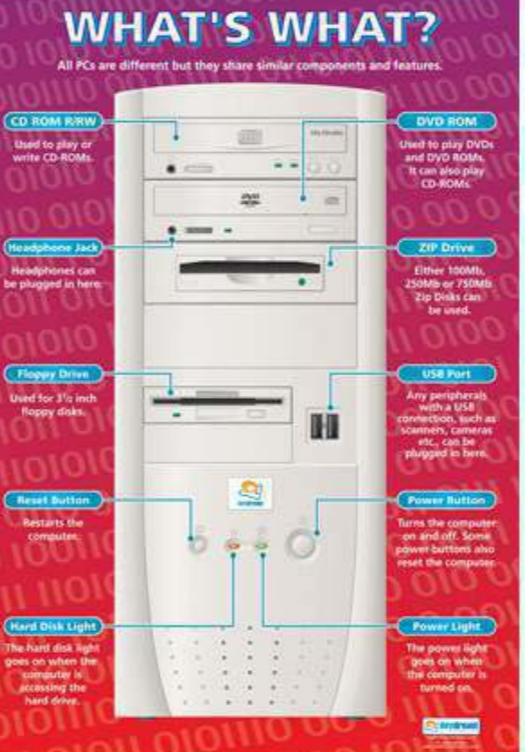
Internet Disadvantages

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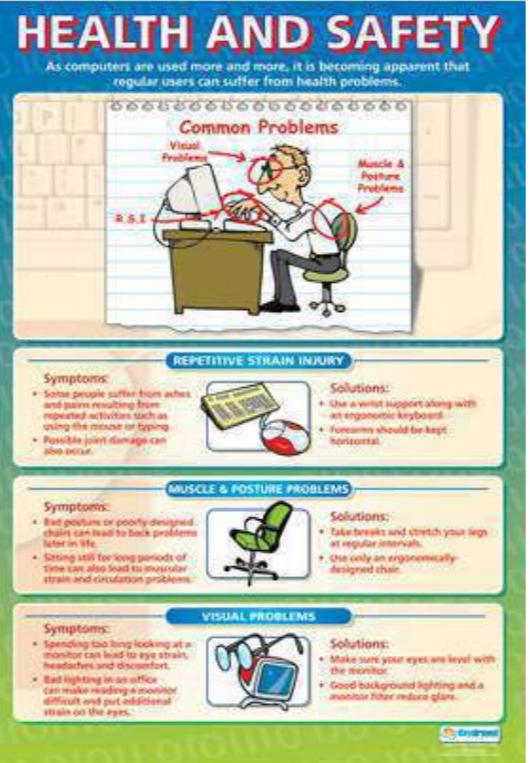
The Data Protection Act

paberplakat ICT024
lamineeritud ICT024L



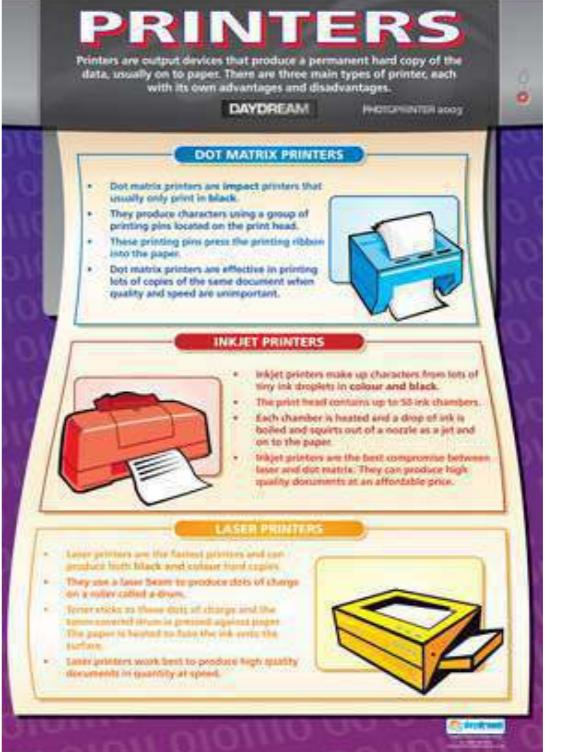
What's What?

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lamineeritud ICT025L



Health and Safety

paberplakat ICT028
lamineeritud ICT028L



Printers

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lamineeritud ICT027L



Operating Systems

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lamineeritud ICT029L

USER INTERFACES

A user interface is the means by which the user communicates with the operating system (OS) or other software. There are three main types of user interface:

- COMMAND DRIVEN**: A command-driven interface is usually just a black screen. The user types abbreviated commands that the operating system carries out.
- MENU DRIVEN**: These display lists of commands organized into headings and menus. Commands are selected using a mouse or relevant key.
- GRAPHICAL USER INTERFACE (GUI)**: The most popular type of interface and the type used in most modern operating systems. Some of the main features of GUI's are:
 - Windows**: A window contains information that is relevant to a task, e.g. a word-processing document.
 - Menus**: These are often 'drop-down' and give the user a list of options.
 - Icons**: These are small pictures that represent different commands.
 - Pointers**: Usually in the form of an arrow, a pointer can be moved around the screen using a mouse etc.

User Interfaces

paberplakat	ICT030
lamineeritud	ICT030L

COMPUTER SIMULATIONS

Computer software allows us to model 'real life' situations in which we can test products or phenomena. Extreme examples of these are flight simulations and car-crash test systems.

- SPREADSHEETS**: These can be used to model situations involving the use of formulae.
- C.A.D.**: Computer-Aided Design (CAD) is used to create 2D and 3D graphical images.
- EXPERT SYSTEMS**: These simulate the knowledge of a human expert, containing data on specific subjects.
- VIRTUAL REALITY**: VR models are extremely large and complex, and give the user a realistic experience.
- ADVANTAGES**:
 - Running a simulation is cheaper than the real thing.
 - Models can be made to make useful predictions and prevent mistakes.
 - Dangerous events can be studied in safety.
- DISADVANTAGES**:
 - A simulation is only as good as the program it's based on.
 - Results can be misleading and present an inaccurate prediction.
 - Setting up a simulation can be time consuming and expensive.

Computer Simulations

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lamineeritud	ICT032L

DATA LOGGING

Data logging is when information is captured and stored using sensors. This information is then stored in the computer for analysis.

- HARDWARE AND SOFTWARE**:
 - Input Sensors**: Converts environmental signals (e.g. light or sound) into electrical signals that produce an analogue or digital signal.
 - Digital Signals**: Digital signals are created when the sensor measures certain events e.g. going in and out of a car park.
 - Analogue to Digital**: Analogue signals need to be converted before they can be read by a computer.
- WHAT IS MEASURED?**:
 - Light, Temperature, Sound, Pressure, Air Pressure, Infra-red, Radio-activity.
- BENEFITS**:
 - No Breaks**: Data logging machines work until programmed not to. No need for breaks for sleeping and eating!
 - Accuracy**: Intervals between measurements are more accurate than when done manually.
 - Time Scale**: Data can be collected from something that happens very quickly or very slowly.

Data Logging

paberplakat	ICT031
lamineeritud	ICT031L

ICONS

Icons are small pictures which help us use computers.

- WINDOWS XP**:
 - Start button
 - Internet, E-Mail, Local Disk, CD-ROM, Floppy Disk, Folder, Minimise, Maximise, Restore Down, Close, Log Off, Shut Down.
- APPLICATION**:
 - New, Save, Open, Print, Hyperlink, Table, Cut, Copy, Paste, Undo, Redo, Spell Check.
- INTERNET**:
 - Back, Forward, Stop, Refresh, Home, Search.

Icons

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lamineeritud	ICT034L

PRESENTING DATA

There are six main methods of data presentation. The one you choose depends on the output devices available, what you want to present and how you want to present it.

- TEXT**:
 - Used to communicate ideas that require words.
 - Often used when information is important and needs to be accurate.
- IMAGES**:
 - Images are a powerful way of communicating information without words.
 - Illustrations and photographs are forms of image.
- GRAPHS & CHARTS**:
 - Graphs and charts are used to communicate data graphically.
 - They usually involve numbers and figures.
- SOUND**:
 - Information can be passed on by spoken word.
 - Sound and music can also be used to create atmosphere and mood.
- VIDEO**:
 - Some information is best communicated through motion.
 - This can include live action and animation.
- MULTIMEDIA**:
 - Multimedia is a combination of some or all methods of presenting data.
 - It is often used for websites, CD-ROMs or for a presentation.

Presenting Data

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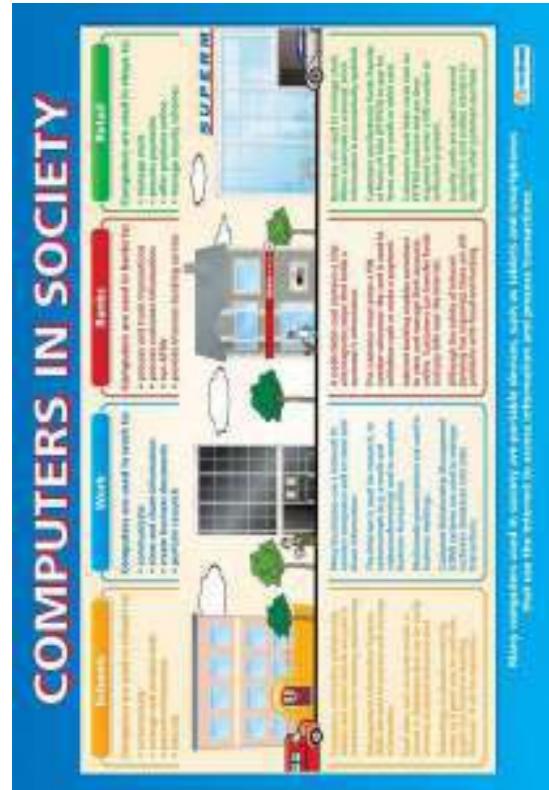
MULTIMEDIA PRESENTATIONS

Multimedia software is being used more and more to help people give professional-looking presentations.

- HOW THEY HELP**:
 - Presentations can be used to demonstrate a new idea or to communicate information.
 - Software can be used to give a presentation with or without a speaker.
 - Interactive whiteboards are commonly used in multimedia presentations.
 - Pupils and teachers can present information in a colourful and varied way.
- FEATURES**:
 - NEW**:
 - Slides can be created using presentation software.
 - They can be enhanced with pictures, sounds and video.
 - However, some software can be complicated.
 - OLD**:
 - Slide shows, slides are hand written or typed and then photocopied on to slides for use with an OHP.
 - As the presentation is controlled by the person using the OHP, no thought has to be given to giving the presentation.
 - As slides are 'hard copies' they are liable to go missing or become out of date.
 - ADVANTAGES**:
 - Bullet points and pictures can appear as and when the speaker wants them to.
 - Not all the information has to be given in one go.
 - DISADVANTAGES**:
 - Speakers often have to cover up parts of the slide to stop the audience seeing the information at once.
 - Unless the speaker is confident, these presentations can take a long time to prepare.
 - They are easier and quicker to prepare.

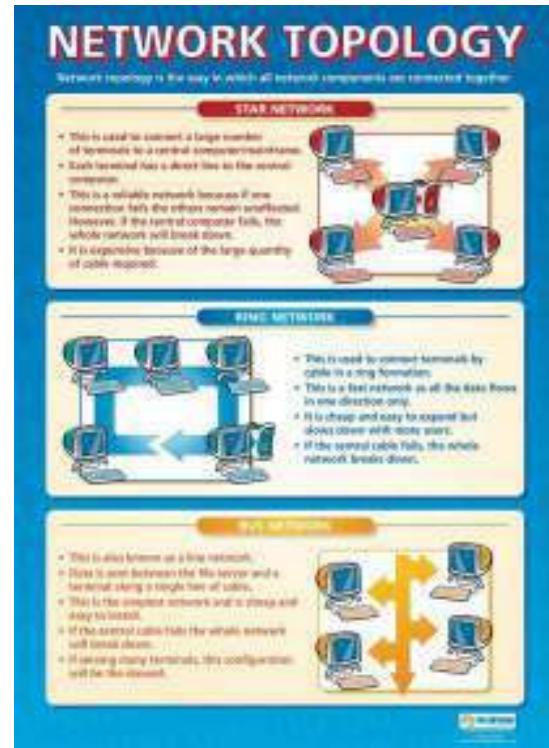
Multimedia Presentations

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lamineeritud	ICT037L



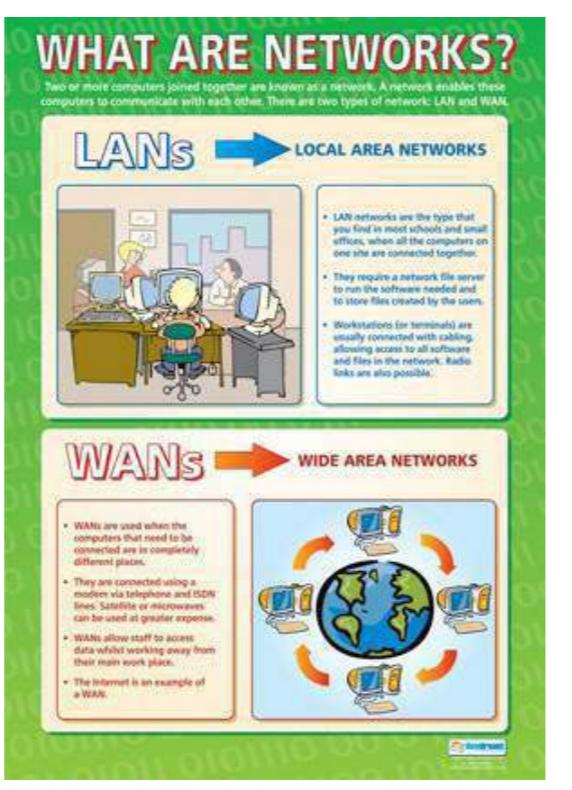
Computers in Society

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lamineeritud ICT038L



Network Topology

paberplakat ICT040
lamineeritud ICT040L



What are Networks?

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lamineeritud ICT039L



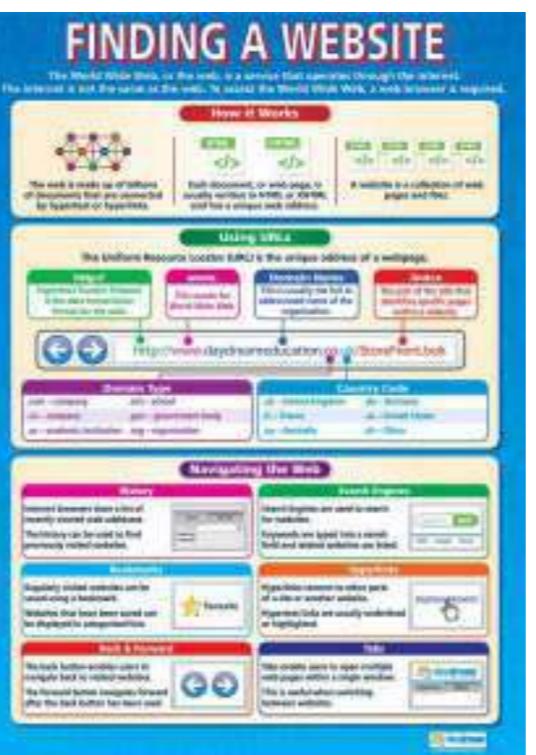
Network Advantages and Disadvantages

paberplakat ICT041
lamineeritud ICT041L



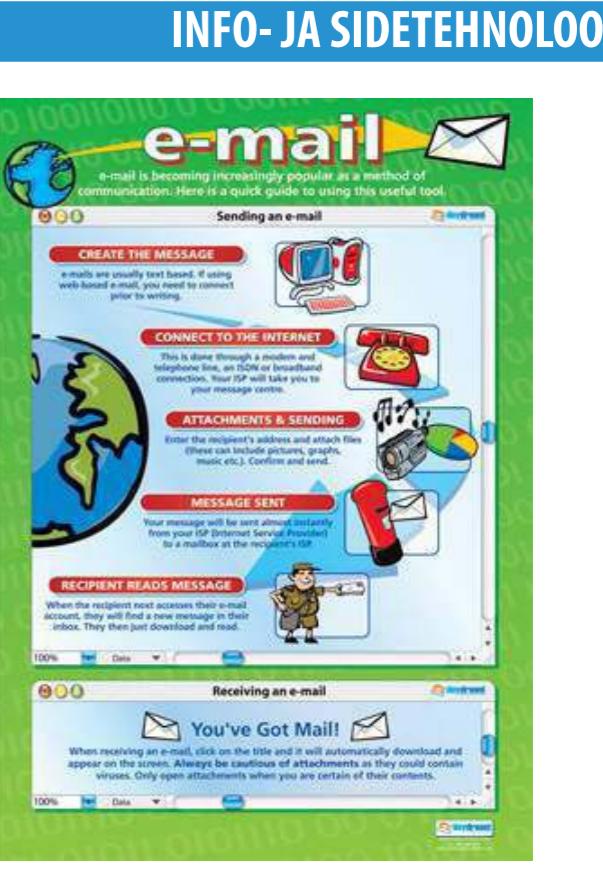
Navigating the Web

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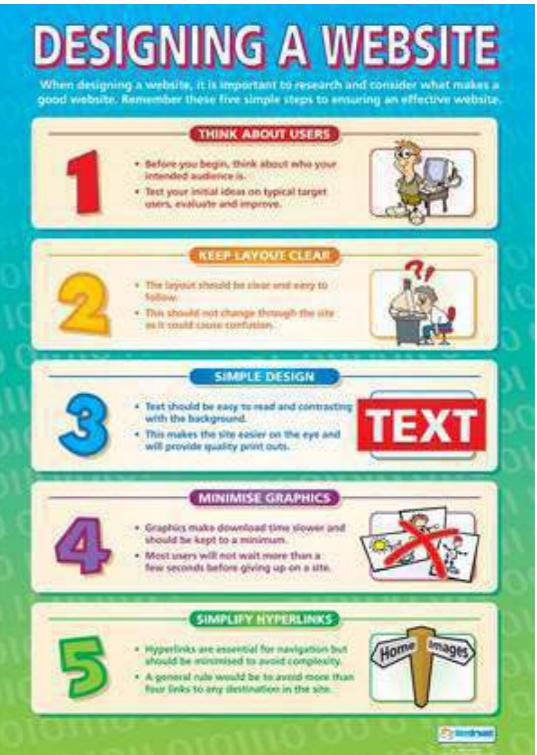
Finding a Website

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e-mail

paberplakat ICT043
lamineeritud ICT043L



Designing a Website

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lamineeritud ICT045L

BRANCHING DATABASES

Branching databases are computerised tree diagrams that allow you to classify, sort and identify different objects.

USING A BRANCHING DATABASE

"Yes/No" questions are used to separate a set of objects into two sub-sets. Create a sequence of "yes/no" questions to identify an object from a selection.

- Firstly, type in a list of the things you want to sort.
- Create a question that will split the group approximately in half.
- The computer will use your YES/NO answers to sort the objects into two groups.
- This process must then be repeated for each of the smaller groups.

The following is a simple example of how branching databases can be used to classify animals.

```

graph TD
    A[Shark] -- Does it live in water? --> B[Jellyfish]
    A -- Does it have a backbone? --> C[Tuna]
    B -- Does it have scales? --> D[Shark]
    B -- Does it eat meat? --> E[Fox]
    C -- Does it have fins? --> F[Rabbit]
    C -- Does it eat meat? --> G[Treasury]
    
```

The computer will not show you the tree diagram. Only the appropriate question and 'yes/no' answers will be displayed.

Branching Databases

paberplakat ICT046
 lamineeritud ICT046L

SYSTEMS ANALYSIS

A systems analysis is an investigation performed to determine the functions of a system and whether it can be improved.

- ANALYST**
What does the system make, what is it used for and what happens?
→ Identify requirements:
- User requirements
- Functional requirements
- Non-functional requirements
- Design constraints
- DESIGN**
System requirements and design
→ Define functional requirements and non-functional requirements.
- User requirements
- Non-functional requirements
- Design constraints
- EVALUATE**
Evaluation → Testing → Testing
→ Identify:
- What needs to be tested
- What criteria are acceptable
- What criteria are unacceptable
- What criteria need to be met
- What criteria can be met
- What criteria cannot be met
- Maintenance**
Once the system has been installed, maintenance may be required.
→ Correct errors
- User requirements
- Non-functional requirements
- 5**
Evaluate the outcome of responses.
→ Does the system perform as intended?
- Has it been improved further?
- Are there any unanticipated elements or problems?

Systems Analysis

paberplakat ICT047
 lamineeritud ICT047L

Adjectives, Verbs, Adverbs

Adjectives:
Adjectives are words used to describe nouns – they tell you about someone or something. Adjectives are usually placed just before the noun they are describing.

Verbs:
Verbs are doing or being words – they tell you what someone or something is doing or being.

Adverbs:
Adverbs are describing words – they tell you how a verb is done.
Most adverbs end in 'ly' and can be placed at the start, middle or end of a sentence.

Adjectives, Verbs & Adverbs

paberplakat EN001
 lamineeritud EN001L

ANTONYMS

Antonyms are words with a meaning OPPOSITE to other words.

hot	↔	cold
rare	↔	common
weak	↔	strong
happy	↔	sad
light	↔	dark
wet	↔	dry

MEMBER - Some words may have more than one antonym.

Antonyms

paberplakat EN002
 lamineeritud EN002L

INTERNET SECURITY

It is important to protect data and devices connected to the internet.

MALWARE:
Malware is malicious software designed to damage computer systems.

PACKWOOD:
Packwood is the automated attacking of a computer system.

WAREZ:
Warez is a program designed to copy media files without permission.

Warez Box:
A warez box is a self-modifying program that can copy files from one computer to another.

ANTI-SPYWARE:
Anti-spyware is a computer program that removes and detects threats that may infect a computer system. All computer users should install an anti-spyware package. To remove spyware the detection feature must be activated.

COMPUTER MISUSE ACT & COPYRIGHT LAWS:
Computer Misuse Act 1990
Copyright, Design and Patent Act 1988

ANTI-SPYWARE:
Anti-spyware software is designed to detect and remove spyware from a computer system. It will look for any threat to the data and system and remove it. Many anti-spyware programs are free of charge.

PASSWORDS:
Computer passwords are used to prevent unauthorised access of a computer system. No strong passwords are difficult to guess. Strong passwords should contain a mixture of letters, numbers and symbols.

Computer Misuse Act & Copyright laws

paberplakat ICT049
 lamineeritud ICT049L

CAPITAL LETTERS

Capital letters are letters that are used to start words.

Starting a Sentence:
Every sentence starts with a capital letter.
A long time ago, in a galaxy far, far away... a capital letter is widely regarded as the start of great stories.
"Stop that man!" shouted the police officer.

Names and Titles:
Sarah took her son to see Dr. Williams because he was ill.

Days of the Week and Months:
The football game is on Monday 2nd July.

Place Names:
I'm moving to Sydney, Australia.

Nationalities and Languages:
The man is Mexican but he speaks Spanish.
"Hola!"

Companies and Organisations:
The RSPCA takes care of injured and abandoned animals.

Headings and Book Titles:
My favourite book is Alice in Wonderland.

Capital Letters

paberplakat EN003
 lamineeritud EN003L

CLICHÉS, IDIOMS, PROVERBS

CLICHÉS:
Clichés are over-used phrases or sayings.

IDIOMS:
Idioms are phrases commonly used but not meant literally.

PROVERBS:
Proverbs are phrases about the world or life in general that give advice.

Clichés, Idioms & Proverbs

paberplakat EN004
 lamineeritud EN004L

COMMON LETTER STRINGS

Some patterns of letters are often repeated. We call these letter strings.

If the letter strings are repeated in different words they may be pronounced differently.

TRY PRONOUNCING THESE

1 one	bone	cone
earth	pear	ear
moth	froth	both

Common Letter Strings

paberplakat EN005
lamineeritud EN005L

DOUBLE MEANINGS

ADVISE / ADVICE

To advise with an **S** is a verb.
The advice he gave was to drink bottled water and use sun block.

PRACTISE / PRACTICE

To practise with an **S** is a verb.
Tennis practice starts at 2pm.

DEVISE / DEVICE

Berry needed to devise a plan for his science homework.
Test tubes are a device for holding liquid.

Double Meanings

paberplakat EN006
lamineeritud EN006L

HOMOPHONES

Homophones are words that sound the same but have different meanings and spellings.

bare	bear	see	sea
dear	deer	tale	tail
fir	fur	pair	pear
sweet	suite	pane	pain
muscle	mussel	mail	male
read	reed	miner	minor

Homophones

paberplakat EN009
lamineeritud EN009L

i Before e?

The **i** in **before** is a vowel, but it's a consonant in **the** and **she**.

Phonetic rules with 'ee'

- The **e** in these examples doesn't rhyme with 'ee': - It's the case with the **sheep** before the **sheep**. Other examples: **sheep**, **sheepish**.
- The **e** in these examples rhymes with 'ee': - It's the case with the **sheep** after the **sheep**. Other examples: **sheepish**, **sheepish**.

Phonetic rules with 'ay'

- The **a** in these examples doesn't rhyme with 'ay': - There is a **ay** on the **key** in **keyhole**. Other examples: **keyhole**, **keyhole**.
- The **a** in these examples doesn't rhyme with 'ay': - There is no **ay** on the **key** in **keyhole**. Other examples: **keyhole**, **keyhole**.

Here are some exceptions to the rule:

weird	seize	neighbour
-------	-------	-----------

i Before e?

paberplakat EN010
lamineeritud EN010L

HOMOGRAPHHS

Homographs are words which look the same but mean something different.

Verbs ending with a single consonant preceded by a short vowel, double the consonant when adding the suffix '-ing' or '-ed'.

stop	stopped
jog	jogged
bat	batted
wrap	wrapped

Homographs

paberplakat EN008
lamineeritud EN008L

Imagery

Imagery is used to form an image or picture in the reader's mind. It helps readers express emotions, thoughts and feelings in an imaginative way.

Metaphor

"The snow glistened like stars in the clear night sky."

A simple description does not have the same effect.

"The snow glistened."

Simile

A simile tells you that one thing is like another; it compares two different aspects using the words **as** like to emphasize a description.

Personification

A personification tells you that one thing is something else. It is not meant literally. It is just an imaginative way of **describing** a word or phrase in the reader's mind.

Hyperbole

Hyperbole exaggerates things or objects as if it is a person, or as having human qualities. It is often used to stimulate emotion and engage the reader.

Onomatopoeia

Onomatopoeia describes things or objects as if it is a person, or as having human qualities. It is often used to stimulate emotion and engage the reader.

Imagery

paberplakat EN011
lamineeritud EN011L

Nouns

Nouns are words that name things such as objects, animals, places and people.

Concrete

Concrete nouns are words that refer to an object, person or place.

ball	bag	library
The ball is round.	The bag was lonely.	It is an old library.

Proper

Proper nouns are words that name a particular place, person or object.

France (country)	Mike (name)	Eiffel Tower (place)
A proper noun will always start with a capital letter.	Mike went to France to visit the Eiffel Tower.	

Collective

Collective nouns are words that refer to a group of collection of people, animals, objects or places.

crowd	team	insects
The crowd watched as the lions basked over the branch of bananas.		

Abstract

Abstract nouns are words that refer to emotions, thoughts or ideas.

love	anger	jealousy
Anissa knew her love for Jordan was real.	He was filled with anger.	She had a jealousy for her mother.

Nouns

paberplakat EN012
lamineeritud EN012L

Paragraphs

A paragraph is a group of related sentences that focus on a specific theme or topic.

Change of Topic

A new paragraph is needed when there is a new topic, a development or idea.

He had hoped to disrupt a meeting of the邪. They were living on the island. They had been taken out of the prison guard when the panel left.
 (Continuing on page 10) And for the rest of the day, just another day.



...and about to let the last of the day's sun disappear over the horizon. He knew that he had to leave before the sun disappeared completely.

Change of Time

A new paragraph is needed when there is a change in time.

During the summer, his health improved, but the weather of spring was dreadful. It grew cold, the trees of blossoms began to burst again. Yet the savings held. For they had a month of leisure road ahead.

The following winter he wrote again, that we're determined to escape. We decided to have all early spring, when the country was beginning to melt and the nights were still bright.

Change of Speaker

A new paragraph is needed when there is a change of speaker.

Matty finally won an one of the open trials. "What was cold but not quite so terrible?"
 "I saw Mr. Wertheim," said Matty. "He didn't seem well."
 "Every job today is meant to be herculean," said Matty.
 "I think it'll take that and it's not on hand."
 "There's no room to stretch."
 "But you'd need me and try not go to sleep. There; that's better!"



Change of Person or Place

A new paragraph is needed when a new person or place is introduced.

It was the end of May when the team reached Dohar - after many days of sleeping and eating, of lying up in saddlebags, of covering along the bottom roads.

The soldiers had a character, but otherwise were glad to escape from their cramped quarters. They unstrapped off the saddlebags and took the horses, some of whom disappeared off across the dusty roads of Dohar.



Paragraphs

paberplakat EN013
lamineeritud EN013

Plurals

Most plurals are formed by simply adding s.

book → books dog → dogs bottle → bottles

Adding 'es'

Where a vowel ends in e, add es to make it plural.

glass → glasses house → houses dish → dishes watch → watches

Ending in f or fe

Replace the f or fe with ves to make it plural.

leaf → leaves monkey → monkeys

If there is a vowel before the y, add es to make it plural.

berry → berries

Ending in y

If there is a consonant before the y, replace it with es to make it plural.

kangaroo → kangaroos

If there is a vowel before the ss, add es to make it plural.

tomato → tomatoes

Irregular Plurals

Plurals that do not follow a spelling rule are called irregular plurals.

sheep → sheep horse → horses mango → mangoes

Plurals

paberplakat EN015
lamineeritud EN015L

PHONEMES

PHONEMES

A phoneme is a unit of sound in a word. In the word 'pen' there are 3 phonemes: /p/e/n/. Each letter represents one sound in the word.

Look at the word 'cat'. It has 3 phonemes:

is the first phoneme,

is the middle / medial phoneme,

is the final phoneme.

Look at the word 'dog'. It also has 3 phonemes:

is the first phoneme,

is the middle / medial phoneme,

is the final phoneme.

DIGRAPHS

Sometimes two letters represent one sound:

ship

stick

This is called a digraph. If the two letters are consonants then we call this a consonant digraph.

How many phonemes can you find in the following?

fish

bell

ring

PrimaryLeap.co.uk

Phonemes

paberplakat EN014
lamineeritud EN014L

Pronouns, Prepositions & Conjunctions

Pronouns

Pronouns are words used to point repeating the same noun. Common pronouns include:

Interrogative pronouns or relatives: Who, What, Where, When, Why, How

Reflexive pronouns: Myself, yourself, himself, herself, ourselves, themselves

I have picked up the ball and kicked **the ball** back to **my friend**.

Object pronouns: Me, You, Her, Him, It, Us, Them

James picked up the ball and kicked **it** back to **me**. James' friend.

Prepositions

Prepositions are words that tell you where things happen.
They are used with nouns or pronouns.

Time: Prepositions of time tell you when something is happening.	Place/Direction: Prepositions of place tell you the position or direction of something.
 before at in on from	 near under over through between in front of behind down

Juliet's birthday party is being held **in** the village hall **at** 10:00 **on** Friday 10th June.

The dog was **around** the garden while the cat sat **behind** the fence.

Conjunctions

Conjunctions are words that join two or more nouns, phrases or clauses.

Coordinating

Coordinating conjunctions link nouns, phrases and clauses that are of equal importance.

yet for and nor or but so

Our car is old **but** very reliable.

Subordinating

Subordinating conjunctions are used to connect complex sentences to introduce subordinate clauses.

because when where while if however despite

I need to remember to use my mouse before I go **on**.

Pronouns, Prepositions & Conn

paberplakat EN016
lamineeritud EN016L

Punctuation	
Full Stop	• It is used to end a sentence.
Question Mark	? It is used to end a question.
Exclamation Mark	! It is used to end an exclamation.
Capital Letter	A capital letter is used at the start of a sentence.
Hyphen	- It is used to join two words together.
Brackets	() They are used to group words together.
Quotation Marks	" " They are used to enclose a direct speech or a title.
Ellipsis	... It is used to show that there are missing words.
Colon	: It is used before a list or a quote.
Semicolon	; It is used to join two related sentences.
Hyphenated Words	Two words joined together by a hyphen.
Quoted Words	“ ” They are used to enclose a direct speech.
Quoted Quotations	“ “ “ ” They are used to enclose a direct speech in a quotation.
Quoted Quoted Quotations	“ “ “ “ “ ” They are used to enclose a direct speech in a quotation in a quotation.

Punctuation

baberplakat EN017
amineeritud EN017L

Soft C, Hard C

Soft C Hard C

oaberplakat EN019
amineeritud EN019L

QUESTION SENTENCES

There are three different types of question sentence.

YES / NO QUESTIONS

These are questions that invite you to answer **yes** or **no**.



Would you like a
computer for
your birthday?





EITHER / OR QUESTIONS

These questions give a **choice** of two answers.



Would you like
a dog or a
computer for
your birthday?





THINK FOR YOURSELF QUESTIONS

To reply to these questions you have to come up with your **OWN** answer.



What would you
like for your
birthday?





oxford
university press

Question Sentences

paberplakat EN018
lamineeritud EN018L

Soft g, Hard g

Soft g Hard g

paberplakat	EN020
lamineeritud	EN020L

Sentence Rules

A sentence is a group of words that are organised in a particular way so that they make sense.

- If the words are not organised in the correct order, the sentence will not make sense.
- The boy ran across the road. ✓ The boy ran across the road.
- Sentences start with a capital letter and end with a full stop.
- Bear all your potential. The dog barked loudly. Football is my favourite sport. Stop that now!
- Some sentences end with a question mark or exclamation marks. What time is it? Stop that now!
- Almost every sentence needs a verb (a doing or being word) and a subject.
- The teacher learned. The boy had a bad headache. The girl took her medicine. The man helped his wife.
- Many sentences usually do not have a subject or verb. For sale. Help me!
- The verb used in the sentence must be in the correct tense and form.
- Learn about a clock. We were having dinner. We were eating dinner. I know my pet. I know my pet.

Sentence Rules

paberplakat EN021
lamineeritud EN021L

SILENT LETTERS

Silent letters cannot be heard when you say a word.

- You do not say the e on the end of snake, shake or cake.
- snake shake cake
- The e is there to tell you to say the a as a long a not a short a (a as in hay, not as in hat).
- The letter k followed by an 'n' at the beginning of a word is usually a silent letter.
- knuckles knight knitted
- The letter h at the beginning of a word is sometimes a silent letter.
- hour honest honour

Silent Letters

paberplakat EN022
lamineeritud EN022L

The Apostrophe

The apostrophe is used to show possession by one person or thing.

- There is used with the words 'is', 'are', 'had' and 'were' to indicate that something belongs to someone's exactly. It can also be used to refer to a place.
- These are my friends. Their friends are their friends. There are no leaves on the trees.
- They're is the shortened form of 'they are'.
- They're at the cinema with their friends to have fun. They're having a good time.
- To check that you are using the correct word, actually say 'they are' in your sentence.

The Apostrophe

paberplakat EN025
lamineeritud EN025L

There, Their, They're

These, Their and They're are homophones which means they have the same sound but have different meanings.

- There
- There is used with the words 'is', 'are', 'had' and 'were' to indicate that something belongs to someone's exactly. It can also be used to refer to a place.
- These are my friends. Their friends are their friends. There are no leaves on the trees.
- They're
- They're is the shortened form of 'they are'.
- They're at the cinema with their friends to have fun. They're having a good time.
- To check that you are using the correct word, actually say 'they are' in your sentence.
- Can you complete the following sentences?

There, Their & They're

paberplakat EN026
lamineeritud EN026L

SOUNDS OF LETTERS

The letters of the alphabet are used to represent sounds.

In the English language, one letter may make several different sounds, depending on which other letters it is combined with in a word.

hand	hay	half

The vowel a sounds different in each of these words.

Try pronouncing the following words.

behave	ten	pet

kite	tin	kitten

oven	pot	open

blunt	cue	bush

Speakers of English from different places may make slightly different sounds with some letters.

Sounds of Letters

paberplakat EN023
lamineeritud EN023L

SYNOMYMS

Synonyms are words which have the same or very similar meaning.

	dry • arid • parched
	wet • soaked • drenched
	strong • powerful • robust
	happy • cheerful • merry
	jump • leap • spring
	lazy • lethargic • inactive

REMEMBER - Add variety by avoiding over use of particular words.

Synonyms

paberplakat EN024
lamineeritud EN024L

To, Two and Too

To, Two and Too are homophones which means they have the same sound but have different meanings.

- To is often used with a description of a verb.
- I need to pay my friend's phone bill. She went to bed after her sports. I like to consider the help offered.
- Two is the number 2.
- I have two dogs. I ate two pieces of fruit this morning. I have two days off in the holidays.
- Too is used to mean too much of something.
- I need too much coffee this morning. I like to go to bed too late. I like to have too many sweets.

Can you complete the following sentences?

To, Too & Two

paberplakat EN027
lamineeritud EN027L

TRICKY PLURALS

Change spelling

The spelling of some nouns changes to form the plural:

mouse	mice	woman	women

Same spelling

Some nouns use the same spelling for the plural:

fungus	fungi	foot	feet

Other plurals

Here are some more unusual ones:

child	children	half	halves	ox	oxen

Tricky Plurals

paberplakat EN028
lamineeritud EN028L

Types of Sentences

Minor Sentences When writing, you will need to use different types of sentences to tell your audience, instructions and facts etc.

- Simple Sentences** A simple sentence consists of only one clause, with a single subject and predicate verb or verb phrase.
 - I dance.
 - Mother reads.
 - The dog barked and growled.
- Complex Sentences** A complex sentence contains two or more independent clauses (but equal importance) that are linked by a connecting conjunction (e.g. and, but, so, yet).
 - The connection had a joke and the audience laughed uncontrollably.
 - It was hot and sunny we were used to the sun.
- Compound Sentences** A compound sentence contains two or more independent clauses (of equal importance) that are linked by a coordinating conjunction (e.g. and, but, or, yet).
 - When we saw the fire we ran quickly, but he knew her area so thoughtfully.
 - He was late for school despite making up work.
- Complex Compound Sentences** A complex sentence contains an independent clause and a dependent clause. The subordinate clause supports the main clause and does not make sense on its own.
 - When we saw the fire we ran quickly, but he knew her area so thoughtfully.
 - He was late for school despite making up work.

To make your writing more interesting try to vary the kinds of sentences you use, including adjectives, adverbs and imagery will often make your audience more engaged.

Types of Sentences

paberplakat EN029
lamineeritud EN029L

Verb Tenses

The tense of a verb tells you when it happened. There are three basic verb tenses: past, present and future.

	Simple Past	Present Simple	Future Simple	Simple Present
You	I played football.	I play football.	I will play football.	I play football.
We	We played football.	We play football.	We will play football.	We play football.
He	He listened to the radio.	He listens to the radio.	He will listen to the radio.	He listens to the radio.
She	She bought her book.	She buys her book.	She will buy her book.	She buys her book.
It	It worked well.	It works well.	It will work well.	It works well.
They	They won last time.	They win last time.	They will win next time.	They win last time.

In the present tense, most regular verbs do not change, however, when the subject is 'I' or 'we' a present tense suffix '-s' is added to the verb.

Some verbs do not change because they are irregular verbs.

In addition to the simple past, present and future tenses there are also other tenses:

- Past Continuous: We were playing tennis.
- Present Continuous: We are playing tennis.
- Future Continuous: We will be playing tennis.
- Past Perfect: We had played tennis.
- Present Perfect: We have played tennis.
- Future Perfect Continuous: They will have been playing tennis.

Verb Tenses

paberplakat EN031
lamineeritud EN031L

VERBS

A verb expresses an action or a state-of-being.

Action verbs show physical and mental actions. State-of-being verbs show a condition.

ACTION		
physical		
sing	travel	run

STATE-OF-BEING		
believe	hope	desire

STATE-OF-BEING		
feel	become	appear

Verbs

paberplakat EN030
lamineeritud EN030L

VOWELS AND CONSONANTS

The letters of the alphabet are divided into two groups: vowels and consonants.

Vowels	
There are 5 vowels.	
	Every word contains a vowel. Sometimes the letter 'y' is used as a vowel, but strictly speaking it is a consonant.

Consonants	
There are 21 consonants.	
	Traditionally, 'ch' is used instead of 'c' with 'f' and 'v'.

Vowels and Consonants

paberplakat EN032
lamineeritud EN032L

Word Sounds

Alliteration Alliteration is where several words in a phrase or a line of poetry begin with the same sound. It is often used in poetry and advertising to emphasize key words or messages.

The fast foodie followed over the fast trousers.

Assonance Assonance is where several words in a sentence or poem have the same vowel sound repeated.

The rain in Spain falls mainly on the plain.

Onomatopoeia Onomatopoeia describes a word that sounds like the action.

Positives Positive sounds are short and sharp, and usually involve the letters p, t, k, ch, sh, or s.

Positives can create a surprising, shocking or threatening effect. The effect will be different depending on the context of the place of writing.

The name increases in people, animals and objects to feel the heat.

Negatives Negative words are short and ended to feel the heat.

The negative increases because the words are short and ended.

Word Sounds

paberplakat EN033
lamineeritud EN033L

PREFIXES

A prefix goes in front of a word to change its meaning.

prefix	+	word	=	new word
re	+	search	=	research
dis	+	comfort	=	discomfort
tele	+	vision	=	television

The prefixes il, im, in, and ir, often give a new word the opposite meaning.

prefix	+	word	=	new word
il	+	legal	=	illegal
im	+	patient	=	impatient
in	+	visible	=	invisible
ir	+	responsible	=	irresponsible

COMMON PREFIXES INCLUDE:
ex, dis, re, con, un, auto, bi, tri, mal, mis, trans, centi, be.

Prefixes

paberplakat EN035
lamineeritud EN035L

WORD BUILDING

Many long words are actually made of shorter words joined together.

PARTS OF A WORD Longer words are made of parts called:

- prefixes** (bits at the start)
- base words** (or Root Words)
- suffixes** (bits at the end)

prefix base word **suffix**
inter rupt ion ment ally
dis appoint matic
auto matically

Can you break these words up into prefixes, base words and suffixes?

researching irresponsible interactive

Word Building

paberplakat EN034
lamineeritud EN034L

COMMON PREFIXES 1

ante	anti
ante: before antenatal (before birth) antediluvian (before the flood)	anti: against/opposite of anticlimax (a let down) antisocial (against society's principles)

circum	contra / contro
circum: around circumference (the distance around) circumnavigate (to travel around)	contra / contro: against contradict (to oppose the words of someone) controversy (dispute, argument)

Common Prefixes 1

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lamineeritud EN036L

COMMON PREFIXES 2



Common Prefixes 2

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lamineeritud EN037L

CONSONANT SUFFIXES



Consonant Suffixes

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lamineeritud EN039L

SUFFIXES

A suffix is added to the end of a word to change its meaning or the way it is used.

word + suffix = new word

comfort + able = comfortable
danger + ous = dangerous
strength + en = strengthen
tear + ful = tearful
music + al = musical
paint + ing = painting

COMMON SUFFIXES INCLUDE:
able, ible, ary, ery, ly, ous, ment, al, ence, ance, ed, ion, ing, ure.

FORMS OF WRITING

DIARIES AND JOURNALS

Diaries and journals are a personal form of writing and can take many forms. They usually contain the date of each entry, and may contain illustrations.

LETTERS

Letters can be informal - such as writing to a friend - or formal - when applying for a job or to complain. The layout depends on your audience (who you are writing to) and purpose (why you are writing).

MAGAZINE ARTICLES

Magazines are usually aimed at people's interests. The articles can be longer, in depth and more visually appealing than in a newspaper, using columns, photographs and graphics.

NEWSPAPER ARTICLES

A very important part of a newspaper article is the layout, using headings, sub headings, columns and perhaps an accompanying photograph.

PROSE

Prose is any piece of sustained writing that is not poetry, such as short stories and novels.

Formal Letter

A formal letter is used when you write to someone you don't know or the number is unknown.

Why am I writing this report?
After being asked to do a presentation about our company, I have decided to write a formal letter to my boss.

Your full address
6 Charing Cross, Marylebone, London NW1 2BT
Date → 2nd July 2011
Reference The heading of your letter, it helps the reader who the letter is about.

Greetings Use the title and name of all the person to whom you are writing.

Closing Personal note, you are writing to your boss, before the close sign off the letter.

Message Explain what has happened or what you want to say.

Conclusion Remind the person what you expect and what they should do.

Postscript If you need to add something after the main body of the letter.

Signature Always include your name and your position.

Suffixes

paberplakat EN038
lamineeritud EN038L

VOWEL SUFFIXES

Suffixes are endings to a word that change the base word.

'ly' suffix
base word + suffix = new word
weak + ly = weakly
strong + ly = strongly

Adding 'ly' to make adverbs
Adding 'ly' to a base word changes it to mean 'in this way' or 'in this manner'. These words ending in 'ly' are usually called adverbs.
quick + ly = quickly
slow + ly = slowly

'al' suffix
person + 'al' = personal

'ist' suffix
balloon + 'ist' = balloonist
The 'ist' suffix usually refers to someone who does something.

'ary' suffix
diction + 'ary' = dictionary

'ic' suffix
history + 'ic' = historic
Base words ending in 'y'.

'ive' suffix
detect + 'ive' = detective

'ible' suffix
horror + 'ible' = horrible
If you drop the suffix 'ible' the base word is often unrecognisable.

'able' suffix
respect + 'able' = respectable

Forms of Writing

paberplakat EN041
lamineeritud EN041L

INFORMAL LETTER

An informal letter is used when writing to a friend or family member. As a result, it can be relaxed, familiar and friendly.

Household hints Please do not forget to include the address of the person to whom you are writing.

Subscription Your address → 6 Charing Cross, Marylebone, London NW1 2BT
Date → 22 July 2011

Dear Mum, How are you? I hope you are feeling better after being ill. I've been to the doctor's just now. Mr. Smith has a cold on his throat where she examined areas of her neck so I hope you are well too.

For every bit I haven't written for so long! I've been very busy recently with school work and revision for my exams. Revision is very difficult. The exam is on the 3rd July. I'm not sure if I will pass. My essay topic is good, though. Are your trumpet lessons going? Are you still enjoying them?

I went to the beach last weekend. The weather was nice. My friends came from two local towns. We had a brilliant time – playing football and relaxing on the sand and sunbathing in the sun. The weather was a bit cold so we went swimming and got a bit wet. I enjoyed myself!

My friend told me yesterday that we are going to visit you in the summer holidays. I can't wait as we always have so much fun playing in the park by your house.

Anyway, I'd love to go now and practice on the piano again. I'm looking forward to seeing you soon. Keep in touch!

Love,
Sophie

To friends, close family members or neighbours

Informal letters are usually written in a friendly, casual style. The language is relaxed and the punctuation is informal.

Formal Letter

paberplakat EN042
lamineeritud EN042L

Newspapers

A newspaper is a publication that contains news reports, general information and other matter of interest to the general public. It is published weekly or daily.

Research & Write Choose your focus selected one of the topics for your article. Research related topics and select the likely to happen.

Get Ready to Write Decide on the key points and create a checklist of what information needs to be included in the article.

It is important to write in a formal and style that are suitable for the intended audience.

How to Write a Newspaper Article

Structure A newspaper article is usually divided into several sections.

Headline The headline should be a comment and reflect the story. The headline should be eye-catching and informative.

Sub-headline Sub-headlines are used to introduce the main story.

Body text The body text is the main part of the article. It should be written in a formal tone.

Anticipatory questions Anticipatory questions are used to introduce the main story.

Quotations Quotations are used to provide evidence and support the main story.

Opinion Opinions are used to express the writer's own views on the story.

Conclusion The conclusion is the final part of the article.

Writing Techniques

- Using facts** Use facts to support the story.
- Using statistics** Use statistics to support the story.
- Using quotes** Use quotes to support the story.
- Using anecdotes** Use anecdotes to support the story.
- Using humour** Use humour to support the story.
- Using irony** Use irony to support the story.
- Using symbolism** Use symbolism to support the story.
- Using metaphor** Use metaphor to support the story.
- Using analogy** Use analogy to support the story.
- Using alliteration** Use alliteration to support the story.
- Using repetition** Use repetition to support the story.
- Using hyperbole** Use hyperbole to support the story.
- Using simile** Use simile to support the story.
- Using personification** Use personification to support the story.
- Using onomatopoeia** Use onomatopoeia to support the story.
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READING MATERIALS

ADVERTISING AND PROMOTIONAL MATERIAL
Advertising material is used to persuade people to buy something.
It's preference to create.

AUTOBIOGRAPHIES, DIARIES AND JOURNALS
Biographies are long pieces of writing about the author's life experiences.
They try to give a personal account of their life and experiences.

INFORMATION
Information comes in many forms, such as encyclopedias, websites,
TV shows, documentaries etc.

INSTRUCTIONS
Instructions should teach you how to do something and are best suited
to a clear and concise manner with as many visual layouts.

LETTERS
Letters can be informal, such as keeping in touch with friends or
family, or formal, such as applying for a job.

MAGAZINES
Magazines are usually aimed at a particular audience or age group and are
usually more serious than newspapers.

NEWSPAPER ARTICLES
Newspapers are often full of news stories, editorials, commentaries,
political pieces, financial news and more.

POETRY
Poetry is a considered form of writing, often in verse, usually dealing with
emotional or descriptive themes.

PROSE
Prose is any literary writing that is not poetry, such as short stories and novels.

PUBLICITY MATERIAL
Publicity material is used to make the public aware of particular organisations,
such as advertising environmental groups, local authorities or companies.

TRAVEL WRITING
Travel writing is a form of travelogue, in a person's own words about their holiday
place or places. It can be written on a diary, journal or poem.

TABLOID AND BROADSHEET

The image shows two versions of a newspaper layout side-by-side. On the left is a 'TABLOID' layout, which is narrower and features large, bold headlines and smaller columns of text. On the right is a 'BROADSHEET' layout, which is wider and includes a masthead, a more detailed front page with various sections like 'LARGE PRINT', 'SENSATIONAL HEADLINES', and 'EASY', and a more complex internal structure with multiple columns per page.

Reading Materials

paberplakat EN045
lamineeritud EN045L

POEM TYPES

Ballad
A poem or song which tells a story in a simple way.
Originally, ballads were often anonymous folk tales.

Sonnet
A poem with fourteen lines, usually written in iambic pentameters.

Ode
A long poem dedicated to a person (often deceased) or an object. Serious in tone, it is usually written in a series of stanzas.

Limerick
A five-line comic verse which follows the syllable pattern 8,8,6,6,8 with a rhyme scheme a,a, b,b, a.

Clerihew
A four-line comic verse composed of two rhyming couplets. The first line is the name of the person about whom the clerihew is written.

Elegy
A poem of mourning or lamentation, which is sad or reflective in nature.

Tabloid and Broadsheet

paberplakat EN046
lamineeritud EN046L

Poetic Features

Hard Frost

The poem 'Hard Frost' by Andrew Young is analyzed here. Annotations point to various features:
Consonant Metaphor: Frost called to water "Hail!"
Rhyme Couplet: And created the moist snow with sparkling salt;
Personification: Brows, their own bridges, stop, And cities in long sheltered sleep.
Simile: And track in water-holes. Looks under glassy glaze like fish in bowls.
Assonance: In the hard-cold face.
Alliteration: Arrows, frosty bows, a belt the pane,
Metaphor: And shuddering trees ice-bound.
Enjambement: Changed into weeping oaks, sweep the ground.
Hyperbole: Dead hags, like iron in pain!
Imagery: And darts on shadows about their ghostly tracks.
Personification: But valiant the fierce frost!
Simile: Intensifies frost, rocks trees in an armed host,
Metaphor: Hangs desolate bone-spires.
Enjambement: And on the windows' frosty anchor dreams.
Personification: In the long, low green misery.
Simile: The sun will strike his dead and strip his bones...
Andrew Young (1900-1969)

Poetic Structure

paberplakat EN049
lamineeritud EN049L

SONNET STRUCTURE

A sonnet is a poem with 14 lines. The lines are normally grouped into 8 and 6 or into 4, 4, 4 and 2.

Summer Evening

The frog half-fearful jumps across the path,
And little mouse that leaves its hole at eve
Nimbly with timid dread beneath the swath;
My rustling steps awhile their joys deceiv.
John Clare (1793-1864)

This diagram illustrates the structure of a sonnet. It shows a 14-line poem divided into four quatrains (four-line stanzas). The rhyme scheme is indicated by arrows pointing from one line to the next in a repeating pattern. The first quatrain has a rhyme scheme of abba. The second quatrain has a rhyme scheme of babb. The third quatrain has a rhyme scheme of abba. The fourth quatrain has a rhyme scheme of abba. The final line is labeled 'Last line'.

Sonnet Structure

paberplakat EN050
lamineeritud EN050L

Poetic Terms

Verses / Stanzas
A single, usually vertical line of a poem. However, it is more often used as an alternative to 'strophe' or a grouping of lines.

Internal Rhyme
An internal rhyme is found in the middle of a line.

Metaphor
Poetry written in lines of two syllables or iambic pentameters, but without rhyme.

Quatrains
A four-line stanza or set of poems of any form.

Meter
The flow or movement of a line of verse, caused by the rhythmical patterns it contains.

Repetition
The saying of a sentence over and over again.

Personification
The giving of a personified quality to an inanimate object.

Similes
Comparisons between two things.

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The use of words that sound like the thing they describe.

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The use of words that sound like the thing they describe.

Personification
The giving of human qualities to non-human things.

Metaphor
A figure of speech in which one thing is said to be another.

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Commas

This poster provides a comprehensive guide to commas, covering various types such as serial commas, contraction commas, and punctuation commas. It includes examples and practical exercises.

Commas

paberplakat EN053
lamineeritud EN053L

Proofreading Checklist

A checklist for proofreading documents, focusing on punctuation, grammar, and style. It includes sections for headings, lists, and punctuation marks like commas, colons, and semicolons.

Proofreading Checklist

paberplakat EN055
lamineeritud EN055L

Discourse Markers

This poster explains the function of discourse markers in English, categorized by their purpose: adding information, showing contradiction, expressing cause and effect, indicating time, and so on. It includes examples and exercises.

Discourse Markers

paberplakat EN054
lamineeritud EN054L

Purpose, Audience, Form

This poster helps students understand the purpose of writing, the audience they are addressing, and the different forms of writing. It includes sections on purpose (Entertain, Argue/Persuade, Describe, Inform/Explain/Advise, Instruct), audience (Children, Friends, Potential Employers, Politicians, Family/Family-type), and form (Newspaper Article, Letter, Diary, Advert, Presentation, Blog, Review, Report).

Purpose, Audience, Form

paberplakat EN056
lamineeritud EN056L

Reading Exam Questions

This poster provides strategies for reading exam questions, including tips for locating and retrieving information, comparing and contrasting texts, evaluating arguments, summarizing, reflecting, and acting as characters. It also includes a central wheel diagram for summarizing.

Reading Exam Questions

paberplakat EN057
lamineeritud EN057L

Comparing Poems

This poster guides students through comparing poems, focusing on purpose, themes, imagery, sound devices, structure, and personal response. It includes examples from poems like "Hard Rain's A-Gonna Fall" and "Summer Evening".

Comparing Poems

paberplakat EN059
lamineeritud EN059L

Narrative Perspective

This poster explores narrative perspectives, including first-person narration (from the character's point of view), second-person narration (from the author's point of view), and third-person narration (from an omniscient perspective). It includes examples and exercises.

Narrative Perspective

paberplakat EN058
lamineeritud EN058L

Direct Speech

This poster illustrates the seven ways to present direct speech in writing, each with examples and explanations. The methods include speech marks, text marks, capital letters, punctuation, italics, dashes, and new paragraphs.

Direct Speech

paberplakat EN060
lamineeritud EN060L

Where, Wear, Were & We're

Where: Where refers to a place.
Where's my backpack?
There's a bird on the tree.
I'm going to the park.

Wear: Wear can either refer to having something on your body or the wearing away of something through friction.
I wear a jacket.
My shoes are worn out.

Were: Were is a verb and the past tense of be.
The house was built yesterday.
The road was wet.
The car was broken.

We're: We're is the shortened form of we are.
We are the best team in the league.
We're not going to win if we don't work together.
To check that you're using the correct word, usually say we are in the sentence.

Where, Wear, Were & We're

paberplakat EN061
lamineeritud EN061L

Summarising Texts

1 Read the question and identify exactly what it is asking for.
Underline or highlight the keywords in the question to determine exactly what needs to be answered.

2 Read the original text and determine its main idea. Then identify the meaning of the text that will need to consider its purpose and the language, tone and audience used by the writer.

3 Enclose the key points in the text.
Underline or highlight the key information, then write a summary. Writing in note of the key points may help.

4 Write the summary in your own words, but not exactly from the original text to support your answer.
Do not give your own opinion; only include the facts, link together past events and use logical connections.

5 Check your summary.
As with all text types, summarise on previous knowledge, tone and punctuation and grammatical errors.

Summarising Texts

paberplakat EN063
lamineeritud EN063L

Your and You're

Your: Your and yours are homophones and have different spellings and meanings.

You're: You're is the shortened form of you are.

Can you complete the following sentence?
Dear Mrs _____, I hope you are well. Tell _____ manager that _____ is my best friend.

Your and You're

paberplakat EN062
lamineeritud EN062L

Review Writing

What is a review? A review is a written critique used to inform you for further reading. The term and language used to evaluate certain things will be addressed in due course on a separate occasion.

What to include:

- Background information about the product or service.
- Product details, giving the required details about the product or service of the test.
- Opinion of the reader regarding the product or service, like liked or disliked.
- Information on the price, quality and value with pull-quote examples.
- Conclusion, giving the overall impression, like good or bad, and recommendation.
- Useful links to related products, like books, reviews, forums, etc.
- Additional information, like reviews, photos or videos.
- Recommendations, like other products that the reader may have different views.
- Responsible to include:

 - A balance of factual information and opinion so that the review is balanced.
 - An acknowledgement of evidence that may have different views.
 - An informed opinion.
 - Evidence of expertise.
 - A conclusion or summary of your opinions.

Review Writing

paberplakat EN065
lamineeritud EN065L

Essay Writing

What is an essay? An essay is a form of writing that individually analyses and evaluates a topic or issue. Essay writing is your opportunity to show how well you can apply your learning.

What to include:

- Background information about the product or service.
- Product details, giving the required details about the product or service of the test.
- Opinion of the reader regarding the product or service, like liked or disliked.
- Information on the price, quality and value with pull-quote examples.
- Conclusion, giving the overall impression, like good or bad.
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 - A conclusion or summary of your opinions.

Essay Writing

paberplakat EN066
lamineeritud EN066L

Tricky Spellings

May Be: It is a verb phrase. It doesn't rhyme with 'maybe'.
Write a sentence of the difference between 'may be' and 'maybe'.

May Be vs. Maybe: It isn't rhyming; maybe I should try something else. Am I going to the concert? Maybe.

Any Way vs. Anyway: Any way is an adverb. If I want to go to the beach, I'll take any way. Anyways is an adverb. If I want to go to the beach, I'll take anyways.

Practice vs. Practise: Practising starts in your book. The doctor practised at school this week.

Passed vs. Past: He passed his driving test last week. I'm very pleased with her past performance.

Effect vs. Affect: Effect: usually a noun; the result of something. The effect was devastating. Affect: usually a verb; to influence something. The accident severely affected Maria's confidence.

Tricky Spellings

paberplakat EN064
lamineeritud EN064L

Know, Now and No

Know: Know refers to the present time or present.

Now: Now is used to refer to the present time or present.

No: No is used as a negative response or to mean 'not' or 'no'.

Can you complete the following sentence?
I don't know the name of the _____.
If he doesn't go to the party, he will be late.
They are now going to the park.

Know, Now and No

paberplakat EN067
lamineeritud EN067L

Narrative Writing

What is narrative writing? Narrative writing is a form of writing that tells a story. It includes setting, characters, plot, conflict, rising action, falling action, and resolution.

What to include:

- Setting: the time and place where the story takes place.
- Characters: the people involved in the story.
- Plot: the sequence of events that happen in the story.
- Conflict: the problem or challenge that the characters face.
- Rising Action: the events that lead up to the climax.
- Falling Action: the events that follow the climax.
- Resolution: the outcome or ending of the story.

Narrative Writing

paberplakat EN068
lamineeritud EN068L



Studying Poetry

paberplakat EN069
lamineeritud EN069L



Studying Prose

paberplakat EN070
lamineeritud EN070L



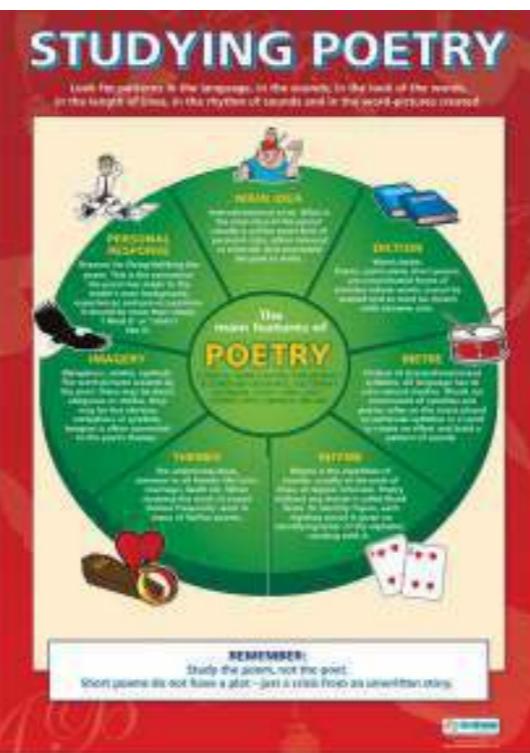
Investigating Literary Text

paberplakat EL001
lamineeritud EL001L



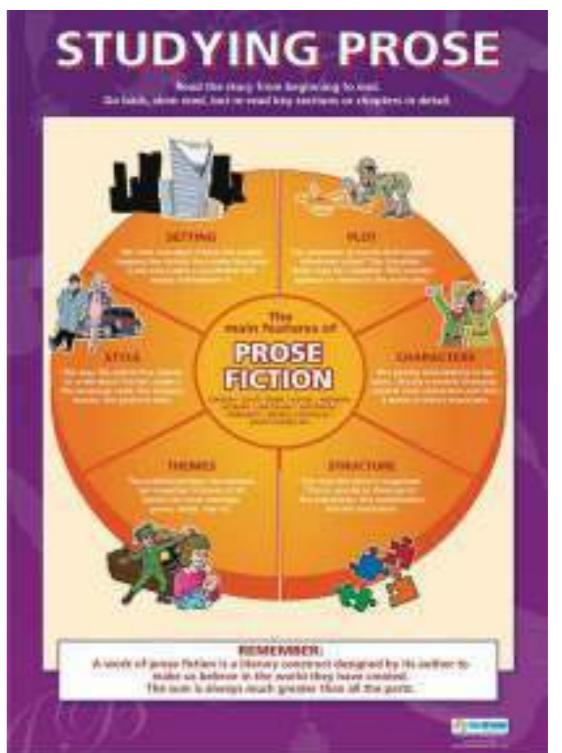
Studying Literature Drama

paberplakat EL002
lamineeritud EL002L



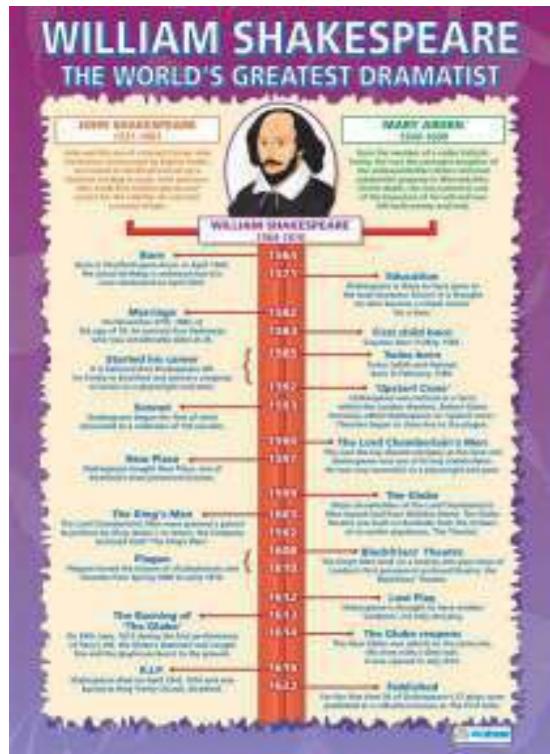
Studying Poetry

paberplakat EL003
lamineeritud EL003L



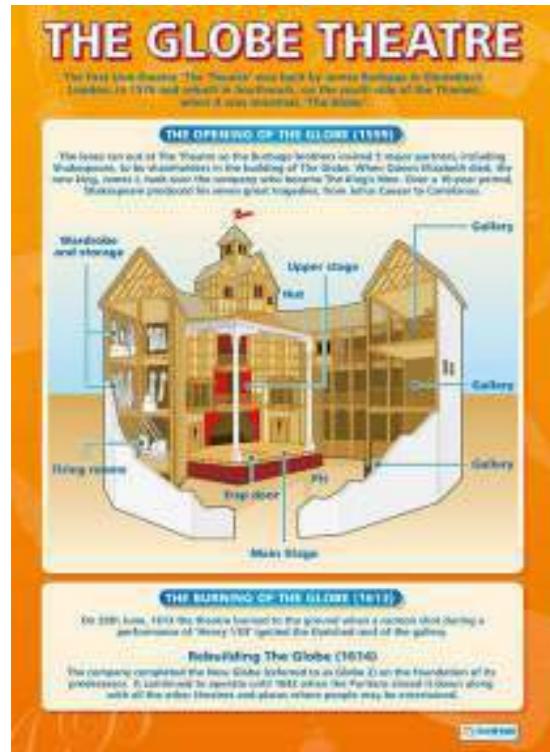
Studying Prose

paberplakat EL004
lamineeritud EL004L



William Shakespeare

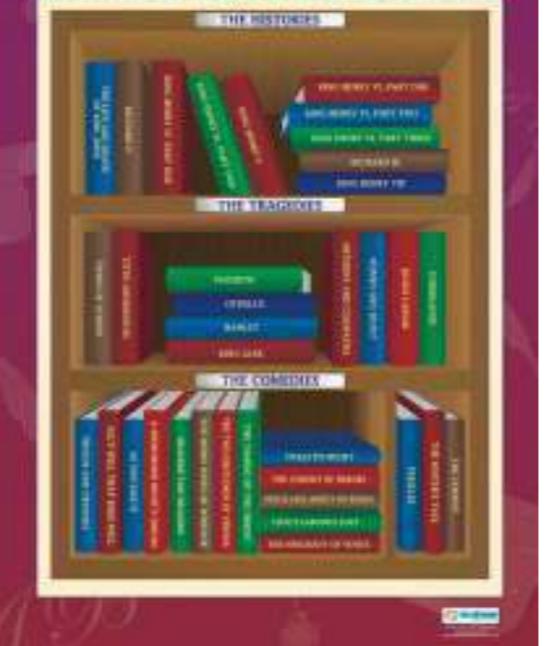
paberplakat EL005
lamineeritud EL005L



The Globe

paberplakat EL007
lamineeritud EL007L

THE PLAYS OF WILLIAM SHAKESPEARE



Plays of William Shakespeare

paberplakat EL006
lamineeritud EL006L



Macbeth Plot

paberplakat EL008
lamineeritud EL008L

MACBETH QUOTATIONS



Macbeth Quotations

paberplakat EL009
lamineeritud EL009L



Macbeth Main Characters

paberplakat EL010
lamineeritud EL010L



Romeo & Juliet Plot

paberplakat EL011
lamineeritud EL011L



Romeo & Juliet Quotations

paberplakat EL012
lamineeritud EL012L

ROMEO AND JULIET MAIN CHARACTERS



Romeo & Juliet Main Characters

paberplakat EL013
lamineeritud EL013L

A MIDSUMMER NIGHT'S DREAM PLOT: THE STORY OF THE PLAY



A Midsummer Night's Dream Plot

paberplakat EL014
lamineeritud EL014L

LOS NÚMEROS



Los Números

paberplakat ML021
lamineeritud ML021L

LOS PRONOMBRES



Los Pronombres

paberplakat ML022
lamineeritud ML022L



A Midsummer Night's Dream Quote

paberplakat EL015
lamineeritud EL015L

A MIDSUMMER NIGHT'S DREAM MAIN CHARACTERS



A Midsummer Night's Dream Main

paberplakat EL016
lamineeritud EL016L

LAS PREGUNTAS



Las Preguntas

paberplakat ML023
lamineeritud ML023L

LOS NOMBRES



Los Nombres

paberplakat ML024
lamineeritud ML024L

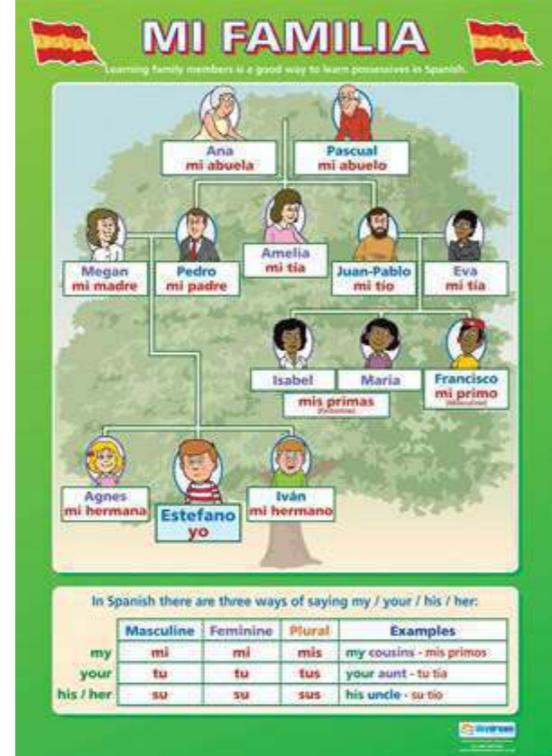


El Pretérito Perfecto, el Preterito, el Presente y el Futuro

paberplakat ML025
lamineeritud ML025L

El Plural

paberplakat ML026
lamineeritud ML026L



Actividades y Opiniones

paberplakat ML031
lamineeritud ML031L

Mi Familia

paberplakat ML032
lamineeritud ML032L

L'Alphabet

paberplakat ML001
lamineeritud ML001L

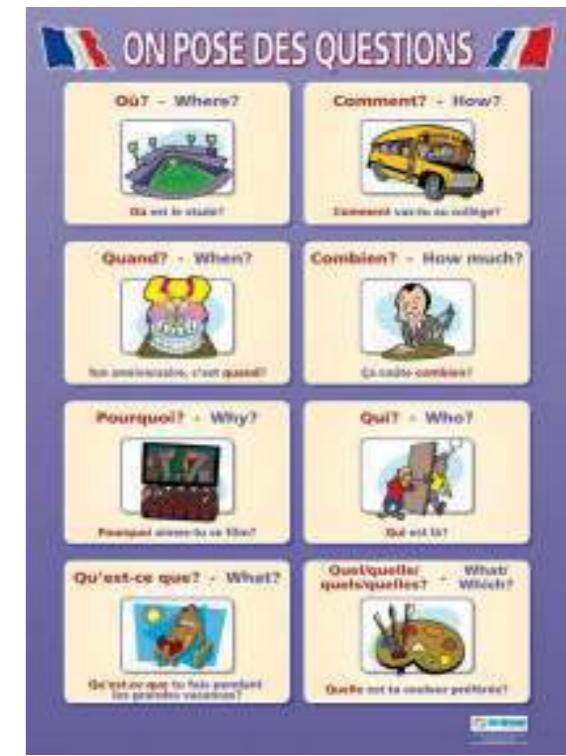


Les Pronoms Personnels

paberplakat ML003
lamineeritud ML003L

Les Nombres

paberplakat ML002
lamineeritud ML002L



On Pose des Questions

paberplakat ML004
lamineeritud ML004L

LES ADJECTIFS

Adjectives describe nouns.

LES ADJECTIFS AU SINGULIER

Adjectives usually add -e when they describe a feminine noun.

un grand château	masculin	un petit poisson	feminin

If the masculine adjective already ends in -e, the spelling of the feminine adjective stays the same, e.g. grande.

LES ADJECTIFS AU PLURIEL

Most adjectives add s when they are describing plural nouns.

des garçons intelligents	des filles intelligentes

AVANT OU APRÈS LE NOM?

Most adjectives follow the noun, exceptions to this rule are: grand, petit, beau, très (pretty), beau/beaute, jeune (young), même (still) and quelques (some) which come before the noun.

Les Adjectifs

paberplakat ML005
lamineeritud ML005L

LES NOMS

Nouns are words that have a thing, place or idea.

MASCULES OR FEMININES?

French nouns have a gender. They can be masculine or feminine.

Style is an example of a masculine noun.	Règle is an example of a feminine noun.

LE, LA, L' OR LES?

Le, la, l' and les are the French words for the.

le cinéma	la piscine	l'école	les magasins

UN OU UNE?

Un and une are the French words for a.

un ordinateur	une lampe

Un is used with masculine nouns.
Une is used with feminine nouns.

Les Noms

paberplakat ML006
lamineeritud ML006L

LES VERBES RÉGULIERS AU PRÉSENT

Regular verbs follow a pattern: take the last three letters off the verb + add on the endings.

1^{ER} VERBES

jouer (to play)

je joue	tu joues	il joue	elle joue	on joue	nous jouons	vous jouez	ils jouent	elles jouent

2^{ER} VERBES

choisir (to choose)

je choisis	tu choisis	il choisit	elle choisit	on choisit	nous choisissons	vous choisissez	ils choisissent	elles choisissent

3^{ER} VERBES

attendre (to wait)

je attends	tu attends	il attend	elle attend	on attend	nous attendons	vous attendez	ils attendent	elles attendent

At present there is one book for the regular verbs used in English nouns. There are over 30 other regular verbs. To play and to eat are exceptions to this rule. It is changed to 2 books as each has its own book with a mixed collection of verbs.

Les Verbes Réguliers au Présent

paberplakat ML009
lamineeritud ML009L

DES VERBES IRRÉGULIERS AU PRÉSENT

Irrregular verbs do not follow patterns. They must be learnt off by heart.

AVOIR (to have)

je ai	tu as	il a	elle a	on a	nous avons	vous avez	ils ont	elles ont

ETRE (to be)

je suis	tu es	il est	elle est	on est	nous sommes	vous êtes	ils sont	elles sont

ALLER (to go)

je vais	tu vas	il va	elle va	on va	nous allons	vous allez	ils vont	elles vont

FAIRE (to do)

je fais	tu fais	il fait	elle fait	on fait	nous faisons	vous faites	ils font	elles font

Nous allons au cinéma.
Elle fait les dessins.

Des Verbes Irréguliers au Présent

paberplakat ML010
lamineeritud ML010L

LE PLURIEL DES NOMS

Many French nouns add -s to make them plural.

le chien		les chiens	
	→		

Nouns ending in -e stay the same.

la souris		les souris	
	→		

Nouns ending in -al change to -aux.

le cheval		les chevaux	
	→		

Nouns ending in -an add -ans.

l'oiseau		les oiseaux	
	→		

Le Pluriel des Noms

paberplakat ML007
lamineeritud ML007L

LES VERBES ET LES ADVERBES

LES VERBES

Verbs are doing words.

Je mange un hamburger.	Je joue au football.

If you look up a verb in a dictionary, you will find it in its infinitive form, which looks like -er, -re, or -ir.

regarder (to watch)	faire (to finish)	monter (to get on)

LES ADVERBES

Adverbs describe verbs.

Je parle français rapidement.	Elle parle lentement et poliment.

Adverbs often end in -ement in French, but words such as vite (quickly), lentement (slowly) and doucement (quietly) are also adverbs.

Les Verbes et les Adverbes

paberplakat ML008
lamineeritud ML008L

LE PASSÉ COMPOSÉ, LE PRÉSENT ET LE FUTUR

The passé composé tells you what has happened.

Il a mangé son sandwich.	Je suis allé au bord de la mer.	Elle a fait du vélo.

The présent tense tells you what is happening now.

Il mange des fruits.	Je vais à la plage.	Elle fait de l'équitation.

The futur tense tells you what will happen.

Il va changer une paire de chaussures.	Je vais aller à la réception.	Elle va faire du vélo.

Le Passé Composé, le Présent et le Futur

paberplakat ML011
lamineeritud ML011L

LES COULEURS

rouge	bleu	noir

vert	jaune	gris

Colours are **adjectives**. They agree with the noun they describe according to gender and number:

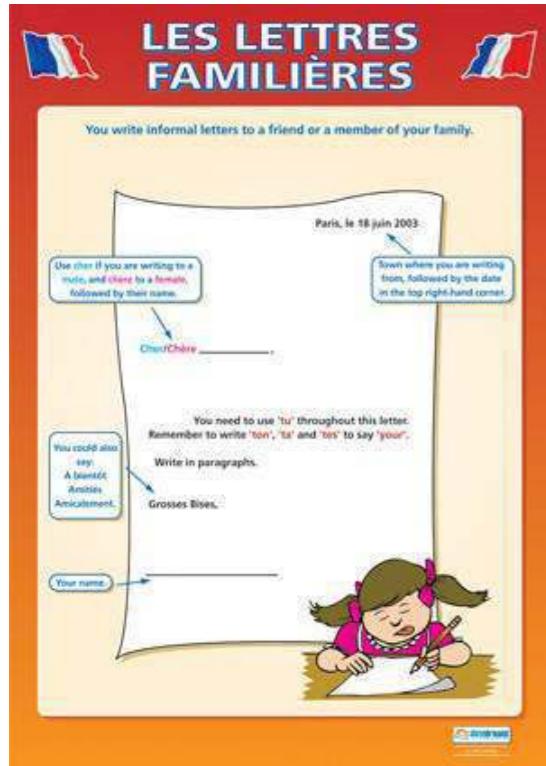
masculin	féminin
masculin	masculin

Add an extra -e to colours that describe **feminine nouns**. Add an extra -s to colours that describe **general nouns**.

Exceptions to the singular are:
rouge → rouge (the colour red)
jaune → jaune (the colour yellow)
noir → noir (the colour black)

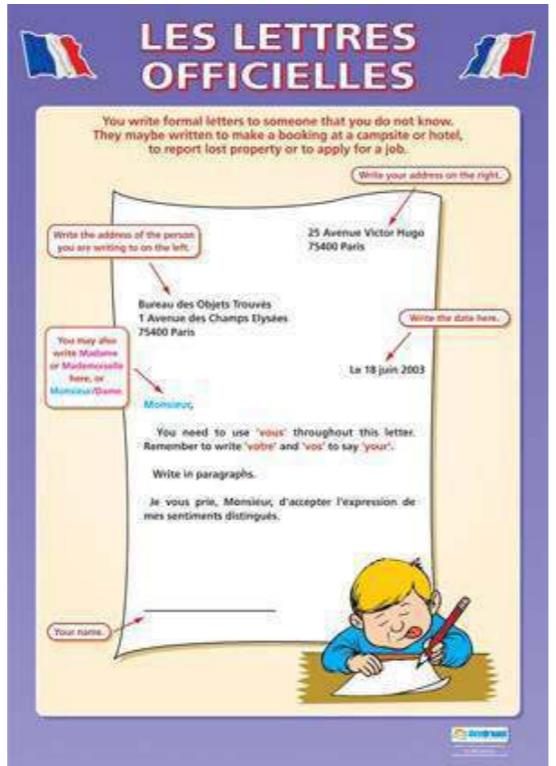
Les Couleurs

paberplakat ML012
lamineeritud ML012L



Les Lettres Familières

paberplakat ML013



Les Lettres Officielles

paberplakat ML014



Die Zahlen

paberplakat ML015
lamineeritud ML015L



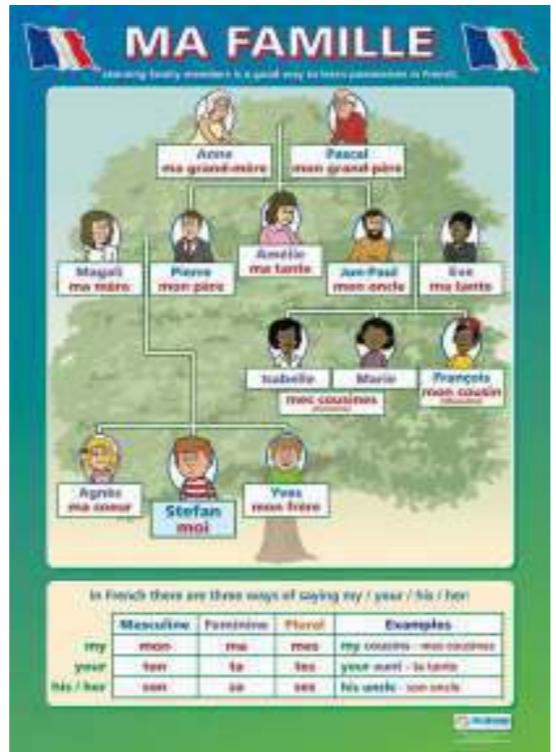
Die Personalpronomen

paberplakat ML016
lamineeritud ML016L



Les Activities et les Opinions

paberplakat ML027
lamineeritud ML027L



Ma Famille

paberplakat ML028
lamineeritud ML028L



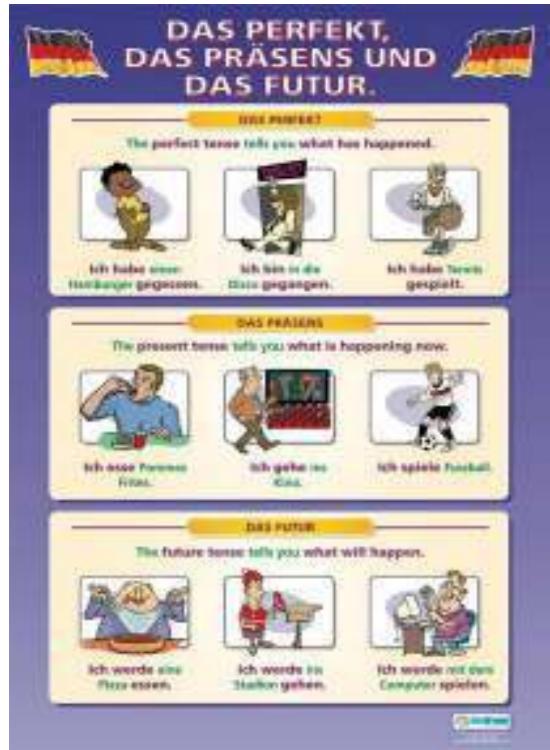
Fragewörter

paberplakat ML017
lamineeritud ML017L



Die Substantive

paberplakat ML018
lamineeritud ML018L



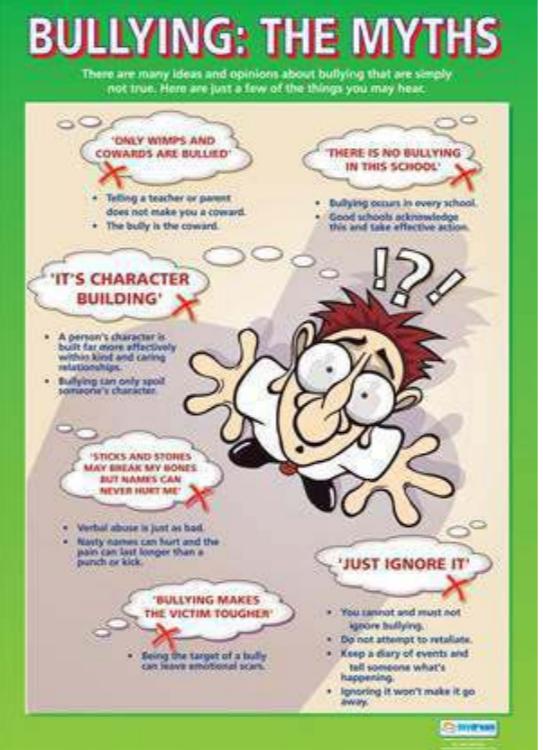
Das Perfekt, das Präsens und das Futur

paberplakat ML019
lamineeritud ML019L



Der Plural

paberplakat ML020
lamineeritud ML020L



Bullying: The Myths

paberplakat PSHE001
lamineeritud PSHE001L



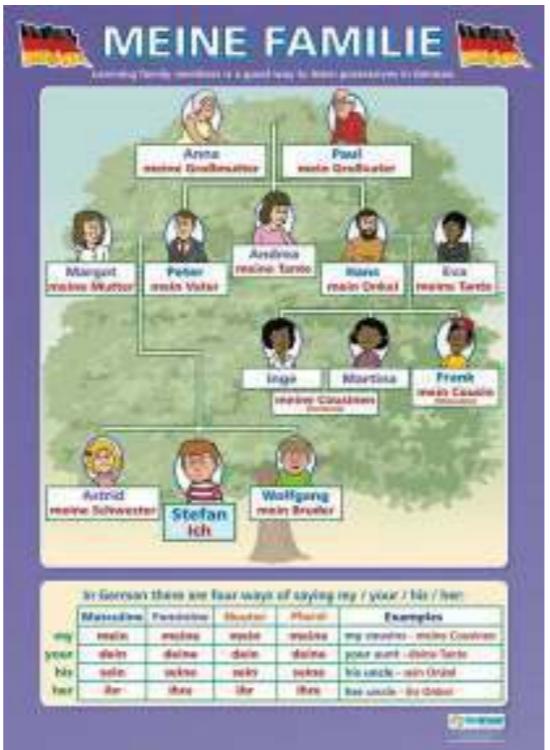
Bullying: The Facts

paberplakat PSHE002
lamineeritud PSHE002L



Aktivitäten und Meinungen

paberplakat ML029
lamineeritud ML029L



Meine Familie

paberplakat ML030



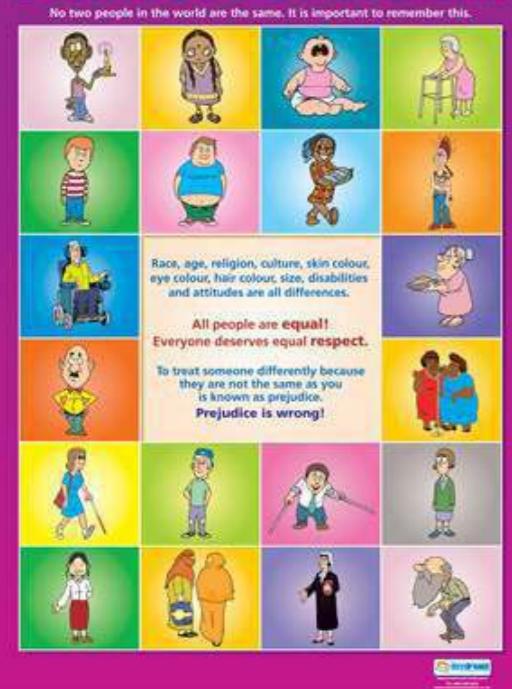
Don't Be A Victim

paberplakat PSHE003
lamineeritud PSHE003L



Prejudice in Society

paberplakat PSHE004
lamineeritud PSHE004L

EVERYBODY'S DIFFERENT**Everybody's Different**

paberplakat PSHE005
lamineeritud PSHE005L

**Cannabis**

paberplakat PSHE007

FACTS ABOUT ALCOHOL**Alcohol**

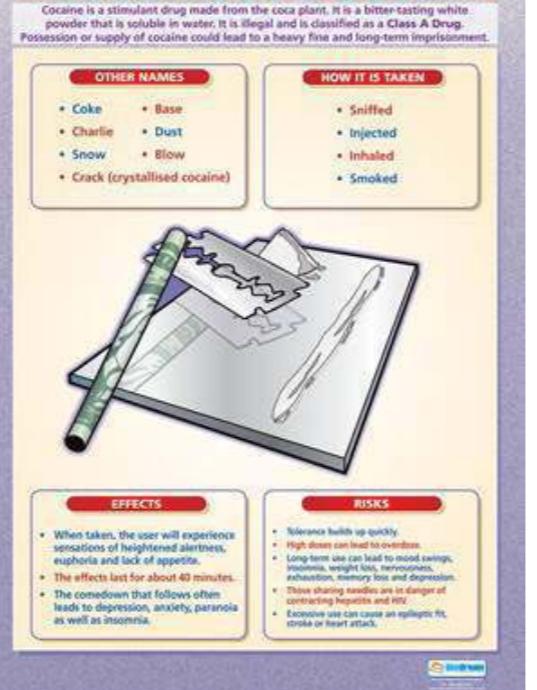
paberplakat PSHE006

FACTS ABOUT ECSTASY**Ecstasy**

paberplakat PSHE009

FACTS ABOUT HEROIN**Heroin**

paberplakat PSHE010

FACTS ABOUT COCAINE**Cocaine**

paberplakat PSHE008

FACTS ABOUT LSD/ACID**LSD/Acid**

paberplakat PSHE011

FACTS ABOUT SOLVENTS**Solvents**

paberplakat PSHE012

FACTS ABOUT SMOKING

Tobacco is the second most common legalised drug. In the UK, around 12 people die every hour from smoking-related diseases.



Smoking

paberplakat

PSHE013

HEALTH RISKS

There are many substances available that can cause us harm. Some change our personality or behaviour, while others can make us dependent and even cause ill health or death.



WHY EXERCISE?

Regular physical activity is very important for all people who want to lead a healthy and fulfilling life. Here are some of the reasons why.

- Exercise increases your energy.
- Exercise increases your strength and muscle tone.
- Exercise helps you sleep more restfully.
- Exercise burns off unwanted calories.
- Exercise improves your circulation.
- Exercise helps your joints stay loose and supple.
- Exercise improves endurance.
- Exercise helps relieve stress.
- Exercise helps provide you with a good posture.
- Exercise increases your ability to concentrate and learn.
- Exercise makes you happy.

1 REST, RELAXATION & RECREATION



Rest, Relaxation & Recreation

paberplakat

PSHE018

NUTRITION

A BALANCED DIET

- Your body needs a constant supply of fuel to grow, develop and stay healthy.
- The fuel you need comes from the air you breathe, the food you eat and the water you drink.

WATER

- Our bodies are 70% water.
- Sugars
- Starches

CARBOHYDRATES

- They give us energy. Carbohydrates are split into sugars (fast burning) and starches (long lasting).

PROTEINS

- They help growth and repair cells, including teeth and nails.

EXERCISE MORE!

Many people believe exercise is only for those who take part in competitive sports, gym fanatics and body builders. In fact, exercise is something we all should do regularly.

HOW MUCH IS GOOD?

Surprisingly, very little is needed to make a big difference. About 20-30 minutes a week is a good start. Just think about how much time you spend playing computer games and watching TV! Here are some suggestions that won't leave you exhausted.



Nutrition

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PSHE015

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SAFETY IN THE SUN

A little bit of sun is healthy and makes us feel good. However, people who lie in the sun for long periods trying to achieve the perfect tan are putting themselves in danger.

Over exposure to the sun can be fatal. Here are a few tips.



SAFETY IN THE HOME

ELECTRICITY

- Do not overload sockets - the most serious consequence of this could be fire.
- Electricity and water do not mix - never take electrical appliances near a bath or sink, try not to plug them into sockets containing liquids or appliances.

CHEMICALS

- Never play around with or swallow a liquid not meant for drinking.
- Cleaning products contain harmful and irritating substances.
- Always read labels.

GAS

- Make sure gas appliances are turned off properly when not in use.
- If you ever smell gas - turn off the main supply and call the gas emergency number.
- Do not turn on the lights or do anything that may cause a spark.

HOT OBJECTS

- If there are small children or animals in the house, take care not to leave irons, boiling saucepans etc. easily accessible.
- Take care with laundry on electrical items.

SMOKING

- It is safest never to smoke within your home, but if you do, never leave a cigarette unattended.
- Cigarettes cause many house fires.

SECURITY

- Always lock your doors and ensure at night that your windows are not open enough to be accessible.
- Do not make it easy for a burglar.

Exercise More

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Safety in The Sun

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PSHE019

Safety in the Home

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PSHE020

THE GREEN CROSS CODE

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**The Green Cross Code**

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**Emergency**

paberplakat PSHE022

PUBERTY IN BOYS

Puberty is the time in your life when your body changes from that of a boy to that of a man. These changes are caused by chemicals in the body called hormones. It is also a time when you become physically able to father a child. Puberty usually starts for boys between the ages of 10 and 16. Here are a few of the changes you will notice.

**Puberty in Boys**

paberplakat PSHE025

PUBERTY IN GIRLS

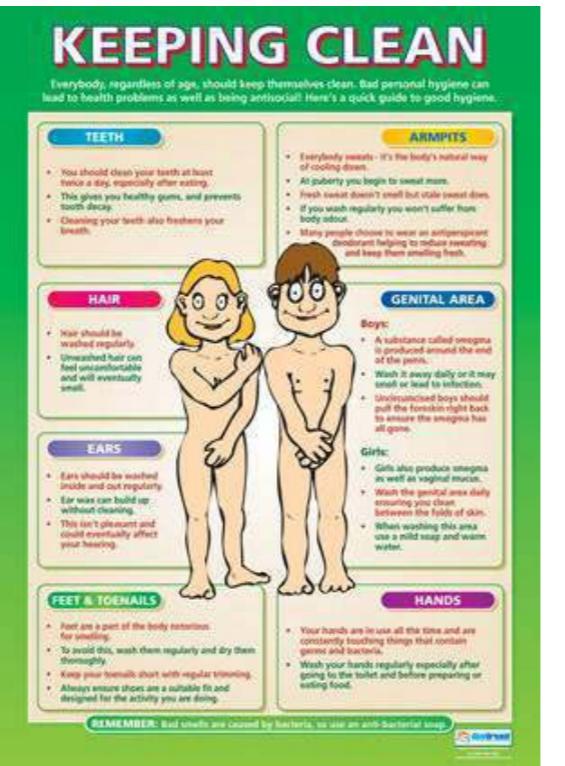
Puberty is the time in your life when your body changes from that of a girl to that of a woman. These changes are caused by chemicals in the body called hormones. It is also a time when you become physically able to have children. Puberty usually starts earlier in girls than in boys - usually between 9 and 14 years old. Here are a few of the changes you will notice.

**Puberty in Girls**

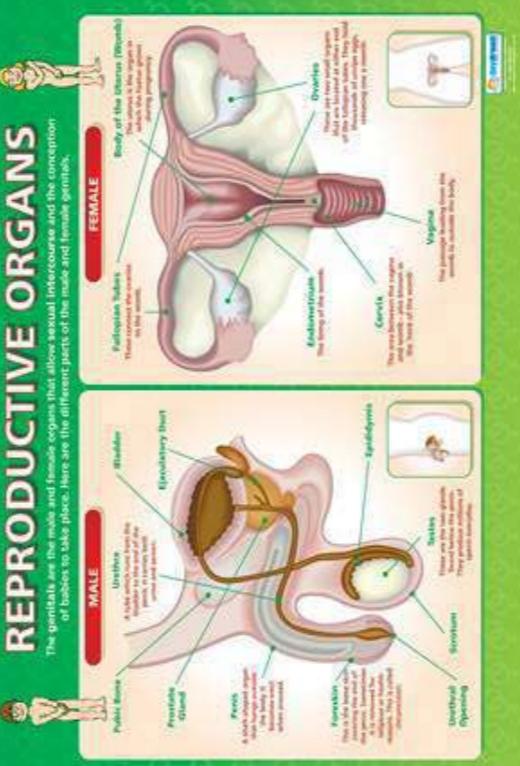
paberplakat PSHE026

**Resuscitation**

paberplakat PSHE023

**Keeping Clean**

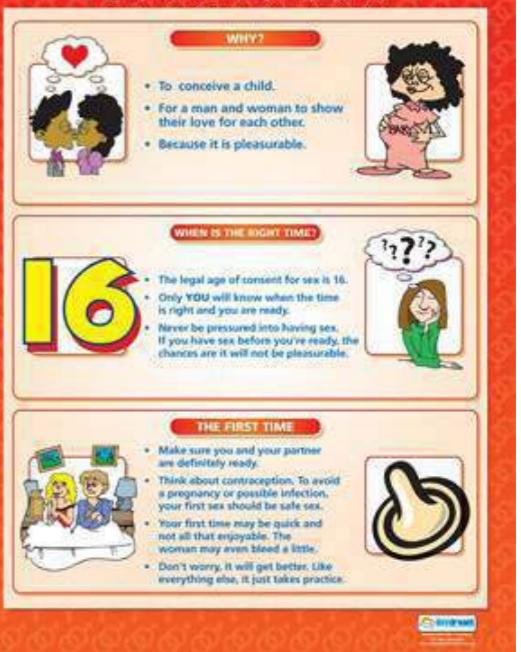
paberplakat PSHE024

**Reproductive Organs**

paberplakat PSHE027

SEX: WHEN & WHY ?

Sex is a subject many people feel uncomfortable with. As long as you are careful and ready it can be enjoyable, healthy and perfectly natural part of life. One day it could lead to having a family of your own.

**Sex: When and Why?**

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SEXUAL INTERCOURSE

FOREPLAY

- Before having full sexual intercourse, couples will often spend time kissing, cuddling and touching one another.
- This is known as foreplay and causes both partners to become aroused and ready for full intercourse.

INTERCOURSE

- This is when the man's erect penis enters the woman's vagina.
- If the woman is sexually aroused, the vagina releases a fluid which lubricates it and makes it easier for the man's penis to enter.
- The couple move together in a way that feels pleasurable to both.
- These pleasurable feelings may lead to orgasm for either or both partners.

ORGASM

- An orgasm is a climax of the sexual feelings.
- A man's orgasm coincides with ejaculation.
- Ejaculation is when his penis releases a creamy fluid called semen (which contains millions of sperm) into the woman's vagina.
- If contraception is not used, this is when conception and a subsequent pregnancy may take place.

Sexual Intercourse

paberplakat PSHE029

PREGNANCY

CONCEPTION

- The man's sperm enters the woman's egg (ovum).
- The egg is fertilised and the other sperm die.
- The fertilised egg moves down the fallopian tube and into the womb's lining and begins to grow.

PREGNANCY

The next nine months...

- 6 Weeks: The embryo is approximately 1.5cm long. Arm and leg movements are just visible.
- 12 Weeks: The embryo is approximately 3.5cm long. It is beginning to be recognisable as a human being.
- 20 Weeks: This is half way through the full term. The baby can be felt moving. It is approximately 30cm long and 300g.
- 40 Weeks: It has reached full term and is ready to be born. It is approximately 50cm long and 3500g.

BIRTH

- The most common form of birth is through the woman's vagina.
- The woman knows she is ready to give birth because she will experience contractions.
- This is known as being 'in labour'.
- If a woman has a Caesarean section where the baby is surgically delivered through the abdomen wall.

Pregnancy

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FRIENDSHIP

TYPES OF FRIEND

- Some people choose to have one best friend with whom they share everything.
- Others prefer not to have a best friend but lots of good friends.
- Some friends stay with us for our whole life - others for just a part of it.

Qualities and skills of a GOOD FRIEND

- Listening
- Sharing
- Playing Fairly
- Loyalty
- Honesty
- Patience
- Trust
- Kindness

HOW TO KEEP FRIENDS

- Always be honest and open.
- Listen when they need someone to talk to.
- Support them when they need your help.
- Like them because of who they are.

HOW TO LOSE FRIENDS

- Keep secrets from them.
- Boss them around and ignore their opinions.
- Talk about them behind their back.
- Ignore them.

REMEMBER

Some people have different needs. This could be because they are shy and lack confidence. Some have moved schools regularly. It is important to help them fit in as much as we can.

Friendship

paberplakat PSHE033

PEER PRESSURE

WHAT IS PEER PRESSURE?

- Peer Pressure is when our friends or classmates influence us in good or bad ways.
- What we wear, how we act, the things we like, can all be influenced by peer pressure.
- It does not just affect children and teenagers, adults can also be affected by pressure from their peers.

POSITIVE INFLUENCES

- Our friends can introduce us to new hobbies and interests.
- Our friends having high expectations of themselves, can lead to the same in us.
- Teamwork and being part of a large group can make us feel good about ourselves and increase our self-confidence.

NEGATIVE INFLUENCES

- It can be difficult to stand up for something we believe in if everyone else disagrees.
- Peer pressure is often a reason why children start smoking, take drugs, or turn to crime.
- Peer pressure can lead to low self-esteem if you cannot afford to keep up with your friends' lifestyles.

Peer Pressure

paberplakat PSHE034
lamineeritud PSHE034L

CONTRACEPTION

WHY USE CONTRACEPTION?

- To avoid unwanted pregnancy.
- To protect yourself from sexually transmitted infections - STIs.

Remember:
Some of the forms of contraception protect only against pregnancy - not against STIs.

MALE CONDOM

- The most popular form of contraception that helps protect against pregnancy and STIs.
- Made of thin latex rubber, it is placed over the erect penis and traps sperm in the end when the man ejaculates.

THE PILL

- The most popular form of contraception that protects against pregnancy but NOT STIs.
- When taken, it makes the woman's body think it is already pregnant so that she doesn't release an egg (ovulate).
- It is a small tablet containing hormones which stops the sperm reaching the egg. 'The Pill' also comes as an injection that lasts for 12 weeks.

FEMALE CONDOM

- Not as popular as the male condom.
- The female condom fits inside the vagina, overlapping the outer area.
- This barrier stops the sperm entering the vagina.
- A female condom will help protect against both pregnancy and STIs.

OTHER METHODS

- Other methods of contraception such as diaphragms, caps, IUDs, coils and implants are available from your GP or family planning clinic.
- As these only offer protection against pregnancy, they are only worth considering when you have a long-term partner.

Remember:
The most effective contraception is NOT HAVING SEX!

Contraception

paberplakat PSHE031

SEXUALLY TRANSMITTED INFECTIONS

GONORHOEA & NDI

- These are two of the most common STIs.
- In most cases there are no symptoms but some may experience a burning sensation when urinating.
- They can be treated with antibiotics.

Chlamydia

- Chlamydia is a disease caused by bacteria which can affect the eyes, nose, throat and genital area.
- It is known as a 'silent' infection because there are few symptoms.
- There is no cure but they can be treated with antibiotics.

herpes

- Herpes is a disease caused by the herpes simplex virus.
- The symptoms are sore blisters around the genital area.
- There is no cure but they can be treated with antivirals.

Syphilis

- Syphilis is a complex bacterial disease.
- The symptoms are sore blisters around the genital area.
- It can be passed on to babies if born to an infected mother.
- It can be treated with antibiotics.

Pub

Crabs

hepatitis b

HIV/AIDS

TAKE ACTION

- If you think you have an STI you should arrange a visit to a GUM (Genito-Urinary Medicine) clinic straight away.
- You will be tested and treated accordingly (following diagnosis).
- It is completely confidential.
- Make sure your partner is also checked and avoid sex until you're in the clear.
- Avoid a repeat infection by always wearing a condom.

Sexually Transmitted Infection

paberplakat PSHE032

PERSONAL CONFLICT

RESOLVING A CONFLICT

Because of our differences, we are all involved in a conflict with another person now and again. A conflict is a situation where people disagree. It is important to resolve a conflict without resorting to a fight.

TRY THESE TECHNIQUES TO HELP RESOLVE A PERSONAL CONFLICT:

- Talk through the conflict.
- Try to reach an agreement through reasonable discussion.
- Listen to each other's point of view and negotiate a solution without arguing.
- Try and meet each other 'half-way'.
- If both sides back down just a little, it may be possible to reach some sort of compromise that's findable.
- If you give your views in a calm way and back up everything you say, it may be possible to persuade the other person you are right. At the very least, they will understand why you feel the way you do.

REMEMBER:

- Never get physical
- Never get personal
- Never be ignorant

Inviting someone to help you put across your views.

Personal Conflict

paberplakat PSHE035

THE SCHOOL COUNCIL

WHO MAKE A GOOD SCHOOL COUNCILLOR?

- A School Council benefits the whole school.
- It gives pupils a chance to express their views to the staff of the school.
- Pupils can have an input on important decisions.
- They can develop confidence and communication skills.

WHO WOULD MAKE A GOOD SCHOOL COUNCILLOR?

- Someone who has the following qualities:
 - Good listener and speaker.
 - Not selfish or bossy.
 - Committed.
 - Sets a good example.
 - Good team player.
 - Honest and loyal.
 - Has lots of good ideas.

LINK TEACHERS

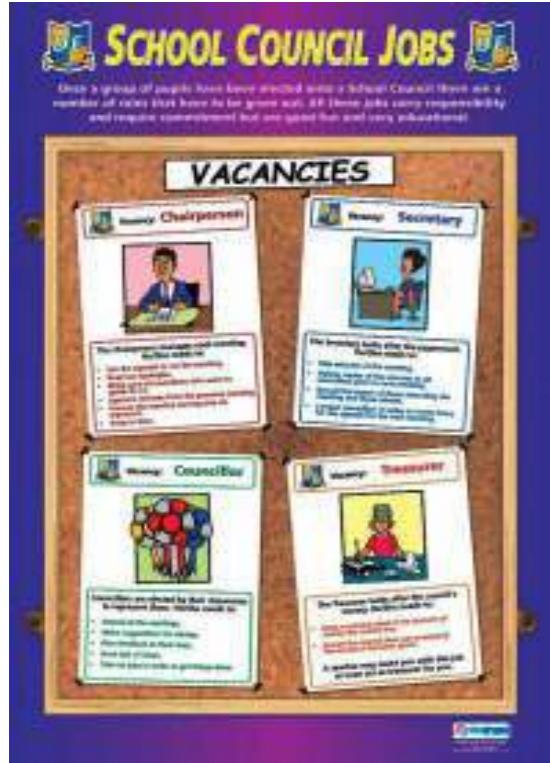
- The experience of Teachers should be welcomed in a council. They are not trying to take over but can help in the following ways:
 - Planning the agenda.
 - Setting the minutes.
 - Chairing the meeting.
 - Handling the budget.

YEAR / CLASS COUNCIL

- Class Councils can be set up so that the school councillors can feed back information from their meetings.
- The School Councilor can also take input from other classes in the following ways:
 - Suggestion box.
 - Class votes.
 - Council notice board.
 - Surveys and questionnaires.
 - Talking to their classmates.

The School Council

paberplakat PSHE036

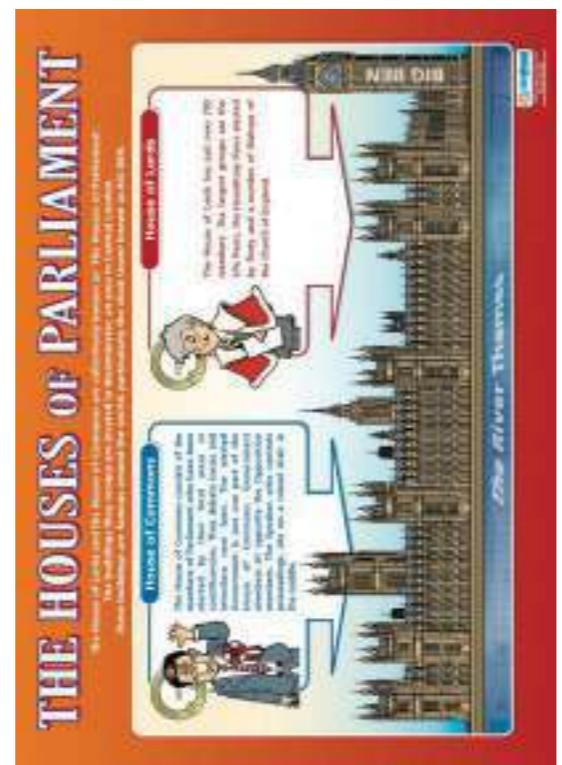


School Council Jobs

paberplakat PSHE037

School Council Agenda

paberplakat PSHE038



The Government

paberplakat PSHE039

The Houses of Parliament

paberplakat PSHE040



The Components of Physical Fitness

paberplakat PE001
lamineeritud PE001L



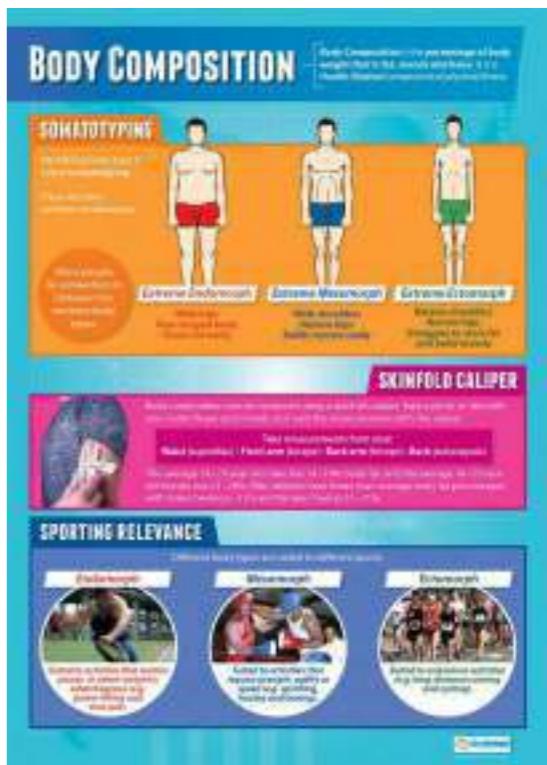
Balance

paberplakat PE003
lamineeritud PE003L



Agility

paberplakat PE002
lamineeritud PE002L



Body Composition

paberplakat PE004
lamineeritud PE004L

CARDIOVASCULAR FITNESS

The cardiovascular system uses endurance to transport oxygen and nutrients around the body.

COOPER'S 12-MINUTE RUN

Run for 12 minutes starting at a slow pace and gradually increasing speed until you reach your maximum sustainable pace.

Age	Sex	Speed	Average	Pulse	HR Max
10-14	Male	12.200	12.200	12.200	12.200
15-19	Male	12.200	12.200	12.200	12.200
20-24	Male	12.200	12.200	12.200	12.200
25-29	Male	12.200	12.200	12.200	12.200
30-34	Male	12.200	12.200	12.200	12.200
35-39	Male	12.200	12.200	12.200	12.200
40-44	Male	12.200	12.200	12.200	12.200
45-49	Male	12.200	12.200	12.200	12.200
50-54	Male	12.200	12.200	12.200	12.200
55-59	Male	12.200	12.200	12.200	12.200
60-64	Male	12.200	12.200	12.200	12.200
65-69	Male	12.200	12.200	12.200	12.200
70-74	Male	12.200	12.200	12.200	12.200
75-79	Male	12.200	12.200	12.200	12.200
80-84	Male	12.200	12.200	12.200	12.200
85-89	Male	12.200	12.200	12.200	12.200
90-94	Male	12.200	12.200	12.200	12.200
95-99	Male	12.200	12.200	12.200	12.200
100-104	Male	12.200	12.200	12.200	12.200
105-109	Male	12.200	12.200	12.200	12.200
110-114	Male	12.200	12.200	12.200	12.200
115-119	Male	12.200	12.200	12.200	12.200
120-124	Male	12.200	12.200	12.200	12.200
125-129	Male	12.200	12.200	12.200	12.200
130-134	Male	12.200	12.200	12.200	12.200
135-139	Male	12.200	12.200	12.200	12.200
140-144	Male	12.200	12.200	12.200	12.200
145-149	Male	12.200	12.200	12.200	12.200
150-154	Male	12.200	12.200	12.200	12.200
155-159	Male	12.200	12.200	12.200	12.200
160-164	Male	12.200	12.200	12.200	12.200
165-169	Male	12.200	12.200	12.200	12.200
170-174	Male	12.200	12.200	12.200	12.200
175-179	Male	12.200	12.200	12.200	12.200
180-184	Male	12.200	12.200	12.200	12.200
185-189	Male	12.200	12.200	12.200	12.200
190-194	Male	12.200	12.200	12.200	12.200
195-199	Male	12.200	12.200	12.200	12.200
200-204	Male	12.200	12.200	12.200	12.200
205-209	Male	12.200	12.200	12.200	12.200
210-214	Male	12.200	12.200	12.200	12.200
215-219	Male	12.200	12.200	12.200	12.200
220-224	Male	12.200	12.200	12.200	12.200
225-229	Male	12.200	12.200	12.200	12.200
230-234	Male	12.200	12.200	12.200	12.200
235-239	Male	12.200	12.200	12.200	12.200
240-244	Male	12.200	12.200	12.200	12.200
245-249	Male	12.200	12.200	12.200	12.200
250-254	Male	12.200	12.200	12.200	12.200
255-259	Male	12.200	12.200	12.200	12.200
260-264	Male	12.200	12.200	12.200	12.200
265-269	Male	12.200	12.200	12.200	12.200
270-274	Male	12.200	12.200	12.200	12.200
275-279	Male	12.200	12.200	12.200	12.200
280-284	Male	12.200	12.200	12.200	12.200
285-289	Male	12.200	12.200	12.200	12.200
290-294	Male	12.200	12.200	12.200	12.200
295-299	Male	12.200	12.200	12.200	12.200
300-304	Male	12.200	12.200	12.200	12.200
305-309	Male	12.200	12.200	12.200	12.200
310-314	Male	12.200	12.200	12.200	12.200
315-319	Male	12.200	12.200	12.200	12.200
320-324	Male	12.200	12.200	12.200	12.200
325-329	Male	12.200	12.200	12.200	12.200
330-334	Male	12.200	12.200	12.200	12.200
335-339	Male	12.200	12.200	12.200	12.200
340-344	Male	12.200	12.200	12.200	12.200
345-349	Male	12.200	12.200	12.200	12.200
350-354	Male	12.200	12.200	12.200	12.200
355-359	Male	12.200	12.200	12.200	12.200
360-364	Male	12.200	12.200	12.200	12.200
365-369	Male	12.200	12.200	12.200	12.200
370-374	Male	12.200	12.200	12.200	12.200
375-379	Male	12.200	12.200	12.200	12.200
380-384	Male	12.200	12.200	12.200	12.200
385-389	Male	12.200	12.200	12.200	12.200
390-394	Male	12.200	12.200	12.200	12.200
395-399	Male	12.200	12.200	12.200	12.200
400-404	Male	12.200	12.200	12.200	12.200
405-409	Male	12.200	12.200	12.200	12.200
410-414	Male	12.200	12.200	12.200	12.200
415-419	Male	12.200	12.200	12.200	12.200
420-424	Male	12.200	12.200	12.200	12.200
425-429	Male	12.200	12.200	12.200	12.200
430-434	Male	12.200	12.200	12.200	12.200
435-439	Male	12.200	12.200	12.200	12.200
440-444	Male	12.200	12.200	12.200	12.200
445-449	Male	12.200	12.200	12.200	12.200
450-454	Male	12.200	12.200	12.200	12.200
455-459	Male	12.200	12.200	12.200	12.200
460-464	Male	12.200	12.200	12.200	12.200
465-469	Male	12.200	12.200	12.200	12.200
470-474	Male	12.200	12.200	12.200	12.200
475-479	Male	12.200	12.200	12.200	12.200
480-484	Male	12.200	12.200	12.200	12.200
485-489	Male	12.200	12.200	12.200	12.200
490-494	Male	12.200	12.200	12.200	12.200
495-499	Male	12.200	12.200	12.200	12.200
500-504	Male	12.200	12.200	12.200	12.200
505-509	Male	12.200	12.200	12.200	12.200
510-514	Male	12.200	12.200	12.200	12.200
515-519	Male	12.200	12.200	12.200	12.200
520-524	Male	12.200	12.200	12.200	12.200
525-529	Male	12.200	12.200	12.200	12.200
530-534	Male	12.200	12.200	12.200	12.200
535-539	Male	12.200	12.200	12.200	12.200
540-544	Male	12.200	12.200	12.200	12.200
545-549	Male	12.200	12.200	12.200	12.200
550-554	Male	12.200	12.200	12.200	12.200
555-559	Male	12.200	12.200	12.200	12.200
560-564	Male	12.200	12.200	12.200	12.200
565-569	Male	12.200	12.200	12.200	12.200
570-574	Male	12.200			

B BODY: Reduces risk of injury - increased heart rate, more oxygen available to muscles, faster recovery times.

R RULES: Rules ensure safety, prevent accidents, reduce risk of injury.

E EQUIPMENT: Proper equipment reduces risk of injury, prevents equipment failure.

A ABILITY: Physical fitness improves performance, reduces risk of injury.

K KIT: Proper kit reduces risk of injury, prevents equipment failure.

S SURFACE: Proper surfaces reduce risk of injury, prevent equipment failure.

REMEMBER: In addition to the above, common sense and knowledge must be used! (Injuries can happen even with the best equipment and knowledge).

Safety in Sport

paberplakat PE013
lamineeritud PE013L

THE CIRCULATORY SYSTEM: The Circulatory System includes the heart, arteries, veins and capillaries, and involves the circulation of blood and lymph around the body.

- The heart becomes bigger and stronger and can therefore pump more blood around the body.
- Stroke Volume (the amount of blood pumped out of the left ventricle in one contraction) increases.
- Cardiac Output (the amount of blood pumped out of the left ventricle in one minute) increases.
- Arteries become more elastic.
- The number of red blood cells (haemoglobin) increases to cope with the demands of carrying extra oxygen.
- Resting heart rate decreases and recovery time after exercise is reduced.

THE RESPIRATORY SYSTEM: The Respiratory System includes the nasal passages, windpipe and lungs, and involves the body's breathing system.

- Lung volume (the volume of air inhaled and exhaled in each breath) increases.
- The number of alveoli increases and gaseous exchange becomes more efficient.
- VO₂ max (the maximum volume of oxygen the body can utilise per minute) increases.

THE SKELETAL/MUSCLE SYSTEM: The Skeletal System is the framework of bones that supports the body. The Muscular System effects movement and includes muscles, cells, tissues and organs.

- Bones become stronger as more calcium is produced.
- Tendons become stronger and ligaments become more flexible through stretching.
- Cartilage becomes thicker and as a result, is a better shock absorber.

The Long Term Effects of Exercise

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lamineeritud PE015L

CARDIOVASCULAR RESPONSE:

- Heart rate (the number of heartbeats per minute) increases.
- The amount of blood flowing around the body increases.
- Vasodilation: Blood vessels leading to the muscles open (allow more blood to flow) and vessels leading to the digestive system close.

PULMONARY RESPONSE:

- Respiratory rate (the number of breaths per minute) increases as their depth breathing.
- Each breath contains more oxygen (O₂) and less carbon dioxide (CO₂).
- The rate of gaseous exchange increases.

RESPIRATION IN MUSCLE CELLS:

- Increased muscle respiration means that more energy is created as adenosine triphosphate (ATP).
- To produce energy, muscles use blood oxygen (O₂) and glucose from the blood.
- When oxygen (O₂) is not available, fat is used instead.

TELEMETRY COOLING:

- As energy is produced, body temperature rises and skin releases sweat droplets to the surface to reduce heat.
- Sweat is produced by the sweat glands and evaporates at the surface of the skin to reduce body temperature.

The Short Term Effects of Exercise

paberplakat PE014
lamineeritud PE014L

SPECIFICITY: Training must be specific to the performance of the particular sport or activity. Training must be planned to coincide with the specific needs of the sport.

PROGRESSIVE OVERLOAD: Progress must be continuous, training must be gradually increased over time.

FITT: Frequency, Intensity, Time, Type. How often you train, how hard you train, how long you train, and what you train.

REST AND RECOVERY: REST is the time allowed for recovery.

REVERSIBILITY: If you stop training, your improvements will start to退化 (revert back to previous state). This can be addressed by regular short F.I.T.T. activities.

Principles of Training

paberplakat PE016
lamineeritud PE016L

TRAINING METHODS:

- CIRCUIT:** A series of exercises performed in sequence without resting between them.
- WEIGHT TRAINING:** Exercises that involve resistance training using weights like dumbbells, barbells, and weight machines.
- CROSS TRAINING:** Involves different types of exercises to improve overall fitness.
- CONTINUOUS:** A form of aerobic exercise where there is no break between movements.
- INTERVAL:** Alternating periods of high-intensity exercise with periods of low-intensity exercise.
- TABATA SPEED PLAY:** High-intensity interval training (HIIT) involving short bursts of intense exercise followed by brief recovery periods.

Training Methods

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lamineeritud PE017L

OFF-SEASON: Approximately 8-12 weeks. Fitness levels are maintained through light exercise. Performers build aerobic fitness and begin specific strength training. Some performers will also look to develop skill weaknesses identified during the peak season.

REST/RECOVERY: Approximately 2 weeks.

PRE-SEASON: Approximately 6-8 weeks. Following an intense peak season, performers need a rest from training. During this time the body is able to recover from injuries. Often this period is combined with the off-season.

PEAK/PLAYING SEASON: Up to 40 weeks. Performers build on their physical development from the off-season developing speed, power and other components of physical fitness. Frequent matches are organised in preparation for the peak season.

With the emphasis on speed, skills are practised under pressure. Game play is strategic and tactics are practised. Games are played once or twice a week and performers aim to maintain their pre-season fitness.

Periodisation

paberplakat PE019
lamineeritud PE019L

MONITORING HEART RATE: Training zones are determined by heart rate percentage of maximum heart rate.

MAXIMUM HEART RATE = 220 - YOUR AGE:

TRAINING THRESHOLDS:

THRESHOLD	DESCRIPTION	HEART RATE (%)	INTENSITY	EXAMPLE
ANERGIC ZONE	Very low heart rate, no aerobic training possible.	Below 50	Very Low	Very light walking, stretching, slow swimming.
ACTIVE ZONE	Low heart rate, aerobic training possible.	50-60	Low	Light jogging, cycling, swimming.
ENDURANCE ZONE	Medium heart rate, aerobic training possible.	60-70	Medium	Endurance running, cycling, swimming.
STRENGTH ZONE	High heart rate, aerobic training possible.	70-80	High	Interval training, strength training.
ANATOMIC ZONE	Very high heart rate, aerobic training possible.	80-90	Very High	Very high intensity interval training.

Training Thresholds & Zones

paberplakat PE018
lamineeritud PE018L

ENVIRONMENTAL CONTINUUM: Skills can be categorized into open and closed environments. Open environments are those where the performer has a choice of action and closed environments are those where the performer has little choice of action.

DIFFICULTY CONTINUUM: Skills can be categorized into basic and complex. Basic skills are simple and require minimal cognitive processing, while complex skills require significant cognitive processing.

PRACTICE METHODS:

- DRILL:** Repeating a task to improve technique and consistency.
- DRILL:** Repeating a task to improve technique and consistency.
- DRILL:** Repeating a task to improve technique and consistency.
- DRILL:** Repeating a task to improve technique and consistency.

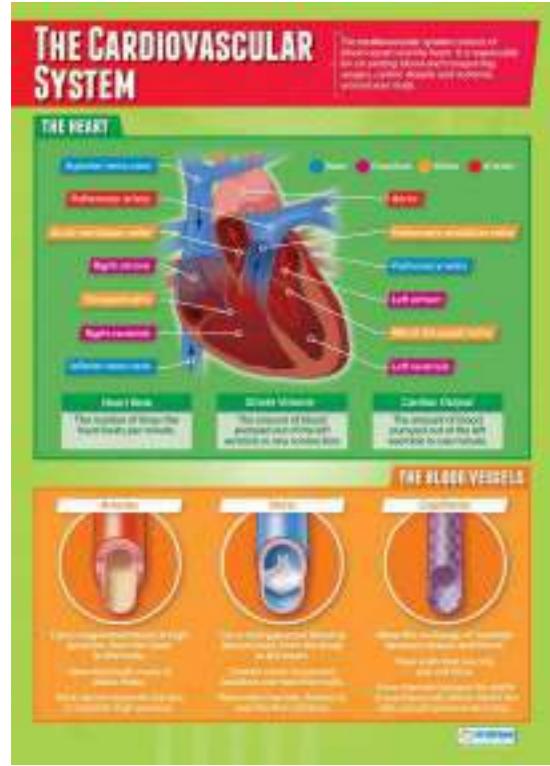
Skills in Sport

paberplakat PE020
lamineeritud PE020L



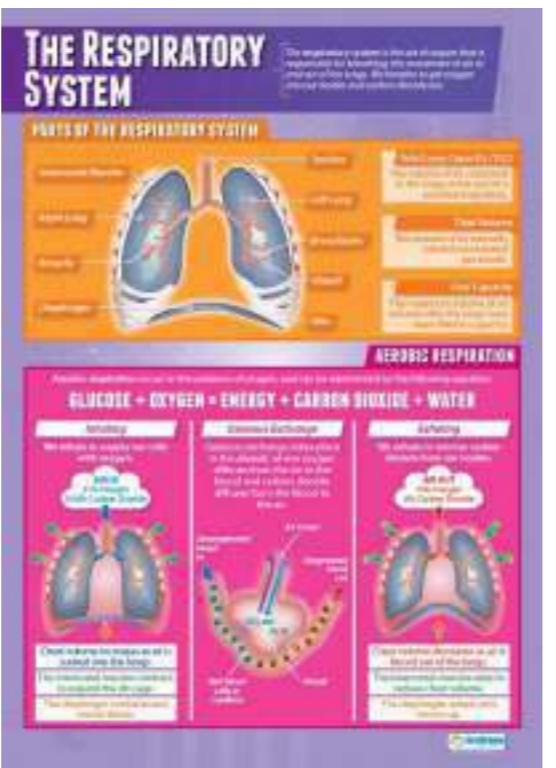
Gymnastics

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lamineeritud PE021L



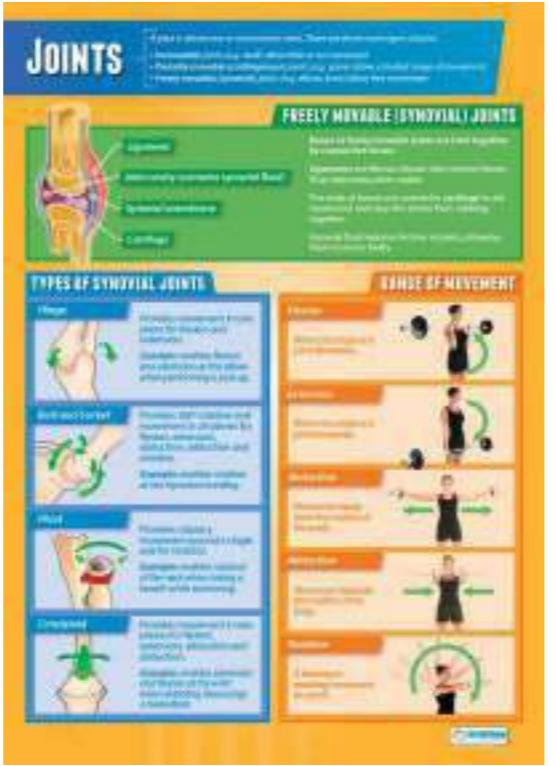
The Heart & Circulation

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lamineeritud PE023L



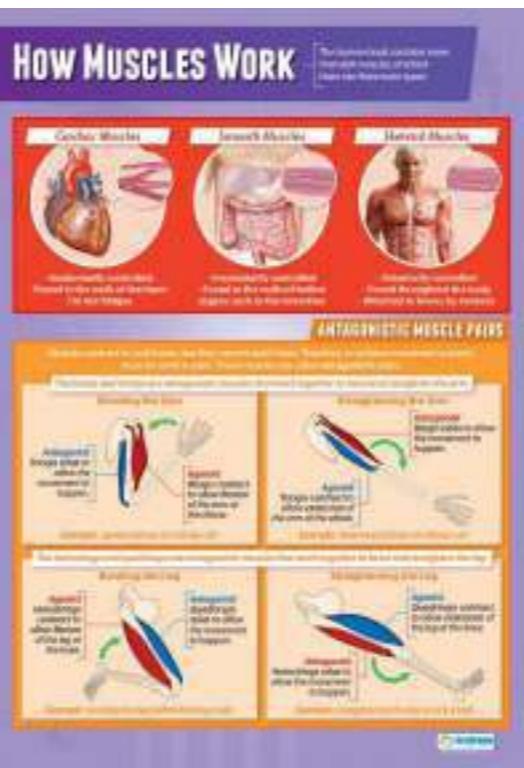
Breathing

paberplakat PE022
lamineeritud PE022L



Joints

paberplakat PE024
lamineeritud PE024L



Muscles

paberplakat PE025
lamineeritud PE025L



Nutrition

paberplakat PE027
lamineeritud PE027L



The Human Skeleton

paberplakat PE026
lamineeritud PE026L



Vitamins & Minerals

paberplakat PE028
lamineeritud PE028L

THE FOOD PYRAMID



The Food Pyramid

paberplakat PE029
lamineeritud PE029L

WHY EXERCISE?	
Regular physical activity is very important for all people who want to lead a healthy and fulfilling life. Here are some of the reasons why:	
	Exercise increases your energy.
	Exercise increases your strength and muscle tone.
	Exercise helps you sleep more peacefully.
	Exercise burns off unwanted calories.
	Exercise improves your circulation. This means all the oxygen and nutrients in your body can work efficiently.
	Exercise helps your joints stay loose and supple.
	Exercise improves endurance. This means you can work harder for longer.
	Exercise helps relieve stress. It also enables you to cope with high pressure situations.
	Exercise helps provide you with a good posture.
	Exercise increases your ability to concentrate and learn.
	Exercise makes you happy. It increases your sense of control over your own life.

Why Exercise

paberplakat PE031
lamineeritud PE031L

Exercise More

paberplakat PE030
lamineeritud PE030L

Motivation

paberplakat PE032
lamineeritud PE032L

Teamwork

paberplakat PE033
lamineeritud PE033L

TEAMWORK

Back

Iamineeritud GYM002L

KEHALINE KASVATUS

Shoulders

lamineeritud

Chest

Iamineeritud



Arms

lamineeritud

GYM004L



Legs

lamineeritud

GYM006L



Core

lamineeritud

GYM005L



Upper Body Stretching

lamineeritud

GYM007L



Lower Body Stretching

lamineeritud

GYM008L



Training Zones and Thresholds

lamineeritud

GYM010L



Warm Up and Cool Down

lamineeritud

GYM009L



Understanding Nutrition

lamineeritud

GYM011L



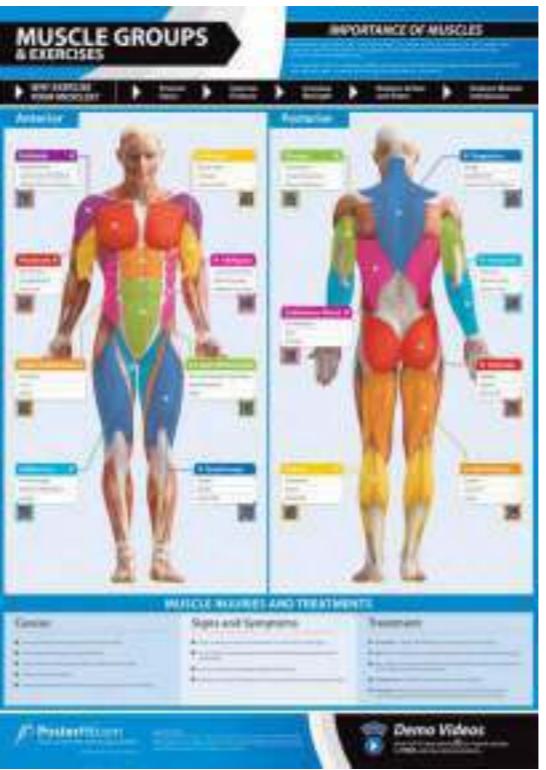
Nutrition for Training

lamineeritud

GYM012L



Kettlebells



Muscle Groups and Exercises

lamineeritud GYM013L



Medicine Ball



Exercise Ball

lamineeritud GYM016L



Suspension Training



Resistance Bands

lamineeritud GYM017L



Foam Roller

lamineeritud

GYM014L

lamineeritud GYM015L

lamineeritud GYM016L

lamineeritud GYM017L

lamineeritud GYM018L



Ladder Drills

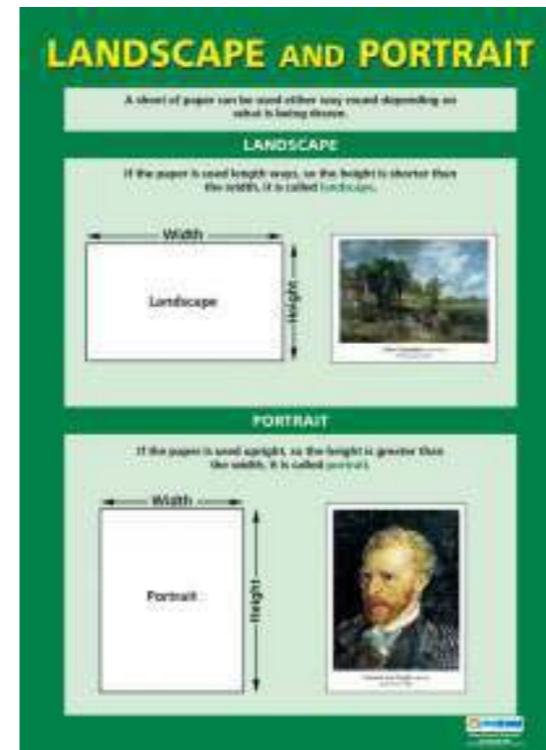
lamineeritud GYM020L

Circles and Eclipses

paberplakat ART001
lamineeritud ART001L

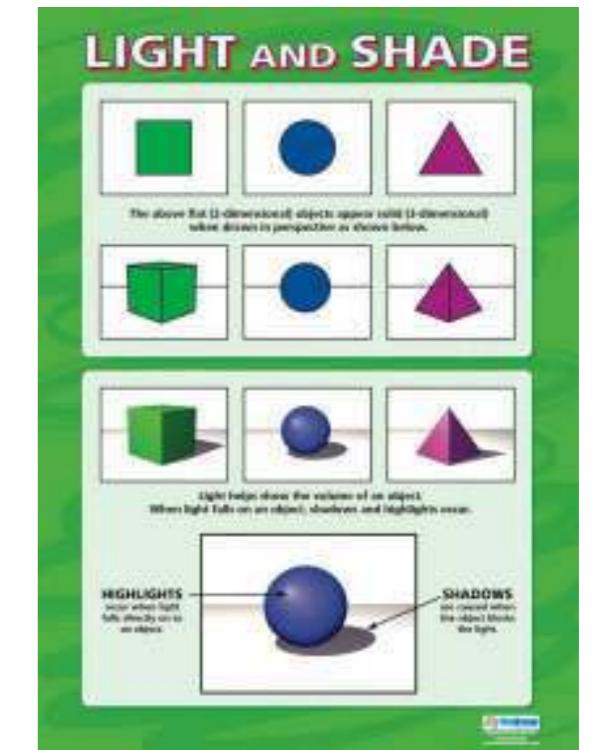
Compositional Arrangement

paberplakat ART002



Landscape and Portrait

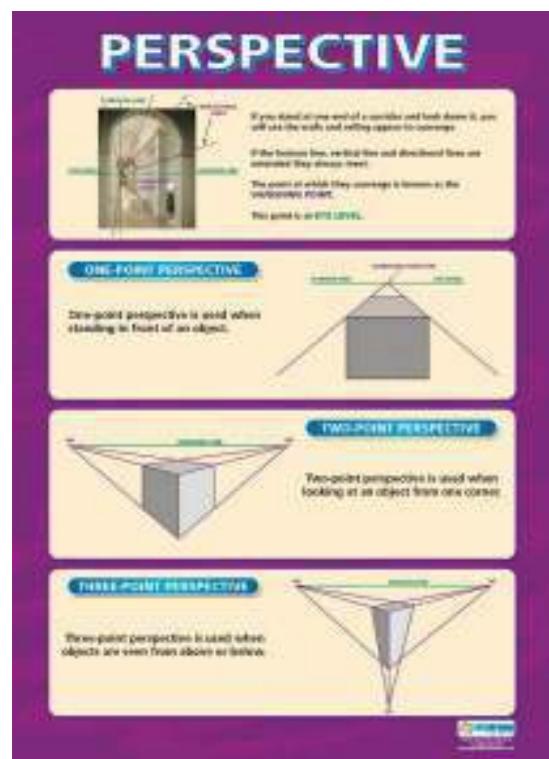
paberplakat ART003
lamineeritud ART003L



Light and Shade

paberplakat ART004
lamineeritud ART004L

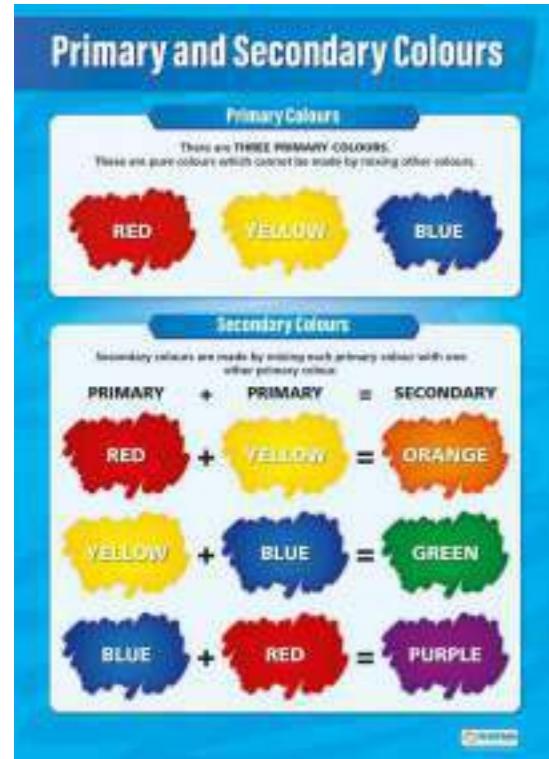
PERSPECTIVE



Perspective

paberplakat ART005
lamineeritud ART005L

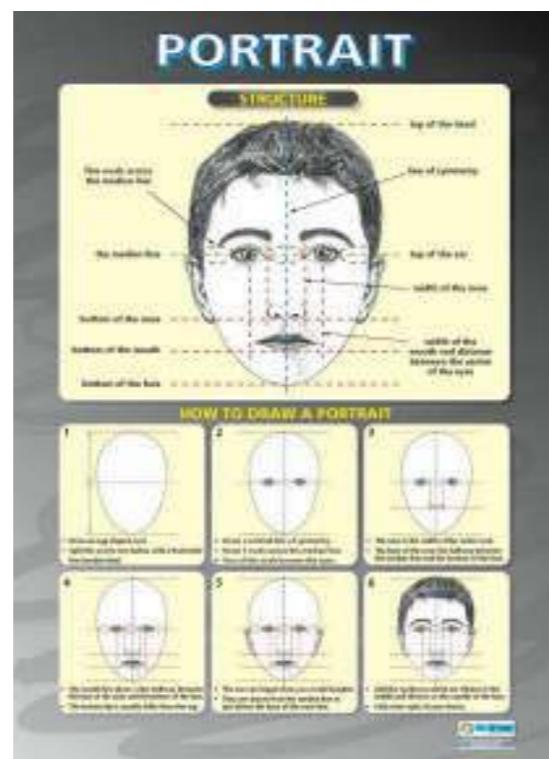
Primary and Secondary Colours



Primary and Secondary

paberplakat ART007
lamineeritud ART007L

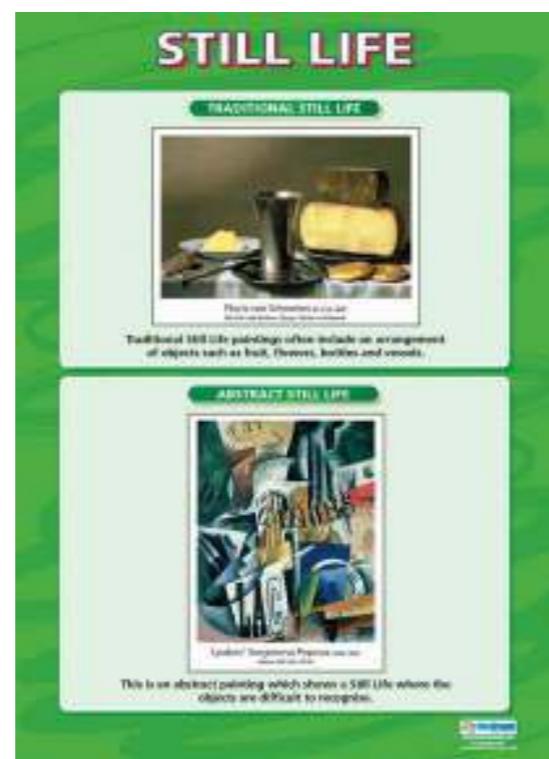
PORTRAIT



Portrait

paberplakat ART006
lamineeritud ART006L

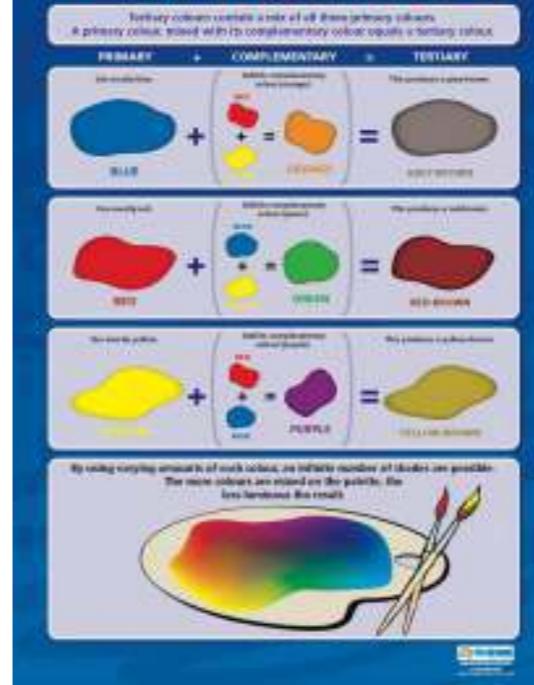
STILL LIFE



Still Life

paberplakat ART008
lamineeritud ART008

TERTIARY COLOURS



Tertiary Colours

paberplakat ART009
lamineeritud ART009L

THE COLOUR WHEEL



The Colour Wheel

paberplakat ART010
lamineeritud ART010L

TONE

This tonal scale shows the gradation of dark tones, mid tones and light tones.
It shows the passage from black through grey to white.

DARK → MID → LIGHT

TINTING AND SHADING

Tinting and shading refer to making a colour lighter by adding white (bleaching) or darker by adding black (shading).

BLUE → ADDING WHITE

This tonal scale shows the gradation of the colour blue by adding white.

RED → ADDING BLACK

This tonal scale shows the gradation of the colour red by adding black.

TINTING AND SHADING WITH COLOUR

RED → ORANGE → YELLOW

This tonal scale shows the gradation in tone of the orange colour using different quantities of red and yellow.

Tone

paberplakat ART011
lamineeritud ART011L

<h1>CUBISM</h1>	<p>• Cubism developed between 1907 and 1914 by a group of young artists, including Georges Braque and Robert Delaunay.</p> <p>• The term was coined around 1910 by Georges Braque and Daniel-Henry Kahnweiler.</p>	<p>• The Cubists wanted to express the multiple perspectives of objects simultaneously.</p> <p>• They used geometric shapes and angular planes, depicting figures and objects from different angles at once.</p>	<p>Georges Braque</p> <p>• Georges Braque was born in Le Havre in 1881. He studied at the École des Beaux-Arts in Paris and then worked as a painter-decorator.</p> <p>• He became friends with Pablo Picasso in 1907 and they developed the style of Cubism together.</p>	<p>Robert Delaunay</p> <p>• Robert Delaunay was born in Paris in 1885. He studied at the École des Beaux-Arts in Paris and then worked as a painter-decorator.</p> <p>• He became friends with Georges Braque in 1907 and they developed the style of Cubism together.</p>
				<p><small>© 2013 The McGraw-Hill Companies, Inc.</small></p>

Cubism

paberplakat ART012
lamineeritud ART012L

EXPRESSIONISM

EXPRESSIONISM

- The Expressionist movement originated in Germany, France, and Austria around 1900.
- It focused on emotional expression, individualism, and anti-traditionalism.
- Artists sought to express their inner experiences through distorted forms and colors.

Ernst Ludwig Kirchner: *Femme au Chapeau* (1907)

Edouard Vuillard: *Eiffel Tower at Night* (1901)

Expressionism

paberplakat ART013
lamineeritud ART013L

FUTURISM

- The Futurist movement developed at the beginning of the 20th century.
- It focused on the movement and dynamism of industrial civilization.
- Artists sought to depict the intensity of modern life through dynamic, rhythmic, and energetic paintings.

Umberto Boccioni: *The Man with the Horn* (1910)

Giacomo Balla: *The Futurist's Dream* (1911)

Futurism

paberplakat ART015
lamineeritud ART015L

FAUVISM

FAUVISM

- Matisse developed it in the early 20th century with Henri Matisse being the leader of the group.
- The term comes from the French word 'fauve' meaning 'wild beast' and refers to the raw, intense colors used by the artists.
- They often painted figures, landscapes, and interiors in a non-realistic, expressive style.

Henri Matisse: *The Circus* (1911)

André Derain: *The Red Studio* (1907)

Fauvism

paberplakat ART014
lamineeritud ART014L

POST-IMPRESSIONISM

POST-IMPRESSIONISM

- This movement originated in France around 1880.
- Post-Impressionists rejected the focus on light and color, instead focusing on personal expression and individual vision.
- They often painted still lifes, portraits, and landscapes.

Paul Gauguin: *Portrait of Dr. Gachet* (1890)

Vincent van Gogh: *Sunflowers* (1888)

Paul Cézanne: *The Yellow House* (1890-1892)

Post-Impressionism

paberplakat ART017
lamineeritud ART017L

POINTILLISM

POINTILLISM

- Pointillism is a technique of painting consisting of dots of different colored paint applied in a specific way of painting called 'divisionism'.
- It involved the use of small dots of pure color to create the illusion of depth and form.
- Pointillism originated in France in the late 19th century.

Georges Seurat: *The Quay at Gravelines* (1887)

Georges Seurat: *The Red Mill* (1886)

Pointillism

paberplakat ART018
lamineeritud ART018L

Impressionism

IMPRESSIONISM

The Impressionist movement developed in France around 1860. The Impressionists painted often in outdoor settings, using bright colors and short brushstrokes to capture the effect of light and atmosphere.

Claude Monet: *Impression, Sunrise* (1872)

Edgar Degas: *A Corner in the Studio* (1873)

Pierre-Auguste Renoir: *The Luncheon on the Grass* (1863)

Alfred Sisley: *A Bar at the Folies-Bergère* (1870)

Gustave Caillebotte: *The Railway* (1873)

paberplakat ART016
lamineeritud ART016L

Realism

REALISM

- Realism originated in France around 1840.
- It focused on depicting scenes from everyday life in a straightforward, unidealized manner.
- Realists often painted scenes of poverty, labor, and social inequality.

Gustave Courbet: *The Gleaners* (1857)

Jean-François Millet: *The Stone Breakers* (1849)

Jean-François Millet: *The Angelus* (1857)

Gustave Courbet: *The Family Reunion* (1855)

paberplakat ART019
lamineeritud ART019L

Surrealism

SURREALISM

- Surrealism was a global movement that originated in the early 1920s.
- It focused on dreamlike imagery and explored the unconscious mind.
- Surrealist artists often used symbolism and dreamlike imagery to explore the depths of the human psyche.

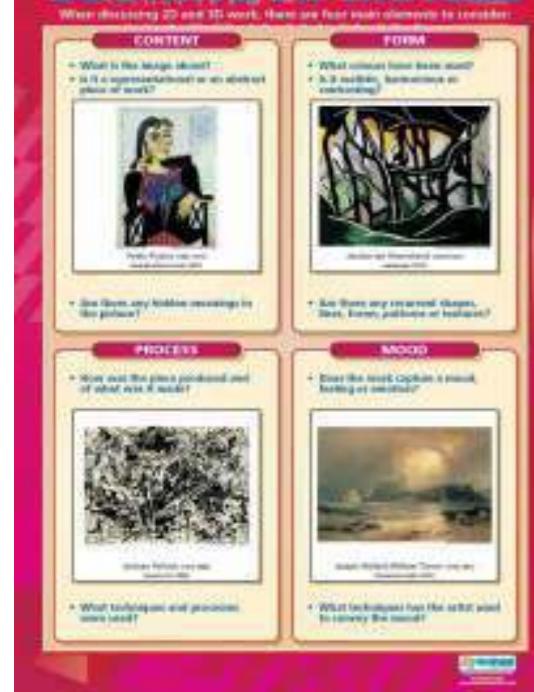
Salvador Dalí: *The Persistence of Memory* (1931)

René Magritte: *The Persistence of Memory* (1929)

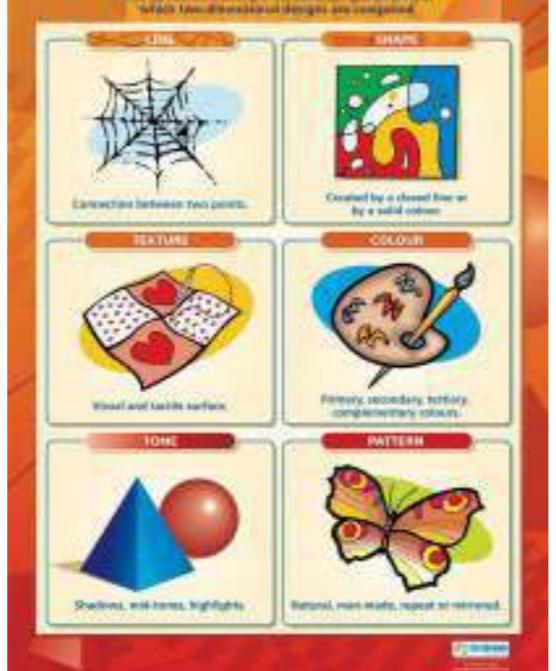
paberplakat ART020
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ART MATERIALS**Art Materials**

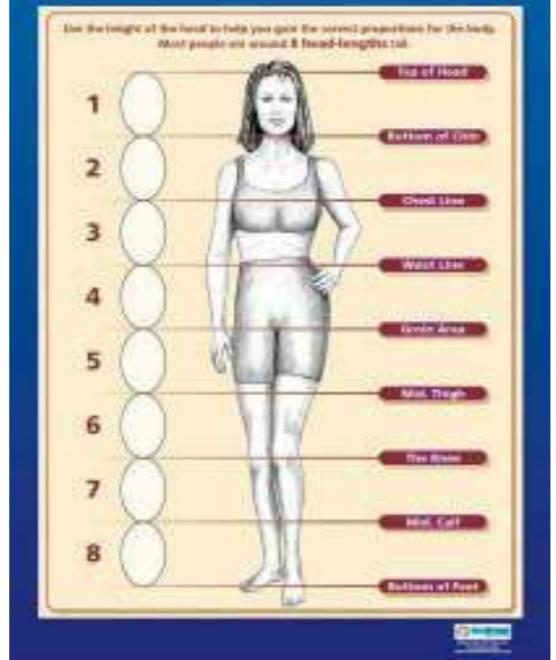
paberplakat ART021
lamineeritud ART021L

LOOKING AT IMAGES**Looking At Images**

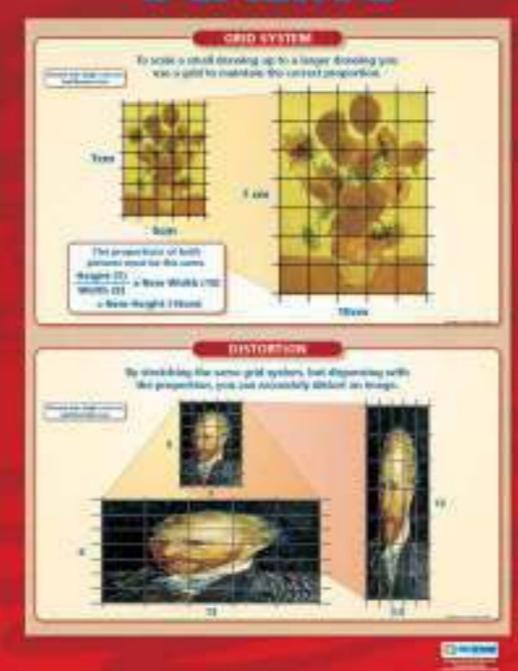
paberplakat ART023
lamineeritud ART023L

FORMAL ELEMENTS**Formal Elements**

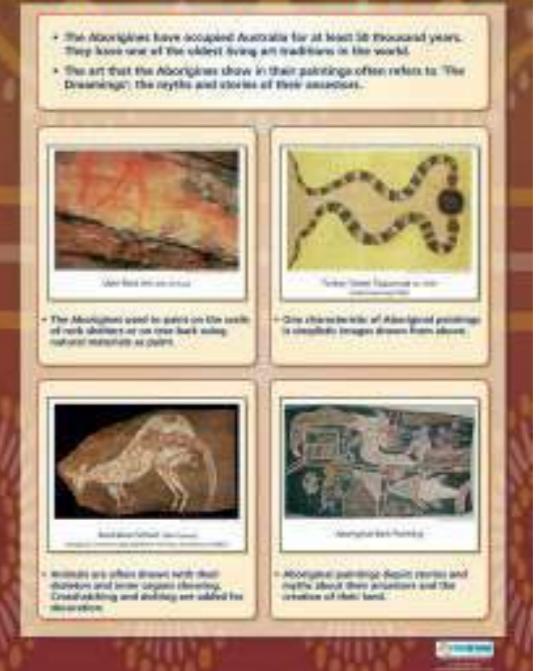
paberplakat ART022
lamineeritud ART022L

PROPORTIONS OF THE HUMAN FIGURE**Proportions Of The Human Body**

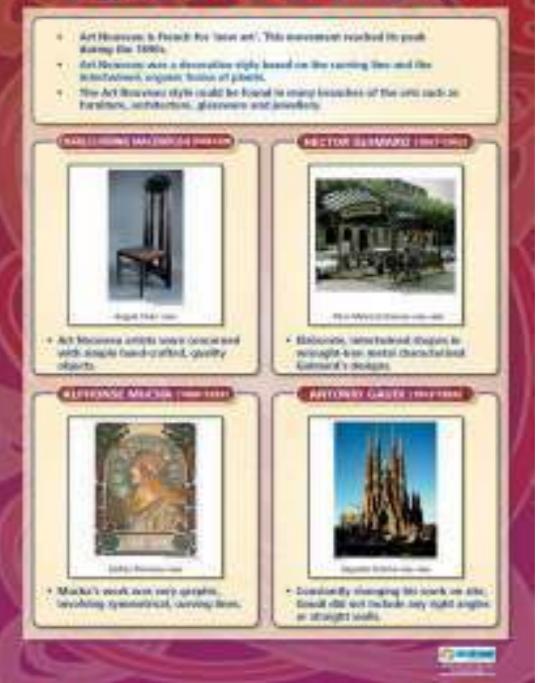
paberplakat ART024
lamineeritud ART024L

SCALING**Scaling**

paberplakat ART025
lamineeritud ART025L

AUSTRALIAN ABORIGINAL ART**Aboriginal Art**

paberplakat ART026
lamineeritud ART026L

ART NOUVEAU**Art Nouveau**

paberplakat ART028
lamineeritud ART028L

BAROQUE

BAROQUE	
<ul style="list-style-type: none"> Baroque art dominated Europe throughout the 1600s. Every country seemed to produce a different kind of Baroque art. Their art is said to produce drama, lighting, movement, and space (see earlier Baroque art for details). 	
ITALIAN BAROQUE (1600-1750)	PETER PAUL RUBENS (1577-1640)
<ul style="list-style-type: none"> Caravaggio's chiaroscuro style influenced Baroque artists, shown here in <i>Ecce Homo</i>. 	<ul style="list-style-type: none"> Rubens was a devout Catholic—and this painting shows an alternative to a statue by Bernini's <i>Ecce Homo</i>.
 The Ecce Homo by Caravaggio	 The Ecce Homo by Peter Paul Rubens
<ul style="list-style-type: none"> This painting depicts St. Paul with his feet bound and his hands tied and lifted by a band of soldiers. 	<ul style="list-style-type: none"> This Biblical scene tells from the legend of Judas that Jesus died and others did influence Judas to act as he did.
SPANISH BAROQUE (1600-1750)	MICHAELANGELO MERISI DA CARAVAGGIO (1571-1610)
<ul style="list-style-type: none"> Caravaggio's chiaroscuro style inspired the Spanish. 	<ul style="list-style-type: none"> Michelangelo Merisi da Caravaggio's chiaroscuro style influenced the Spanish.
 The Martyrdom of Saint Ignatius of Loyola by Velázquez	 The Ecce Homo by Michelangelo Merisi da Caravaggio
<ul style="list-style-type: none"> This painting uses chiaroscuro to depict a soldier who has been beaten to the ground across the picture. 	<ul style="list-style-type: none"> This painting depicts Jesus (Barabbas) still being beaten because of his actions, showing the severity of his sentence.

Baroque

paberplakat ART029
lamineeritud ART029L

POP ART

POP ART

- The 'Pop Art' movement occurred in the 1950s and 1960s and demonstrated bold imagery with brash, heightened colour.
- The Pop Art style derived from everyday objects, items of mass culture, such as comic strip panels, soup cans, beer bottles and road signs.

ANDY WARHOL (1928-1987)

- Warhol was the most influential Pop Artist. He used the silk-screen process to transfer photographic images onto canvas.

A photograph of a Campbell's Tomato Soup can. The label features the brand name 'Campbell's' at the top, followed by a large red circle containing the words 'TOMATO SOUP' in white capital letters.

Campbell's Soup Can (1962)

ROY LICHTENSTEIN (1923-1997)

- Lichtenstein is famous for his paintings based on comic strips, often depicting tension, dramatic situations.

A painting by Roy Lichtenstein titled 'In the Car Crash'. It depicts two figures in a car, one with blonde hair and the other with dark hair, looking intensely at each other. The background is filled with jagged, expressive lines suggesting a car crash.

In the Car Crash

- He used images of celebrities and mass-produced, commercial products.

DAVID HOCKNEY (b. 1937)

- David Hockney is the most highly-publicised, British, post-war artist.

A painting by David Hockney titled 'A Bigger Splash'. It depicts a swimming pool with a person in the water, surrounded by a bright blue sky and a building in the background. The painting uses a vibrant, expressive style.

A Bigger Splash (1967)

JASPER JOHNS (b. 1930)

- Jasper Johns is one of the most influential American artists of the post-war era.

A painting by Jasper Johns titled 'Three Flags'. It features three vertical stripes of the United States flag against a white background. The brushwork is visible and expressive, giving it a textured appearance.

Three Flags (1958)

- Hockney's popularity stems from his flair, wit and versatility in experimenting with painting, photography and film.

- He frequently uses well-known images such as targets, flags and beer cans, transforming them into cultural icons.

BRITISH MUSEUM
INTERACTIVE

Pop Art

paberplakat ART031
lamineeritud ART031L

DADA

<h1>DADA</h1>	<p>Dada began in 1916 with a group of writers that were against the war, destruction, and society from an age through to today.</p> <ul style="list-style-type: none"> The art of Dada is based on the belief that every movement is important to progress as they believe that progress is the only way forward. 	<p>Marcel Duchamp (1887-1968)</p> <p>Marcel Duchamp was a French artist who is best known for his painting <i>L.H.O.O.Q.</i> (1919), which is a painting of the Mona Lisa with a mustache and a goatee added to it.</p> 
	<ul style="list-style-type: none"> The art of Dada is based on the belief that every movement is important to progress as they believe that progress is the only way forward. 	<p>Marcel Duchamp (1887-1968)</p> <p>Marcel Duchamp was a French artist who is best known for his painting <i>L.H.O.O.Q.</i> (1919), which is a painting of the Mona Lisa with a mustache and a goatee added to it.</p> 

Dada

paberplakat ART030
lamineeritud ART030L

PRIMITIVE ART

PRIMITIVE ART	
<p>(Primitive art is painting or sculpture produced within the very traditional areas of Africa, particularly in the Islands of New Guinea, the Aborigines of Australia, or the North American Native Indians.)</p>	
 <i>Pablo Picasso's Les Demoiselles d'Avignon</i>	 <i>Paul Gauguin's Te Raorau</i>
<ul style="list-style-type: none"> The simplicity and originality of primitive artistry have influenced and inspired many aspects of modern clothing, sculpture and fashion. 	<ul style="list-style-type: none"> The decorative and abstract patterns often found in primitive artistry can be seen in the bodies of figures such as spiritual beliefs, sexual desire or life cycles.
 <i>Paul Gauguin's Nafea Faa Ipoipo</i>	 <i>Paul Gauguin's The Yellow Christ</i>
<ul style="list-style-type: none"> This painting by Picasso features many figures from Africa and was the beginning of the Cubist movement. 	<ul style="list-style-type: none"> The primitive faces and the style of Picasso's 'Les Demoiselles d'Avignon' are based on African tribal masks.

Primitive Art

paberplakat ART032
lamineeritud ART032L

ROMANTICISM

ROMANTICISM	
<ul style="list-style-type: none"> ▪ Romanticism developed in the late 18th and early 19th Centuries. ▪ The movement was concerned with emotion, imagination and a feeling for nature, as opposed to reason and logic. 	
EUGÈNE DELACROIX (1798-1863) <ul style="list-style-type: none"> ▪ French artist, well known for his subjects from literature, using colour to create an effect of pure energy and emotion. 	JORDI DE TERRASSA (1848-1923) <ul style="list-style-type: none"> ▪ Spanish artist associated with the painting of light and form. The title refers mostly to composition.
 <p><i>Massacre at Chios (The Massacre at Chios)</i></p>	 <p><i>Man Riding a Horse (Man Riding a Horse)</i></p>
<ul style="list-style-type: none"> ▪ His painting portrays the suffering of humanity. 	<ul style="list-style-type: none"> ▪ Jordi de Terrassa uses soft colour and various techniques to give the impression of a spreading dream-like vision.
JOHN CONSTABLE (1776-1837) <ul style="list-style-type: none"> ▪ English painter who uses the different and more intimate pace of his art to depict the English landscape. 	CARAVAGGIO (1571-1610) <ul style="list-style-type: none"> ▪ Italian artist, the leading artist of the Counter-Reformation movement.
 <p><i>The Hay Wain (The Hay Wain)</i></p>	 <p><i>The Tree of Gomorrha (The Tree of Gomorrha)</i></p>
<ul style="list-style-type: none"> ▪ Constable's 'The Hay Wain' depicts a typical English scene. 	<ul style="list-style-type: none"> ▪ He painted Christian art based on nature, as opposed to Biblical Biblical imagery.

Romanticism

paberplakat ART033
lamineeritud ART033L

ES OF LANDSCAPE

The image is a composite of six smaller images arranged in two columns and three rows. The top row shows two representational landscapes: a coastal scene with a lighthouse on the left and a city skyline at night on the right. The middle row shows two non-representational landscapes: a minimalist red and black abstract on the left and a dark, abstract scene with vertical streaks on the right. The bottom row shows two abstract landscapes: a landscape with a large tree on the left and a landscape with a bridge on the right.

Types Of Landscape

paberplakat ART034
lamineeritud ART034L

CÉZANNE

CÉZANNE

PAUL CÉZANNE 1839–1906

- Cézanne was a French Post-Impressionist painter often referred to as 'the father of modern art'.
- His work and ideas influenced the development of many artists including Pablo Picasso and Henri Matisse, and art movements such as Cubism and Fauvism.

Portrait of Paul Cézanne

Landscape painting

- Cézanne painted his first house at Aix-en-Provence in 1861. It shows his early Post-Impressionist and Cubist influences.

- This painting demonstrates how he used the elements of painting, including colour and lighting, from Post-Impressionism.

View of Marseille and the Old Port

Still life with a basket of fruit

- Cézanne produced many portraits and still life paintings in his later years.

- In 1906, only seven years before his death, he sold his last painting.

Paul Cézanne

Cezanne

paberplakat ART036
lamineeritud ART036L

DALI

SAULÉHOON DALI (1944-1945)

- Dali was an eccentric Spanish painter. In 1920, he joined the French Surrealist group.
- As well as painting, Dali worked in many media: he designed stage sets, clothing, jewellery and even surrealist films.

The painting 'Saulé' depicts a surreal landscape featuring a large, dark, organic shape resembling a face or a Saul's head, with figures and architectural elements integrated into the scene.

THE SURREALIST DALI (1944-1945)

- The painting 'The Surrealist DALI' shows Dali's characteristic dreamlike imagery and distorted shapes in an unexpected form, reflecting his unique surrealist vision.
- Dali's surreal style and the use of repeated images in this painting show the development of his surrealist style.
- Dali returned to the Surrealist style of his childhood and his later psychology, often based on religious themes.

This painting features a dark, atmospheric composition with multiple figures and distorted architectural elements, typical of Dali's surrealist style.

Dali

paberplakat ART037
lamineeritud ART037L

MATISSE

HENRI MATISSE (1910-1915)

- Matisse is often regarded as the most important French painter of the 20th century.
- Art leader of the Fauvist movement, he conveyed emotional expression through the use of colour and form.

The painting 'Still Life with a Vase of Flowers' is a classic example of Matisse's Fauvist style, characterized by bold, expressive brushwork and a palette dominated by red, yellow, and blue.

THE FAUVIST MATISSE (1910-1915)

- The painting 'The Fauvist Matisse' shows Matisse's influence by the Fauvist painter who applied pure, unblended colours in small dots of colour.
- He added to this technique by changing the small dots to thick, broad strokes.

This painting illustrates Matisse's transition to a more Fauvist-influenced style, using thick, expressive brushstrokes and a limited color palette.

LE RÊVE (1910-1911)

- This painting is a masterpiece for its bold style of colour, strong contrasts, and flat objects, as well as abandoning three-dimensional styling.
- In 'Le Rêve', Matisse uses the fauvist techniques, the bold shapes of brightly-coloured paper, creating thin, horizontal surface designs.

'Le Rêve' (The Dream) is a famous painting where Matisse uses cut-out colored paper to create a dreamlike, rhythmic composition.

Matisse

paberplakat ART038
lamineeritud ART038L

VAN GOGH

VINCENT VAN GOGH (1888-1890)

- Van Gogh was a Dutch painter, known as the founder of the Post-impressionist movement.
- He had a series of personal crises and fits. He had a short and extremely troubled career.

The painting 'The Potato Eaters' depicts a simple, rural scene of a family eating their meal, with a focus on the earthy tones and the somber atmosphere.

THE POTATO EATERS (1885)

- Van Gogh's 'Potato Eaters' was typical of his early paintings, where he used earthy colours in a realistic style.
- In 1888, Van Gogh moved to Arles in the South of France where some of his most famous works were painted.

'The Potato Eaters' is one of Van Gogh's most famous works, showing a family eating their meal in a simple, rural setting.

STARRY NIGHT (1889)

- Van Gogh's 'Starry Night' is a masterpiece of expressive and emotive use of vibrant colour and energetic application of paint.
- His painting was highly acclaimed and heavily influenced with poster prints.

'Starry Night' is a well-known painting featuring a cypress tree in the foreground, a small town in the middle ground, and a swirling, star-filled sky above.

Van Gogh

paberplakat ART041
lamineeritud ART041L

MONET

CLAUDE MONET (1840-1926)

- Monet was a French painter regarded as the leader of the Impressionist movement.
- Monet perfected a technique of working in the open air, capturing the dazzling effects of natural light.

The painting 'Water Lilies' is a series of Impressionist artworks depicting a pond filled with water lilies, with sunlight filtering through the leaves.

WATER LILIES (1899)

- Monet painted quickly, recording a changing scene at different times of the day.
- Monet focused on light and colour, using complementary colours in their painting.

Monet's 'Water Lilies' series is a prime example of Impressionism, focusing on light, color, and the transient effects of sunlight on the water.

IMPRESSIONISM (1873)

- Monet's 'Impressionism' painting is a study of light and colour, showing a boat on the water.
- Monet focused on light and colour, using complementary colours in their painting.

'Impressionism' is one of Monet's earliest works, showing a boat on the water with a focus on the play of light and color.

Monet

paberplakat ART039
lamineeritud ART039L

PICASSO

PABLO PICASSO (1881-1973)

- Pablo Picasso was a Spanish painter and sculptor, now considered the greatest artist of the 20th century.
- Picasso experimented with many styles creating more than 20,000 works of art.

The painting 'The Blue Period' is characterized by a somber palette of blues and greys, depicting scenes of poverty and despair.

THE BLUE PERIOD (1901-1904)

- 'The Blue Period' is a series of paintings created during 1901-1904.
- Many of these paintings depict poor people.

'The Blue Period' includes 'The Old Guitarist' and 'The Family of Saltimbanques', among others.

CUBISM

- Influenced by Paul Cézanne and Georges Braque, Picasso developed Cubism.
- Cubism involved the breaking down and analyzing of forms, presenting the subject from several angles at the same time.

'Cubism' includes 'Les Demoiselles d'Avignon' and 'The Weeping Woman'.

SCULPTURE

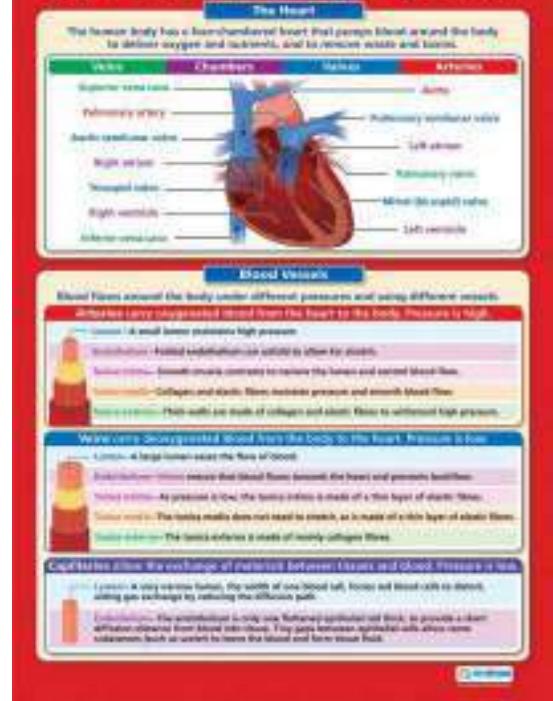
- Picasso created sculptures as well as paintings.
- His famous Sculpture 'Weeping Woman' is a well-known example of his work.

'Weeping Woman' is a bronze sculpture by Picasso, depicting a woman in a state of grief.

Picasso

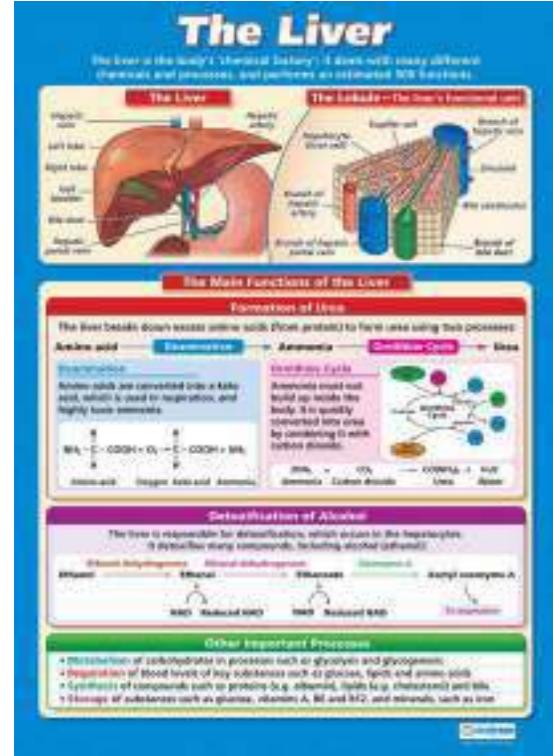
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The Circulatory System



The Circulatory System

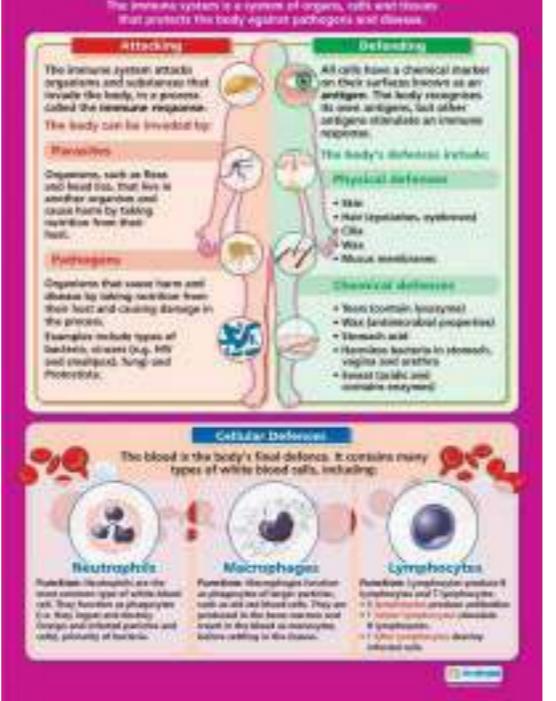
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lamineeritud SAL003L



The Liver

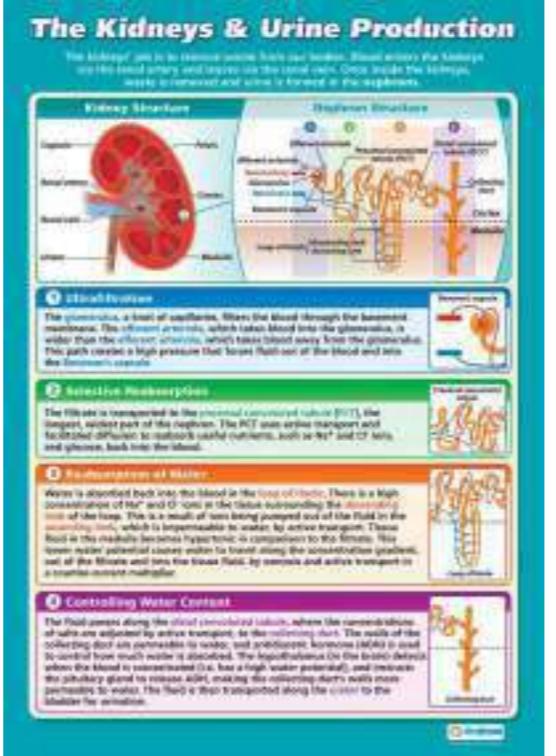
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The Immune System



The Immune System

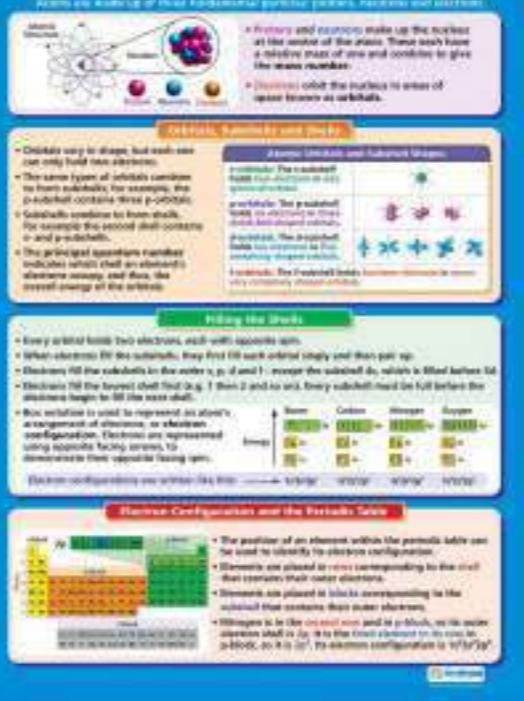
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lamineeritud SAL004L



The Kidneys & Urine Production

paberplakat SAL006
lamineeritud SAL006L

Atomic Structure



Atomic Structure

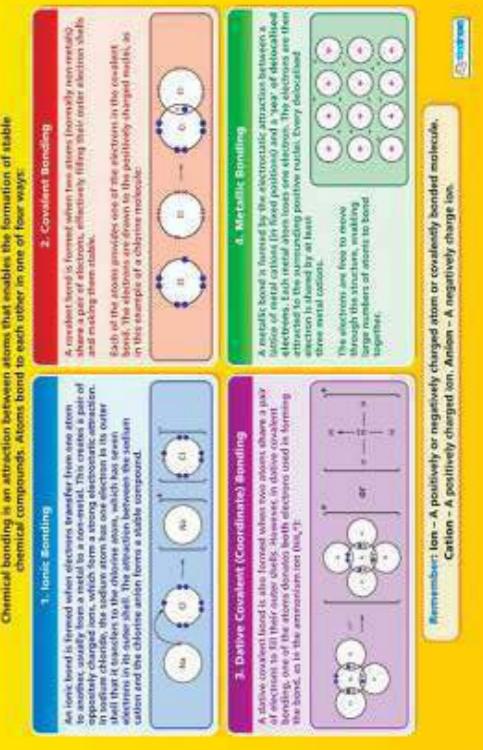
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The Five Types of Solid Structure

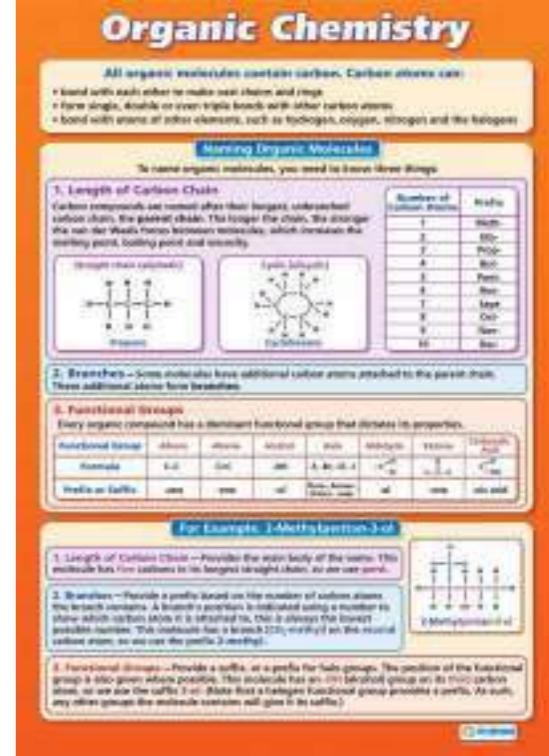
aaberplakat SAL009
amineeritud SAL009L

Chemical Bonding



Chemical Bonding

paberplakat SAL008
lamineeritud SAL008L



Organic Chemistry

paberplakat SAL010
lamineeritud SAL010L

Analytical Chemistry

There are many techniques used to determine the composition and structure of chemical compounds, including:

- Infrared Spectroscopy:** Infrared light is absorbed by chemical bonds in molecules, causing them to vibrate at a unique frequency. The absorbed frequencies can be displayed in an infrared spectrum of the molecule, which can then be compared to known spectra of reference molecules.
- Mass Spectrometry:** A sample is ionized and passed through a magnetic field at a fixed rate. The ions are then sorted by mass-to-charge ratio (m/z) and detected by a detector. The resulting mass spectrum shows relative abundance versus m/z .
- Hydrogen-1 NMR (NMR, NMR, NMR, NMR, NMR):** Radio waves are absorbed by protons in a sample. The energy of the absorbed wave is proportional to the number of protons in the sample. This information is used to determine the structure of the molecule.
- Chemical Shifts of Protons and CH₂ Groups:** The chemical shifts of protons and CH_2 groups are measured by NMR. These values are used to identify different types of protons in a molecule.
- Carbon-13 NMR (NMR, NMR, NMR, NMR, NMR):** Similar to proton NMR, carbon-13 NMR measures the chemical shifts of carbon atoms in a molecule. These values are used to determine the structure of the molecule.
- IR Spectrum of Acetone and Ethanol:** IR spectra for acetone and ethanol are shown, with their chemical structures below.

Analytical Chemistry

paberplakat SAL011
lamineeritud SAL011L

SI Quantities and Units

Base Units:

The International System (SI) system defines measurements for use in scientific work. All SI system units are derived from seven basic units, known as base units.

Quantity (Symbol)	Name of Unit	SI Unit	Other Symbols
Amount of substance (n)	mol	mol	mol
Length (l)	metre	m	m
Intensity (I ₀)	candela	cd	cd
Mass (m)	kilogram	kg	kg
Thermodynamic temperature (T)	Kelvin	K	K
Time (t)	second	s	s

Derived Units:

Base units can be combined using mathematical rules for other quantities. These are called derived units. The base units used in the equation determine what the derived units will be, but factors are given as separate terms. For example, charge (Q) is found using the equation: Charge = Current × Time, and it is in the coulomb (C).

Quantity (Symbol)	Name of Unit	SI Unit	Other Symbols	Base Unit Equivalent
Acceleration (a)	metre per second squared	m s^{-2}	m s^{-2}	m s^{-2}
Charge (Q)	coulomb	C	C	A s
Energy (E)	joule	J	J	$\text{kg m}^2 \text{s}^{-2}$
Force (F)	newton	N	N	kg m s^{-2}
Frequency (f)	hertz	Hz	Hz	s^{-1}
Power (P)	watt	W	W	J s^{-1}
Pressure (p)	pascal	Pa	Pa	N m^{-2}

Powers, Units and Physics:

In physics, many of the quantities used are very large or very small.

- When writing a number, use powers and indices to show how many times the original value has been multiplied.
- A positive index will multiply the previous, and a negative index will divide by the previous.
- Some indices have commonly used prefixes that provide a quick way of writing small or large values.

For example: one million: $1,000,000 = 1 \times 10^6$ and one megawatt: $1,000,000 \text{ W} = 1 \times 10^6 \text{ W}$

SI Quantities and Units

paberplakat SAL013
lamineeritud SAL013L

Enthalpy

Enthalpy (ΔH) is the energy released, heat or absorbed in a chemical reaction. It is measured by the amount of energy released, heat or absorbed during a chemical reaction.

Enthalpy Change: The enthalpy change (ΔH) of a reaction can be calculated by finding the difference between the enthalpy of the products and the enthalpy of the reactants. According to the conservation of energy law, the enthalpy of heat produced during the reaction is equal to the amount of energy released into the atmosphere.

Enthalpy and its Diagrams: Enthalpy changes are used to show enthalpy changes.

Exothermic Reactions: In exothermic reactions, the enthalpy of the products is less than that of the reactants. Thus, heat is given out to the surroundings.

Endothermic Reactions: In endothermic reactions, the enthalpy of the products is greater than that of the reactants. Heat is taken in from the surroundings.

Standard Enthalpy Change: Enthalpy values vary with conditions, so we use standard enthalpy changes (ΔH°_f) measured under standard conditions.

- Pressure: 100 kPa (1 atm)
- Concentration: 1 mol/l (1 M)
- Temperature: 298 K (25°C)
- State: A substance must be in its standard physical state.

These conditions are applied to measure enthalpy change for different types of reactions, including standard enthalpy change of formation (ΔH°_f), standard enthalpy change of reaction (ΔH°_r) and standard enthalpy change of combustion (ΔH°_c).

Hess's Law:

The total enthalpy change of a reaction does not depend on the route it takes to the reaction outcome. Hess's Law makes it possible to find enthalpy changes that cannot be measured directly, using enthalpy-change values and enthalpy cycles.

For example, to find enthalpy change of the reaction, we can add and subtract the enthalpy change of formation.

Enthalpy = $E_1 - E_2$ Route 1: $A + C \rightarrow B$ $E_1 = 400 \text{ kJ}$
Enthalpy = $E_3 - E_4$ Route 2: $B \rightarrow D$ $E_3 = 200 \text{ kJ}$

Enthalpy

paberplakat SAL012
lamineeritud SAL012L

Waves

Wave Terminology:

- Wavelength (λ): The distance between two consecutive peaks in a wave.
- Amplitude (A): The height of a wave from the baseline.
- Frequency (f): The number of oscillations per second.
- Period (T): The time period of one full cycle of oscillation.
- Velocity (v): Frequency \times wavelength.

Frequency (f): Frequency is the number of oscillations per second of a wave. It is calculated using the formula: Frequency = $1/\text{Time}$. For example, if a wave completes 10 oscillations in 10 seconds, its frequency is 1 Hz.

Speed (v): Speed is the distance travelled by a wave in a given time. It is calculated using the formula: Speed = $\text{Distance}/\text{Time}$. For example, if a wave travels 10 m in 10 seconds, its speed is 1 m/s.

Waves on a String:

- Reflection:** When a wave hits a boundary, it reflects off the boundary and returns to the source.
- Refraction:** When a wave passes through a boundary, it bends away from the normal.
- Diffraction:** When a wave passes through a narrow gap, it spreads out.
- Interference:** When two waves meet, they interfere constructively or destructively.

Waves

paberplakat SAL014
lamineeritud SAL014L

The Electromagnetic Spectrum

The Electromagnetic Spectrum consists of different types of radiation that travel at the speed of light, $2.998 \times 10^8 \text{ m s}^{-1}$.

Type	Wavelength (nm)	Frequency (Hz)	Wavelength (nm)	Frequency (Hz)
Visible Light	380 – 750	$4.3 \times 10^{14} – 7.5 \times 10^{14}$	750 – 400	$7.5 \times 10^{14} – 4.3 \times 10^{14}$
Ultraviolet (UV)	< 380	$> 7.5 \times 10^{14}$	> 400	$< 4.3 \times 10^{14}$
Gamma Rays	< 10	$> 3 \times 10^{19}$	> 10	$< 3 \times 10^{19}$

Properties of Electromagnetic Radiation:

- Electromagnetic radiation passes through most materials without being absorbed or reflected.
- Electromagnetic radiation can pass through a material.
- Increasing the light frequency increases the kinetic energy of photons.
- The control of photons is used in lasers.
- The energy of a photon is proportional to the frequency of light. This gives us the equation: $E = hf$ (A photon's energy is proportional to its frequency).
- Energy emitted by the electron: $E = hf$ (Planck's constant is $6.626 \times 10^{-34} \text{ J s}$).

Electron Momentum Equation:

Electron Energy: It takes a minimum amount of energy for an electron to leave a metal's surface, called the work function (ϕ).

Any energy remaining after an electron has left the metal's surface will be equal to the kinetic energy (kE) of the electrons. Thus, the energy transferred to a photon is: $E = h\nu + \phi$.

Wave Particle Duality:

Light can also behave like a wave. Experiments involving phenomena such as interference, diffraction and polarization provide evidence for wave nature. This is known as wave-particle duality.

The Electromagnetic Spectrum

paberplakat SAL015
lamineeritud SAL015L

The Gas Laws

The volume occupied by a gas is dependent on three key factors:

- Temperature – As temperature increases, molecules gain kinetic energy and occupy more space.
- Pressure – As pressure increases, molecules become more compressed and take up less space.
- Amount of gas – The more gas there is, the more space it will need.

Boyle's Law:

All constant temperature, the volume and pressure of a fixed mass of gas are inversely proportional ($V \propto 1/P$).

$$PV = k \quad \text{where } k \text{ is a constant.}$$

Charles' Law:

All constant pressure, the volume of a fixed mass of gas is directly proportional to its temperature ($V \propto T$).

$$V/T = k \quad \text{where } k \text{ is a constant.}$$

Gay-Lussac's Law (Pressure Law):

At constant volume, the pressure of a fixed mass of gas is directly proportional to its temperature ($P \propto T$).

$$P/T = k \quad \text{where } k \text{ is a constant.}$$

Avgavadro's Law:

At constant temperature and pressure, the volume of a gas is directly proportional to the number of moles ($V \propto n$).

$$V/n = k \quad \text{where } k \text{ is a constant.}$$

Ideal Gas Equation:

When combined, the gas laws form: $\frac{PV}{nT} = k$, where k is the molar gas constant ($8.3145 \text{ J mol}^{-1} \text{ K}^{-1}$). For calculations involving different amounts of gases, use the ideal gas equation: $PV = nRT$.

This also gives us the equation of state, used to find the number of molecules of a gas: $n = PV/RT$, where n is molecules and R is Boltzmann's constant ($1.3807 \times 10^{-23} \text{ J K}^{-1}$).

The Gas Laws

paberplakat SAL017
lamineeritud SAL017L

The Photoelectric Effect

At higher prices, light heat stimulated electrons. So the photoelectric effect phenomena that light has particle properties.

The Gold Leaf Experiment

High Frequency light can release surface electrons from metal by electromagnetic radiation. The gold leaf experiment demonstrates this using a gold leaf electroscope and ultraviolet (UV) light.

- At the start of the experiment, both the leaves of the electroscope and the gold leaf are negatively charged. As a result, the gold leaf is repelled from the stem.
- When UV light hits the gold leaf, electrons are emitted from the metal. These escaped electrons are known as photoelectrons.

Photoelectric Effect Equations

- Light contains discrete packets of energy called photons. The energy of a photon is proportional to its frequency ($E = hf$). If these have enough energy, they can be emitted from metal. These escaped electrons are known as photoelectrons.
- The energy carried by a photon is equal to the energy transferred as an electron.
- Only photons above the threshold frequency (ν_0) will cause electrons to leave the metal's surface.
- Increasing the light frequency increases the kinetic energy of photoelectrons but not their number.
- The control of photons is used in lasers.
- The energy of a photon is proportional to the frequency of light. This gives us the equation: $E = hf$ (A photon's energy is proportional to its frequency).
- Energy emitted by the electron: $E = hf$ (Planck's constant is $6.626 \times 10^{-34} \text{ J s}$).

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Wave Particle Duality:

Light can also behave like a wave. Experiments involving phenomena such as interference, diffraction and polarization provide evidence for wave nature. This is known as wave-particle duality.

The Photoelectric Effect

paberplakat SAL016
lamineeritud SAL016L

Capacitors

Capacitors facilitate the storage of charge in electrical circuits.

Capacitor Structure and Capacitance:

- A capacitor contains two insulated plates that are insulated by an insulator between them.
- When voltage is applied to the capacitor, electrons move from the plate connected to the negative terminal of the cell, resulting in negative charges.
- This build up of charge repels electrons off the plate connected to the positive terminal of the cell, making it positively charged.
- If the voltage across the capacitor is increased, the amount of charge stored on each plate will increase.
- The greater the applied voltage (V), the greater the amount of charge (Q) is stored.

Capacitance: Capacitance is the amount of charge stored in a capacitor per voltage applied.

Graph of Charge vs Voltage:

The graph shows how the charge stored in a capacitor varies with the voltage difference (V) across its plates. The energy stored by the capacitor is equal to the energy used in charging the capacitor.

The area beneath the graph gives this value: $Q = CV$, where C is the capacitance.

Combining this with the equation $C = Q/V$ gives: $Q = CV = CT$, where T is the time taken to charge the capacitor.

The graph below shows the relationship between current and charge when capacitors are charging and discharging.

Charging:

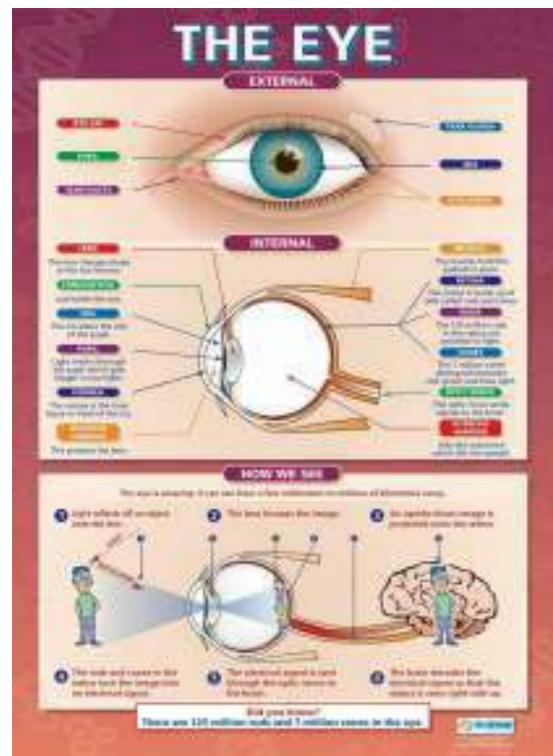
Initially, the current is high because the plates are initially uncharged. As the charge builds up on the plates, making them attractive for electrons to move to the other plate. And as voltage decreases, current decreases.

Discharging:

Initially, current is high because the voltage is high. As the voltage decreases, current decreases.

Capacitors

paberplakat SAL018
lamineeritud SAL018L



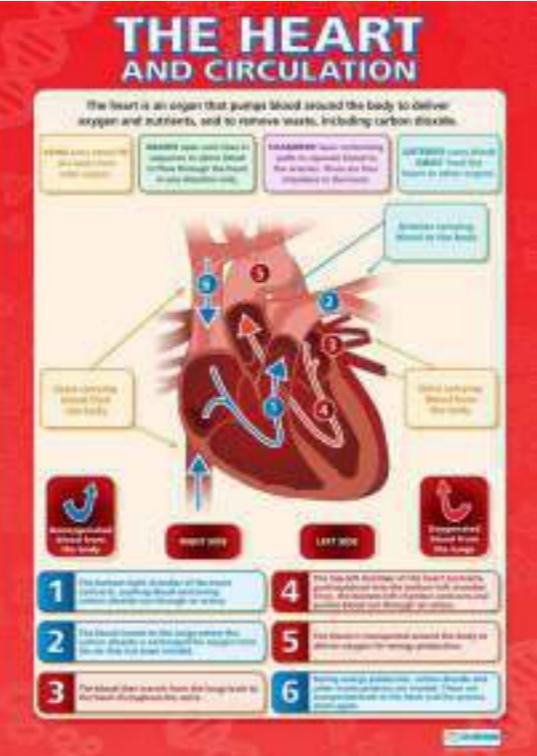
The Eye

paberplakat SC001
lamineeritud SC001L



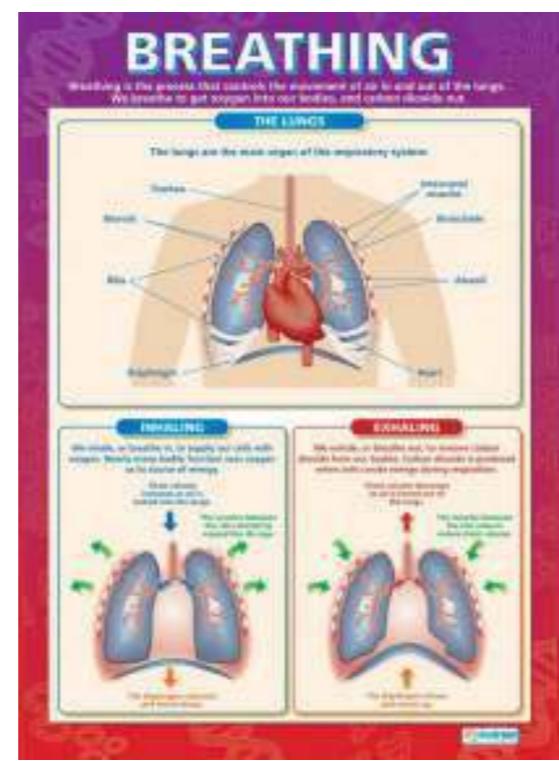
Body Organs

paberplakat SC003
lamineeritud SC003L



The Heart And Circulation

paberplakat SC005
lamineeritud SC005L

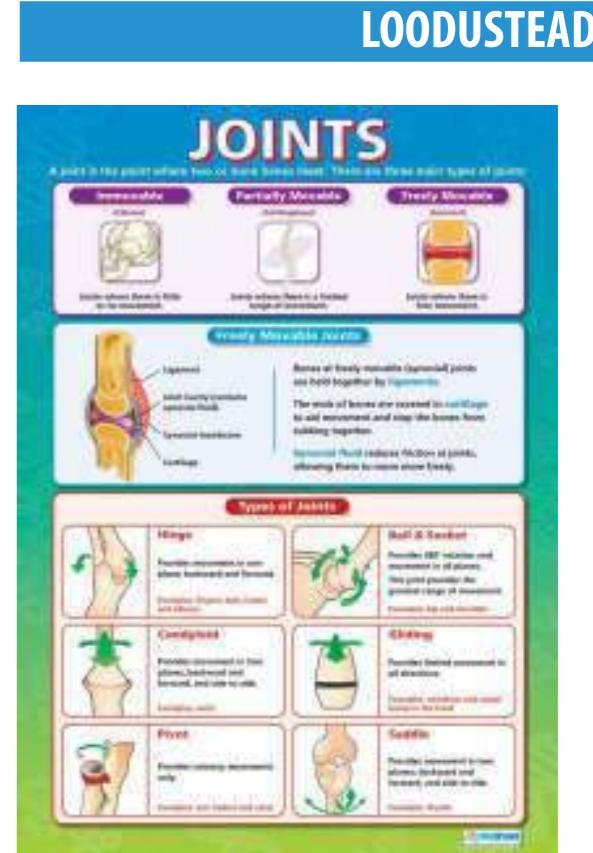


Breathing

paberplakat SC004
lamineeritud SC004L

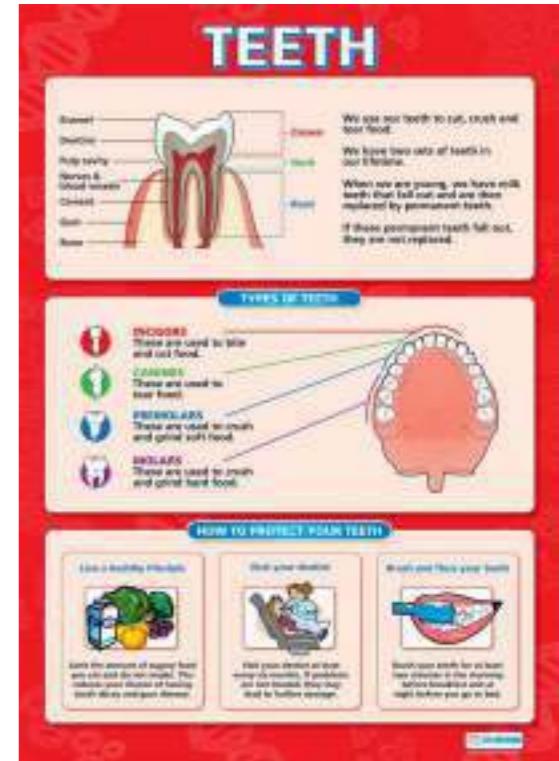
Muscles

paberplakat SC007
lamineeritud SC007L



Joints

paberplakat SC006
lamineeritud SC006L



Teeth

paberplakat SC008
lamineeritud SC008L



Digestion

paberplakat SC009
lamineeritud SC009L



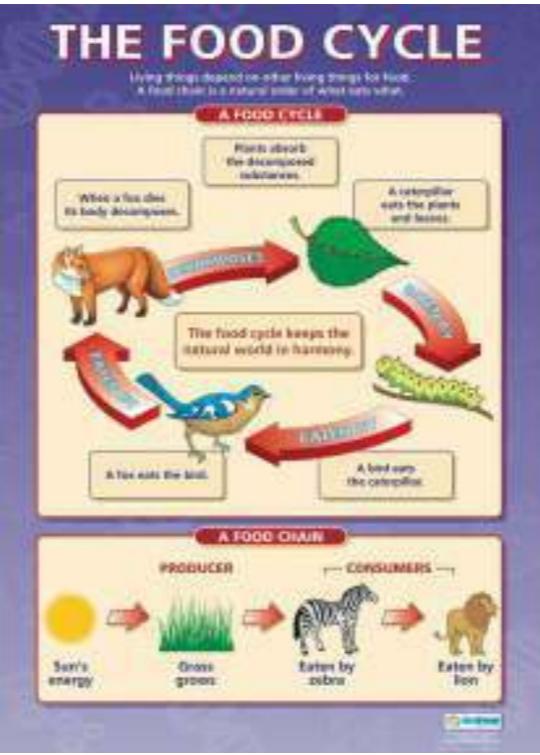
Food Pyramid

paberplakat SC011
lamineeritud SC011L



The Human Skeleton

paberplakat SC010
lamineeritud SC010L

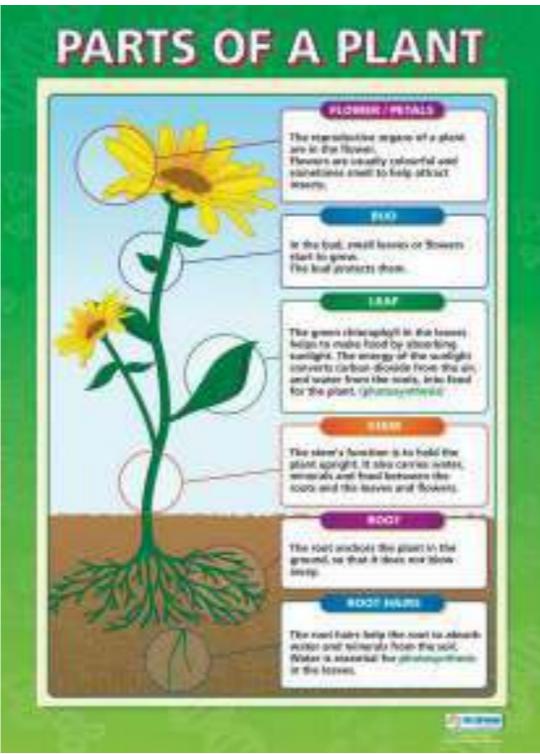


The Food Cycle

paberplakat SC013
lamineeritud SC013L

Plants

paberplakat SC014
lamineeritud SC015L



Parts of a Plant

paberplakat SC015



Life Cycle of a Plant

paberplakat SC016
lamineeritud SC016L



Germination

paberplakat SC021



Apparatus

paberplakat SC023
lamineeritud SC023L



Solids

paberplakat SC025
lamineeritud SC025L



Liquids

paberplakat SC026
lamineeritud SC026L



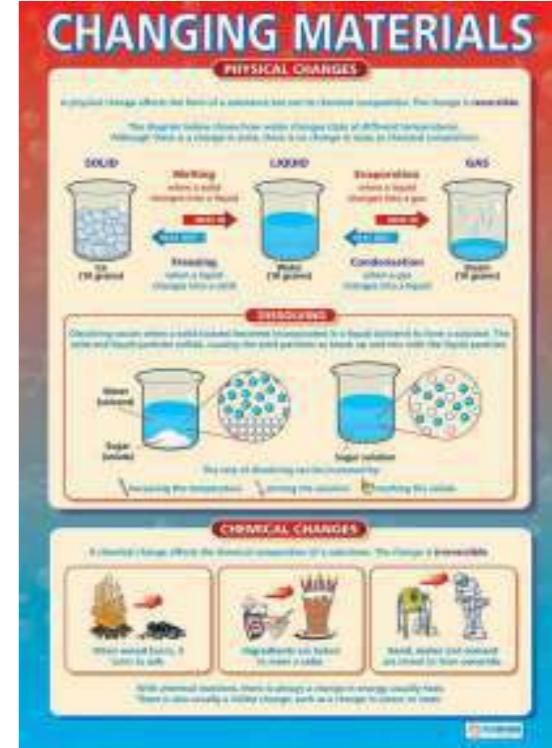
Solids, Liquids & Gases

paberplakat SC024
lamineeritud SC024L



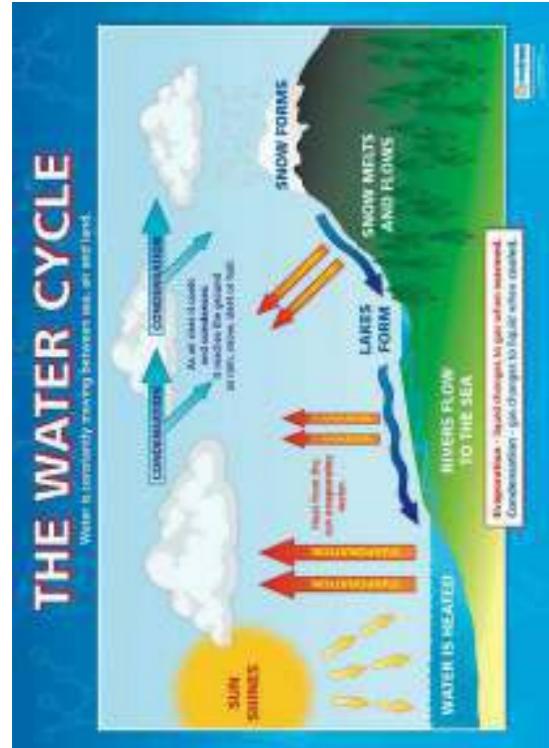
Gases

paberplakat SC027
lamineeritud SC027L



Changing Materials

paberplakat SC028
lamineeritud SC028L



The Water Cycle

paberplakat SC029
lamineeritud SC029L



Periodic Table

paberplakat SC031
lamineeritud SC031L



Separating Mixtures

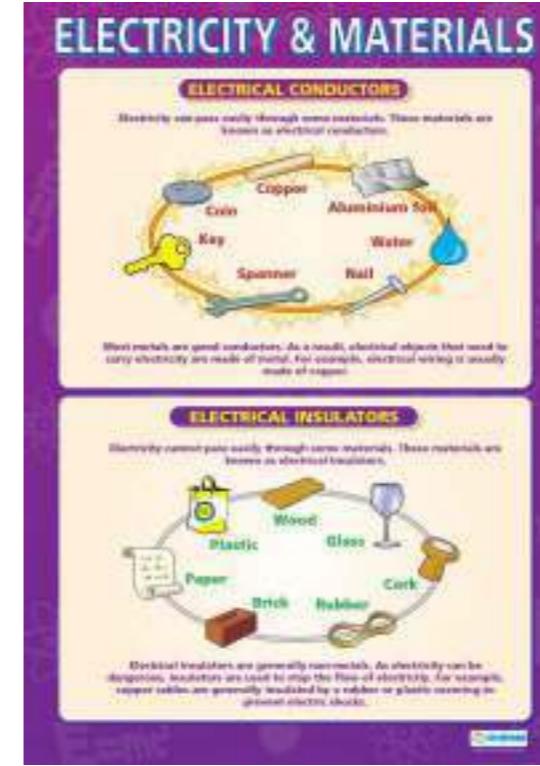
paberplakat SC030
lamineeritud SC030L

Physical Units

QUANTITY	NAME	SYMBOL
ENERGY	Joules	J
MOMENT	Newton-metres	Nm
SPEED	metres per sec	m/s
TIME	seconds	s
WEIGHT	Newton's	N
AREA	square metres	m ²
DISTANCE	metres	m
MASS	kilograms	kg
VOLUME	cubic metres	m ³
DENSITY	kg per m ³	kg/m ³
FORCE	Newtons	N
PRESSURE	Pascals	Pa (N/m ²)
CURRENT	Amperes	A
POTENTIAL DIFFERENCE	Volts	V
RESISTANCE	Ohms	Ω
TEMPERATURE	degrees Celsius	°C

Physical Units

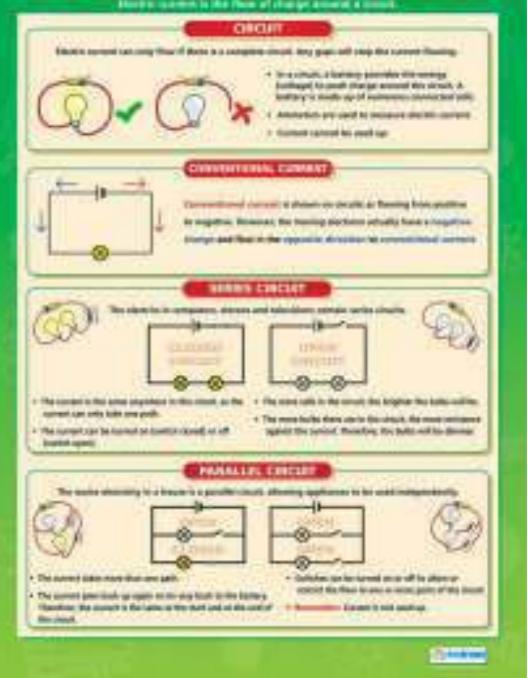
paberplakat SC033
lamineeritud SC033L



Electricity and Materials

paberplakat SC035
lamineeritud SC035L

ELECTRICAL CIRCUITS



Electrical Circuits

paberplakat SC034
lamineeritud SC034L



Circuit Symbols

paberplakat SC036
lamineeritud SC036L



FRICTION

Friction occurs when two surfaces meet and rub against each other. Friction slows a moving object, but can help control its movement.

ROUGH SURFACES

Rough surfaces slow moving objects but can be useful:

- The student balances the rough pencil and the tape holds the moving car down.
- The friction between the hands and the floor helps prevent falls.
- Building two pieces of wood together with a pencil creates strong hold to create houses.

HEAT

Friction produces heat:

- Building your hands together makes heat.
- Building two pieces of wood together with a pencil creates strong hold to create houses.

AIR RESISTANCE

Air resistance is a force that acts to slow down things moving:

- The wind pushes the glider downwards.
- The air pushes the toy car backwards on resistance.
- A small area moves less air resistance than a large area.
- The cyclist moves less air resistance by taking off resistance.
- A large area moves more air resistance than a smaller area.
- Flaps are designed to increase lift and decrease drag force.

LIGHT REFLECTION, REFRACTION AND DISPERSION

REFLECTION

When light hits a surface, it is reflected. Light reflects when light is scattered by the light in a specific direction, giving it direct reflection.

REFRACTION

When light bends from one medium to another, it changes direction. This is called refraction. This happens because light travels at different speeds in different materials.

DISPERSION

White light is caused made up of a mixture of colours. Light splits a beam of white light into a spectrum of colours known as dispersion. This is caused by refraction.

SHADOWS

When light hits an object, the light will reflect back through it. As unshaded by the object, it creates a shadow.

TRANSPARENT

Glass

TRANSLUCENT

Frosted glass

OPAQUE

Wall

Light passes all the light through

Light some of light through

Light no light through

REMEMBER

Light travels in straight lines.

Forces

paberplakat SC037
lamineeritud SC037L

Friction

paberplakat SC038
lamineeritud SC038L

Light Reflection

paberplakat SC041
lamineeritud SC041L

Shadows

paberplakat SC042
lamineeritud SC042L

LIGHT

SUNLIGHT

Sunlight helps us in many ways:

- It provides energy.
- It helps things grow.
- It helps us see things.
- However, sunlight can be dangerous and damaging to your eyes. You can protect them by wearing sunglasses.

LIGHT SOURCES

Things that give out light are light sources (luminous objects):

- Our Sun and other stars
- Candle flames
- Electric light bulbs

PROPERTIES OF LIGHT

- We see most objects because they reflect light. Light reflects off objects.
- Light travels in straight lines.
- The speed of light is **299,999,999 METRES PER SECOND**.
- Light reflects off shiny surfaces.

AMPLITUDE AND PITCH

Sound is a form of energy. It consists of vibrations and travels as a longitudinal wave through solid, liquid and gas.

AMPLITUDE

The loudness of a sound is indicated by the height/amplitude of the wave. Patterns of sound waves can be compared on an oscilloscope.

LOW Amplitude

Low energy waves = low amplitude = quiet sound.

HIGH Amplitude

High energy waves = high amplitude = loud sound.

The further away you get from the source of the sound, the quieter the sound gets. This is because the waves spread out and become dispersed.

PITCH

Pitch defines how high or low a note sounds.

- Fast strings that vibrate higher = high pitch (higher)
- Fast strings that vibrate lower = low pitch (lower)

Frequency is the number of waves produced by a source each second. It is measured in Hertz (Hz).

HOW WE HEAR

1 Sound vibrates from

2 Air vibrates.

3 Ear drum vibrates.

4 Tiny bones (auditory ossicles) move.

5 Tiny hairs in the cochlea vibrate.

6 Auditory nerve carries signals to the brain.

LOUDNESS

Sound level is measured in decibels (dB).

QUIET (0-40 dB) - better for your ears!

LOUD (100-120 dB) - bad for your ears!

Measuring Speed

paberplakat SC039

Light

paberplakat SC040
lamineeritud SC040L

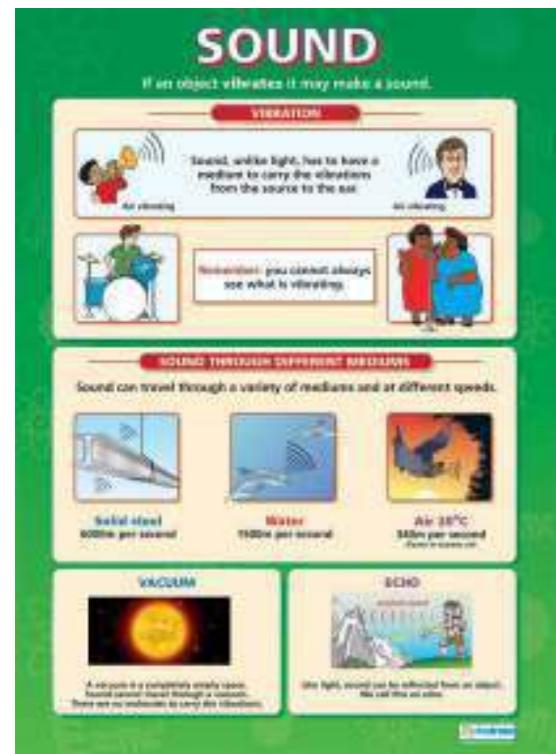
Amplitude and Pitch

paberplakat SC043
lamineeritud SC043L

How We Hear Sound

paberplakat SC044
lamineeritud SC044L





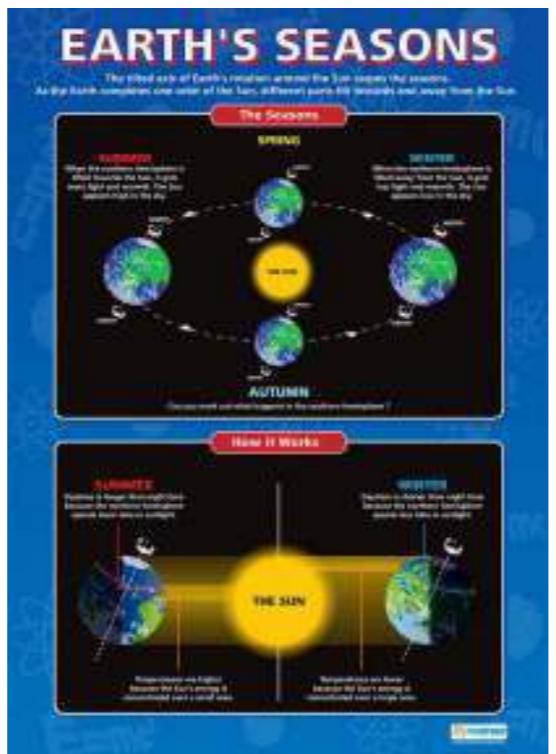
Sound

paberplakat SC045
lamineeritud SC045



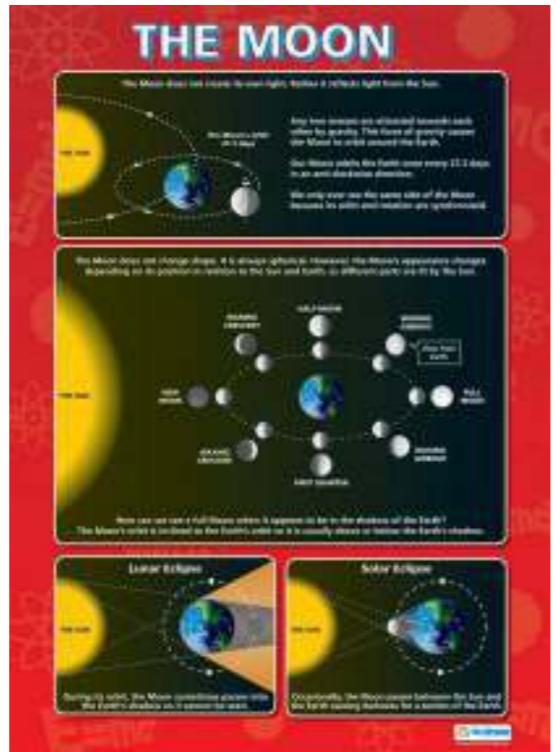
The Earth

paberplakat SC047
lamineeritud SC047L



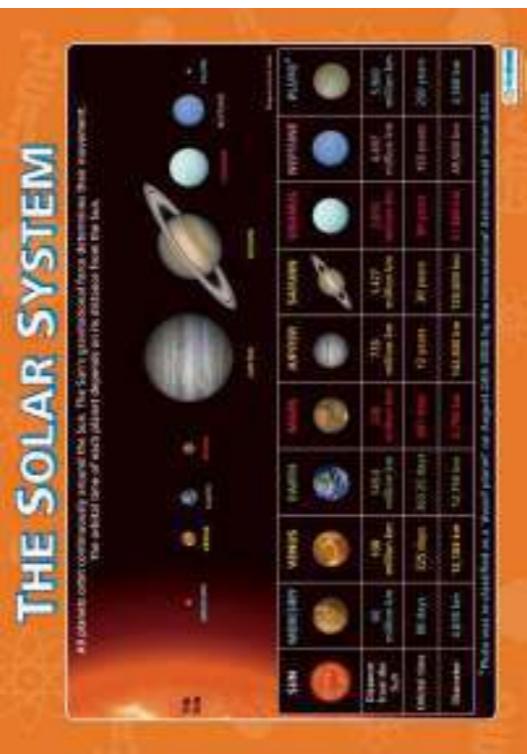
Earth's Seasons

paberplakat SC046
lamineeritud SC046L



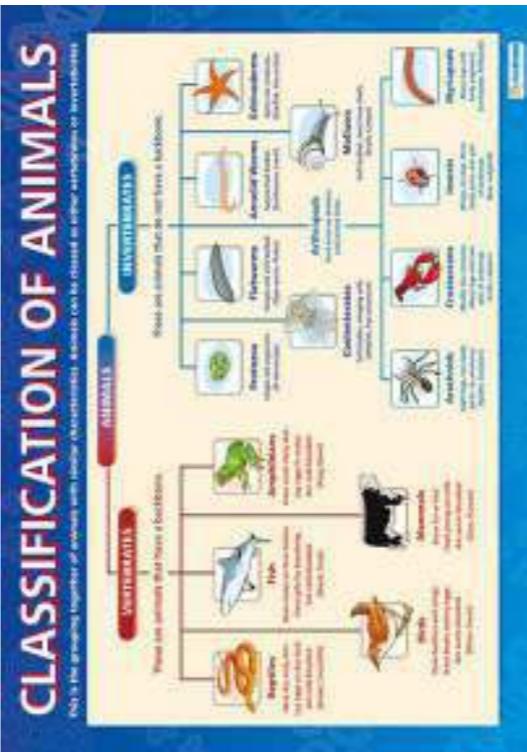
The Moon

paberplakat SC048
lamineeritud SC048L



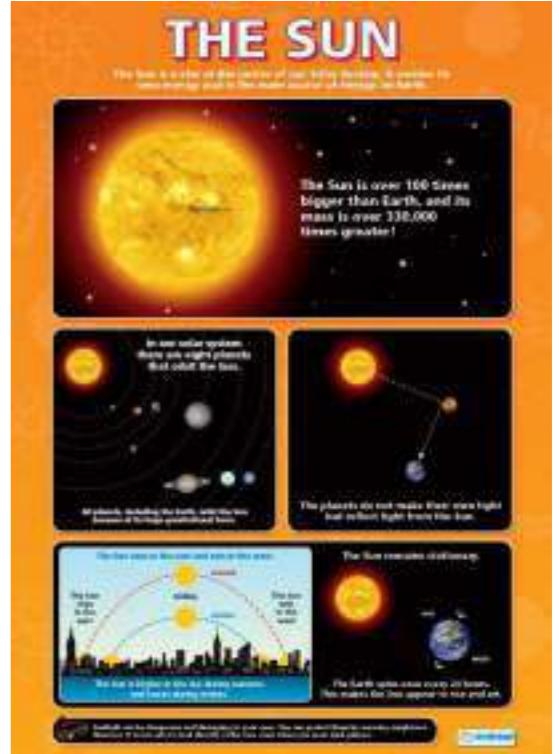
The Solar System

paberplakat SC049
lamineeritud SC049L



Classification

paberplakat SC051
lamineeritud SC051L



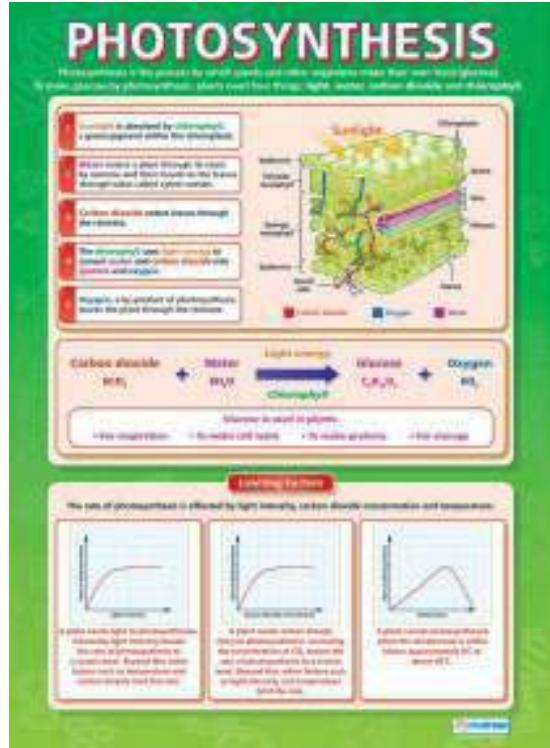
The Sun

paberplakat SC050
lamineeritud SC050L



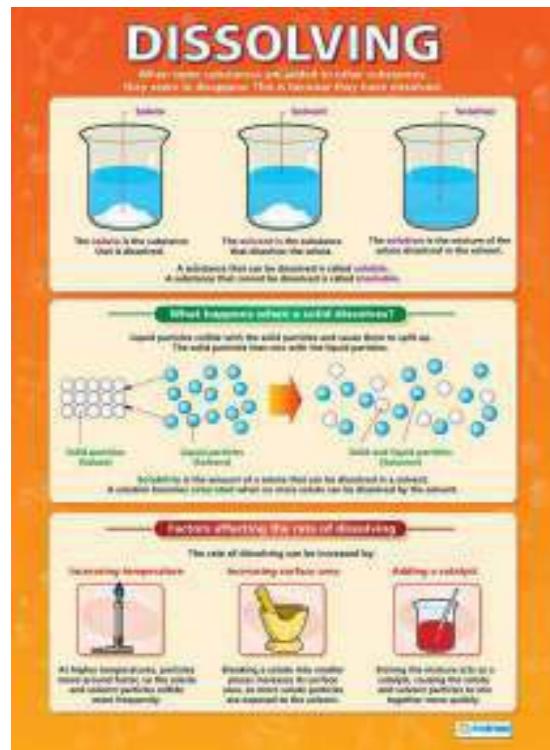
Habitats

paberplakat SC052
lamineeritud SC052L



Photosynthesis

paberplakat SC053
lamineeritud SC053L



Dissolving

paberplakat SC055
lamineeritud SC055L



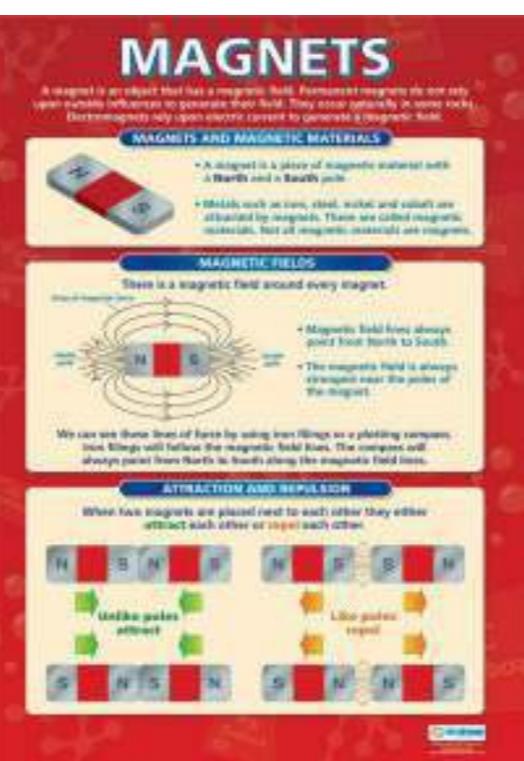
Microbes

paberplakat SC054
lamineeritud SC054L



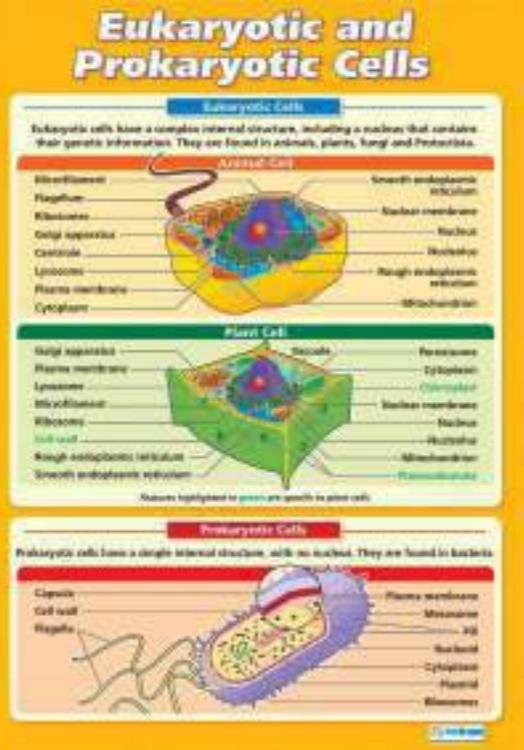
Metals and Non-Metals

paberplakat SC056
lamineeritud SC056L



Magnets

paberplakat SC057
lamineeritud SC057L



Eukaryotic and Prokaryotic Cells

paberplakat SAL001
lamineeritud SAL001L



Energy Resources

paberplakat SC058
lamineeritud SC058L



The Lungs and Gas Exchange

paberplakat SAL002
lamineeritud SAL002L

SURDS

In irrational numbers which involve roots are called surds e.g. $\sqrt{2}, \sqrt{3}$.

NATIONAL AND IRRATIONAL NUMBERS

Rational numbers are numbers that can be written as a fraction $\frac{a}{b}$ where a and b are integers with no common factor ($b \neq 0$) e.g. $3, \frac{1}{2}$. Consequently, irrational numbers are numbers that cannot be written as a fraction $\frac{a}{b}$ where a and b are integers with no common factor ($b \neq 0$) e.g. $\pi, \sqrt{2}, \sqrt{3}$.

IRRATIONAL

$\sqrt{a^2} = a$
 $\sqrt{ab} = \sqrt{a} \cdot \sqrt{b}$, and in general, $\sqrt{a+b} \neq \sqrt{a} + \sqrt{b}$
 $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$
Consequently
 $\sqrt{3} = 3$
 $\sqrt{15} = \sqrt{3} \times \sqrt{5}$
 $= 3 \times \sqrt{5}$
 $= 5\sqrt{3}$ (This answer is not the same as $\sqrt{15}$)

RATIONALISING

An important process used in mathematics is called rationalising the denominator i.e. making the denominator (bottom) of a fraction rational.

It is useful to remember that $(a+b)(a-b) = a^2 - b^2$

Rationalise the denominator of each of the following:

EXAMPLE: $\frac{4\sqrt{3}}{3-\sqrt{3}} = \frac{4\sqrt{3}}{3-\sqrt{3}} \cdot \frac{3+\sqrt{3}}{3+\sqrt{3}} = \frac{4\sqrt{3}(3+\sqrt{3})}{(3-\sqrt{3})(3+\sqrt{3})}$
 $= \frac{4\sqrt{3} \cdot 3 + 4\sqrt{3} \cdot \sqrt{3}}{(3-\sqrt{3})(3+\sqrt{3})}$
 $= \frac{4\sqrt{3} \cdot 3 + 4 \cdot 3}{(3-\sqrt{3})(3+\sqrt{3})}$
 $= \frac{12\sqrt{3} + 12}{(3-\sqrt{3})(3+\sqrt{3})}$
 $= \frac{12(\sqrt{3} + 1)}{(3-\sqrt{3})(3+\sqrt{3})}$
 $= \frac{12(\sqrt{3} + 1)}{9 - 3}$
 $= 3\sqrt{3}$

SERIES

A sequence is a set of terms that have something in common. A series is the sum of a sequence.

ARITHMETIC SERIES

When the terms of a series are generated by adding a fixed quantity to the previous term, the series is called an arithmetic series.

The sum of the sequence $3 + 5 + 7 + 9 + \dots$

is an example of an arithmetic series where successive terms increase by 2.

GEOMETRIC SERIES

When the terms of a series are generated by multiplying the previous term by a fixed quantity, the series is called a geometric series.

The sum of the sequence $3 + 6 + 12 + 24 + \dots$

is an example of a geometric series where successive terms are multiplied by 2.

CUMMUN DIFFERENCE

The fixed quantity used in an arithmetic series is called the common difference.

Notation:

1st term = a
Common difference = 2nd term - 1st term
 $= 2^{\text{nd}} \text{ term} - 2^{\text{nd}} \text{ term}$
 $= \dots$
 $= d$

To general the series becomes:

$a + (d+1) + (a+2) + \dots$
Consequently,
the n^{th} term is $a + (n-1)d$ and the sum of n terms is:

where $s_n = \frac{n}{2} [2a + (n-1)d]$
when $s_n = \frac{n}{2} [2a + (n-1)d] = \frac{n}{2} [2a + (n-1)d]$
or $s_n = \frac{n}{2} [a + (n-1)d]$
In addition,
if $n=1$ and $d=0$ then $s_1 = \frac{n}{2} [a + (n-1)d]$
where $d = \text{bad term}$.

CUMMUN RATIO

The fixed quantity used in a geometric series is called the common ratio.

Notation:

1st term = a
Common ratio = $\frac{2^{\text{nd}} \text{ term}}{1^{\text{st}} \text{ term}}$
 $= \frac{3^{\text{rd}} \text{ term}}{2^{\text{nd}} \text{ term}}$
 $= \dots$
 $= r$

To general the series becomes:

$a + ar + ar^2 + \dots$
Consequently,
the n^{th} term is $a \cdot r^{n-1}$ and the sum to n terms is:

where $s_n = ar^{n-1}$
when $s_n = ar^{n-1}$
In addition,
if $n=1$ and $r=1$ then $s_1 = a$

SPECIAL TRIANGLES

There are two special right-angled triangles that have exact properties. They are the 30°-60°-90° right-angled triangle and the right-angled isosceles triangle.

EQUILATERAL TRIANGLE

Consider an equilateral triangle ABC with each side 2 units in length. If we join a vertex, A, to the midpoint of the side opposite, C, then 30°-60°-90° right-angled triangles are formed.

A simple use of Pythagoras' Theorem to triangle ABC establishes the height of the triangle.

Note:
 $AC = \sqrt{2^2 - 1^2}$
 $= \sqrt{3}$

Consequently:
 $\sin 60^\circ = \frac{\sqrt{3}}{2}$
 $\cos 30^\circ = \frac{1}{2}$
 $\tan 60^\circ = \sqrt{3}$
 $\cot 30^\circ = \frac{1}{\sqrt{3}}$

RIGHT-ANGLED ISOSCELES TRIANGLE

Consider an isosceles right-angled triangle with equal sides 1 unit in length. The triangle contains two angles of 45° and two equal sides.

Another application of Pythagoras' Theorem establishes the length of the hypotenuse.

Note:
 $AC = \sqrt{1^2 + 1^2}$
 $= \sqrt{2}$

Consequently:
 $\sin 45^\circ = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$
 $\cos 45^\circ = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$
 $\tan 45^\circ = 1$

CIRCULAR MEASURE

Angles are not always measured in degrees. There are times when other units are used.

RADIANS

In mathematics, it is sometimes easier to use the radian as a measure of angle in preference to the degrees.

One radian is defined as the angle subtended at the centre of a circle by an arc equal in length to the radius.

1 radian = $180^\circ \cdot \frac{\pi}{\pi}$

RELATIONSHIPS

What is the relationship between the degrees and the radians?

$180^\circ = \pi \text{ rad} = \pi^2$

The relationship between the degrees and the radians can also be expressed as follows:

$90^\circ = \frac{\pi}{2}$	$180^\circ = \frac{\pi}{1}$	$45^\circ = \frac{\pi}{4}$	$120^\circ = \frac{\pi}{3}$
$45^\circ = \frac{\pi}{4}$	$1^\circ = \frac{\pi}{180}$	$1^\circ = \frac{\pi \cdot 180}{360}$	$\pi^2 = \frac{360^\circ}{180}$

Length of minor arc AB = $r\theta$ Where θ is in radians.

Area of minor sector AOB = $\frac{1}{2}\theta r^2$ Where θ is in radians.

Surds

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lamineeritud	MAL001L

Series

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lamineeritud	MAL002L

STANDARD GRAPHS

The ability to sketch standard graphs is a vital element of mathematics. The following are examples of standard graphs.

A STRAIGHT LINE

A QUADRATIC CURVE

A CUBIC CURVE

AN EXPONENTIAL CURVE

A LOGARITHMIC CURVE

A RECIPROCAL CURVE

TRANSFORMATION OF GRAPHS

It is important to understand the relationship between changes to the algebraic form of a curve and the effect on the graph of the curve.

If $y = ax$ is an equation involving x , then we can write $y = f(x)$.

In the following examples it is important to remember that a is a constant.

If $y = f(x)$ then the graph of $y = af(x)$ is translated a units parallel to the y -axis.

If $y = f(x)$ then the graph of $y = f(x) + b$ is translated b units parallel to the y -axis.

In this case $f(x)$ is translated $+b$ units parallel to the y -axis.

If $y = f(x)$ then the graph of $y = f(x) - b$ is translated $-b$ units parallel to the y -axis.

In this case $f(x)$ is translated $-b$ units parallel to the y -axis.

If $y = f(x)$ then the graph of $y = kf(x)$ is stretched by a scale factor k parallel to the y -axis.

If $y = f(x)$ then the graph of $y = f(cx)$ is stretched by a scale factor of c parallel to the x -axis.

In this case $f(x)$ is stretched by a scale factor c parallel to the x -axis.

If $y = f(x)$ then the graph of $y = f(x) + b$ is reflected in the x -axis.

If $y = f(x)$ then the graph of $y = f(x) - b$ is reflected in the x -axis.

In this case $f(x)$ is reflected in the x -axis.

A general understanding of curves is often needed but sometimes greater detail is required.

Standard Graphs

paberplakat	MAL003
lamineeritud	MAL003L

Transformation of Graphs

paberplakat	MAL004
lamineeritud	MAL004L

Special Triangles

paberplakat	MAL005
lamineeritud	MAL005L

CORRELATION

Statisticians frequently need to represent pairs of observations (measured using a scatter diagram). When plotted, these observations may suggest a trend and the term correlation is a way of expressing this relationship or association between the observations.

The measure of this relationship is called the product moment correlation coefficient, r . This is a measure of linear relatedness.

$$r = \frac{\sum xy - \bar{x}\bar{y}}{\sqrt{[\sum x^2 - (\bar{x})^2][\sum y^2 - (\bar{y})^2]}}$$

This formula may be provided in examination booklets for use during exams. Scientific calculators may also have the calculation of r as a function.

CORRELATION EXAMPLES

With calculating the value of r it is possible to plot the observations on a scatter diagram. Calculating r is not enough to estimating non-linear relationships.

REMEMBER

A correlation coefficient only measures agreement between observations and not the class of the agreement. Further investigation would be needed to establish the cause.

LINEAR REGRESSION

It is important you may be asked that there is an underlying relationship between two variables. Consequently, you may need to establish the equation of this linear relationship.

For example: $y = mx + c$ where m and c are population values. We use a line of best fit to express this.

- x is called the independent variable (called the explanatory variable).
- y is called the dependent variable (called the response variable).
- It is assumed that the values of the independent variable are accurate but the values of the dependent variable are subject to error.

To obtain the equation of the least squares regression line of y on x , we use:

$$\frac{\sum xy - \bar{x}\bar{y}}{\sum x^2 - (\bar{x})^2} = m$$

If x is plotted at different speeds and the corresponding times of fuel consumption are measured:

Check for linearity by plotting residuals on a scatter diagram.

Calculate the mean of x :

$$\bar{x} = \frac{20 + 30 + 40 + 50 + 60}{5} = 42$$

Calculate the mean of y :

$$\bar{y} = \frac{10 + 15 + 20 + 25 + 30}{5} = 20$$

Least squares regression line of y on x :

$$y = 77.36 - 0.117x$$

Note: The line passes through $(20, 15)$.

Linear Regression

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lamineeritud	MAL008L

BINOMIAL DISTRIBUTION

A binomial distribution is a discrete distribution which occurs when a variable has:

- Only two possible outcomes e.g. success/failure, on/off, heads/tails.
- A fixed number of independent trials (n).
- A constant probability of success for each trial (p).

If X denotes the number of successes in n independent trials with the probability of success being p , then:

$$X \sim B(n, p)$$

$$P(X = k) = {}^n C_k p^k (1-p)^{n-k} \text{ for } k = 0, 1, 2, 3, \dots, n$$

$$\text{Mean: } E(X) = np \text{ and } \text{Var}(X) = np(1-p)$$

EXAMPLE

It is known that a driving pin has a probability of 0.8 of landing point up. If the driving pin is tossed 8 times, then the number of times that the pin lands point up, then the number of times that this occurs is a variable which is binomially distributed. I.e. the fixed number of independent trials is 8 and p = probability of success = 0.8.

If X denotes the number of successes then $X \sim B(8, 0.8)$.

Only two possible outcomes: point up/down
There are 8 fixed number of independent trials = 8
A constant probability of success: point up = 0.8

Probability of driving pin landing point up
 $P(X=0) = 0.18$
Therefore, for example, if we want to calculate the probability that the driving pin lands point up 6 times then:
 $P(X=6) = {}^8 C_6 0.8^6 (1-0.8)^2 = {}^8 C_6 0.8^6 0.2^2 = 0.2090$ (to 4 d.p.)

NORMAL DISTRIBUTION

In statistics this is a vital continuous distribution. Many everyday situations can be modelled using a normal distribution, e.g. height and weight.

The main features of a normal distribution are:

- The graph is symmetric.
- The distribution is symmetrical.
- General shape is bell-shaped.
- The peak is at the mean.

The mean (μ) and the standard deviation (σ) are used to describe a variable that is normally distributed.

STANDARD NORMAL DISTRIBUTION
If Z is distributed normally with mean 0 and standard deviation 1 , then $Z \sim N(0, 1)$.
This form of the distribution is called the standard normal distribution.

We write $P(Z \leq z) = \Phi(z)$
When using statistical tables or a calculator, check the cumulative total for the following probabilities:

With $Z \sim N(0, 1)$
 $P(Z \leq 0.5) = P(Z \leq 0.5 - 0) = P(Z \leq 0) + P(0 < Z \leq 0.5) = 0.5 + 0.1915 = 0.6826$

OTHER NORMAL DISTRIBUTIONS
All other normal distributions are modelled by the changes in position, scale or both of the standard normal distributions.

STANDARDISING A NORMAL DISTRIBUTION
If $Z \sim N(\mu, \sigma)$ then $Z = \frac{Z - \mu}{\sigma} \sim N(0, 1)$.
Hence, if $X \sim N(10, 3)$ then $P(X \leq 12) = P\left(\frac{X-10}{3} \leq \frac{12-10}{3}\right) = P\left(\frac{X-10}{3} \leq \frac{2}{3}\right) = 0.6179$ (to 4 d.p.)

EQUIVALENCE

May look different but has the same meaning, power or value.

SUM = AMOUNT = TOTAL

These words look different but they all have the same meaning:

One Pound (£) **One Pound (£)** **One Pound (£)**
These 3 sets of coins look different but all have the same spending power.

Fractions
These 3 fractions look different but all have the same value (equivalent fractions).
Equivalent fractions are found by multiplying or dividing the TOP and the BOTTOM by the same number.

Integers
An integer is a whole number that can be positive, negative or zero.

Multiples
Every number has multiples. For example, every number has 2 as a multiple because 2, 4, 6, 8, 10, 12 and so on are all multiples of 2.
The first 10 multiples of 2 are 2, 4, 6, 8, 10, 12, 14, 16, 18, 20.

Square Numbers
A square number is the product of a number multiplied by itself.
 $1^2 = 1$
 $2^2 = 4$
 $3^2 = 9$
 $4^2 = 16$
 $5^2 = 25$
 $6^2 = 36$
 $7^2 = 49$
 $8^2 = 64$
 $9^2 = 81$
 $10^2 = 100$

Cube Numbers
A cube number is the product of a number multiplied by itself three times.
 $1^3 = 1$
 $2^3 = 8$
 $3^3 = 27$
 $4^3 = 64$
 $5^3 = 125$
 $6^3 = 216$
 $7^3 = 343$
 $8^3 = 512$
 $9^3 = 729$
 $10^3 = 1000$

Facts About Figures

Factors
Every number has factors. The factors of 12 are 1, 2, 3, 4, 6 and 12 because all of these numbers go into the number 12.

Odd Numbers
Odd numbers are only have factors themselves and 1.

Even Numbers
Even numbers are numbers that are divisible by 2. For example, 2 and 3 are prime factors of 12.

Triangular Numbers
A triangular number is any number obtained by continued summation of the natural numbers 1, 2, 3, 4, 5 and so on.

Binomial Distribution

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lamineeritud MAL009L

Normal Distribution

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lamineeritud MAL010L

Equivalence

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lamineeritud MA001L

Facts About Figures

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FIGURES ARE FUN

PATTERNS
Look for the patterns in numbers. For example, the nine-times table.

1 × 9 = 9	2 × 9 = 18	3 × 9 = 27	4 × 9 = 36	5 × 9 = 45	6 × 9 = 54	7 × 9 = 63	8 × 9 = 72	9 × 9 = 81
10 × 9 = 90	11 × 9 = 99	12 × 9 = 108	13 × 9 = 117	14 × 9 = 126	15 × 9 = 135	16 × 9 = 144	17 × 9 = 153	18 × 9 = 162

MAGIC SQUARES
All the columns (13 rows), 1-diagonals (13) and 2-diagonals (13) add up to the same number.

8	3	4
1	5	9
6	7	2

SQUARE NUMBERS
These numbers are called square numbers. Can you see why?

1	4	9	16
25	36	49	64

TRIANGLE NUMBERS
These numbers are called triangle numbers. Can you see why?

1	3	6	10	15
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Figures are Fun

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lamineeritud MA003L

Fractions, Decimals, Percentages

Fractions, decimals and percentages are three different ways of expressing a proportion of a whole.

F	D	P
$\frac{1}{2} = 0.5 = 50\%$	$\frac{1}{4} = 0.25 = 25\%$	$\frac{1}{3} = 0.333 = 33\frac{1}{3}\%$

Fractions
To convert a fraction to a decimal:
1. Write the fraction as a division problem.
2. Divide the numerator by the denominator.
3. Convert to a percentage.

Decimals
To convert a decimal to a fraction:
1. Identify the decimal place value.
2. Write the decimal as a fraction with a denominator of 10, 100, 1000, etc.
3. Simplify the fraction.

Percentages
To convert a decimal to a percentage:
1. Multiply the decimal by 100.
2. Add a percent sign (%) to the end.
3. Convert to a fraction.

Fractions / Dec. / %

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Know Your Numbers

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Pascal's Triangle

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Multiplication Chart

X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	132	144
12	12	24	36	48	60	72	84	96	108	120	132	144

Spot the Patterns

The numbers in the GRANGE squares are all square numbers.
Notice that: $2 \times 8 = 16$ and $8 \times 2 = 16$
Can you spot any other patterns? The figures in the GREEN squares form nice patterns, but there are many more...

Prime Numbers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

13. Is it a prime number?
It has both factors 12 and 1.
 $12 = 1 \times 12 = 3 \times 4 = 2 \times 6$

1. Is it a prime number?
It has only one factor 1.
 $1 = 1 \times 1$

2. Is it a prime number?
It has four factors 1, 2, 3, and 4.
 $4 = 1 \times 4 = 2 \times 2 = 2 \times 3 = 1 \times 12$

6. Is it a prime number?
It has three factors 1, 2, and 3.
 $6 = 1 \times 6 = 2 \times 3 = 3 \times 2$

Ratios

A ratio is a way of comparing two or more quantities.

Purple paint is made by mixing blue and red paint in the ratio of 2 to 1.

Two mice share the cheese in the ratio of 5 to 2.

Ulli, Jalli and Al have shared the money in the ratio of 2 to 6 to 3.

A ratio must be written in the correct order, with the quantity mentioned first.

To simplify ratios, both numbers must be divided by their highest common factor.

The ratio of 12 to 18 is 2 to 3 because 12 and 18 are both divisible by 6.

There are easier to work out when they are in their simplest form.

Simple ratios are often used to be divided according to a particular ratio.

Two friends made £240 selling balloons at a fayre. They agreed to split the money in the ratio of 2:3:5. How much money does each person get?

- Add the numbers in the ratio to calculate the total number of parts.
 $3 + 2 + 4 = 9$
- Find the value of 1 part by dividing the total amount by the total number of parts.
 $315 \div 9 = 35$
 $1 \text{ part} = 35$
- Multiply the value of 1 part by the number in the ratio to calculate how much money each person gets.
 $2 \times 35 = 70$
 $3 \times 35 = 105$
 $5 \times 35 = 175$
- Check your answer by adding together the values.
 $70 + 105 + 175 = 350$
Check your answer by adding together the values.

Ratio

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Multiplication Chart

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Penny Poster

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Prime Numbers

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Roman Numerals

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Signs and Words

Addition (add, plus, sum, total)	$4 + 3 = 7$
Subtraction (subtract, minus, take-away)	$7 - 3 = 4$
Multiplication (multiply, times, product)	$3 \times 5 = 15$
Division (divide, sharing)	$15 \div 5 = 3$
Is Equal to (the same value)	$\frac{1}{2} = 0.5$
Is Not Equal to (different value)	$3 \neq 4$
Is Approximately Equal to	$\frac{1}{3} \approx 0.3$
Is Equivalent to	$5^2 = 5 \times 5$
Is Reciprocal	
Is Parallel to	
Is Perpendicular (at 90°)	
Less than ($x < y$, means x is less than y)	
Greater than ($x > y$, means x is greater than y)	
Less than or Equal to ($x \leq y$, means x is less than or equal to y)	
Greater than or Equal to ($x \geq y$, means x is greater than or equal to y)	

Signs and Words

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Simple Fractions

Simple Fractions

What's a fraction? It's a part of a whole. A fraction has two parts: a numerator and a denominator.

Top Number The top number in a fraction is called the **numerator**.

Bottom Number The bottom number in a fraction is called the **denominator**.

Find fractions in nature! Look around your house or outside to find fractions.

This fraction is $\frac{1}{2}$. It's one part of two equal parts.

This fraction is $\frac{1}{4}$. It's one part of four equal parts.

This fraction is $\frac{1}{5}$. It's one part of five equal parts.

Equivalent Fractions

Equivalent fractions have different numerators and denominators but are equal to each other. They are created by multiplying or dividing both numbers in the fraction by the same number.

$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$

Notice how these equivalent fractions look like they're composed of different numbers but the numerators and denominators are proportional.

A fraction will help identify equivalent fractions.

$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$

Simple Fractions

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TIMES TABLES 1-6

TIMES TABLES 1-6		
There are not as many to learn as you think.		
ONE	TWO	THREE
$1 \times 1 = 1$	$1 \times 2 = 2$	$1 \times 3 = 3$
$2 \times 1 = 2$	$2 \times 2 = 4$	$2 \times 3 = 6$
$3 \times 1 = 3$	$3 \times 2 = 6$	$3 \times 3 = 9$
$4 \times 1 = 4$	$4 \times 2 = 8$	$4 \times 3 = 12$
$5 \times 1 = 5$	$5 \times 2 = 10$	$5 \times 3 = 15$
$6 \times 1 = 6$	$6 \times 2 = 12$	$6 \times 3 = 18$
$7 \times 1 = 7$	$7 \times 2 = 14$	$7 \times 3 = 21$
$8 \times 1 = 8$	$8 \times 2 = 16$	$8 \times 3 = 24$
$9 \times 1 = 9$	$9 \times 2 = 18$	$9 \times 3 = 27$
$10 \times 1 = 10$	$10 \times 2 = 20$	$10 \times 3 = 30$
$11 \times 1 = 11$	$11 \times 2 = 22$	$11 \times 3 = 33$
$12 \times 1 = 12$	$12 \times 2 = 24$	$12 \times 3 = 36$
FOUR	FIVE	SIX
$1 \times 4 = 4$	$1 \times 5 = 5$	$1 \times 6 = 6$
$2 \times 4 = 8$	$2 \times 5 = 10$	$2 \times 6 = 12$
$3 \times 4 = 12$	$3 \times 5 = 15$	$3 \times 6 = 18$
$4 \times 4 = 16$	$4 \times 5 = 20$	$4 \times 6 = 24$
$5 \times 4 = 20$	$5 \times 5 = 25$	$5 \times 6 = 30$
$6 \times 4 = 24$	$6 \times 5 = 30$	$6 \times 6 = 36$
$7 \times 4 = 28$	$7 \times 5 = 35$	$7 \times 6 = 42$
$8 \times 4 = 32$	$8 \times 5 = 40$	$8 \times 6 = 48$
$9 \times 4 = 36$	$9 \times 5 = 45$	$9 \times 6 = 54$
$10 \times 4 = 40$	$10 \times 5 = 50$	$10 \times 6 = 60$
$11 \times 4 = 44$	$11 \times 5 = 55$	$11 \times 6 = 66$
$12 \times 4 = 48$	$12 \times 5 = 60$	$12 \times 6 = 72$

The numbers in yellow are the ones you've already learnt.
If you look closely they have appeared in a previous table.

The numbers in boxes are called square numbers - why?  $4 \times 4 = 16$

Times Tables (1-6)

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Simple Percentages

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TIMES TABLES 7-12

TIMES TABLES 7-12		
There are not as many to learn as you think.		
SEVEN	EIGHT	NINE
$1 \times 7 = 7$	$1 \times 8 = 8$	$1 \times 9 = 9$
$2 \times 7 = 14$	$2 \times 8 = 16$	$2 \times 9 = 18$
$3 \times 7 = 21$	$3 \times 8 = 24$	$3 \times 9 = 27$
$4 \times 7 = 28$	$4 \times 8 = 32$	$4 \times 9 = 36$
$5 \times 7 = 35$	$5 \times 8 = 40$	$5 \times 9 = 45$
$6 \times 7 = 42$	$6 \times 8 = 48$	$6 \times 9 = 54$
$7 \times 7 = 49$	$7 \times 8 = 56$	$7 \times 9 = 63$
$8 \times 7 = 56$	$8 \times 8 = 64$	$8 \times 9 = 72$
$9 \times 7 = 63$	$9 \times 8 = 72$	$9 \times 9 = 81$
$10 \times 7 = 70$	$10 \times 8 = 80$	$10 \times 9 = 90$
$11 \times 7 = 77$	$11 \times 8 = 88$	$11 \times 9 = 99$
$12 \times 7 = 84$	$12 \times 8 = 96$	$12 \times 9 = 108$
TEN	ELEVEN	TWELVE
$1 \times 10 = 10$	$1 \times 11 = 11$	$1 \times 12 = 12$
$2 \times 10 = 20$	$2 \times 11 = 22$	$2 \times 12 = 24$
$3 \times 10 = 30$	$3 \times 11 = 33$	$3 \times 12 = 36$
$4 \times 10 = 40$	$4 \times 11 = 44$	$4 \times 12 = 48$
$5 \times 10 = 50$	$5 \times 11 = 55$	$5 \times 12 = 60$
$6 \times 10 = 60$	$6 \times 11 = 66$	$6 \times 12 = 72$
$7 \times 10 = 70$	$7 \times 11 = 77$	$7 \times 12 = 84$
$8 \times 10 = 80$	$8 \times 11 = 88$	$8 \times 12 = 96$
$9 \times 10 = 90$	$9 \times 11 = 99$	$9 \times 12 = 108$
$10 \times 10 = 100$	$10 \times 11 = 110$	$10 \times 12 = 120$
$11 \times 10 = 110$	$11 \times 11 = 121$	$11 \times 12 = 132$
$12 \times 10 = 120$	$12 \times 11 = 132$	$12 \times 12 = 144$

The numbers in yellow are the ones you've already learnt.
If you look closely they have appeared in a previous table.

The numbers in boxes are called square numbers - why?  $8 \times 8 = 64$

Times Tables (7-12)

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ALGEBRA

Algebra

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Algebra

Algebra			
An algebraic expression can be used to represent unknown mathematical values. For example, if the expression for $x + y = 10$, it could be new variables.			
An equation is a collection of numbers and letters. Terms are represented by mathematical symbols.			$3x + 4xy = 10 + y$
An expression includes terms and operational mathematical symbols but not the equals symbol.			$2x + 5y - 2$
An equation is made up of two expressions that are equal.			$4x + 5y = 23$
Simplifying Algebraic Expressions: To simplify algebraic expressions, the terms can be collected together. If all the terms have the same power, then they can be added together.			
Addition and Subtraction $a + x + y$ can be shortened to $\underline{3x}$	$3x + 5x = 8x$	$4b - b$ can be shortened to $\underline{3b}$	$6x - 3x = 3x$ $5x - 3x = 2x$
Multiplication:			
When multiplying like or unlike terms, the multiplication symbol is removed.			
$\underline{\underline{a}} \times \underline{\underline{b}}$	can be shortened to $\underline{\underline{ab}}$	$y \times x \times z \times y \times z$	can be shortened to $\underline{\underline{y^4xz}}$
$\underline{\underline{3}} \times \underline{\underline{a}}$	can be shortened to $\underline{\underline{3a}}$	This is an identity (proving 10 times from one identity is redundant by itself).	
Division: If a is not the same as b ,			
$\underline{\underline{a}} \div \underline{\underline{b}}$	is written as $\frac{\underline{\underline{a}}}{\underline{\underline{b}}}$	When dividing like terms, the variable can be removed from the fraction.	
$\frac{\underline{\underline{15}}}{\underline{\underline{3}}}x$	can be shortened to $\underline{\underline{5}}$	$\frac{\underline{\underline{12}}}{\underline{\underline{3}}}x$	can be shortened to $\underline{\underline{4}}$
Expression Yes Why? Description			
$3x + 2y$	Yes	Same variable	$5x$
$x + y$	No	Different variables	
$x + z^2$	No	Variables related to different powers	
$2ab + 2bc$	Yes	Same variable (associative property)	$4ab$
$3x + 4y + 4z - 3x$	Yes	Same variables	$3x + 4y$

Algebra Info

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GRAPHS AND CO-ORDINATES

GRAPHS AND CO-ORDINATES

A GRAPH HAS FOUR DIFFERENT QUADRANTS
WHERE THE QUADRANT CO-ORDINATES ARE EITHER POSITIVE OR NEGATIVE.

Point	Quadrant	Co-ordinates
A	1st quadrant	(1, 2)
B	2nd quadrant	(-1, 2)
C	3rd quadrant	(-1, -2)
D	4th quadrant	(1, -2)
E	1st quadrant	(2, 1)
F	2nd quadrant	(-2, 1)
G	3rd quadrant	(-2, -1)
H	4th quadrant	(2, -1)
I	1st quadrant	(3, 2)
J	2nd quadrant	(-3, 2)
K	3rd quadrant	(-3, -2)
L	4th quadrant	(3, -2)

When plotting points:
the ORDER is VITAL
X before Y

FIND THE PIRATE TREASURE
(1, 0) BURIED AT (1, 2)

Remember:
the order is X then Y
Y = more +2

Plotting Points Along the x-axis

Plotting Points Along the y-axis

MAINTAINING YOUR POSITION

Use arrows and tick marks from your position

Use arrows and tick marks from your position

Graphs & Co-ordinates

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GRAPHS AND THEIR EQUATIONS

GRAPHS AND THEIR EQUATIONS

SOLVING LINEAR EQUATIONS

The standard equation of a straight line is
 $y = mx + c$

- m represents the gradient, or slope, of the line.
- c represents the y-intercept, where the line crosses through the y -axis.

To plot the graph of $y = mx + c$, choose a range of x values for the equation and solve to find the corresponding y values.

x	0	1	2	3
$m = 2$	0	2	4	6
$c = 3$	3	5	7	9
Points to plot	(0, 3), (1, 5), (2, 7), (3, 9)			

Gradient = 2 → change in y : change in x

Gradient = 2 → change in y : change in x

To find the straight line of a graph from points on the line, such as (0, 3) and (2, 7), then calculate the changes in the x and y coordinates, $2 - 0 = 2$ and $7 - 3 = 4$.

SOLVING QUADRATIC EQUATIONS

Graphs of quadratic equations are parabolas (see earlier topic in this book). The vertex of the parabola lies exactly halfway between the two roots.

Choosing any value of x less than the x -value of the vertex, the value of y can be positive or negative.

Plot the graph of $y = x^2 - 4$, then choose a value of x to its left-hand side so that the corresponding y value is:

x	B	C	D	E	F
$m = -2$	-3	-1	0	1	2
$m = -1$	-4	1	0	1	4
$m = 0$	-4	-2	-4	-4	-4
$m = 1$	-4	3	2	3	4

Points to plot: (-2, -3), (-1, -1), (0, -4), (1, -3), (2, -1)

The original quadratic equation is $y = x^2 - 4$. In reverse, the roots of $y = 0$ are:

Graphs and their Equations

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Powers

A power often known as an index or exponent, is a type of shorthand that shows how many times a number needs to be multiplied by itself.

4³ Power

4^3 or 4 to the power of 3 means $4 \times 4 \times 4 = 64$

Rules for Indices

- Multiplication:** When like terms with powers are multiplied, the powers are added.
 $y^3 \times y^4 = y^7$
 $y \times y^3 \times y^4 = y^8$
 $4^2 \times 4^3 = 4^5$
 $(x+2)^2 \times (x+2)^3 = (x+2)^5$
- Division:** When like terms with powers are divided, the powers are subtracted.
 $y^6 \div y^3 = y^3$
 $y^4 \div y^2 = y^2$
 $4^6 \div 4^3 = 4^3$
 $(x+2)^6 \div (x+2)^3 = (x+2)^3$

Important! These rules do not apply to unlike terms such as $y^2 + z^2$ or $4^2 + 5^2$.

Powers of Powers

When a power is raised to a power, multiply the powers.
 $(y^2)^3 = y^{2 \times 3} = y^6$
 $(y^2 \times y^3)^2 = y^{2+3} \times y^2 = y^8$
 $(3^2)^3 = 3^{2 \times 3} = 3^6$
 $(x+2)^2 \times (x+2)^3 = (x+2)^5$

Rules for Powers: One and Zero

$x^0 = 1$	$y^0 = 1$	$0^0 = 1$
$7^0 = 1$	$4^0 = 1$	$1^0 = 1$

Rules for Indices

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Three-Figure Bearings

A bearing is the direction of travel measured clockwise from the north line. All bearings are written using three figures (e.g. 060° rather than 30°).

The bearing of boat A from B is 010°.
The bearing of boat B from C is 030°.
The bearing of boat C from D is 090°.
The bearing of boat D from E is 100°.

The bearing of boat E from F is 000°.
The bearing of boat F from G is 020°.

To find the bearing of the boat from the lifeguard station, follow the steps outlined below:

- Draw the north line at the lifeguard station (N).
- Draw a line from the lifeguard station to the boat.
- Measure the angle clockwise from the north line, starting with the horizontal.
- The size of this angle is 060°. Therefore, the three-figure bearing of the boat from the lifeguard station is 060°.

3 Figure Bearings

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TRAVEL GRAPHS

On a travel graph (or distance-time graph) distance is measured up the vertical (y) axis per time using the horizontal (x) axis. The steeper the slope the faster the speed. A flat section indicates the time you are stationary.

The graph above tells this story...

- Jules set off for a cycle ride at 8.00 am. His speed was 12 kmph.
- After half an hour he had a puncture.
- It took 15 minutes to repair.
- He continued on his journey up a hill at 8 kmph.
- At 11.00 am he returned home without stopping, arriving back at 12.45 pm. His approximate speed home was 7 kmph.

Travel Graphs

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ANGLES OF ELEVATION AND DEPRESSION

The tangent formula is used to calculate angles of elevation and depression.

Let θ = Opposite / Adjacent

If the angle of depression is measured downwards from the horizontal, the angle of elevation is measured upwards from the horizontal.

Angles of elevation and depression can always equal because they are alternate interior angles that pass through a point (O).

FINDING THE HEIGHT OF A TREE

The angle of elevation (θ) can be used to calculate the height of objects such as trees. In the diagram below, the angle is 20° relative from the line, and the angle of elevation from where she is standing to the top of the tree is 40°.

tan θ = Opposite / Adjacent
 $\tan 20^\circ = \text{height of tree} / \text{distance from tree}$
 $\text{height} = 20 \times \tan 20^\circ$
 $\text{height} = 6.97 \text{ m}$

Make the height of the tree the subject of the formula.

height = 20 × tan 20°
height = 6.97 m

A calculator is used to find the angle of elevation. To find the angle of depression, you can calculate the height of the tree, allowing it to be solved easily.

The size of this angle is 060°. Therefore, the three-figure bearing of the boat from the lifeguard station is 060°.

Angles of Elevation and Depress

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Angle Properties

Take a triangle
Turn off the angles
They add up to 180°

Take a quadrilateral
Turn off the angles
They add up to 360°

Angle Properties of Parallel Lines

- Corresponding Angles:** $\angle 1 = \angle 5$, $\angle 2 = \angle 6$, $\angle 3 = \angle 7$, $\angle 4 = \angle 8$
- Vertically Opposite Angles:** $\angle 1 = \angle 3$, $\angle 2 = \angle 4$
- Alternate Angles:** $\angle 1 = \angle 4$, $\angle 2 = \angle 3$
- Interior Angles:** $\angle 1 + \angle 2 = 180^\circ$, $\angle 3 + \angle 4 = 180^\circ$

Angle Properties

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AREA AND PERIMETER

The perimeter is the total distance around the outer edge. The area of a figure is the amount of space inside the perimeter.

SQUARE

The AREA of the square is: $10 \times 10 = 100 \text{ square cm (100cm}^2)$
The PERIMETER of the square is: $10 + 10 + 10 + 10 = 40 \text{ cm}$
In short: AREA = $L \times L = L^2$ PERIMETER = $L + L + L + L = 4L$

RECTANGLE

The AREA of the rectangle is: $6 \times 12 = 72 \text{ square cm (72cm}^2)$
The PERIMETER of the rectangle is: $6 + 12 + 6 + 12 = 36 \text{ cm}$
In short: AREA = $L \times W$ and PERIMETER = $L + W + L + W = 2L + 2W$

OTHER SHAPES

When measuring more complex shapes, break them down into basic shapes.

Area of A = $6 \times 5 = 30\text{cm}^2$
Area of B = $6 \times 5 \times 3 = 90\text{cm}^2$
Area TOTAL = $30 + 90 = 120\text{cm}^2$

PERIMETER = $10 + 5 + 5 + 5 + 10 = 40\text{cm}$

Area and Perimeter

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ANGLES AND THEIR MEASUREMENT

The turn or rotation between two intersecting lines is called an angle and is measured in degrees. A protractor is used to measure angles. There are 360° (degrees) in a complete rotation, 180° in half a rotation and 90° in a quarter rotation.

ACUTE ANGLES: Angles less than 90° are called acute angles.

RIGHT ANGLES: 90° angles are called right angles.

OBTUSE ANGLES: Angles greater than 90° and less than 180° are called obtuse angles.

REFLEX ANGLES: Angles greater than 180° are called reflex angles.

To draw an angle of 200°, first draw a 180° protractor. Then draw another 20° angle starting from the 180° line.

Area = πr^2 Circumference = $2\pi r$ Diameter = $2r$

Angles and their Measurement

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CIRCLE PROPERTIES

Chord: A line segment connecting two points on the circumference.

Diameter: The diameter passes through the center of the circle, connecting two points on the circumference.

Radius: A line segment connecting the center of the circle to any point on the circumference.

Secant: A straight line passing through the circle, connecting two points on the circumference.

Tangent: A straight line that touches a circle at exactly one point.

Concentric: Two circles that share the same center.

Annulus: The region between two concentric circles.

Segment: The area bounded by a chord and its corresponding arc.

Sector: The area enclosed by two radii and their included arc.

Area: A part of the circumference.

Chord: A straight line segment connecting two points on the circumference.

Diameter: The diameter passes through the center of the circle, connecting two points on the circumference.

Radius: A line segment connecting the center of the circle to any point on the circumference.

Secant: A straight line passing through the circle, connecting two points on the circumference.

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Radius: A line segment connecting the center of the circle to any point on the circumference.

Secant: A straight line passing through the circle, connecting two points on the circumference.

Tangent: A straight line that touches a circle at exactly one point.

Concentric: Two circles that share the same center.

Annulus: The region between two concentric circles.

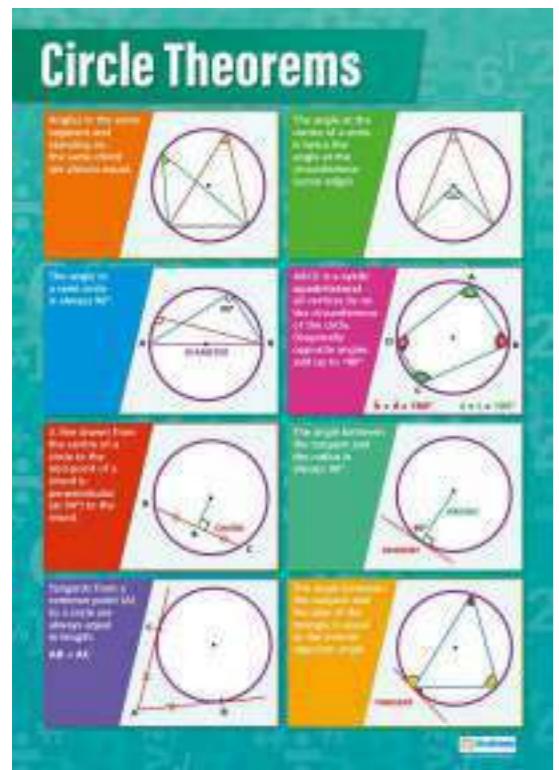
Segment: The area bounded by a chord and its corresponding arc.

Sector: The area enclosed by two radii and their included arc.

Area: A part of the circumference.

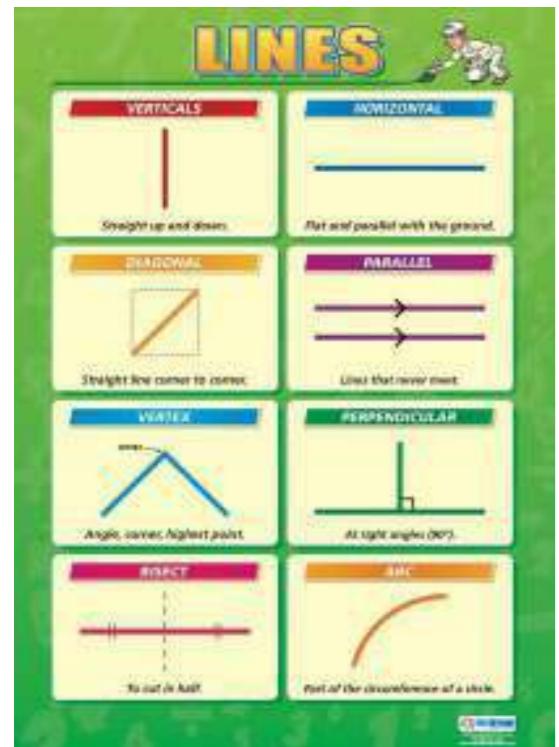
Circle Properties

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Circle Theorems

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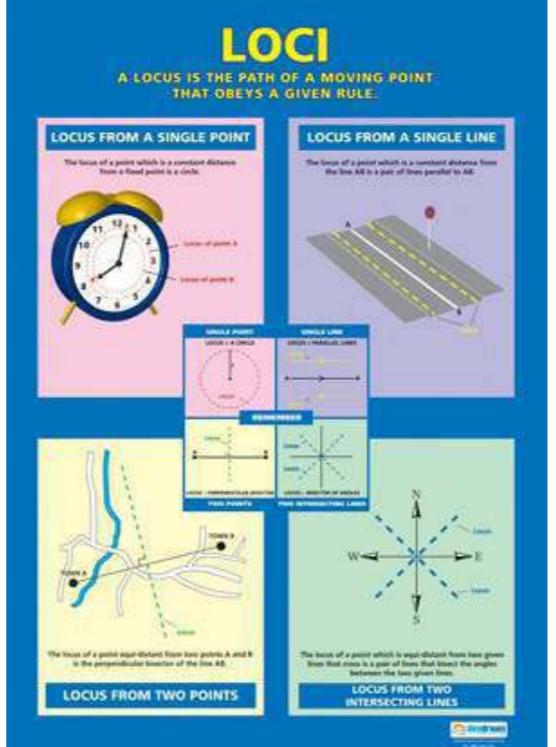
Lines

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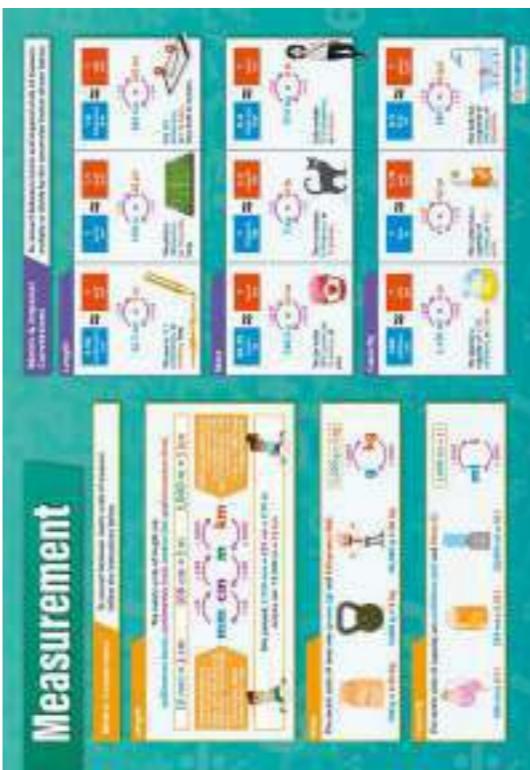
Get in Shape

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lamineeritud MA030L



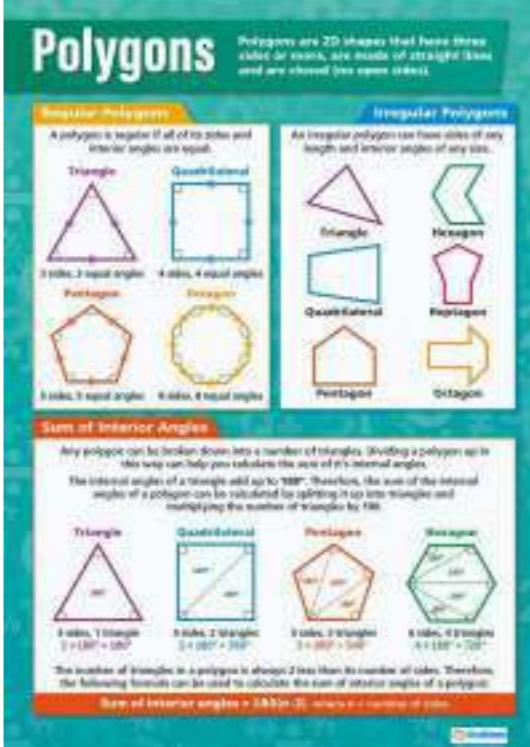
Loci

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Measurement

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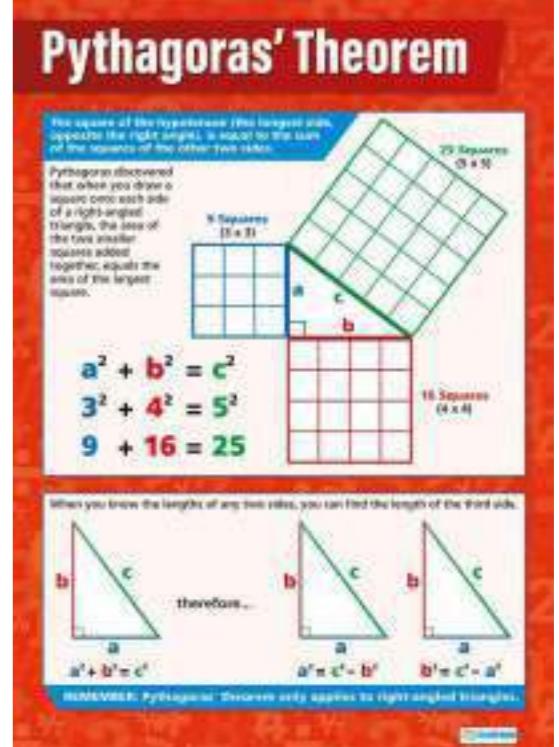
Polygons

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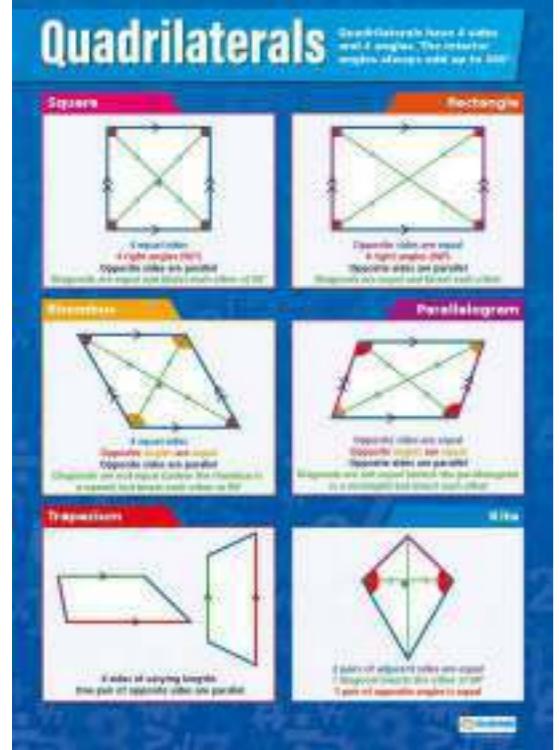
Measurement Conversion

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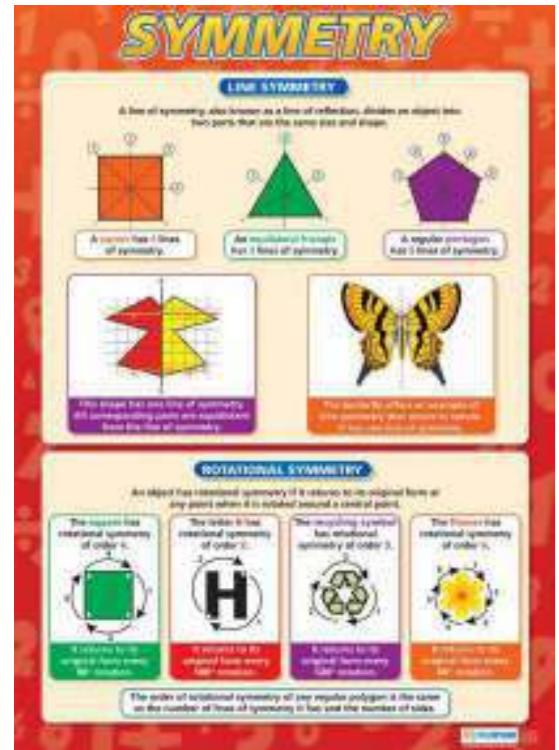
Pythagoras' Theorem

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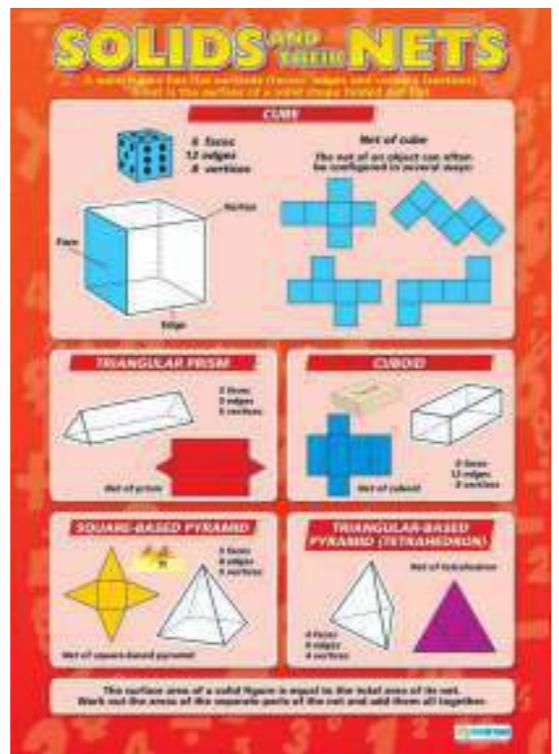
Quadrilaterals

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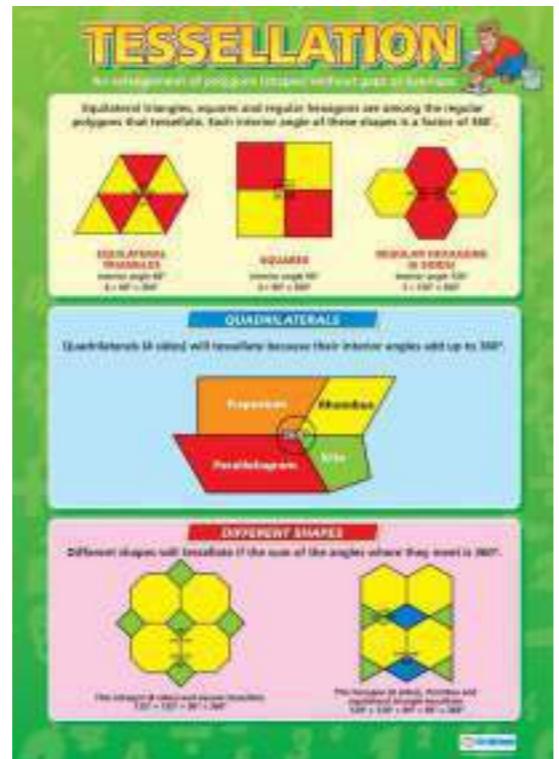
Symmetry

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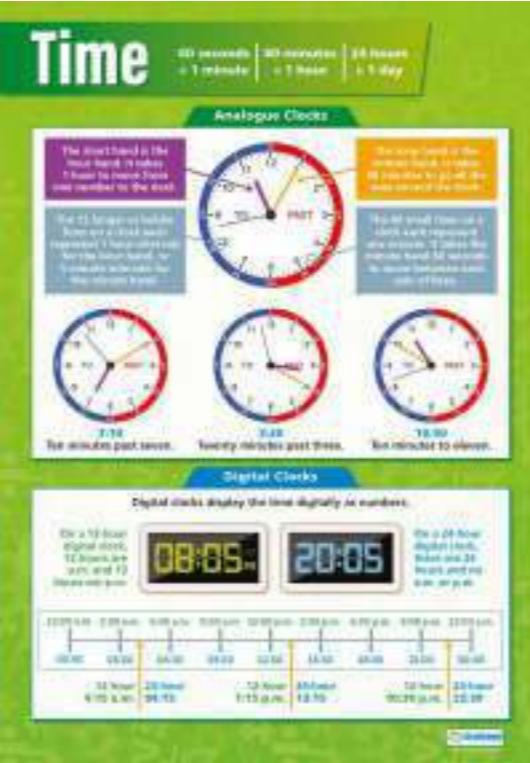
Solids and their Nets

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lamineeritud MA038L



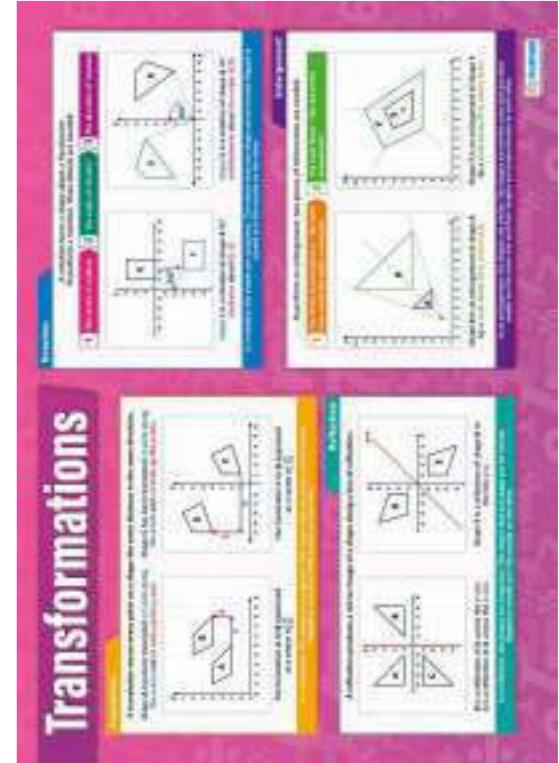
Tessellation

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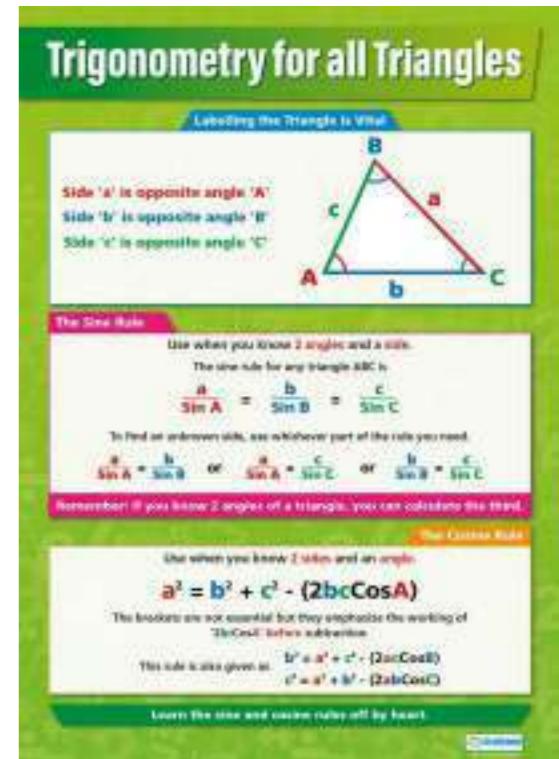
Time

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Transformations

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lamineeritud MA042L

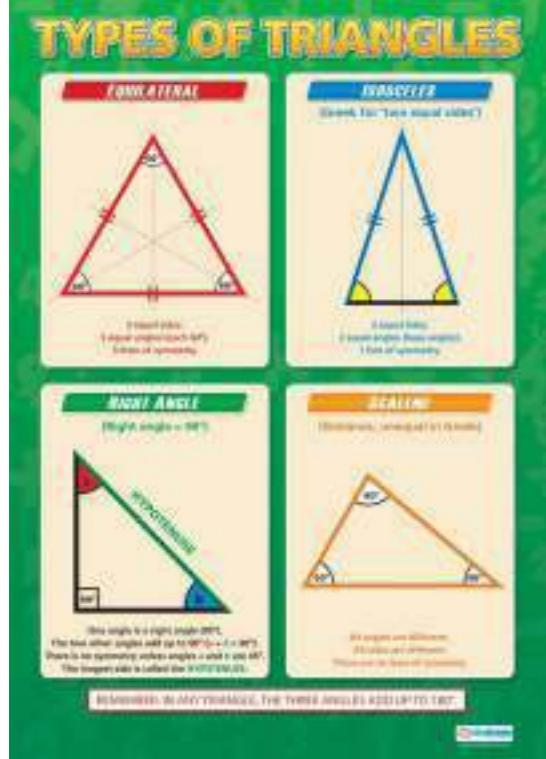


Trigonometry for all Triangles

paberplakat MA044
lamineeritud MA044L

Trigonometry

paberplakat MA043
lamineeritud MA043L



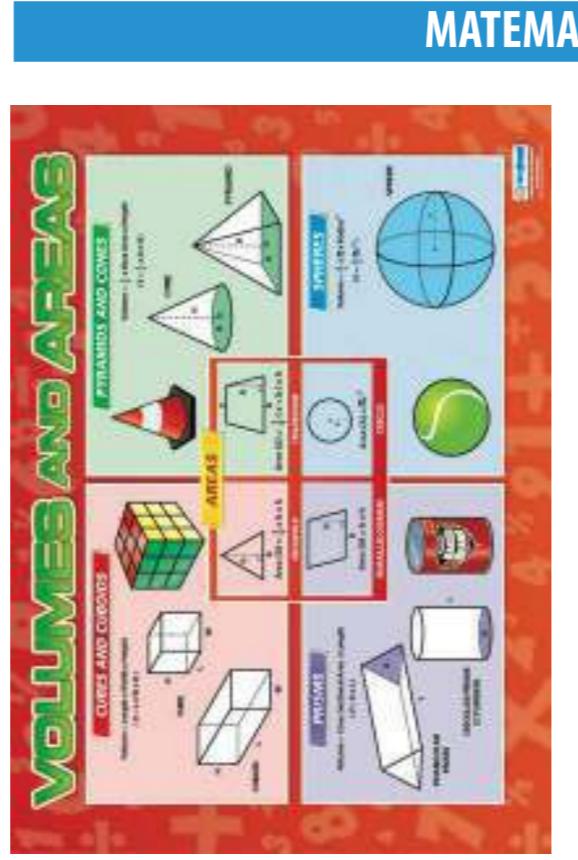
Types of Triangles

paberplakat MA045
lamineeritud MA045L



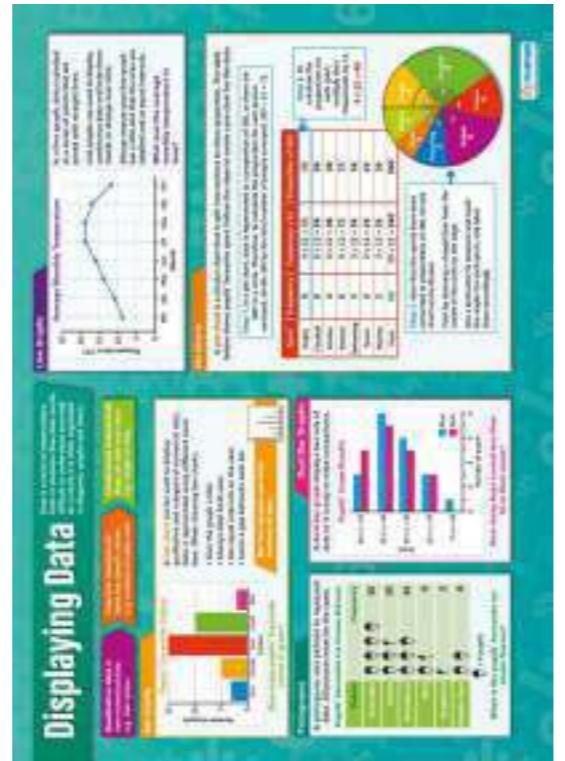
Averages

paberplakat MA047
lamineeritud MA047L



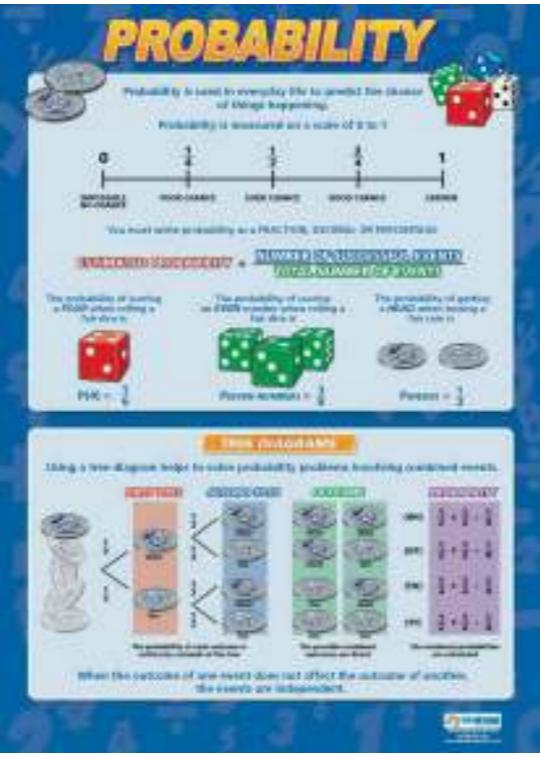
Volumes and Areas

paberplakat MA046
lamineeritud MA046L



Displaying Data

paberplakat MA048
lamineeritud MA048L



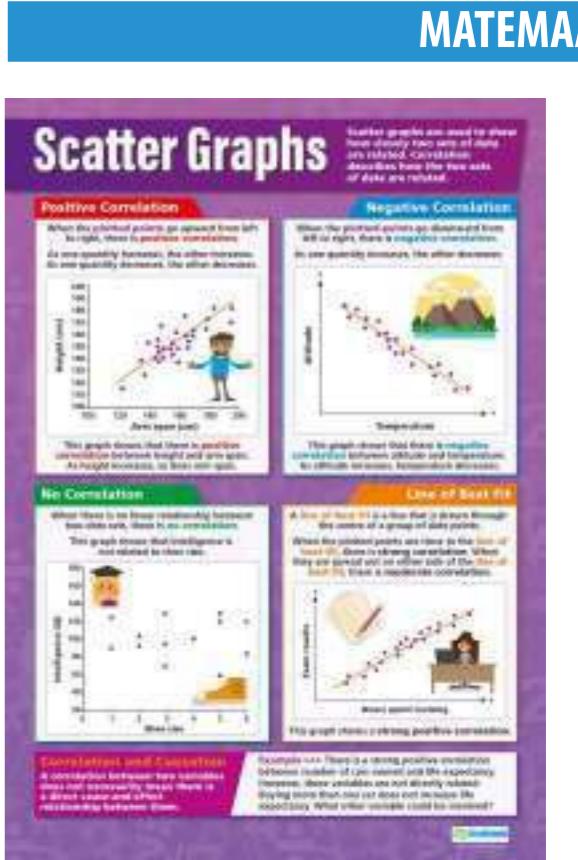
Probability

paberplakat MA049
lamineeritud MA049L



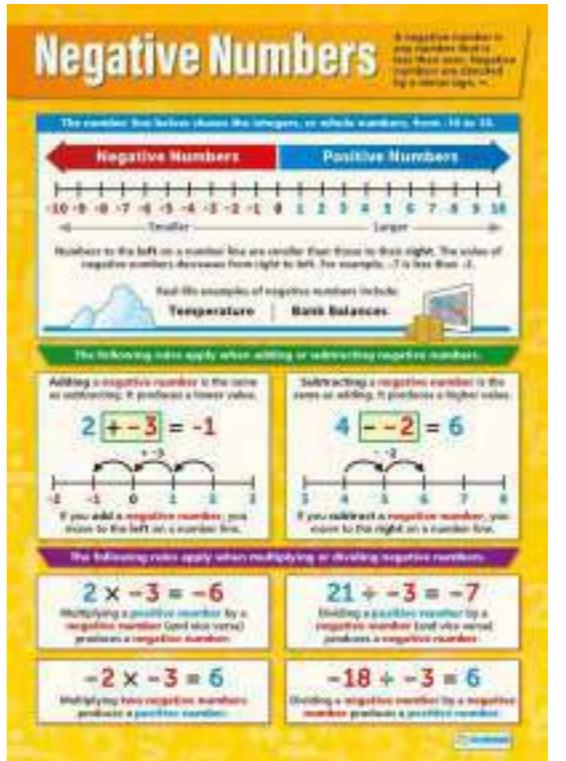
Rounding Numbers

paberplakat MA051
lamineeritud MA051L



Scatter Graphs

paberplakat MA050
lamineeritud MA050L



Negative Numbers

paberplakat MA053
lamineeritud MA053L



Long Multiplication

paberplakat MA054
lamineeritud MA054L



Order of Operations

paberplakat MA056
lamineeritud MA056L

Short Division

To solve this division problem, follow the steps outlined below:

- The number being divided is called the dividend.
- The number by which it is divided is called the divisor.
- The answer to a division problem is called the quotient.

8192 ÷ 4

1 Rewrite the division problem so that the dividend (8192) is written in a division bracket, and the divisor (4) is written to the left of the bracket.

4 | 8 1 9 2

2 Short division is performed from left to right, so divide the first digit in the dividend (8) by the divisor (4).
2 goes into 8 two times.
2 | 8 1 9 2

3 Divide the first digit in the dividend by the divisor (4). In this instance, 4 does not go into 1. Therefore, 1 is written above the division bracket, and the 1 is carried over to the next digit (9) to create 19.

2 | 0 8 1 9 2

4 Divide 19 by the divisor (4).
4 goes into 19 four times (4 x 4 = 16) with a remainder of 3.
2 0 4 | 8 1 9 2

5 Divide 3 by the divisor (4).
3 goes into 30 eight times.
2 0 4 8 | 8 1 9 2

6 Write 8 above the 2 in the dividend. The division problem is now complete:
8192 ÷ 4 = 2048

Adding & Subtracting Fractions

1 + 2

1 Add fractions with the same denominator.

1/4 + 1/4 + 1/4 + 1/4 = 4/4

2 Add fractions with different denominators by finding a common denominator.

1/2 + 1/4 = 2/4 + 1/4 = 3/4

3 Subtract fractions with the same denominator.

2/3 - 1/3 = 1/3

4 Subtract fractions with different denominators by finding a common denominator.

2/3 - 1/4 = 8/12 - 3/12 = 5/12

1/2 - 1/3 = 3/6 - 2/6 = 1/6

Adding & Subtracting Fractions

paberplakat MA058
lamineeritud MA058L

Simplifying & Ordering Fractions

Simplifying Fractions

To simplify a fraction the numerator and denominator must be divided by their highest common factor (the largest whole number that is a factor of both numerator and denominator).

10/15

Factors of 10: 1, 2, 5, 10
Factors of 15: 1, 3, 5, 15
The largest common factor is 5.
10 ÷ 5 = 2
15 ÷ 5 = 3
2/3

Ordering Fractions

It is easy to put like fractions (fractions with the same denominators) in numerical order.

5/12, 3/12, 6/12, 1/12, 1/12

Identify the lowest common multiple of the denominators. The lowest common multiple of 5, 3 and 12 is 60.

60/60, 18/60, 36/60, 2/60, 2/60

Convert each fraction to an equivalent fraction with a denominator of 60.

5/12 = 30/60
3/12 = 15/60
6/12 = 30/60
1/12 = 5/60
1/12 = 5/60

30/60 > 15/60 > 30/60 > 5/60 > 5/60

Addition and Subtraction

639 - 271

1 Add or subtract fractions with the same denominator.

6/6 - 3/6 = 3/6

2 Add or subtract fractions with different denominators by finding a common denominator.

6/6 + 10/10 = 16/10

3 Add or subtract fractions with different denominators by finding a common denominator.

1/12 + 3/12 = 4/12

56 + 272 + 191

1 Add or subtract fractions with the same denominator.

5/5 + 7/7 + 3/3 = 15/15

2 Add or subtract fractions with different denominators by finding a common denominator.

5/5 + 20/20 + 7/7 + 21/21 + 3/3 + 18/18 = 63/63

3 Add or subtract fractions with different denominators by finding a common denominator.

18/24 + 20/24 + 21/24 = 59/24

Addition and Subtraction

paberplakat MA060
lamineeritud MA060L

Times Tables 1-12

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

Times Tables 1-12

paberplakat MA059
lamineeritud MA059L

Solving Equations

1 Solve one-step equations with one variable.

8 + x = 12
8 + x - 8 = 12 - 8
x = 4

2 Solve two-step equations with one variable.

3x + 5 = 14
3x + 5 - 5 = 14 - 5
3x = 9
3x ÷ 3 = 9 ÷ 3
x = 3

3 Solve multi-step equations with one variable.

2(x + 3) = 10
2(x + 3) ÷ 2 = 10 ÷ 2
x + 3 = 5
x + 3 - 3 = 5 - 3
x = 2

Solving Equations

paberplakat MA061
lamineeritud MA061L

Substitution

When substituting a value into an equation, the value replaces the variable. The value substituted applies to the equation – a variable cannot be replaced with a value.

What is the value of $3x + 7$ when $x = 11$?

$$3x + 7 = (3 \times x) + 7 \\ = (3 \times 11) + 7 \\ = 33 + 7 \\ = 40$$

What is the value of $y^2 - 3y$ when $y = 11$?

$$y^2 - 2y = (y \times y) - (2 \times y) \\ = (11 \times 11) - (2 \times 11) \\ = 121 - 22 \\ = 99$$

Substitution involving fractions When substituting fractions into an equation:

Add extra zeros if it helps. If it works for a fraction, then multiply by get cancel!

Total Pay = Hours \times Wage

- 1 Substitute the known numbers into the formula.
Total Pay = $8 \times \$15$
- 2 Follow the rules of BIDMAS to find the answers.
Total Pay = $\$120$

Convert $80\text{ cm} \text{ from centimetre to metres}$

$$C = \frac{5(\sqrt{-32})}{9} \\ C = \frac{5(56 - 32)}{9}$$

Substitute the known numbers into the formula.

$$C = \frac{5(54)}{9} \rightarrow C = \frac{270}{9} \rightarrow C = 30$$

The cooking time for a chicken is 30 minutes per kilogram. Also, each kilogram of chicken weighs 1.5 kg. Cooking Time = $30 \times \text{weight} + 40$. Cooking time for a chicken that weighs 1.5 kg?

- 1 Substitute the known numbers into the formula.
T = $(30 \times 1.5) + 40$
- 2 Follow the rules of BIDMAS to find the answers.
T = $45 + 40$
= 85

Substitution

paberplakat MA062
lamineeritud MA062L

Generating the Terms of a Sequence

When generating terms of a sequence, you can either add or subtract the same amount each time. This is called a common difference.

For example, in the sequence 2, 5, 8, 11, 14, ... the common difference is 3. To generate the next term, add 3 to the previous term.

For example, in the sequence 10, 15, 20, 25, ... the common difference is 5. To generate the next term, add 5 to the previous term.

For example, in the sequence 1, 4, 9, 16, 25, ... the common difference is 3. To generate the next term, add 3 to the previous term.

Generating the Terms of Sequence

paberplakat MA064
lamineeritud MA064L

Straight Line Graphs

When plotting points on a coordinate grid, follow these steps:

- 1 Plot the points on the grid according to their coordinates.
- 2 Connect the points in the order they were plotted.
- 3 Check if the graph has a straight line.

Graphing a straight line

Graph the straight line $y = mx + c$.

1. Plot the y-intercept (c) on the y-axis.

2. From the y-intercept, count up m units and right 1 unit to plot the next point.

3. Repeat step 2 until you have enough points to draw a straight line.

Straight Line Graphs

paberplakat MA063
lamineeritud MA063L

Rearranging Formulae

A formula is an equation that shows how one quantity depends on another. It contains variables.

In some cases you can rearrange formulae using inverse operations to make them easier to work with and solve. In the examples below, the equations have been rearranged to make x the subject.

$x + 4 = 9$ $\rightarrow x = 5$ Addition and subtraction are inverse operations.

$5x = 7$ $\rightarrow x = \frac{7}{5}$ Multiplication and division are inverse operations.

$x^2 = 16$ $\rightarrow x = 4$ Finding the square root of a number is the inverse operation of squaring that number.

Example: You will often be asked to rearrange formulae so they can be solved.

Speed = $\frac{\text{Distance}}{\text{Time}}$ $\rightarrow S = \frac{d}{t}$

Distance = Speed \times Time $\rightarrow d = s \times t$

Time = Distance \div Speed $\rightarrow t = d \div s$

Example: How far did he travel? He ran for 10 hours at a speed of 22 miles per hour. What was his speed?

Rearrange the formula so s is the subject.

$$s = \frac{d}{t}$$

$$s = \frac{120}{10}$$

$$s = 12$$

Substitute the known values into the formula and solve.

$$120 \div 3 = d$$

$$40 = d$$

Distance = 40 miles.

Example: Rearrange the formula so t is the subject.

$$s = \frac{d}{t}$$

$$st = d$$

$$t = \frac{d}{s}$$

Substitute the known values into the formula and solve.

$$t = \frac{120}{22}$$

$$t = 5.45$$

Time = 5.45 hours.

Rearranging Formulae

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lamineeritud MA065L

Area

Area is the total size of a flat surface. It is the amount of space inside the perimeter.

Rectangle/Square

What is the area of the building site?

Area of rectangle = length \times width
 $= 100 \times 70$
Area of field = $7,000 \text{ m}^2$

Triangle

What is the area of the sign?

Area of triangle = $\frac{1}{2} \times \text{base} \times \text{height}$
 $= \frac{1}{2} \times 32 \times 24$
Area of sign = 384 cm^2

Parallelogram

What is the area of the red base of the radiator?

Area of parallelogram = base \times height
 $= 20 \times 7$
Area of base = 140 cm^2

Trapezium

What is the area of that roof?

Area of trapezium = $\frac{1}{2} \times (\text{base}_1 + \text{base}_2) \times \text{height}$
 $= \frac{1}{2} \times (10 + 20) \times 7$
Area of roof = 105 m^2

Compound Shapes

When measuring the area of a compound shape, break it down into simpler shapes and then add the areas together. Look at the plan of the room below.

Area = 12×12
= 144 m^2

Area = 10×10
= 100 m^2

Area = 10×12
= 120 m^2

Total area of the compound shape: $144 + 100 + 120 = 364 \text{ m}^2$

Area

paberplakat MA066
lamineeritud MA066L

Volume

Volume is the amount of space inside a 3D shape or object.

Prisms and Cylinders

Solid objects that maintain a constant cross-sectional area along their length.

Volume of prism = $\text{area of base} \times \text{height}$

Volume of prism cylinder = $10 \times 10 \times 20 = 2000 \text{ cm}^3$

Volume of prism cylinder = $1.5 \times 1.5 \times 10 = 22.5 \text{ cm}^3$

Volume of prism cylinder = $3 \times 3 \times 22 = 198 \text{ cm}^3$

Pyramids and Cones

3D shapes that narrow to a common vertex, creating a point.

Volume of pyramid = $\frac{1}{3} \times \text{area of base} \times \text{height}$

Volume of pyramid = $\frac{1}{3} \times 12 \times 7 = 28 \text{ cm}^3$

Volume of cone = $\frac{1}{3} \pi r^2 h$

Volume of cone = $\frac{1}{3} \pi (3)^2 \times 7 = 21.3 \text{ cm}^3$

Spheres

A perfectly round 3D shape. Every point on its surface is equidistant from its centre.

Volume of sphere = $\frac{4}{3} \pi r^3$

Radius = $\sqrt[3]{\frac{3V}{4\pi}}$

Volume of sphere = $\frac{4}{3} \pi (3)^3 = 113.1 \text{ cm}^3$

Radius = $\sqrt[3]{\frac{3 \times 113.1}{4\pi}} = 3.89 \text{ cm}$

Volume

paberplakat MA067
lamineeritud MA067L

Nets and Surface Area

When drawing a net for a 3D shape, make sure all faces are connected correctly. Some nets may require cutting along certain lines.

Net for a Cube

Net for a cube = $6 \times 1 \times 1$

Net for a Cuboid

Net for a cuboid = $6 \times 1 \times 1$

Net for a Triangular Prism

Net for a triangular prism = $3 \times 1 \times 1$

Net for a Square Prism

Net for a square prism = $4 \times 1 \times 1$

Net for a Cone

Net for a cone = 1×1

Net for a Cylinder

Net for a cylinder = $2 \times 1 \times 1$

Nets and Surface Area

paberplakat MA068
lamineeritud MA068L

Scale

Scale is the ratio of a model dimension to the real dimension. The scale of $1:10$ means that the distance is 10 times larger in real life than in the drawing.

The area of Object's kitchen is shown as a scale of $1:100$. This means that the kitchen is 10 times bigger in real life than in the drawing.

To identify the length of 200 cm on the drawing, divide the real-life measurement by the scale:
 $200 \text{ cm} \div 100 = 2 \text{ cm}$

To identify the length of 10 m in real life, use a ruler to measure the length of 10 cm on the drawing (in this case 10 cm) and multiply it by the scale:
 $10 \text{ cm} \times 100 = 1000 \text{ cm}$

Using Scales for Drawings and Road Maps

The road below has a scale of $1:100,000$. This means the map is 100,000 times smaller than the actual area shown.

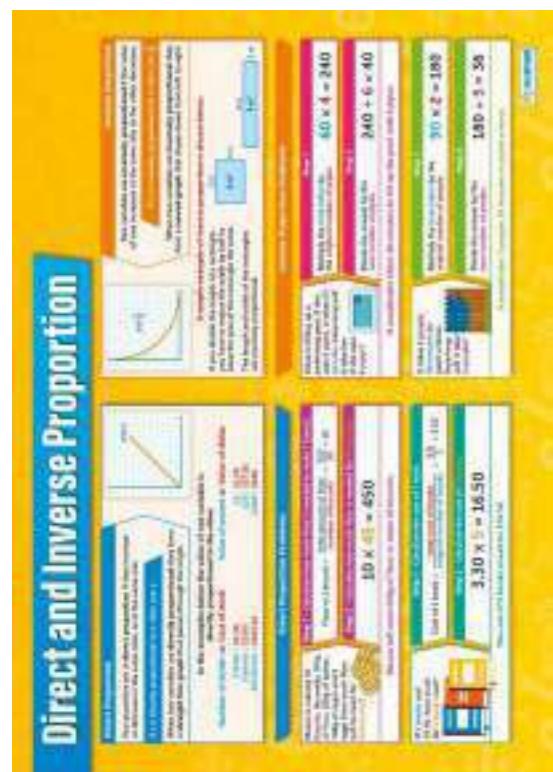
1. Calculate the compass scale: $2 \text{ cm} \times 10,000 = 200,000 \text{ cm}$

2. Calculate the real area: $100,000 \text{ cm} \times 200,000 \text{ cm} = 20,000,000,000 \text{ cm}^2$

3. Convert the area to km²: $20,000,000,000 \text{ cm}^2 = 200 \text{ km}^2$

Scale

paberplakat MA069
lamineeritud MA069L



Direct and Inverse Proportion

paberplakat MA070
lamineeritud MA070L



Mathematical Formulae

paberplakat MA071
lamineeritud MA071L



Motivation

paberplakat MOT001
lamineeritud MOT001L



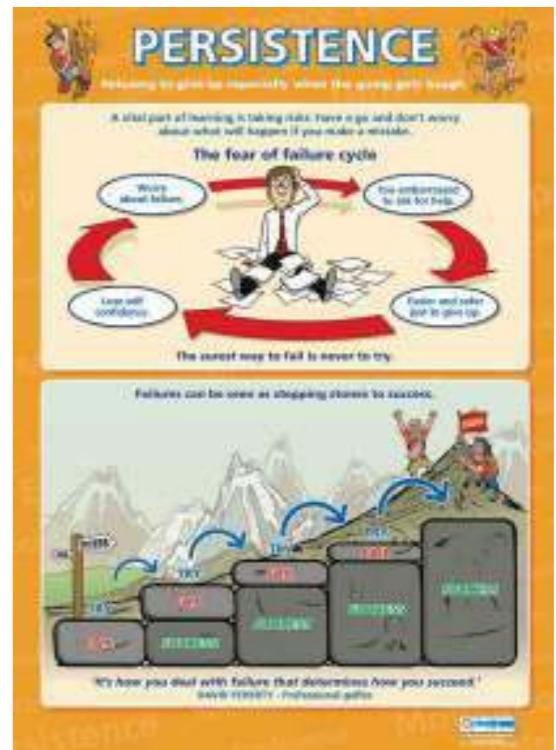
Self-Esteem

paberplakat MOT002
lamineeritud MOT002L



Positive or Negative

paberplakat MOT003
lamineeritud MOT003L



Persistence

paberplakat MOT004
lamineeritud MOT004L



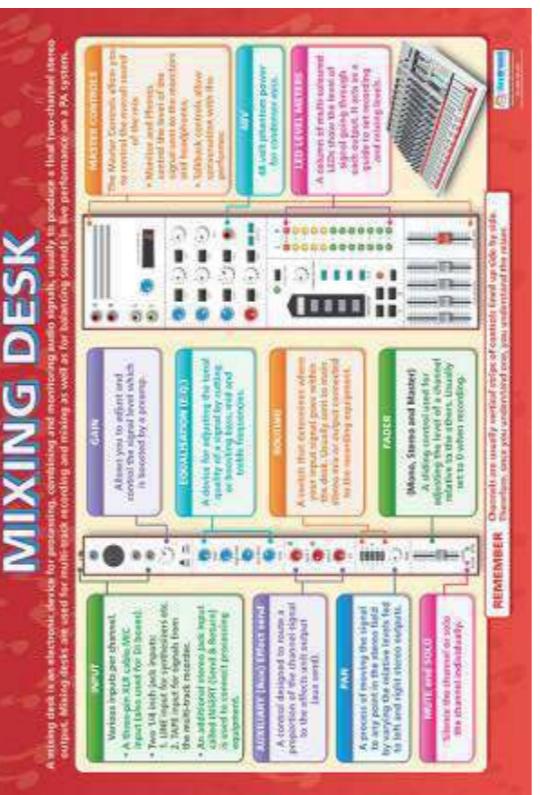
Values

paberplakat MOT005
lamineeritud MOT005L



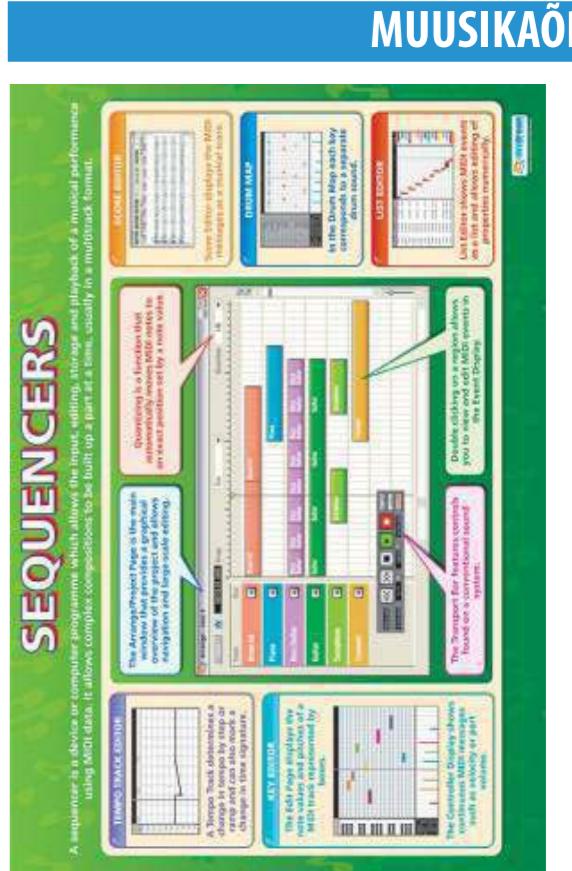
Teamwork

paberplakat MOT007
lamineeritud MOT007L



Mixing Desk

paberplakat MT003
lamineeritud MT003L



Sequencers

paberplakat MT004
lamineeritud MT004L



Midi

paberplakat MT005
lamineeritud MT005L



Effects

paberplakat MT006
lamineeritud MT006L



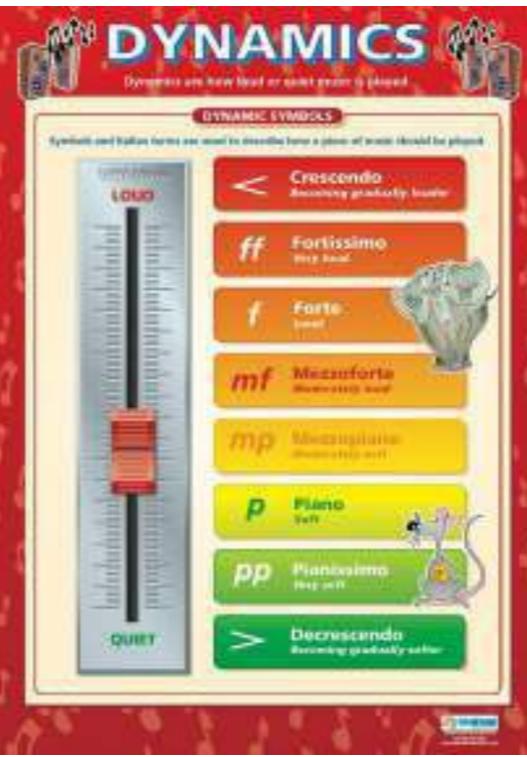
Musical Elements

paberplakat MU001
lamineeritud MU001L



Structure

paberplakat MU002
lamineeritud MU002L



Dynamics

paberplakat MU005
lamineeritud MU005L



Tempo

paberplakat MU006
lamineeritud MU006L



Texture

paberplakat MU003
lamineeritud MU003L



Duration

paberplakat MU004
lamineeritud MU004L



Timbre

paberplakat MU007
lamineeritud MU007L



Pitch

paberplakat MU008
lamineeritud MU008L



Music Symbols

paberplakat MU009
lamineeritud MU009L



Sharps and Flats

paberplakat MU011
lamineeritud MU011L



Musical Notes

paberplakat MU010
lamineeritud MU010L



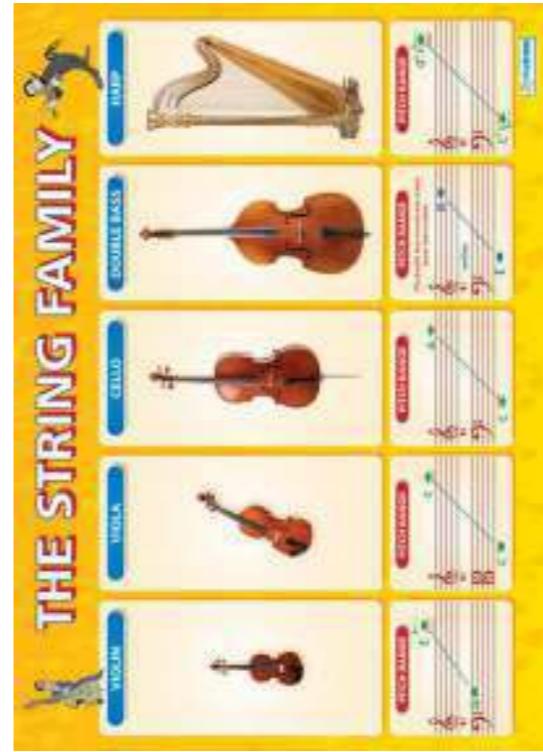
Chords

paberplakat MU012
lamineeritud MU012L



Kodaly

paberplakat MU013
lamineeritud MU013L



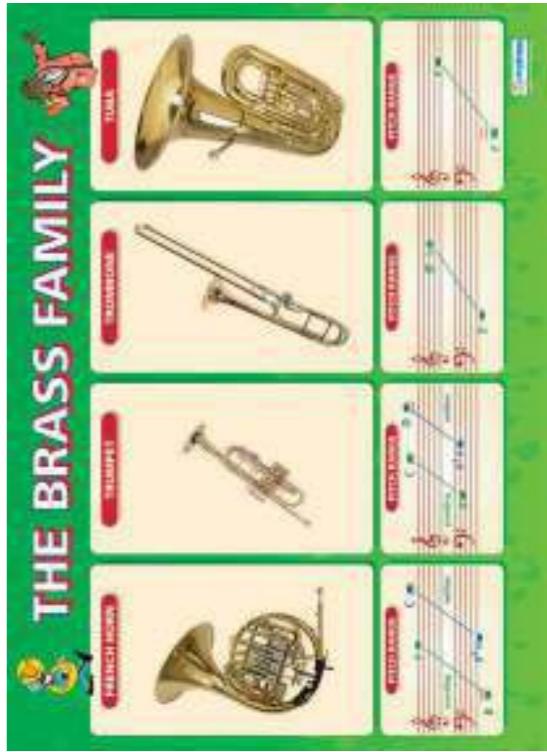
The String Family

paberplakat MU015
lamineeritud MU015L



The Orchestra

paberplakat MU014
lamineeritud MU014L



The Brass Family

paberplakat MU016
lamineeritud MU016L



The Woodwind Family (part 1)

paberplakat MU017
lamineeritud MU017L



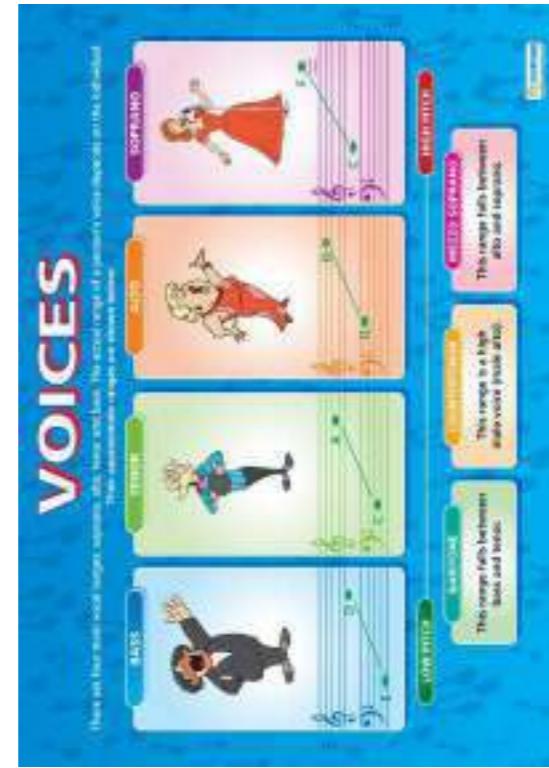
The Percussion Family

paberplakat MU019
lamineeritud MU019L



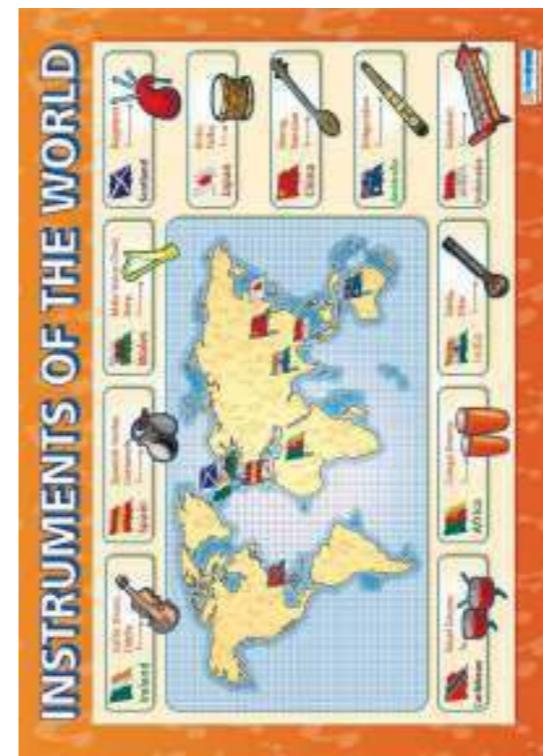
The Woodwind Family (part 2)

paberplakat MU018
lamineeritud MU018L



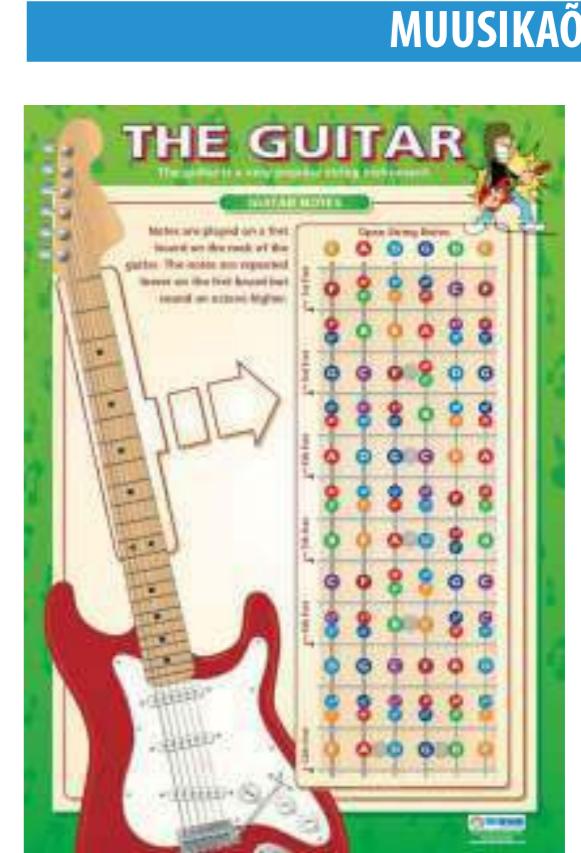
Voices

paberplakat MU020
lamineeritud MU020L



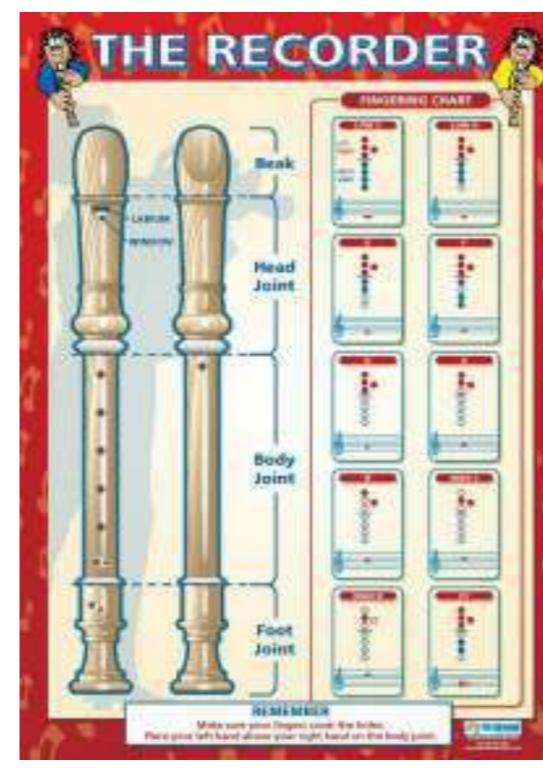
Instruments of the World

paberplakat MU021
lamineeritud MU021L



The Guitar

paberplakat MU022
lamineeritud MU022L



The Recorder

paberplakat MU023
lamineeritud MU023L



Musical Periods

paberplakat MU024
lamineeritud MU024L



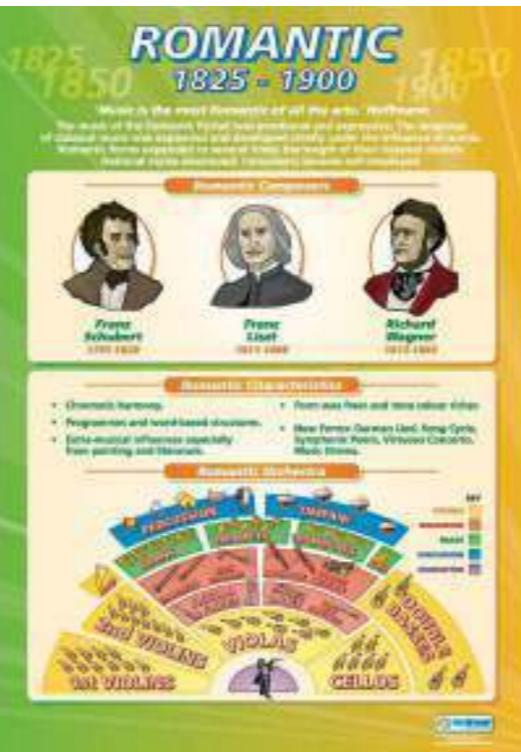
Medieval

paberplakat MU025
lamineeritud MU025L



Renaissance

paberplakat MU026
lamineeritud MU026L



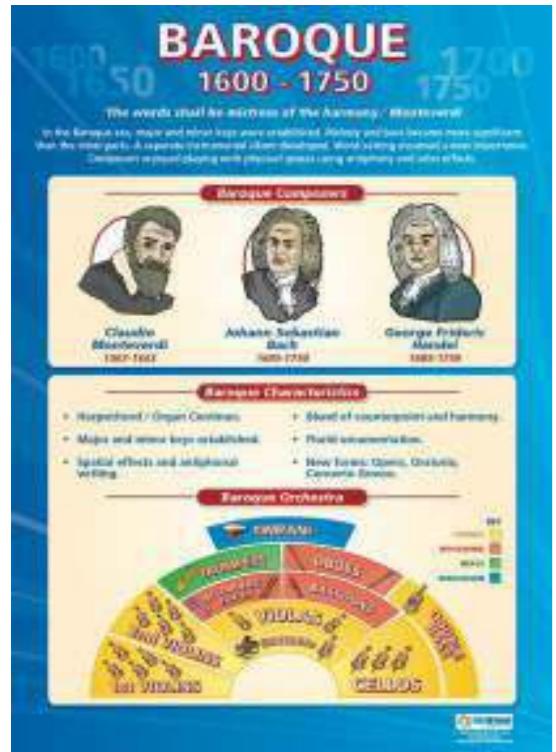
Romantic

paberplakat MU029
lamineeritud MU029L



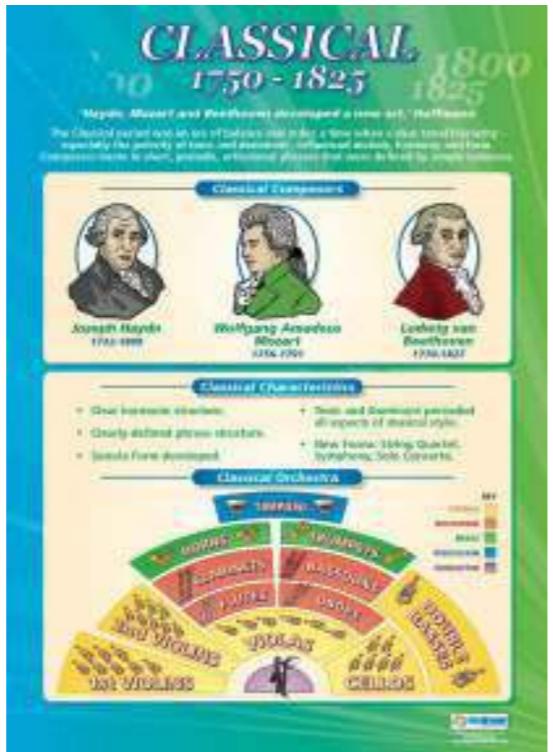
Modern

paberplakat MU030
lamineeritud MU030L



Baroque

paberplakat MU027
lamineeritud MU027L



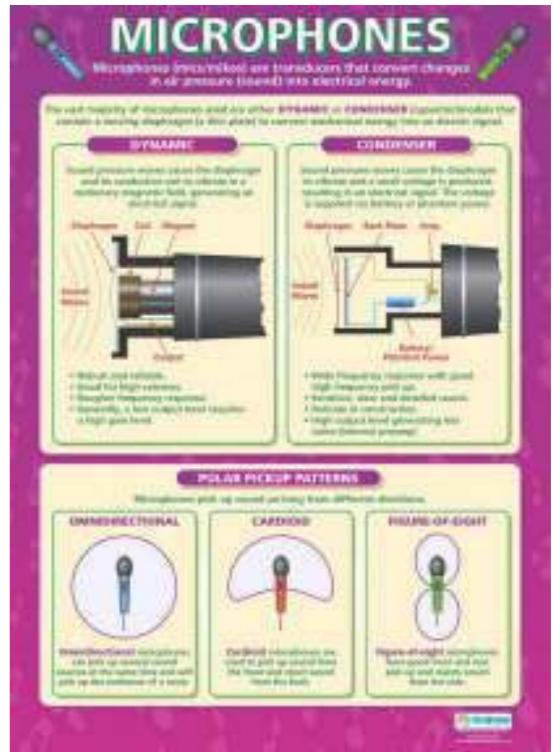
Classical

paberplakat MU028
lamineeritud MU028L



The Recording Process

paberplakat MT001
lamineeritud MT001L



Microphones

paberplakat MT002
lamineeritud MT002L

IMPROVING YOUR DIRECTING SKILLS

USING THE SPACE

- Make the most of space—use all the space—wide, deep, height.
- Develop an audience perspective.
- Keep the centre stage—use the floor for the actors.
- Use set pieces like audience seating or objects on stage.
- Use depth to create visual interest and flow.
- Use pauses, pause for a thought, freeze, and stop.



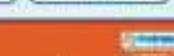
BLOCKING

- Organise the movement and positioning of the performers on stage.
- Create visual flow in the space for the audience to follow.
- When performing, the actors should face the audience.
- Encourage interaction with the audience.
- Create strong visual focus for the audience.
- Where possible, move the space to a theatre location to experiment and refine.



DESIGN DECISIONS

- Technical and design elements combine to make the play look appropriate and highlight themes.
- LIGHTING:** Use colour, shadows and highlights to set the tone of the production.
- SET:** Objects and scenes reflect the time period.
- COSTUME:** Inside and outside clothing reflects character and era.



TYPES OF STAGING

As different types of staging and audience perspectives have a large impact on the performance of a play. This can affect the way the actors perform.



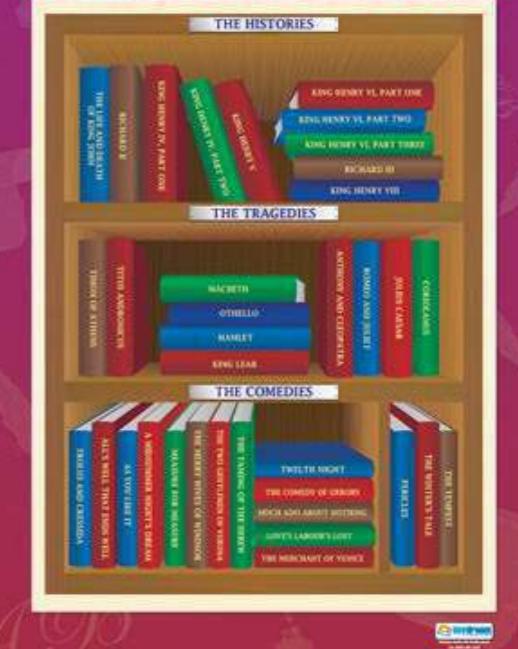
STUDYING DRAMA AS LITERATURE

Read the play from beginning to end. Go back, skim read, but re-read key scenes or acts in detail. Always try to see a performance or a film version.



REMEMBER:
Playscripts are designed to be seen in performance even if you are studying them on the printed page.

THE PLAYS OF WILLIAM SHAKESPEARE



Improving your Directing Skills

paberplakat	DR009
lamineeritud	DR009L

GREEK THEATRE

Theme: As we know today is believed to have begun in Greece in the 6th Century BC.

THEATRES AND ACTORS:
Early Greek theatre centred around the concept of masking. In the 6th century BC, at the festival of Dionysos, the earliest three-play theatre was created with introducing principle and several other factors, making this the first 'play'. The name 'theatre' is derived from the word 'theatron'.

THE PLAY:
The ancient Greeks created three types of plays: COMEDIES, TRAGEDIES, and SATYRIES.

THE COUNTRY:
The most important of these were tragedies that were based on myth and history. The plays were performed annually in honour of the God of Hunting, Dionysos.

THE GREEKS:
Greek tragedies followed a simple structure: the tragic hero goes through three phases: ANAGRAMMA (state of confusion), KATHARSIS (purification), and CATARHOS (resolution).

THE CLOTHING:
It was a very strict rule that all actors had to wear the same clothes. They were not allowed to wear anything else.

Types of Staging

paberplakat	DR010
lamineeritud	DR010L

THEATRICAL TERMS

As an actor, it's important to understand certain terms, words and phrases. Using this section will speed up expression, clarify meaning and enable you to be much more specific.

Aside:	An aside refers to the action, response etc. taking place off stage.
Backdrop:	Decorating the back of the stage.
Cue:	A signal given to an actor in a performance, e.g. An actor receives a cue to enter or a signal to lighting or sound effects.
Flats:	Flat pieces of lumber which can be painted to give the appearance of windows or furniture in setting.
Fills:	Lighting equipment, illuminating scene during a performance or act.
Gauze:	A translucent cloth or thin-fibre fabric to screen off an area of the stage.
Iron:	It holds curtains in position from the audience or backstage areas.
LX & SFX:	Lighting effects and sound effects.
Prompt:	A person left to keep the audience in order during a performance.
Props (properties):	Props are used for creating a performance, e.g. props include costumes.
Rostra:	Rostra refers to boats decorated with the prows of captured ships.
Stage Manager:	Responsible for running the show from the wings.
Truck:	A platform used to facilitate an actress and/or actress moving on/off the stage.
Wings:	The entrance and exit areas of the stage from the wings.

Studying Drama as Literature

paberplakat	DR013
lamineeritud	DR013L

THE GLOBE THEATRE

The first true theatre 'The Theatre' was built by James Burbage in Shoreditch, London, in 1576 and rebuilt in Southwark, on the south side of the Thames, where it was renamed 'The Globe'.

THE OPENING OF THE GLOBE (1599):
The lease ran out at The Theatre so the Burbage brothers invited 5 major partners, including Shakespeare, to be shareholders in the building of The Globe. When Queen Elizabeth died, the new king, James I, took over the company who became The King's Men. Over a 10-year period, Shakespeare produced his seven great tragedies, from Julius Caesar to Coriolanus.

THE BURNING OF THE GLOBE (1613):
On 29th June, 1613 the theatre burned to the ground when a cannon shot during a performance of Henry VIII ignited the thatched roof of the gallery.

Rebuilding The Globe (1614):
The company completed the New Globe (renamed to the Globe II) on the foundation of its predecessor. The new theatre was built of timber and brick and cost £14,000. It was larger than the original and could seat 3,000 spectators. It was built on the site of the original theatre, just across the river from the original.

Greek Theatre

paberplakat	DR011
lamineeritud	DR011L

Theatrical Terms

paberplakat	DR012
lamineeritud	DR012L

Devising Techniques

paberplakat	DR016
lamineeritud	DR016L

Devising Techniques

Starting to create your own piece of theatre:

Brainstorm: Use a group discussion to generate ideas, concepts and theories.	Character: Identify a setting, time and place for the play. Decide what characters will be involved and how they will interact with each other.
Setting: Create a setting that has a specific atmosphere through the elements of time, place and characters.	Music: Find a piece of music that has a specific atmosphere that you want to create. Then choose a character that you think fits the mood of the music.
Structure: Decide a basic structure for the play. This might involve dividing the play into acts and scenes.	Impression: Imagine a scene or situation that you want to create. Then choose a character that you think fits the mood of the scene.
Props: Find a group of objects that will help to create a specific atmosphere. These can be anything from simple household items to more complex items like a sword or a shield.	Impact: An idea or a situation that will affect the whole play. This can be anything from a single character to a whole scene or even the entire play.

WRITING A THEATRE REVIEW

BEFORE THE PERFORMANCE

- Make brief notes on the **script** of the play:
- What's the **plot** of the play?
- Who's **acting** in the play?
- Who's **directing** the play?
- What's **costume** like?
- What's **set** like?
- What's **music** like?
- What's **lighting** like?
- What's **stage** like?

DURING THE PERFORMANCE

- It's hard to write during the performance so you have to concentrate and wait until the performance has ended.
- Look at the set and write what you see of the sets and look at stage.
- Ask questions about the play, discuss the different **costumes**.
- Think about what personal style and choices of the performance.
- Take notes of the **script** of the play.

AFTER THE PERFORMANCE

STRUCTURING THE REVIEW

- Start with an introduction that includes the **name** of the play.
- Include a short **summary** of the play, including **impressions** from the play that **stand out**.
- Give examples of the **performances** and **playwright** in the **review**.
- Describe the **set**, **lighting** and **costume**, giving examples of the best effects and **available improvements**.
- Reassess the **conclusion** and **make-up** of the play.
- Show the **direction** and the **theatremaking** throughout the **play**.
- Throughout the **review**, compare the **production** to previous ones.
- End with a conclusion that **sums up** what you have learned from reading the **play**.

Writing a Theatre Review

paberplakat DR017
lamineeritud DR017L

STAGE LIGHTING

FLOODLIGHT

"Floodlight" is one of the brightest lanterns. It gives out a lot of light and cannot be focused. As a result, it provides a greater area of colour and is mostly used for lighting the **audience**.

PROFILE SPOT

A "profile spot" provides a strong beam of light that can focus on a specific area of the stage. The directed beams are perfect for **long distance** and can be used to cast shapes on stage and **projected**.

FOLLOW SPOT

A "follow spot" sits on a stand and is designed to follow performers around the stage. It is a more **personal** variation of a profile spot with its additional features such as colour **regulation** and **zoom**.

FREEZE SPOT

A "freeze spot" is used to create a **frozen** beam of light across the stage. The freeze has a diameter very thin that allows light to scatter, producing a **halo effect**. "Freeze spot" can also make use of the **lens** to create various effects.

PAR CAN

A "par can" cannot be focused and is one of the **cheapest** types of lanterns. They used to cost **expensively**. Par cans **bend** a very sharp, strong beam of light, creating a **beam-like effect**.

WARNING

Lamps and lanterns can get very hot. Always wear protective clothing when working with stage lights.

Stage Lighting

paberplakat DR019
lamineeritud DR019L

DRAMA PRACTITIONERS 2

VSEVOLOD MEYERHOLD (1874 - 1940)

Ukrainian stage practitioner who developed a **total theatre** approach to productions, involving music, costume, lighting and stage design.

JERZY GROTOWSKI (1919 - 2009)

Polish stage practitioner who developed a **total theatre** approach to productions, involving music, costume, lighting and stage design.

PETER BROOK (born 1926)

A French stage director and his vision has shaped the international nature of theatre research.

AUGUSTO BOAL (1931 - 2009)

Brazilian theatre director who influenced the development of **Community Theatre** and **Theatre in Education**.

Drama Practitioners 2

paberplakat DR018
lamineeritud DR018L

HISTORY OF THEATRE 1

The **beginnings** of theatre are uncertain. However, some sources claim that it all started as far as the **Troyan War**.

GREEK THEATRE

- The word drama comes from the ancient Greek word meaning "to act".
- The Greeks wanted three types of plays: **comedy**, **tragedy** and **satyr**. Performances were held in the open air in the **stadium** and the **orchestra** was the main acting space.
- Costumes involved three areas and a chorus. The actors communicated on the **stage**, **orchestra** and **surrounding areas** to help portray their characters.
- Each play was now **acted** and **rehearsed** to sell the **theatre**.

MEDIEVAL THEATRE

- After the fall of the Roman Empire, Europe fell into the **Dark Ages**.
- The **Celts** and **French** were popular and **disappearing** cities.
- Medieval plays were **open-air** performances on **holy days**.
- 1300: "Miracle Plays" assumed that **ordinary people** of the time did **miracles** because they didn't **know** about **Christianity**.

1300-1500: COMEDIA DELL'ARTE

- Especially **Italy** had plays.
- Medieval comic performances impressed visitors from **remote Italian regions**.
- The **clownish** acts always the same and included **Physical theatre** - a **musical** **guitar** and **drum**.
- Commedia dell'arte was **scripted**. They **improvised** scenes and **had** to create **new** scenes.

1500-1600: Elizabethan & Jacobean

- At **1563**, James I became a **King** and wrote **The Theatre**. By 1590, there were at least 8 other theatres in London, including the **Shakespeare's Globe**.
- Elizabethans enjoyed **tragedy** and **comedy**. Some plays were **political** in nature, others were **romantic**.
- When Elizabeth I died in 1603, James I became king and people were **more** **intelligent** and **more** **critical**.
- In 1611, the Puritans came to power and closed theatres, as these were **irregular** **entertainments**.

History of Theatre 1

paberplakat DR020
lamineeritud DR020L

HISTORY OF THEATRE 2

1660-1700: THE RESTORATION

- Theatre reopened when Charles II was restored to the English throne.
- The "Theatre Royal" in Drury Lane was built with a **Proscenium arch** which allowed actors to approach the audience. This proved a revolution in staging.
- Restoration comedy first played for the rich and **elite** of the time.
- The later popular form of drama.
- For the first time women appeared on stage. (Dame **Castro**, the widow of Charles II, was the most prominent restoration actress.)

1700-1800: 18th CENTURY THEATRE

- Theatre became extremely popular, especially among the upper classes.
- Elaborate scenery was introduced and theatres became larger. Seats had to be **shoved** and **artificial**.
- Comedies took over from tragicomedy as the dominant form of drama. ("Comedy of Manners")
- For the first time actors became **celebrities**. Famous actors included David Garrick, Sarah Siddons and David Garrick.

1800-1900: VICTORIAN MELODRAMMA

- Early melodramas thrilled audiences with lots of noise, colour, drama and **repellent** scenes.
- Melodramas used **stock** characters, high-spirited heroes and **poor**-furnished heroines. Stage effects were inventive and extravagant.
- People used the **theatre** to express the **problems** of their working lives during industrialisation.
- As the country developed, plays dealt with **issues** that affected ordinary people. "Great" **social** **dramas** guaranteed to make the audience **grin** and **harrumph**.

1900-1945: KITCHEN SINK DRAMA

- In 1898, **George萧登顿** wrote a number of plays for working-class plays for the Royal Court Theatre.
- One play, "Ghosts" (1898) by **Henrik Ibsen** was a **young-made character** who **acted** **and** **sang**. His type of character was labelled as "long-faced" and "ugly".
- When **Woolton** was abolished, playwrights began to **choose** **realistic** **subjects** as **issues** to challenge **ideal** **and** **beautiful**.
- Play **Individuality** (1902) by **John Galsworthy** was a **success**.

History of Theatre 2

paberplakat DR021
lamineeritud DR021L

STYLES OF MUSICAL THEATRE

ROCK OPERA

- Music and dialogue **blended** together.
- Storylines are **complex**.

BALLAD OPERA

- Music and dialogue **blended** together.
- The **Prologue** (1728)

ROCK MUSICALS

- Music **dominates** the show.
- 1950s: **West Side Story** (1957)

BAUBLES

- "They're performing **primarily** **cabaret**."
- 1950s: **My Fair Lady** (1956)

CONCERT BROADWAY

- Music **dominates** the show.
- 1950s: **West Side Story** (1957)

EXTRAVAGANZA

- Shows in **large** and **lavish** **decorations**.
- The **Empress of China** (1847-1848)

REVUE

- Entertainment **variety** **shows** are shown as a **series** **back-to-back** for **audiences**.
- 1900s: **Edith Bouvier Beale**

PIRATE THEATRE

- Music **dominates** the show.
- 1950s: **West Side Story** (1957)

BOOK MUSICAL & ROCK OPERAS

- Music with a **solid** **script**.
- 1950s: **West Side Story** (1957)

PARADE MUSICALS

- Always **based** on **historical** **performances**.
- 1950s: **West Side Story** (1957)

ROCK OPERETTA & POP MUSICALS

- Music **dominates** the **show**.
- 1950s: **West Side Story** (1957)

Styles of Musical Theatre

paberplakat DR023
lamineeritud DR023L

20th CENTURY THEATRE

NATIONALISM

- Artists **wrote** that **art** **should** **reflect** **its** **culture**.
- English playwrights **W. B. Yeats** and **John Millington Synge** wrote plays in **Irish**.
- Play **Yeats** (1907) and **Synge** (1907) **opened** **with** **Nationalism**.
- Play **Yeats** (1907) **opened** **with** **Nationalism**.

POLITICAL THEATRE

- The **ideas** of **Marx** (**1848**) **had** **a** **huge** **influence** on **people**.
- Communist **revolution** **happened** in **Russia**.
- Play **Lenin** (1907) **opened** **with** **Political** **theatre**.

THEATRE OF THE ABSURD

- Artists **wrote** that **theatre** **should** **reflect** **the** **absurd**.
- Play **Waiting for Godot** (1953) **opened** **with** **theatre** **of** **the** **absurd**.

KITCHEN SINK DRAMA

- In 1898, **George萧登顿** wrote a number of plays for working-class plays for the Royal Court Theatre.
- One play, "Ghosts" (1898) by **Henrik Ibsen** was a **young-made character** who **acted** **and** **sang**.
- Play **Individuality** (1902) by **John Galsworthy** was a **success**.

20th Century Theatre

paberplakat DR022
lamineeritud DR022L

MUSICAL THEATRE SKILLS

ACTING SKILLS

- Developing **background** and **motivation** will help you **act** your role well and **follow** the **director's** **ideas**.
- Show the **thoughts**, **feelings** and **emotions** of the **character** you are **portraying** through your **acting**.
- Make your **performance** visually interesting and hold **audience's** **attention** by making **powerful** **gestures** to **truly** **express** **yourself**.

SINGING SKILLS

- Holding **notes** will **improve** your **pitch** and **good posture** will help with **breath control**.
- Learn the **rhythm** and **pitch** to **get** **the** **right** **rhythms** and **notes**. **Articulating** the **notes** will help with **vocal control**.
- Remember to **stop** in **mid-sentence** **silence**.

DANCING SKILLS

- Developing a **strong** **stage presence** is **essential**. **Posture**, **balance** and **space**. Use **physical skills** of **balance**, **coordination**, **movement** and **co-ordination**.
- Learning to **use** and **analyse** the **music** will help with **dancing dynamics**, **pace** and **tempo**.
- Before performing a **dance** always **complete** a **full** **warm-up**.

ENSEMBLE SKILLS

- Learning **writing**, **singing** and **dancing** skills in **group** **musical** **performances** or **choral** **performances** for **team** **spirit**, **cohesiveness**, **teamwork** and **team** **cohesion**.
- Group-based **activities** will create a **sense** of **unity**.

Musical Theatre Skills

paberplakat DR024
lamineeritud DR024L

THE HISTORY OF MUSICAL THEATRE 1	
Musical theatre is considered the most active of the Performing Arts, combining music, song, dialogue and action.	
1900 - 1909	MUSICAL DRAMA: COMEDY AND OPERETTA
1900 - <i>Thomas Jefferson's Hat</i> (written by George M. Cohan)	
1900 - <i>Original Mystery Comedy</i> (written by George M. Cohan)	
1908 - <i>The Biggs' Opera</i>	
1919 - <i>The Wizard of Oz</i>	
1910 - 1929	
1910 - <i>The Mikado</i> (by Gilbert and Sullivan)	
1910 - <i>The Clowns' Nation</i>	
1914 - <i>One-Och-Ochee</i>	
1917 - <i>Worried</i>	
1919 - <i>The Professor's Party</i>	
1930 - 1949	
1930 - <i>On Your Toes</i>	
1934 - <i>Anything Goes</i>	
1935 - <i>Porgy and Bess</i>	
1937 - <i>The Cradle Will Rock</i>	
1937 - <i>I'd Rather Be Right</i>	
1950 - 1969	
1950 - <i>Pal Joey</i>	
1952 - <i>Elmer Gantry</i>	
1953 - <i>Camino Real</i>	
1954 - <i>On the Town</i>	
1957 - <i>South Pacific</i>	
1970 - 1989	
1970 - <i>Sugar and Steel</i>	
1971 - <i>This Thing Called Love</i>	
1984 - <i>The Perfect Game</i>	
1989 - <i>My Fair Lady</i>	
1991 - <i>West Side Story</i>	
1990 - 1999	
1990 - <i>Music Man</i>	
1991 - <i>Evita</i>	
1992 - <i>Miss Saigon</i>	
1993 - <i>Chicago</i>	
1994 - <i>Wicked</i>	
1995 - <i>Evita</i>	
1996 - <i>Miss Saigon</i>	
1997 - <i>Love Never Dies</i>	
1998 - <i>Wicked</i>	
1999 - <i>Evita</i>	
2000 - 2009	
2000 - <i>Wicked</i>	
2001 - <i>Evita</i>	
2002 - <i>Love Never Dies</i>	
2003 - <i>Wicked</i>	
2004 - <i>Wicked</i>	
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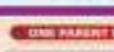
History of Musical Theatre 1

paberplakat DR025
lamineeritud DR025L

THE HISTORY OF MUSICAL THEATRE 2	
1960 - 1989	
1960 - Big Bang	ANDERSON, CULTURE AND INFLUENCES or the '60s plots became more diverse; exploring culture and more serious themes.
1965 - A Funny Thing Happened on the Way to the Forum	Social and cultural issues were explored in plays such as <i>Deathtrap</i> (1966), which examined the question of 'Is Death Trap' (the title suggests that it's not) could a morally bankrupt plot and merciless use of life infections and the anti-war message).
1968 - Hair	
1970 - 1979	
1972 - Jesus Christ Superstar	Great musicals thrived in the 1970s, like <i>Jesus Christ Superstar</i> , <i>Jesus Christ Superstar</i> becoming cult material.
1975 - The Rocky Horror Show	Traditional musicals remained popular, however.
1975 - Evita	<i>Evita</i> (1979) received widespread critical acclaim for its new and original music.
1979 - A Chorus Line	
1980 - 1999	
1980 - Les Misérables	INTERMEDIA, MULTIMEDIA AND NEW CONCEPTS large musicals with fringe casts and extravaganzas special effects became popular again.
1981 - City	
1985 - Streetcar Named Desire	After <i>Allegro</i> (1980) and <i>Les Misérables</i> (1982), many musicals that had been forgotten, or even dead, <i>Wicked</i> (1985) took a bright idea of supercharged music.
1986 - Starlight Express	
1989 - Miss Saigon	
2000 - 2009	
2000 - Jersey Boys	Revivals, adaptations of films musicals and comedies musicals created audiences to re-emerge over decades and use familiar stories and songs again.
2002 - Hairspray	The <i>West Side Story</i> (1961) became a huge hit again, along with adaptations of classic musicals including <i>The Wizard of Oz</i> (1998) and <i>Beauty and the Beast</i> (1998).
2005 - Spamalot	
2007 - Les Misérables	
2009 - High School Musical	
2010 - 2019	
2010 - We Will Rock You	REVIVAL TO ENERGY CENTRE Revivals have re-introduced us to some previous arranged audiences, especially <i>We Will Rock You</i> (2002) and <i>Mamma Mia!</i> (2005) and <i>Wicked</i> (2009).
2012 - Hamilton	
2015 - Hamilton	<i>Hamilton</i> (2015) played a huge role in introducing modern theatres. To raise money including <i>Aladdin</i> (Broadway 2014) and <i>Grease</i> to the West End three-venue budget successful.
2017 - Hamilton	
2019 - High School Musical	
WHAT'S NEXT?	
What will be the next big innovation in musical theatre? With large commercial companies dominating and small original ones breaking through to new audiences, is the 'big artistic' and 'commercial' of the future, what's next with you-off?	

History of Musical Theatre 2

paberplakat DR026
lamineeritud DR026L

<h1>THE FAMILY</h1>	
<p>Families are important because they provide for children's needs. Examples include:</p> <ul style="list-style-type: none"> Food and drink A home Love Support and protection Encouragement Education and training 	
 <p>NUCLEAR FAMILIES</p>  <p>Nuclear families consist of a father and a mother and their dependent children. The wider network of relatives may not live nearby so nuclear families sometimes have less support.</p>	 <p>EXTENDED FAMILIES</p>  <p>Extended families consist of a wider network of relatives including grandparents, aunts, uncles and cousins. Help and support is available from a number of different sources.</p>
 <p>SINGLE PARENT FAMILIES</p>  <p>Single-parent families are becoming more common. The parent may not have married. However, they may choose to marry at a later date. The majority of single parents are mothers but this is not always the case.</p>	 <p>RECONSTITUTED FAMILIES</p>  <p>Reconstituted families are made when there are awards from new partnerships. There can also be issues of step-fathers or step-mothers. Families are where to adjust to the new situations.</p>

The Family

paberplakat CHD001
lamineeritud CHD001L

Reproductive Organs

paberplakat CHD002
lamineeritud CHD002L

Contraception

paberplakat CHD003
lamineeritud CHD003L

PREGNANCY

A woman can become pregnant after spontaneous sexual intercourse. Most pregnancies are planned but occasionally they can happen accidentally. It can happen the first time a woman has sex, or it can take many attempts.

Pregnancy

paberplakat CHD004
lamineeritud CHD004L

NUTRITION

The energy and nutrients needed by your body to grow and stay healthy come from the food you eat. The food we eat has the right nutrients.

A BALANCED DIET

A guide for a healthy diet is shown below:

MEAT AND FISH	FRUIT AND VEGETABLES	MILK AND DAIRY PRODUCTS
Meat, fish, beans, eggs, nuts, seeds, dried fruit, dried vegetables, dried fruit and nuts, dried vegetables, dried fruit and nuts.	Fruit and vegetables are good for you. They give you vitamins and minerals.	Milk, dairy products, cheese, yoghurt, cream, butter, margarine, cream cheese, cottage cheese, etc.

UNDERSTANDING NUTRITION

All the foods you eat are made up of the following nutrients:

Fats	Carbohydrates
Unsaturated and saturated fats are the main source of energy. Movement of fats are built for you. The right fats can help you live longer.	Carbohydrates are your body's main source of energy. Complex carbohydrates provide your brain glucose and energy to help you concentrate and focus on schoolwork and other important tasks.
Protein	Vitamins and Minerals
Proteins are used by the body for growth and maintenance. Proteins include meat, fish, eggs, beans, lentils, pulses, nuts, seeds, whole grains, and dairy products.	Vitamins and minerals help the body healthy. Vitamins include fruit and vegetables, cereals, bread, milk, yogurt, cheese, eggs, fish, meat, and liver.

FEEDING

Milk is the perfect food for babies under six months old. Parents need to choose whether to breast or bottle feed, or use a combination of the two.

BREAST FEEDING

- IMMUNOGLOBULINS**: Contains antibodies that help protect against infections and illnesses.
- PROTEIN**: Provides protein to the baby's diet.
- IRON**: Provides iron to the baby's diet.
- WATER**: Provides water to the baby's diet.
- LECHENILLE**: Provides lactose-free breast milk.

BOTTLE FEEDING

- IMMUNOGLOBULINS**: Offers immunoglobulins to the baby's diet.
- PROTEIN**: Provides protein to the baby's diet.
- IRON**: Provides iron to the baby's diet.
- WATER**: Provides water to the baby's diet.
- LECHENILLE**: Provides lactose-free breast milk.

WEANING

Weaning is the process of gradually introducing an infant to solid food.

- The process of weaning should start at around six months of age.
- Start with bland flavours with no salt or spices.
- Try new foods one at a time.
- Introduce liquids slowly.
- Introduce textures by introducing varied foods.

EMOTIONAL DEVELOPMENT

This is a child's ability to recognise and control emotions.

EMOTIONS

- Happiness
- Fear
- Love
- Jealousy
- Anger
- Excitement
- Sadness

Emotions include

STATES OF EMOTIONAL DEVELOPMENT

3 months: Smiles when spoken to.	6 months: Shows body when spoken to; shows lots of energy.	2 years: Continually removes clothes and puts them back on again.	4 years: Very affectionate to people they know well.
6 months: Shows some fear and anxiety.	12 months: Separates and very dependent on familiar adults.	3 years: Becomes less dependent on parents and more independent.	5 years: Continues physically to distress and will respond to maturity.

SOCIAL DEVELOPMENT

This is the process of learning how to live easily with others (socialisation).

Children will learn social skills when confronted with a variety of different experiences both inside and outside the home.

CHILDREN NEED TO LEARN

- How to share
- Personal hygiene
- To mix with others
- To take care of others
- To respect others
- Table manners

STAGES OF SOCIAL DEVELOPMENT

3 Years: Plays with other children in the same room.	8 Months: Starts to copy what other children do.
4 Years: Plays and interacts alone.	12 Months: Plays alone and starts to feel lonely.
5 Years: Uses a spoon to eat and becomes more independent.	18 Months: Likes to play with other children.

Nutrition

paberplakat CHD005
lamineeritud CHD005L

Feeding

paberplakat CHD006
lamineeritud CHD006L

Emotional Development

paberplakat CHD009
lamineeritud CHD009L

Social Development

paberplakat CHD010
lamineeritud CHD010L

PHYSICAL DEVELOPMENT

This is the child's physical growth and how a child's ability to control their body changes over time. Physical development can be measured by looking at a child's motor skills.

Motor skills are actions that involve the movement of muscles in the body and require co-ordination between the brain and body.

Motor skills are split into four categories:

- Gross Motor Skills**: Skills that involve performing large muscle movements.
- Fine Motor Skills**: Skills that involve performing small muscle movements.
- Large Muscle Skills**: Skills that involve performing large muscle movements.
- Small Muscle Skills**: Skills that involve performing small muscle movements.

AGE	GROSS MOTOR SKILLS	FINE MOTOR MANIPULATIVE SKILLS
3 MONTHS	Learn to support head.	Plays with hands.
6 MONTHS	Rolls over.	Pushes with a vehicle.
9 MONTHS	Lies on stomach and rolls over.	Picks up toys with a pincer grip.
12 MONTHS	Creeps on hands and knees.	Pushes a toy with a pincer grip.
15 MONTHS	Walks with support.	Pushes a toy with a pincer grip.
2 YEARS	Walks with support and begins to walk independently.	Pushes a toy with a pincer grip.
3 YEARS	Runs with support and begins to run independently.	Pushes a toy with a pincer grip.
4 YEARS	Balances and jumps.	Pushes a toy with a pincer grip.
5 YEARS	Climbs, skips, and jumps.	Pushes a toy with a pincer grip.

INTELLECTUAL DEVELOPMENT

This is the development of a child's brain and how a child gains an understanding of the world. Learning to communicate, especially through speech, is an important part of intellectual development.

3 Months: Smiles, coos, babbles and cries.

6 Months: Reaches for objects, plays with objects, and puts objects in mouth.

9 Months: Likes to copy sounds (e.g. Walk - dad).

12 Months: Likes to copy simple movements (e.g. Walk - mom).

18 Months: Likes to copy movements and movements (e.g. Walk - mom).

2-2½ Years: Likes to copy movements and movements (e.g. Walk - mom).

3-4 Years: Likes to copy movements and movements (e.g. Walk - mom).

Children learn through:

- Interacting
- Observing
- Asking questions
- Exploring
- Experimenting

Parents can help strengthen:

- Support and praise
- Answering questions
- Encouragement
- Encouraging thinking
- Encouraging play

PLAY

Play is a healthy activity that helps children grow and develop.

TYPES OF PLAY

Physical	Creative	Imagination
Manipulation	Social	Discovery

PLAY AND DEVELOPMENT

Children learn and practice many skills through play, including fine and gross motor skills, language, socialisation, personal, emotional, relational and creativity.

Physical Benefits

- Helps improve balance and co-ordination
- Develops motor skills
- Develops strength
- Provides a form of exercise

Intellectual Benefits

- Develops language skills
- Learns about the world
- Makes connections (e.g. Imagination)
- Encourages imagination

Emotional Benefits

- Encourages self-confidence
- Encourages positive self-expression
- Encourages resilience
- Encourages sharing
- Encourages cooperation
- Encourages social skills

Social Benefits

- Encourages sharing
- Encourages cooperation
- Encourages resilience
- Encourages social skills

Physical Development

paberplakat CHD007
lamineeritud CHD007L

Intellectual Development

paberplakat CHD008
lamineeritud CHD008L

Play

paberplakat CHD011
lamineeritud CHD011L

Safety

paberplakat CHD012
lamineeritud CHD012L

SAFETY

Young children do not have a real understanding of danger. Accidents are the biggest cause of injury and death of children over the age of one.

IN THE HOME

- Stairs:** Use safety gates at top and bottom of stairs.
- Electricity:** Use electrical outlet covers.
- Kitchen:** Keep children away from cookers, knives and other hot surfaces.
- Fire:**
 - Fit smoke alarms and check them regularly.
 - Use fire guards around the fireplace.
 - Keep matches and lighters away from children.
- Bathroom:**
 - Store medicines and other harmful chemicals out of reach.
 - Don't leave children alone in the bath.
- Bedrooms:**
 - Ensure children sleep in a safe environment.
 - Use safety gates at the foot of the bed.

OUTSIDE THE HOME

- Road Safety:**
 - Teach children the Golden Cross Code: Stop, Look, Listen, Think, Cross.
 - Try to keep children by the adult before letting them in a car or van.
- Travelling:**
 - Use car seats appropriate for the child's age and ensure they are fitted correctly.
- Garden:**
 - Keep the garden tidy.
 - Ensure equipment should be secured and stable.



Cognitive Psychology

paberplakat PSY001
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Social Psychology

paberplakat PSY003
lamineeritud PSY003L



Biological Psychology

paberplakat PSY002
lamineeritud PSY002L



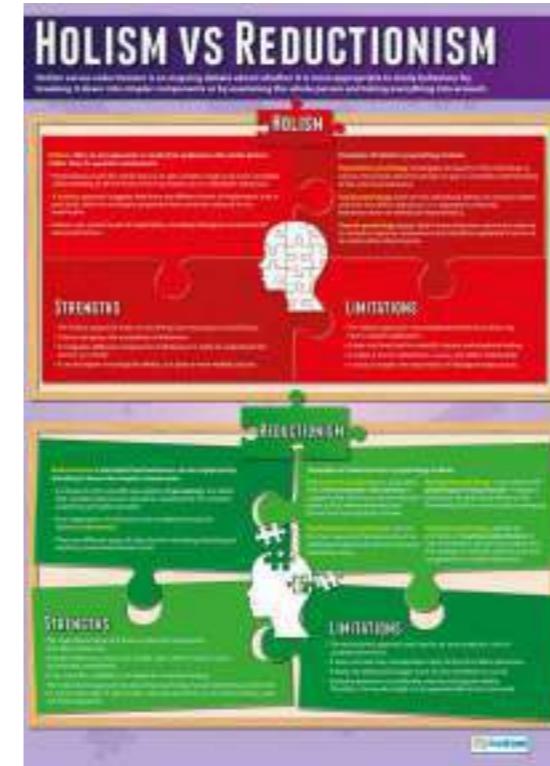
Behavioural Psychology

paberplakat PSY004
lamineeritud PSY004L



Psychodynamic Psychology

paberplakat PSY005
lamineeritud PSY005L



Holism Vs Reductionism

paberplakat PSY007
lamineeritud PSY007L



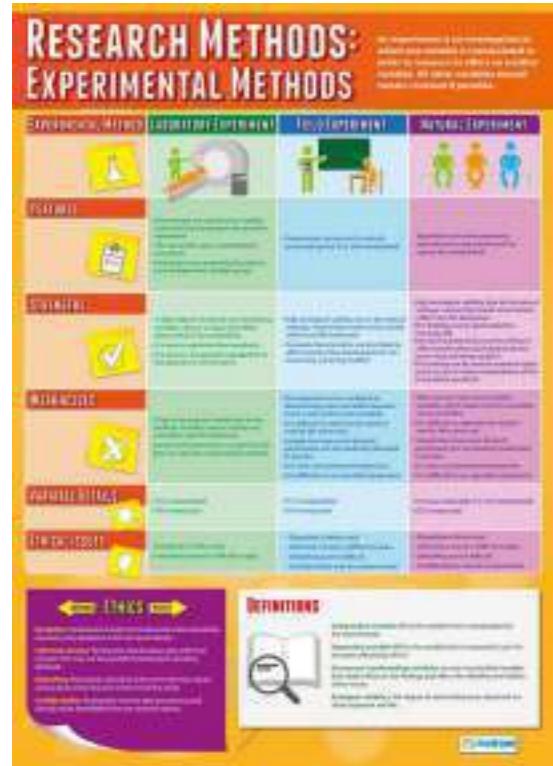
Nature Vs Nurture

paberplakat PSY006
lamineeritud PSY006L



Free Will Vs Determinism

paberplakat PSY008
lamineeritud PSY008L



Research Methods: Experimental Methods

paberplakat PSY009
lamineeritud PSY009L



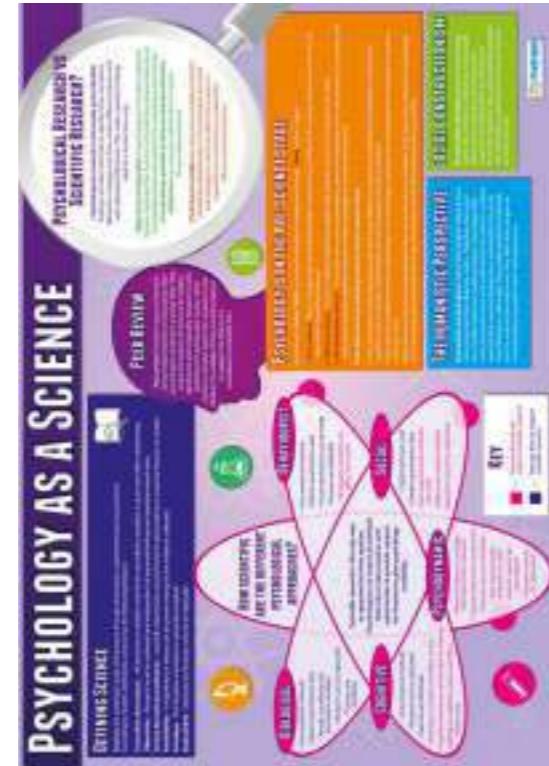
Biases

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lamineeritud PSY011L



Research Methods: Non-Experimental Methods

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lamineeritud PSY010L



Psychology as a Science

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lamineeritud PSY012L



Reliability and Validity

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lamineeritud PSY013L



Abnormal Psychology

paberplakat PSY015
lamineeritud PSY015L



Selecting a Statistical Test

paberplakat PSY014
lamineeritud PSY014L



Sports Psychology

paberplakat PSY016
lamineeritud PSY016L



Forensic Psychology

paberplakat PSY017
lamineeritud PSY017L



Personality

paberplakat PSY019
lamineeritud PSY019L



Stress

paberplakat PSY018
lamineeritud PSY018L



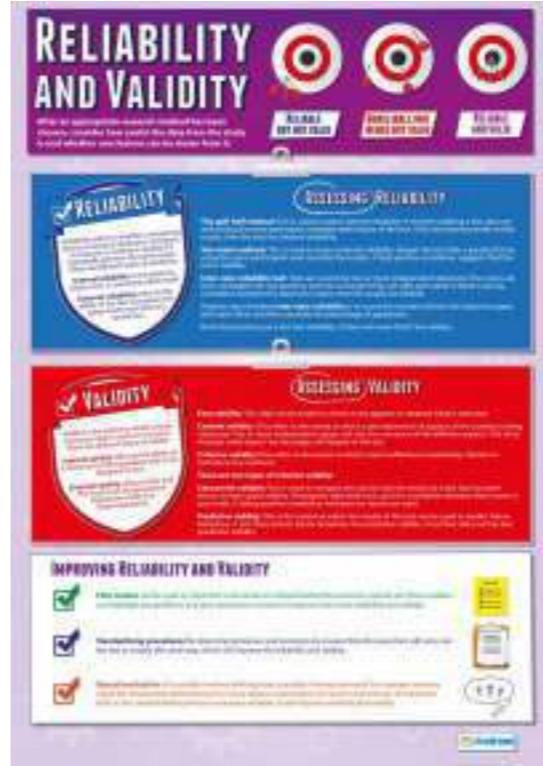
Relationships

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What is Sociology?

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lamineeritud SOC001L



Reliability and Validity

paberplakat SOC003
lamineeritud SOC003L



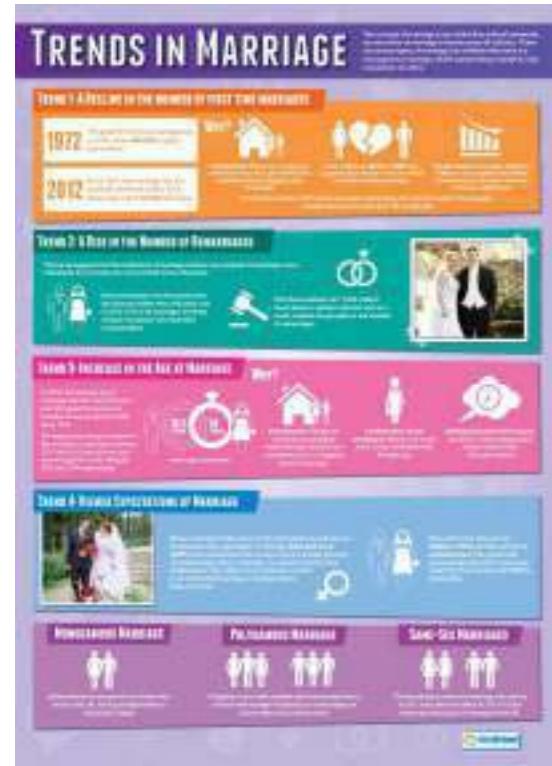
Research Methods

paberplakat SOC002
lamineeritud SOC002L



Family Diversity

paberplakat SOC004
lamineeritud SOC004L



Trends in Marriage

paberplakat **SOC005**
lamineeritud **SOC005L**



Family Roles and Responsibilities

paberplakat **SOC007**
lamineeritud **SOC007L**



Perspectives On Family

paberplakat **SOC006**
lamineeritud **SOC006L**



Family Trends and Demographics

paberplakat **SOC008**
lamineeritud **SOC008L**



Gender Class and Ethnicity in Education

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lamineeritud SOC009L



History of Education

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lamineeritud SOC011L



Influence of Schools

paberplakat	SOC010
lamineeritud	SOC010L



Primary and Secondary socialisation

paberplakat	SOC012
lamineeritud	SOC012L



Meet the classes

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lamineeritud SOC013L



Distribution of Crime

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lamineeritud SOC015L



Identity

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lamineeritud SOC014L



Theories of Crime

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lamineeritud SOC016L



Subculture Explanations of crime

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lamineeritud SOC017L



Wealth and Poverty

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lamineeritud SOC019L



Feminism in history

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lamineeritud SOC018L



Theories of inequality

paberplakat SOC020
lamineeritud SOC020L

THE DESIGN PROCESS

The design process is a series of stages that help identify ideas, optimise problems, and find solutions during the design and creation of a product. The main aim of this process is to create a problem in order to create a need.

```

graph TD
    A[Identify Problem] --> B[Research]
    B --> C[Analyze]
    C --> D[Develop]
    D --> E[Evaluate]
    E --> F[Implement]
    F --> A
    
```

IDENTIFY PROBLEM

What is the problem?
Why is it a need/problem?

RESEARCH

Find design brief requirements:
 • Why the product is needed
 • Who the target audience is
 • What needs to be done to solve the problem

ANALYSE

Identify the user requirements:
 • Functionality
 • Aesthetics
 • Ergonomics
 • Environmental impact
 • Ethical implications

DEVELOP

This stage is to document the design:
 • Sketches
 • Prototypes
 • Mockups
 • Product development
 • A prototype of existing designs

EVALUATE

Product meeting requirements are evaluated by the analysis and evaluation of the following questions:

- Is the product safe?
- Is the product functional?
- Is the product aesthetically pleasing?
- Is the product ethical?
- Is the product sustainable?

IMPLEMENT

Design ideas are refined based on implementation the design specification. Design process often a control stage of ideas, testing and addressing requirements.

The Design Process

paberplakat DT001
lamineeritud DT001

Research

paberplakat DT002
lamineeritud DT002L

WOOD	
Wood is an organic material that is found under the bark of trees. It transports water and nutrients around the tree and provides support. There are three basic types of wood:	
RAINFORESTS	
 <p>Evergreen trees from rainforests. Although trees don't grow as tall as conifers, they are usually more wood and expandable than conifers.</p> <p>They have more leaves, wood and expandability than conifers.</p> <p>They live longer, wood and expandability hinder their growth. For example, India has a very old rainforest tree called a giant redwood.</p>	CONIFERS <p>Evergreen trees from rainforests.</p> <ul style="list-style-type: none"> • Hard, rough, strong and flexible wood. • Always moist. • Dense, heavy grain. • Difficult/difficult to cut down.
 <p>Evergreen trees from rainforests.</p> <ul style="list-style-type: none"> • Hard, strong wood. • Many species are present. • Relatively moist at bottom. 	DECIDUOUS <p>Evergreen trees from rainforests.</p> <ul style="list-style-type: none"> • Many species are present.
NECESSARY	
 <p>Evergreen trees from rainforests.</p> <ul style="list-style-type: none"> • Hard, moist, moist wood. • Many species are present. • Hard, moist wood. • Some species are present. • Relatively moist at bottom. 	 <p>Evergreen trees from rainforests.</p> <ul style="list-style-type: none"> • Hard, light wood that has green leaves and is relatively moist. • Deciduous wood is relatively moist at bottom. • Hard, light wood.
SOFTWOOD	
 <p>Evergreen trees from rainforests.</p> <p>Hardwood trees have continuous rings of wood inside them like leaves and other species.</p> <p>Hardwood trees have distinct rings of wood inside them like leaves and other species.</p> <p>They are quick growing trees can therefore be harvested faster than rainforests.</p> <p>They have more leaves, wood and expandability than rainforests.</p> <p>They are more expensive than rainforests.</p>	 <p>Evergreen trees from rainforests.</p> <ul style="list-style-type: none"> • Contains a lot of resin which is harder and contains a lot of moisture. • Brown, brownish-green. • Lighter wood with reddish-brown. • Contains a lot of resin.
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DECIDUOUS	
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Wood

baberplakat DT005
amineeritud DT005L

PULPWOOD

- Paper-reduced because it is manufactured with 100% recycled materials
- Made from recycled paper without additives
- Environmentally friendly alternative than solid wood
- Same look with digital printing
- Multi-layer bonding, routing and cutting

CHIPBOARD

- Smooth edges of wood are strengthened and stabilized
- Great for interior wall panels
- Non-combustible material
- Excellent water resistance
- Low porosity for decorative painted finishes

BAMBOO

- Sustainable bamboo is a fast-growing, renewable resource
- Environmentally friendly
- Durable
- Bamboo is a natural insulator and good for insulation

HARDWOOD DENSITY FIBREBOARD (HDF)

- Hardwood core bonded directly with wood and glued to create HDF
- Highly durable and stable
- Great, enhanced structural strength
- Great as a replacement, alternative sheet-based component
- Non-toxic, non-carcinogenic, BIF and fungi resistant

WAFFLEBOARD

- Specialized board is made with glue and compressed
- Reduced energy consumption
- Great for insulation or insulation
- Environmentally friendly insulation for acoustic performance
- Low environmental impact and profile

Manufactured Board

paberplakat DT006
lamineeritud DT006L

PLASTICS									
Plastic is a man-made material that is made in a huge variety of products. It is available in a variety of forms, including plastic containers, bags, films, bottles and tubes. There are four main types:									
TEREPHTHALIC PLASTICS									
<p>Thermoplastics can be softened. Monomers have cross-linked so they are not very recyclable. If heat and cold can be easily applied and removed, they can also be recycled easily.</p> <table border="1"> <tr> <td>ALYLIC</td><td>PHOENYLIC</td></tr> <tr> <td> Right, hard plastic Used as a pipe insulation and as insulation in a range of cables and fixtures. Strengths: light weight, strong plastic Weaknesses: brittle and combustible. </td><td> Expanded, soft, light-weight and is good insulator (insulation). Used: pipe insulation and insulation. Strengths: light weight plastic, insulative. Weaknesses: brittle. Uses: (a) foam and food containers. </td></tr> </table>	ALYLIC	PHOENYLIC	Right, hard plastic Used as a pipe insulation and as insulation in a range of cables and fixtures. Strengths: light weight, strong plastic Weaknesses: brittle and combustible.	Expanded, soft, light-weight and is good insulator (insulation). Used: pipe insulation and insulation. Strengths: light weight plastic, insulative. Weaknesses: brittle. Uses: (a) foam and food containers.	<table border="1"> <tr> <td>BUTYLIC</td><td>PVC (POLY VINYL CHLORIDE)</td></tr> <tr> <td> High density (HDPE) – tough, strong, durable plastic used to construct bins, buckets, bags and containers. Weaknesses: brittle and combustible. Used: storage bags and containers. </td><td> Unplasticized PVC (uPVC) – strong, durable and suitable to construct doors, windows and piping. Weaknesses: PVC (uPVC) – combustible, brittle and may release chlorine gas when burnt. Uses: pipes, doors, windows and drainage. </td></tr> </table>	BUTYLIC	PVC (POLY VINYL CHLORIDE)	High density (HDPE) – tough, strong, durable plastic used to construct bins, buckets, bags and containers. Weaknesses: brittle and combustible. Used: storage bags and containers.	Unplasticized PVC (uPVC) – strong, durable and suitable to construct doors, windows and piping. Weaknesses: PVC (uPVC) – combustible, brittle and may release chlorine gas when burnt. Uses: pipes, doors, windows and drainage.
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INTERPOLYMER PLASTICS									
Thermosetting plastics cannot be softened. Monomers have strong cross-links so they are recyclable. If heat and cold is not used, they cannot be recycled.									
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RECYCLABLE									
Most plastics are made from crude oil – a finite resource that will eventually run out. Therefore, try to recycle and reuse plastic when possible.									

Plastics

paberplakat DT003
lamineeritud DT003L

Metal

paberplakat DT004
lamineeritud DT004L

WHAT IS A MECHANISM?

A **mechanism** is made up of a number of working parts called **mechanisms**. A mechanism changes an **input force** (movement) into a desired **output force + movement**.

INPUT	MECHANISM	OUTPUT
Force + Movement going into it...	Work convert or transform energy to move etc...	Force + Movement described by it...

SIMPLE MECHANISMS

- inclined plane**: These are the 5 simple mechanisms which form the basis of all machines.
- wheel and axle**
- wedge**
- screw**
- lever**

EXAMPLES OF MECHANISMS

- vice**
- lock**
- scissors**

Mechanisms

baberplakat DT007
lamineeritud DT007L

LEVER

A lever is a stiff rod that pivots (turns) about a point. This point is called a **Fulcrum**. The input force (effort) + motion is transmitted through the lever to move the **Load**.

Type 1 Lever: where the Fulcrum is between the **load** and the **effort**

Type 2 Lever: the **load** is between the **fulcrum** and the **effort**

Type 3 Lever: the **effort** is between the **fulcrum** and the **load**

LINKAGE

Levers can be joined together to make linkages. Like levers and other mechanisms, they change an input motion + force into an output motion + force.

bike handle

cherry picker

Lever and Linkage

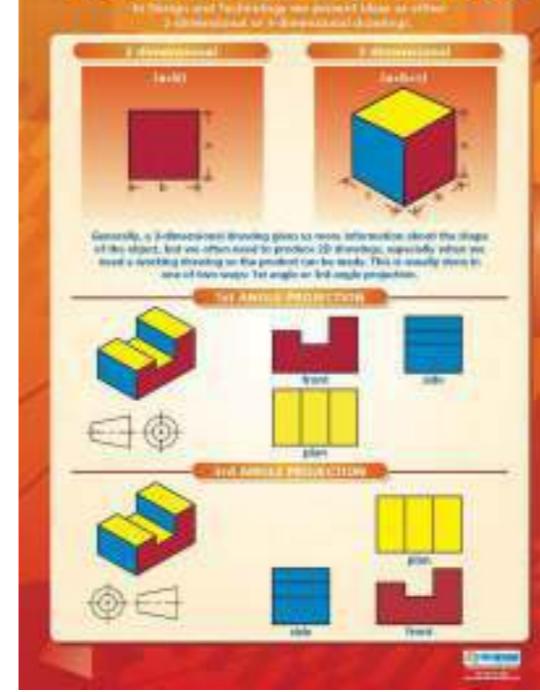
paberplakat DT008
lamineeritud DT008L

**Gears**

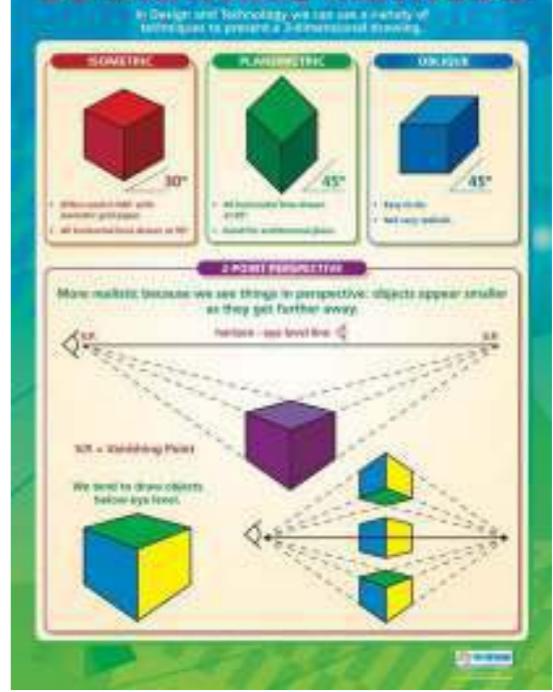
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**Types of Structures**

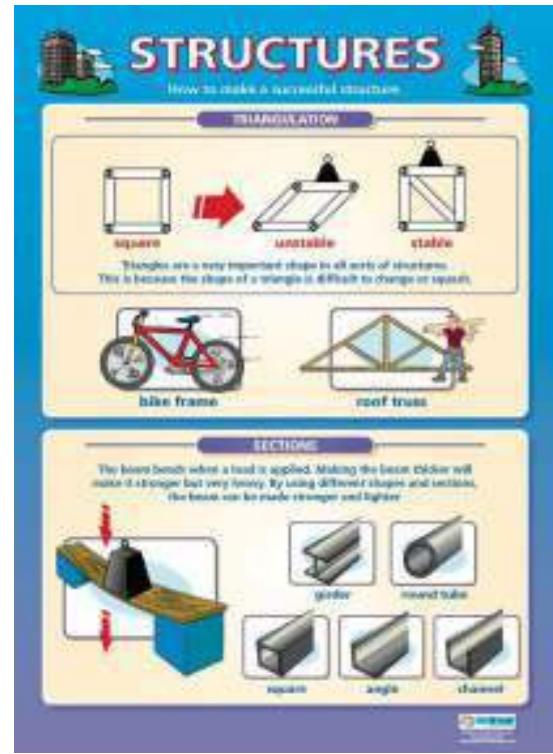
paberplakat DT010
lamineeritud DT010L

TECHNICAL DRAWING**Technical Drawing**

paberplakat DT013
lamineeritud DT013L

3D DRAWING METHODS**3D Drawing Methods**

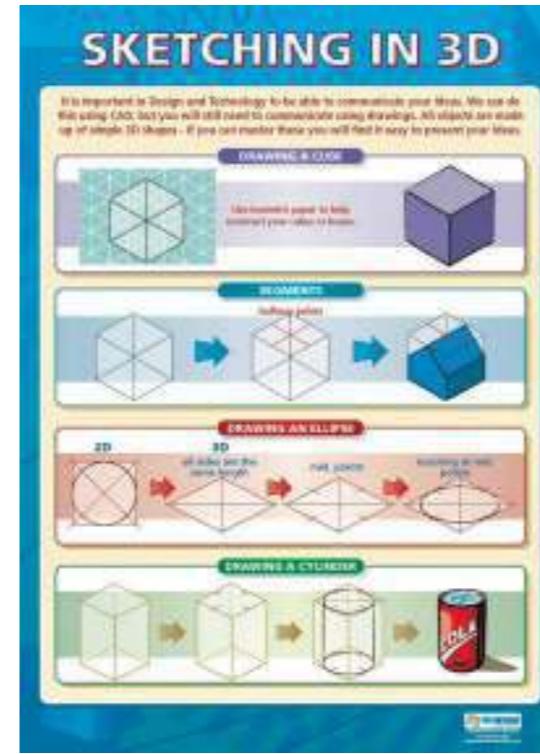
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**Structures**

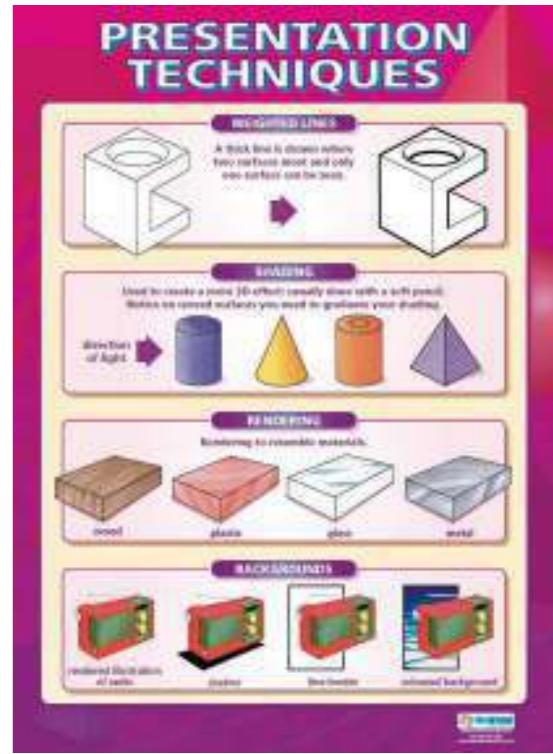
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**Structures and Forces**

paberplakat DT012
lamineeritud DT012L

**Sketching in 3D**

paberplakat DT015
lamineeritud DT015L

**Presentation Techniques**

paberplakat DT016
lamineeritud DT016L



Electronics

paberplakat DT017
lamineeritud DT017L



Resistors

paberplakat DT019
lamineeritud DT019L



Electronic Components

paberplakat DT018
lamineeritud DT018L



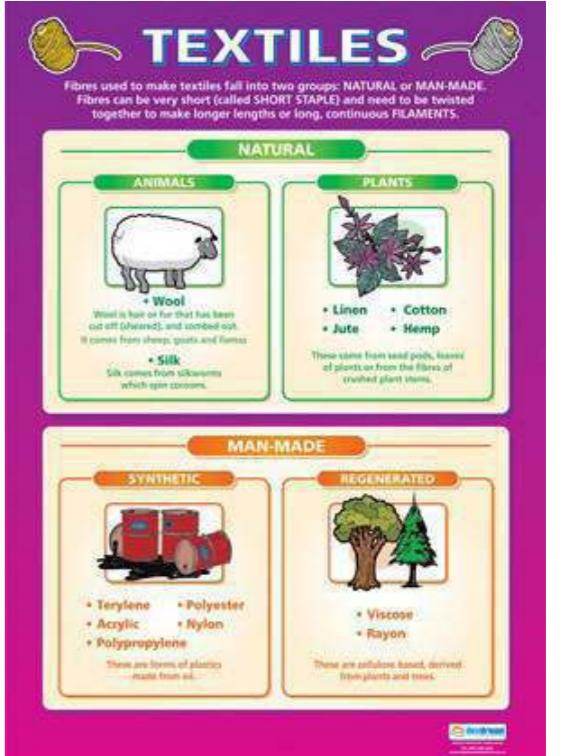
Vitamins and Minerals

paberplakat DT020
lamineeritud DT020L



Measurements in Food

paberplakat DT021
lamineeritud DT021L



Textiles

paberplakat DT022
lamineeritud DT022L



Fabric Decoration

paberplakat DT023
lamineeritud DT023L



Fastenings

paberplakat DT024
lamineeritud DT024L

DESIGN & TECHNOLOGY	
GLOSSARY OF TERMS	
AESTHETICS	The visual appearance of a product i.e. how attractive, pleasant or functional it is.
ALLOY	A combination of two or more metals to improve their individual properties.
ANTHROPOMETRICS	Measurement of the human body.
B.S.I. PARTIAL BRITANNIA INSTITUTION	An organization that checks the safety and quality of products.
C.A.D. COMPUTER-AIDED DESIGN	Computer software designed to create and modify design ideas.
C.A.M. COMPUTER-AIDED MANUFACTURE	Computer-controlled machines used for manufacturing products.
CONDUCTIVITY	The ability of a material to conduct heat or electricity.
ERGONOMICS	The study of how products and environments are designed by involving people and places.
GANTT CHART	A chart to show how a number of tasks will be completed over time.
PROTOTYPE	A model or product made as an idea is tested before being put into full production.
QUALITY CONTROL	Process of testing and controlling characteristics to ensure quality.
TEMPLATE	A stencil used to mark or cut out identical shapes.

Design & Technology Glossary

paberplakat DT025
lamineeritud DT025

FASHION & TEXTILES	
GLOSSARY OF TERMS	
BATIK	
CALICO	
COLOUR FASTNESS	
COLOURWAYS	
DYE	
HEM	
SEAM	
SYNTHETIC	
TACK	
TOILE	
WEAVE	
YARN	

Fashion & Textiles; Glossary

paberplakat DT027
lamineeritud DT027L

FOOD TECHNOLOGY GLOSSARY OF TERMS	
ADDITIVES	 They are added to food products to improve colour, increase shelf-life and enhance flavour. Many are denoted by the prefix 'E'.
AERATION	 To incorporate air into a product in the form of bubbles.
CARAMELIZATION	 The process of changing the colour of sugar, from white to brown, by heating.
H.A.C.C.P.	 The abbreviation for Hazard Analysis and Critical Control Point.
HIGH RISK FOODS	 Food most at risk from pathogenic bacteria.
HOMOGENISE	 To produce a substance of uniform consistency.
LEGISLATION	 Laws made to protect the public.
MODIFIED STARCH	 Natural starches that have been altered chemically or physically.
NUTRIENTS	 Substances in food that provide energy, to promote growth and to help resist infection.
PASTEURISE	 A heat treatment used to destroy micro-organisms.
SENSORY ANALYSIS	 Method of measuring and assessing the flavor, texture, appearance and smell of food.
SHelf-life	The amount of time a food product can be kept safely.

Food Technology Glossary

paberplakat DT026
lamineeritud DT026L

HEALTH & SAFETY

As an essential technique, health and safety is one of the most important skills in the workplace. It is crucial to keep your workers safe from harm by following strict H&S guidelines and maintaining a safe working environment.

WORK ENVIRONMENT

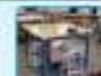
Health and safety in the workplace, a full-risk assessment should be carried out annually and continue after. It cannot over emphasize the risk assessment for all employees, patients and visitors to the premises.

Health & Safety at Work Act: Identifying H&S risks and implementing risk control measures to the business.

SAFETY AT THE WORKPLACE

Health and Safety at Work, Health and Care Act 2002

The Health and Safety at Work Act 2002 places duties on employers and workers. All firms must have a duty of care to prevent risks to health, safety and welfare at work. This should be done through how you manage your risk of injury and safety at work.



Chemical and Process Safety

Health and Safety Executive:

- 100,000+ firms face a criminal offence if they do not take reasonable steps to prevent serious harm.
- Hazardous materials - these are materials which pose a danger to people and the environment. The materials must be stored, handled and transported in such a way as to prevent any damage they may cause to health and safety.

Hazardous Waste:

Health and safety legislation can increase or decrease it is important to understand:

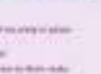
- The design of the machine and the nature of the waste being treated.
- How to set up the machinery, spaces, controls and protection to safety.
- Designers are responsible for the safe design of their products. They must consider the potential hazards and risks posed and how to reduce the risk to health and safety.



Health Needs

Everyone has different needs and requirements, you must be aware of these when applying health and safety training. You must also be aware of the job role and responsibilities:

- Take health and safety training opportunities provided by your employer.
- Make sure you are aware of the job role and responsibilities.



Managing Hazards and Risks

When the correct type of gloves when handling hot and hazardous materials. You should always handle these with care and ensure that you are wearing the correct PPE. You should also wear eye protection, respirators, ear defenders and noise-reducing hearing aids. These will help protect you from potential injuries. These will help protect you from potential injuries. These will help protect you from potential injuries.



Work stress control

Address factors to the workplace and environment that are causing unnecessary stress. If you are not able to control these factors,



Health & Safety

paberplakat DT028
lamineeritud DT028L

SMART MATERIALS

SHAPE MEMORY ALLOY

SMAs are a range of heat-treated alloys that have memory properties.

The word **shape** SMA is **METAMORPHIC**, an alloy of nickel and titanium.

When heated, shapes they return to shape.

SMART WIRE

It's curved. It's bent. It's straight.

Smart wires can be SMA. One strand has 5% strain when a current is passed through it.

PHOSPHORESCENT PIGMENT

Phosphorescent pigments absorb and store energy and release it after glowing.

Phosphorescent pigments last up to 10 times longer than traditional ZnS-based phosphorescents.

These materials glow in the dark, digital and flexible on demand.

TEMOCHROMIC LIQUID CRYSTAL

TLC's change colour when heated.

These materials can be electronically conductive, thermochromic, etc., which results in the amount of current required to heat the panel.

These materials conduct electricity and thermochromic at the same time.

POLYMORPH

Polymer pH is a modern plastic polymer.

Hot water turns translucent. Cold water turns solid.

Polymorph turns solid and becomes mostly insoluble when heated to 65°C. It can be melted to its calcium-polymer hydroxylate base solution, which freezing will crystallize.

Smart Materials

paberplakat DT029
lamineeritud DT029L

Food labelling

paberplakat DT031
lamineeritud DT031L

FOOD HYGIENE AND BACTERIA

Bacteria are the most common cause of food poisoning.

Four Essential Factors for Bacterial Growth:

- 1. WARMTH**: Heat speeds up bacteria growth. (Image: Thermometer)
- 2. MOISTURE**: Water is needed for bacteria to grow. (Image: Bread and water)
- 3. FOOD**: Bacteria need food to multiply. (Image: Meat and vegetables)
- 4. TIME**: Bacteria multiply quickly. (Image: Clock)

Minor Food Poisons:

- Food that is mouldy
- Food containing raw eggs
- Cold meat
- Meat and vegetables left out

Good Hygiene Practice:

- Wash hands and face before and after eating.
- Wash hands before and after handling food.
- Follow colour-coded instructions for food preparation.
- Keep raw and cooked food separate.
- Wash raw fruit and vegetables before eating.
- Use separate knives and chopping boards for raw and cooked food.
- Store raw meat and vegetables at a temperature below 5°C.
- Keep raw meat and vegetables at a temperature above 5°C.
- Store raw meat in a sealed bag or container.
- Store raw meat in the coldest part of the refrigerator.
- Keep raw meat and vegetables away from other food.
- Store raw meat in a sealed bag or container.

Food Hygiene & bacteria

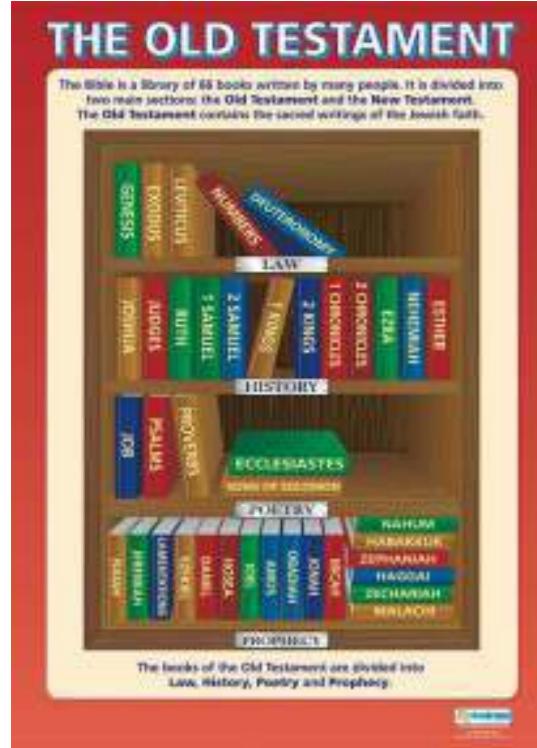
paberplakat DT030
lamineeritud DT030L

Nutrition

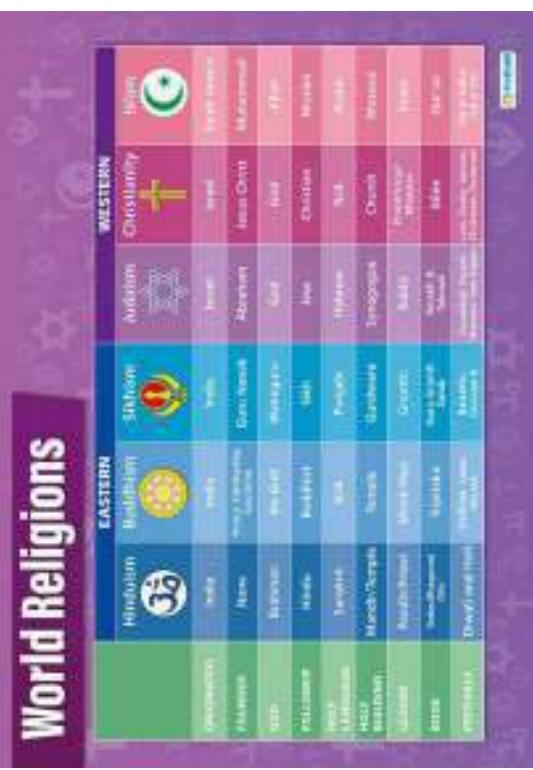
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World Religions

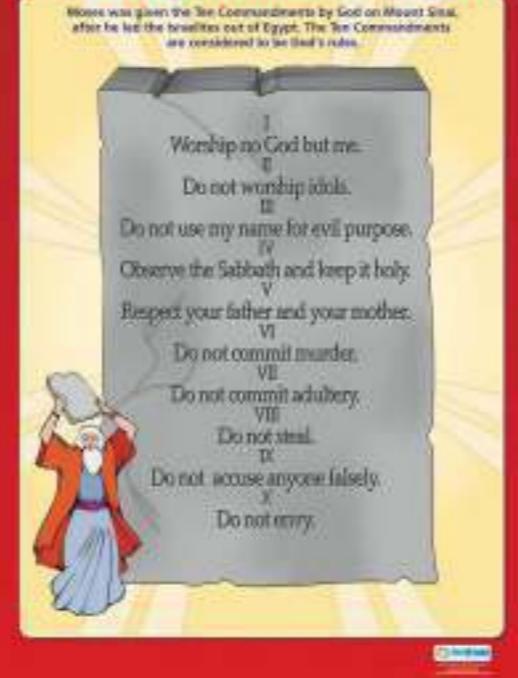
paberplakat RE001
lamineeritud RE001L

**The Old Testament**

paberplakat RE003

**Faith Leaders**

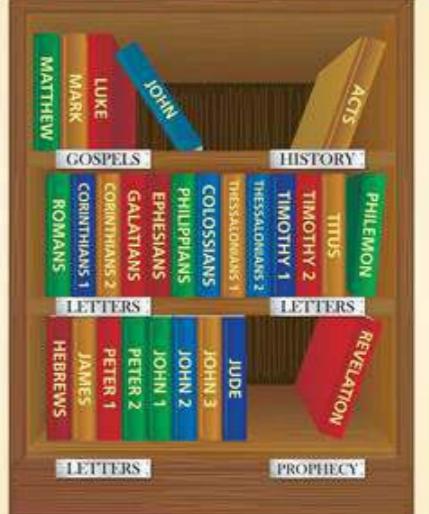
paberplakat RE002

THE TEN COMMANDMENTS**The Ten Commandments**

paberplakat RE005

THE NEW TESTAMENT

The Bible is a library of 66 books written by many people. It is divided into two main sections: the Old Testament and the New Testament. The New Testament was written after Jesus lived and tells us about his life.

**The New Testament**

paberplakat RE006

**The Creation**

paberplakat RE004

THE CHRISTMAS SEASON**The Christmas Season**

paberplakat RE007

**Jesus and His Apostles**

paberplakat RE008

THE MIRACLES OF JESUS

A miracle is an amazing event that cannot be explained by the laws of nature or science. It is an event set apart. Miracles are often seen as a sign of God's power.

**The Miracles of Jesus**

paberplakat RE009

PARABLES OF THE KINGDOM OF GOD

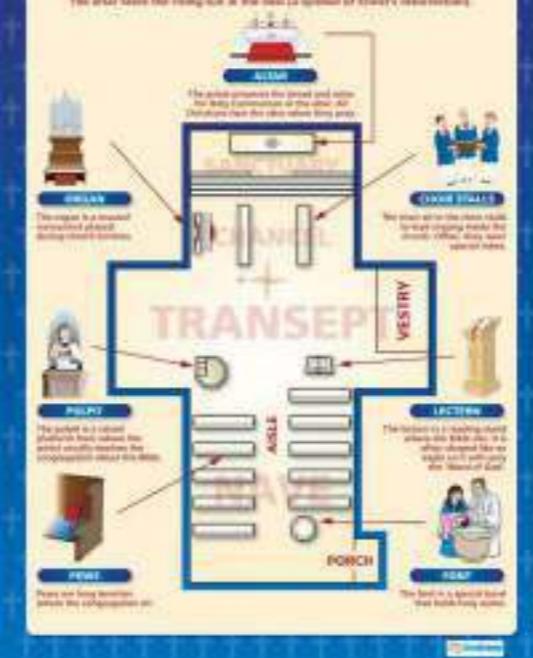
A parable is a simple story with a meaning that can't be explained easily to explain the Kingdom of Heaven.

**Parables of the Kingdom of God**

paberplakat RE010

PLAN OF A CHURCH

Many Christian churches are built in the shape of a cross. The altar faces the front-right at the east (opposite of where the sun rises).

**Plan of a Church**

paberplakat RE013

THE LORD'S PRAYER

Our Father, who art in heaven,
hallowed be thy name;
thy kingdom come;
thy will be done
on earth as it is in heaven.
Give us this day our daily bread;
and forgive us our trespasses
as we forgive those who
trespass against us;
and lead us not into temptation,
but deliver us from evil.
For thine is the kingdom,
the power, and the glory,
for ever and ever.
Amen.

The Lord's Prayer

paberplakat RE014

THE EASTER STORY

Very week millions Christians all over the world are looking to Easter Sunday.

**The Easter Story**

paberplakat RE011

CHRISTIAN ARTEFACTS**Christian Artefacts**

paberplakat RE012

Islamic Artefacts**Islamic Artefacts**

paberplakat RE015

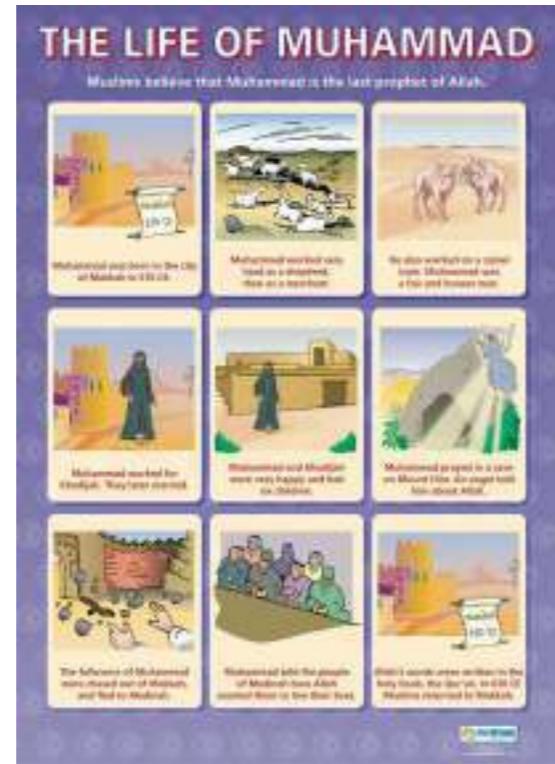
PLAN OF A MOSQUE**Plan of a Mosque**

paberplakat RE016



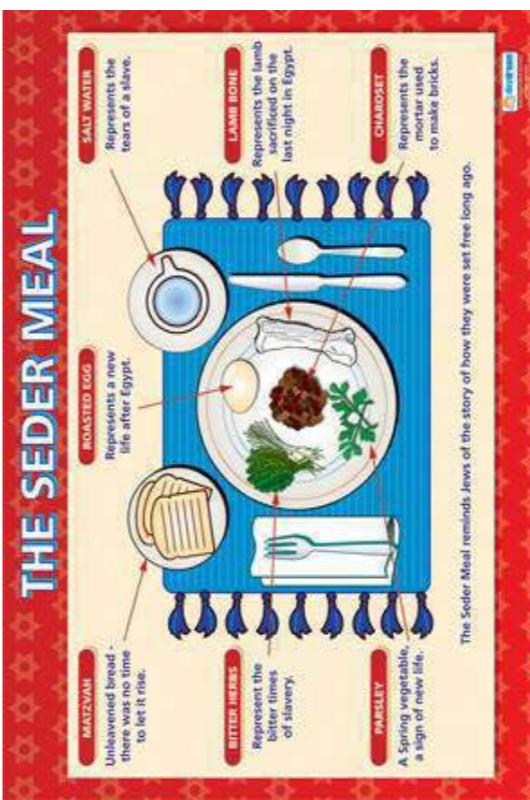
The Five Pillars of Islam

paberplakat RE017



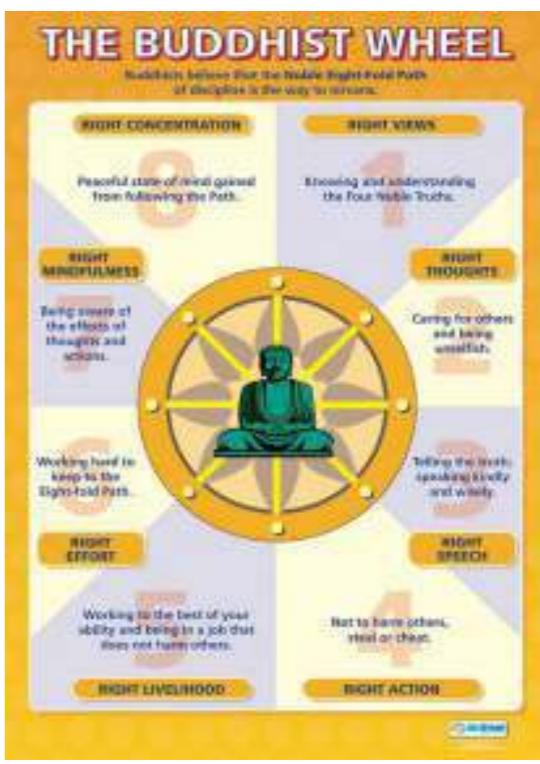
The Life of Muhammad

paberplakat RE018



The Seder Meal

paberplakat RE021



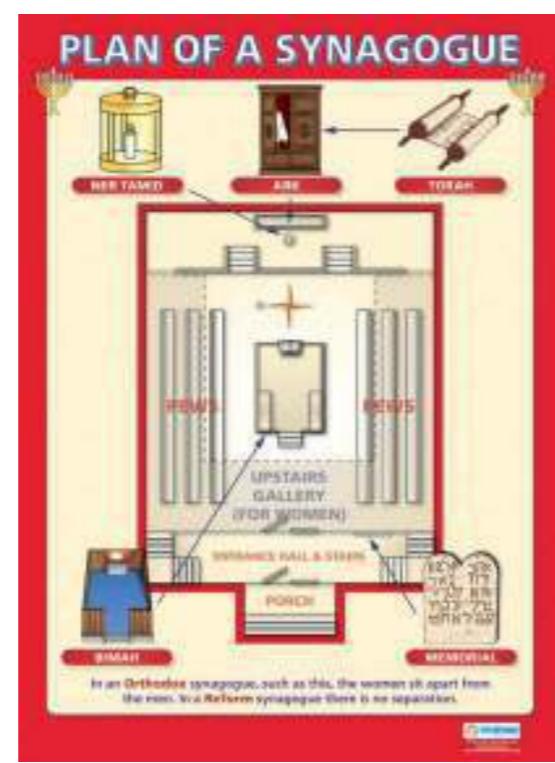
The Buddhist Wheel

paberplakat RE022



Jewish Artefacts

paberplakat RE019



Plan of a Synagogue

paberplakat RE020



Hindu Gods

paberplakat RE023



The Five K's

paberplakat RE024



Jewish Ceremonies

paberplakat

RE033



Shabbat

paberplakat

RE034



Hindu Worship

paberplakat

RE037



Sikh Artefacts

paberplakat

RE038



The Story of Esther

paberplakat

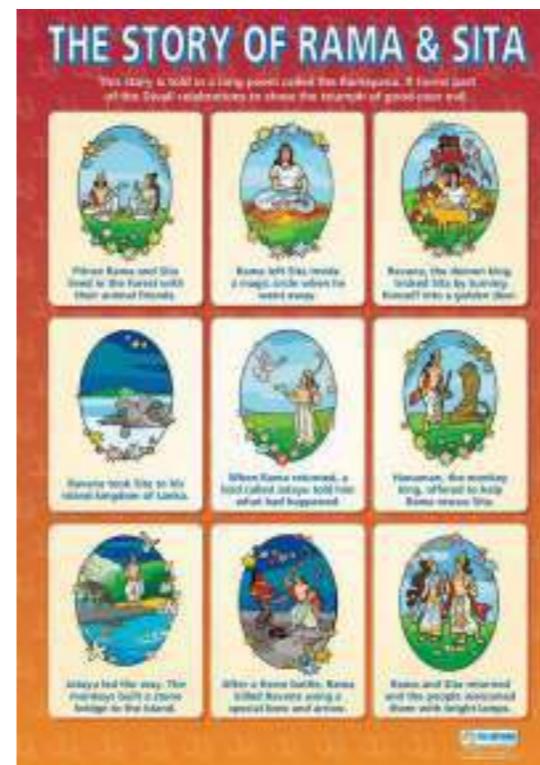
RE035



Hindu Artefacts

paberplakat

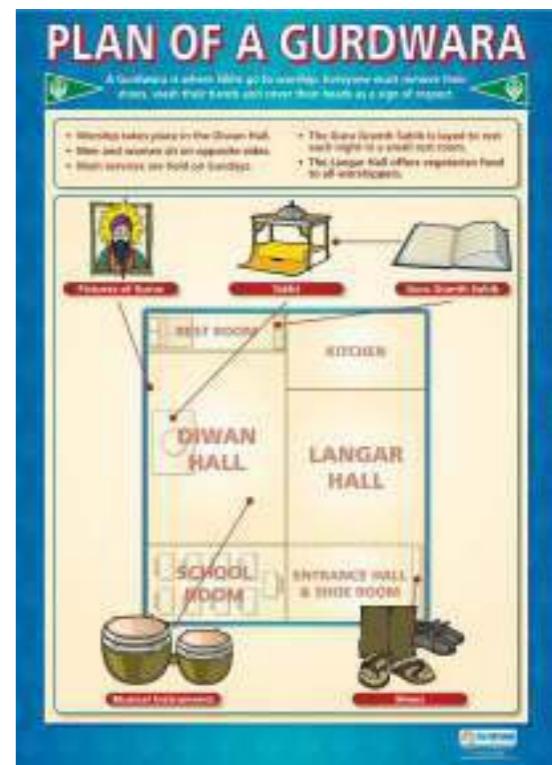
RE036



The Story of Rama and Sita

paberplakat

RE039



Plan of a Gurdwara

paberplakat

RE040



Religion is...

paberplakat RE041
lamineeritud RE041L



I am a Muslim

paberplakat RE043
lamineeritud RE043L



I am a Christian

paberplakat RE042
lamineeritud RE042L



I am a Hindu

paberplakat RE045
lamineeritud RE045L



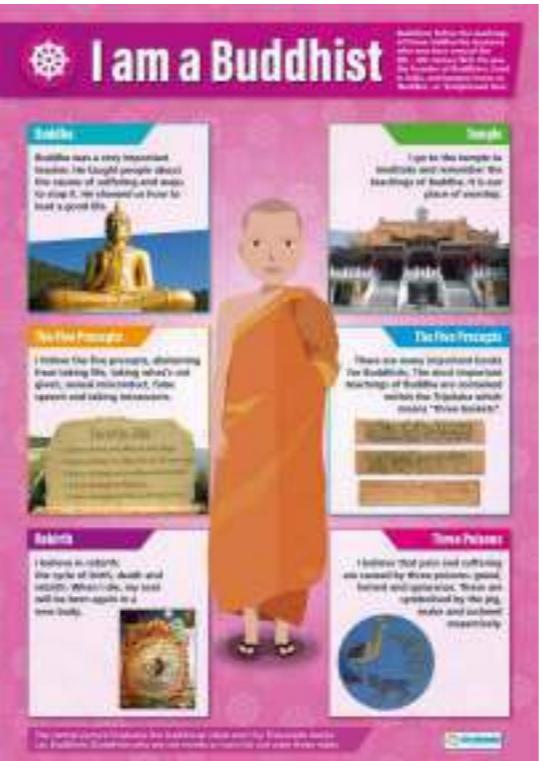
I am a Sikh

paberplakat RE046
lamineeritud RE046L



I am a Jew

paberplakat RE044
lamineeritud RE044L



I am a Buddhist

paberplakat RE047
lamineeritud RE047L



Divorce

paberplakat RE048
lamineeritud RE048L



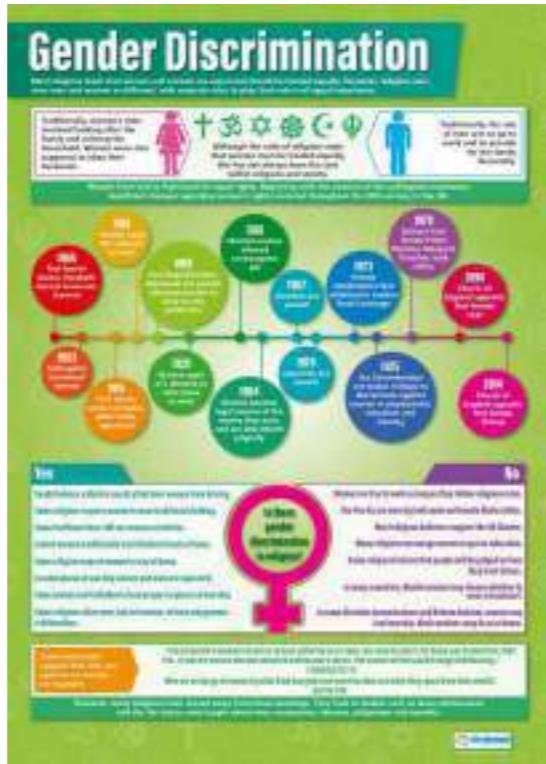
Sex and Relationships

paberplakat RE049
lamineeritud RE049L



Origins of the Universe & Life

paberplakat RE051
lamineeritud RE051L



Gender Discrimination

paberplakat RE050
lamineeritud RE050L



Life After Death

paberplakat RE053
lamineeritud RE053L



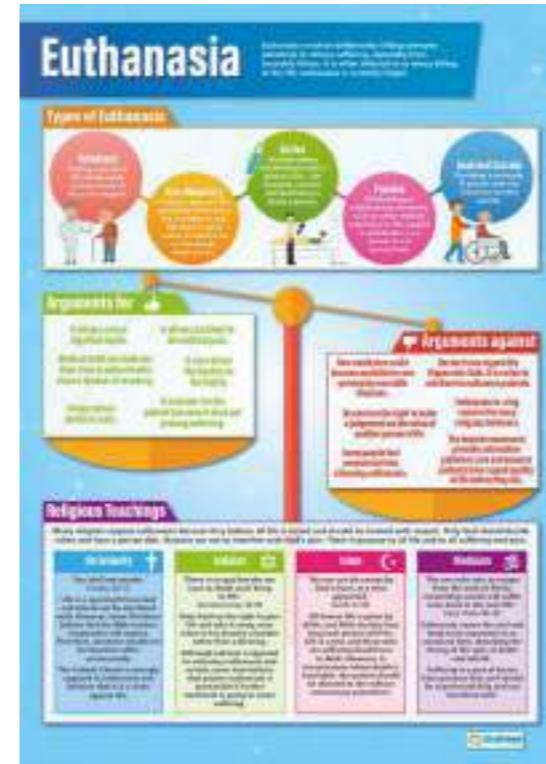
Abortion

paberplakat RE054
lamineeritud RE054L



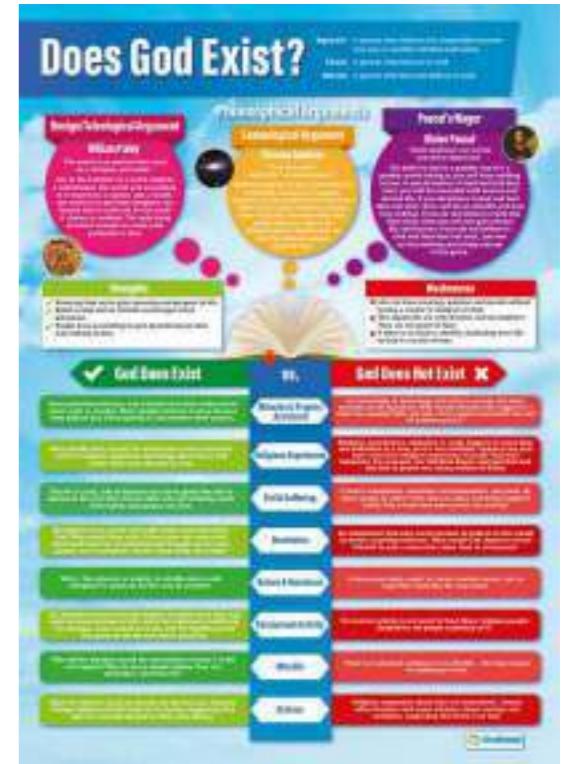
Stewardship

paberplakat RE052
lamineeritud RE052L



Euthanasia

paberplakat RE055
lamineeritud RE055L



Does God Exist?

paberplakat RE056
lamineeritud RE056L



The Nature of God

paberplakat RE057
lamineeritud RE057L



Crime and Punishment

paberplakat RE059
lamineeritud RE059L



Peace and Conflict

paberplakat RE058
lamineeritud RE058L



Human Rights

paberplakat RE061
lamineeritud RE061L



Prejudice & Discrimination

paberplakat RE060
lamineeritud RE060L



Business Objectives

paberplakat BUS001
 lamineeritud BUS001L



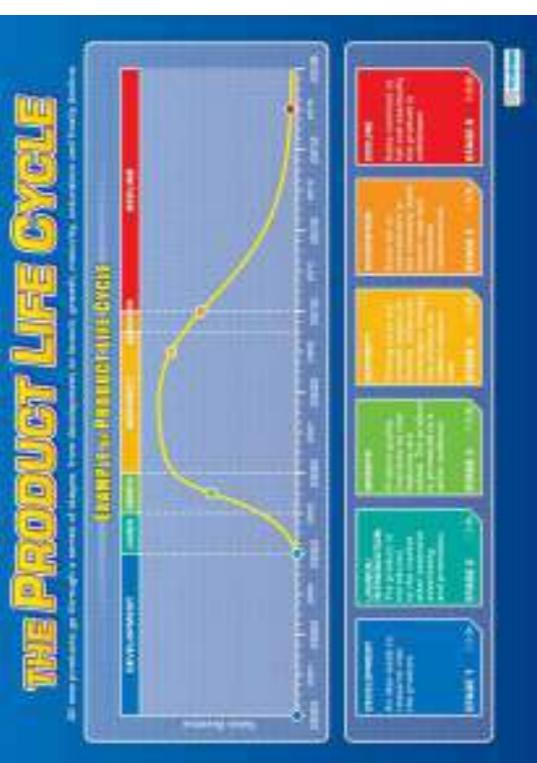
Business Ownership

paberplakat BUS003
 lamineeritud BUS003L



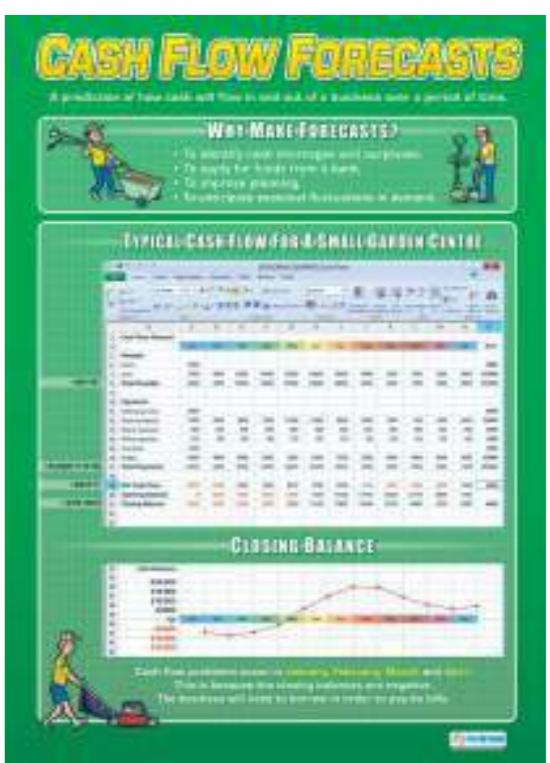
Business Planning

paberplakat BUS002
 lamineeritud BUS002L



The Product Life Cycle

paberplakat BUS005
 lamineeritud BUS005L



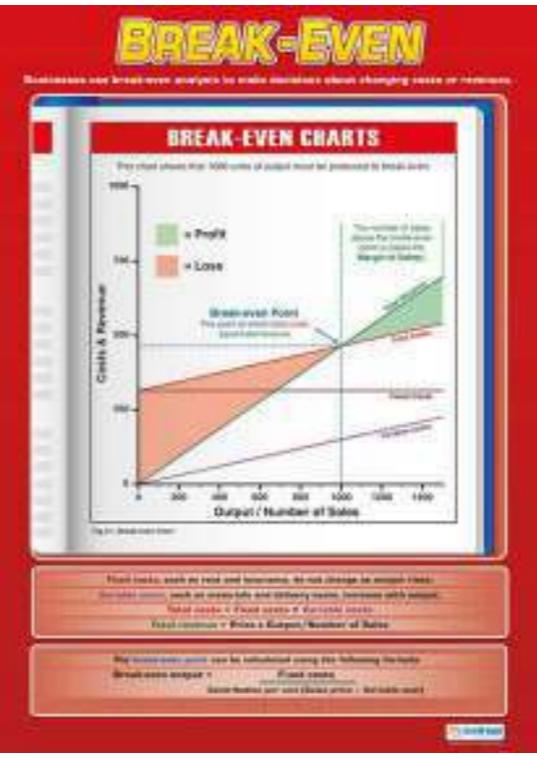
Cash Flow Forecasts

paberplakat BUS006
 lamineeritud BUS006L



The Marketing Mix: The 4 P's

paberplakat BUS004
 lamineeritud BUS004L



Break-Even

paberplakat BUS007
 lamineeritud BUS007L



Value Added & the Chain of Pro

paberplakat BUS008
 lamineeritud BUS008L



The Functions of Departments

paberplakat BUS009
lamineeritud BUS009L



Stakeholders

paberplakat BUS010
lamineeritud BUS010L



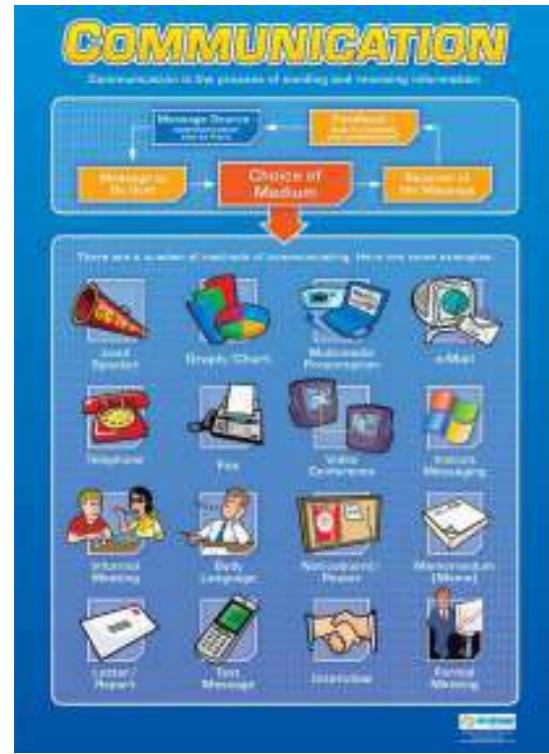
Market Research

paberplakat BUS013
lamineeritud BUS013L



Trading and Profit and Loss

paberplakat BUS014
lamineeritud BUS014L



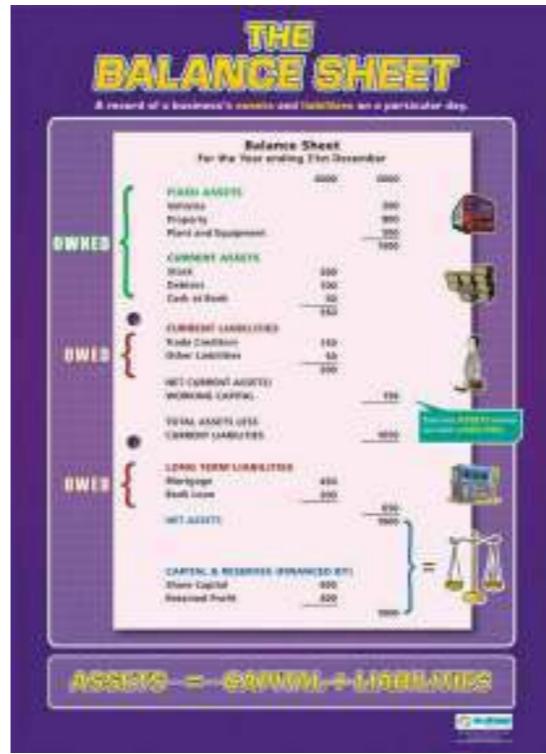
Communication

paberplakat BUS011
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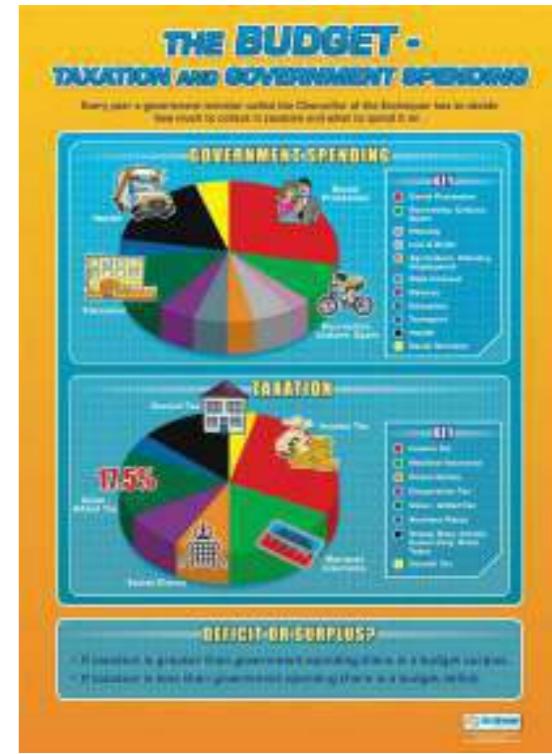
The European Union

paberplakat BUS012
lamineeritud BUS012L



The Balance Sheet

paberplakat BUS015
lamineeritud BUS015L



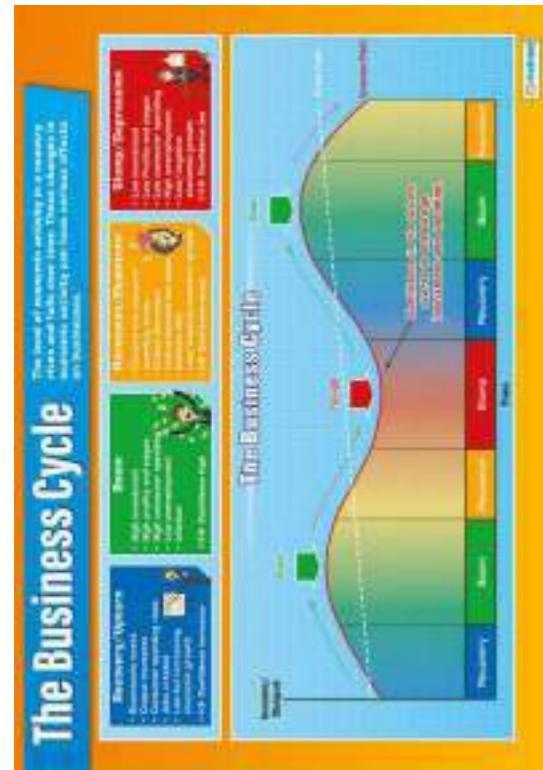
The Budget - Taxation & Government Spending

paberplakat BUS016
lamineeritud BUS016L



Public & Private Sector

paberplakat BUS017
lamineeritud BUS017L



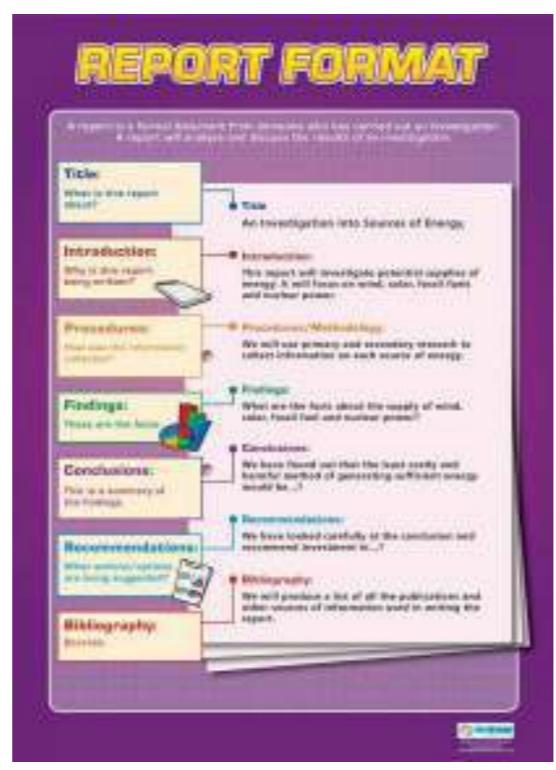
The Business Cycle

paberplakat BUS019
lamineeritud BUS019L



External Influences on Business

paberplakat BUS018
lamineeritud BUS018L



Report Format

paberplakat BUS020
lamineeritud BUS020L



SWOT Analysis

paberplakat BUS021
lamineeritud BUS021L



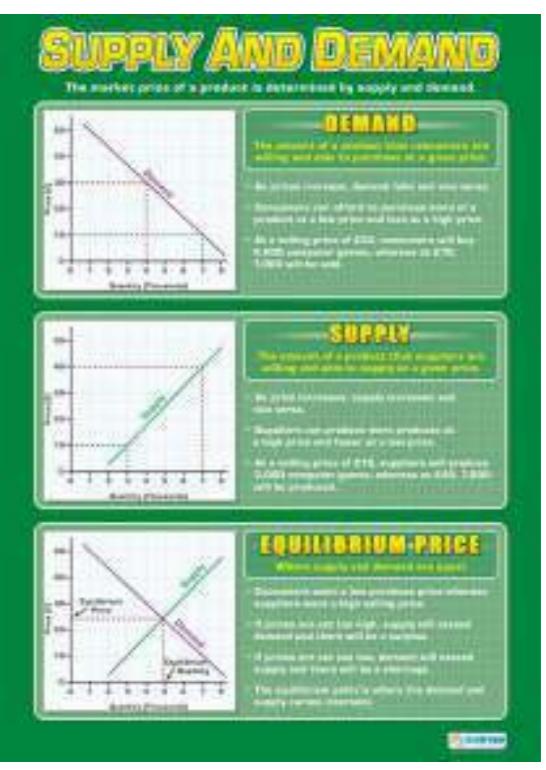
Source of Finance

paberplakat BUS023
lamineeritud BUS023L



Production Methods

paberplakat BUS022
lamineeritud BUS022L



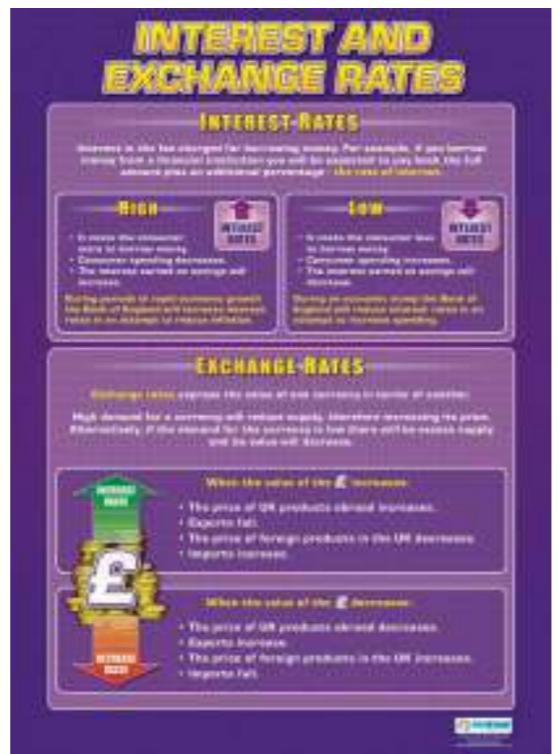
Supply and Demand

paberplakat BUS024
lamineeritud BUS024L



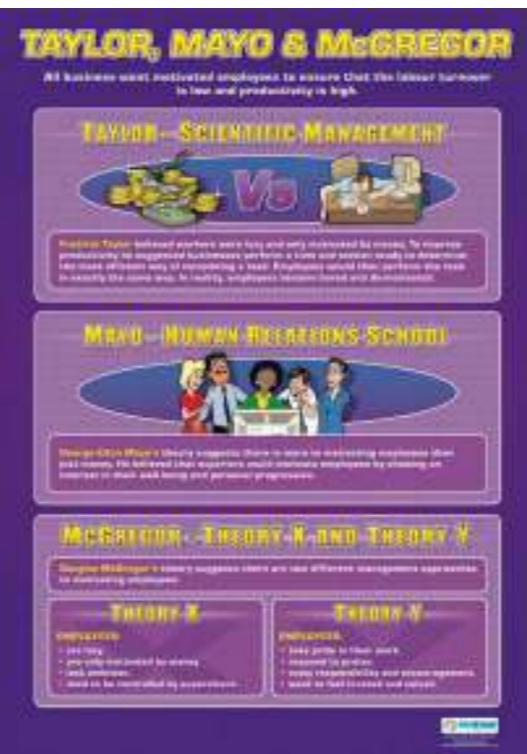
PEST

paberplakat BUS025
 lamineeritud BUS025L



Interest & Exchange Rates

paberplakat BUS026
 lamineeritud BUS026L



Taylor & Mayo & McGregor

paberplakat BUS029
 lamineeritud BUS029L



Recruitment & Selection

paberplakat BUS030
 lamineeritud BUS030L



Boston Matrix

paberplakat BUS027
 lamineeritud BUS027L



Maslow & Herzberg

paberplakat BUS028
 lamineeritud BUS028L

Reading and Learning

When you read you are often looking for specific information which provides answers to questions. The following reading techniques will help you become an active learner.

Reading Techniques

Skimming Look over what you are reading to gain an impression of the text. Skimming the chapters will help you decide whether it is relevant. Do not read every word.

Scanning Scan the text for specific information, look out for key words and names without reading the whole text.

Detailed Reading When reading texts in detail, read one section at a time. Looking for answers to your questions will help you remember and understand what you are reading.

READING TOP TIPS

- 1 Identify the main points and ideas in the text.
- 2 Draw out unimportant relevant key words and phrases.
- 3 Make notes and create mind maps to help you remember key information.
- 4 Focus essential ideas to help improve concentration and memory.
- 5 Once you have finished, review what you have read.
- 6 Activate your thoughts, going over key questions and answers from within the text.
- 7 Read the information to someone else. Discussing it is another way of reviewing and learning.

Note-taking will help you think about and make sense of what you are reading.

- Use just one or two main ideas.
- Only what is important.
- Use symbols and abbreviations.



Reading and Learning

paberplakat FS001

lamineeritud FS001L

Writing an Essay

A good essay has a carefully considered structure. Every paragraph contributes to the flow of the essay.

Make a Plan

- Read the question a number of times to understand what is being asked.
- Your plan should show how you are going to break down your main points.
- Use long words and include specific vocabulary within your plan.
- Your plan can be written as a mind map.

Introduction

This should relate closely to the topic of the essay.

- Start this paragraph simply and to the point, avoid giving too much detail.
- Give a brief overview of your essay, defining the points you are going to make in order of importance.
- Set the tone of work by describing the overall issue or problem.

The Main Body

Present your thoughts and evidence.

- Present your points in the order laid out in your introduction.
- Make sure that each paragraph links to the previous one through the use of connectors. Linking words, for example, are necessary; however:
- Use evidence to back up your arguments.

Conclusion

Bring the essay to a logical and satisfying end.

- Summarise the main points of your essay. Make this section short.

Milestones

If there are certain key milestones you need to fulfil you write your essay:

Speaking and Listening

Speaking

You speak to communicate information or express your thoughts or feelings. This can be in a formal or informal situation, or when presenting to an audience.

When speaking and **listening** ask yourself:
• Is the audience interested in what I am saying?
• Am I speaking clearly and at an appropriate volume?

Use appropriate language and **vocabulary** for your audience. Use your **native language**, local language, English or a mixture of both. Use **visual support** when you are trying.

Give more detailed explanations if required. Repeat key **points** and **take on board feedback** and **negative feedback**.

Listening

Listening is an active process which involves listening, working out and understanding a message with the speaker to respond.

Show attention by making eye contact, use **facial expressions** to mirror the emotions of the speaker.

Identify the key information which you need to remember and relate to any **instructions** that are given.

You do not have to agree with everything that is being said but **ask questions** to clarify.

Take notes and **mind maps** during **conversations** and **debates**.

Speaking and Listening

paberplakat FS002

lamineeritud FS002L

Memory Tips

Our ability to remember things increases if we give our brain the opportunities it needs to work to its full potential.

Lifestyle
Good **sleeping habits** will help with concentration.
A healthy diet can improve memory.
Regular exercise increases oxygen levels to your brain which can enhance memory.

Organisation
Organise and **organise** the information you are studying.
Find a place to study where you will not be disturbed.
Keep **structured** and **visual** **diagrams**.

Learning style
Discover your learning style and **read** in a style that suits you.
Set **short-term** **targets** for topics and **pace** yourself.
Incentivise **repetition** and **recall**. You could even create rhymes linked to a topic.

Exercise **memories**
Try to explain what you have learned to someone else. Recall information and listen to clarify.
Make **cross**-**connections** between related subjects.

Time Management
Avoid **overworking**. Break **down** **tasks** in short periods of regular study to make study **more effective**.
Take **short** **breaks** and **step** **outdoor** **walks** **regularly**.
Review what you have learned at the end of the study **day**.

Memory Tips

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Mind Mapping

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lamineeritud FS006L

Writing an Essay

paberplakat FS003

lamineeritud FS003L

Group Discussion

Developing group discussions skills is useful for everyday life, whether the discussions are formal or informal.

On a daily basis you will find yourself having discussions with friends and family, at work or at school. Group discussions will often form part of the selection process in higher education and job interviews as you need to demonstrate good communication skills.

Preparation
If you know what is going to be discussed, prepare in advance by undertaking research.

Speak Clearly
Only one person should speak at a time. Agree to take it in turns when you have something to say.

Active Listening
Concentrate and focus on what everybody is saying and the questions and topics being discussed.

Share Ideas, Feelings and Opinions
The discussion will be more interesting if everyone contributes their own ideas.

Feel the Sake
Encourage other people to contribute their own ideas.

Be Not Dominant
Never let one person dominate a discussion or debate.

Avoid Conflict
Do not encourage or stimulate somebody's ideal or opinions.

Focus
If a discussion starts to lose focus bring it back on track.

Remember
Discussions are not competitions for those who can say the most. They give opportunity to share opinions in a positive environment. Listen and respond to others to make discussions effective and an enjoyable experience!

Group Discussion

paberplakat FS004

lamineeritud FS004L

Organisation, Planning and Time Management

Managing your time and priorities will increase your chance of achieving your full potential and increasing an effective learner.

Organisation & Planning
Create a place of **safety** **planned** **for** **activities**.
Establish **order** and **structure** **and** **plan** **your** **time**.

Preparation
Create a **checklist** **of** **what** **you** **need** **to** **do**.
Prioritise **tasks** and **challenges**.

Time Management
Set short, mid and long term **targets** that will help you realise what needs to happen in within your goals.

Revision Timetable
A plan will help you understand your timetables and organise your revision. Identify what has already been covered and what is left to revise.

Time Management
Make the most effective use of your time.
Use your time effectively not just efficiently.

PLAN & PRACTISE to help you with your time management.

PLAN & PRACTISE to help you manage your time effectively.

PLAN & PRACTISE to consider and constantly evaluate your priorities.

Top tips for writing a revision timetable

1. **Identify** **what** **you** **need** **to** **do**.
What do you need to revise? Prioritise what you need to do first.

2. **Allocate** **time** **blocks** **for** **each** **subject**.
Allocate time blocks for each subject. Make sure you leave enough time for revision.

3. **Include** **revision** **activities**.
Include revision activities such as quizzes, games, etc.

4. **Include** **short** **breaks**.
Include short breaks to help you stay focused and alert.

5. **Include** **revision** **periods**.
Include revision periods to help you stay focused and alert.

6. **Include** **revision** **periods**.
Include revision periods to help you stay focused and alert.

Improving Own Learning and Performance

Start by **reviewing** the **key** **topics** **in** **your** **course** **and** **decide** **which** **are** **the** **most** **difficult**.

1. **Take** **notes** **in** **class**.
Notes **will** **help** **you** **remember** **what** **you** **have** **learnt**.

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9. **Take** **notes** **in** **class**.
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10. **Take** **notes** **in** **class**.
Notes **will** **help** **you** **remember** **what** **you** **have** **learnt**.

11. **Take** **notes** **in** **class**.
Notes **will** **help** **you** **remember** **what** **you** **have** **learnt**.

12. **Take** **notes** **in** **class**.
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13. **Take** **notes** **in** **class**.
Notes **will** **help** **you** **remember** **what** **you** **have** **learnt**.

14. **Take** **notes** **in** **class**.
Notes **will** **help** **you** **remember** **what** **you** **have** **learnt**.

Writing an Essay

paberplakat FS003

lamineeritud FS003L

Organisation, Planning and Time Management

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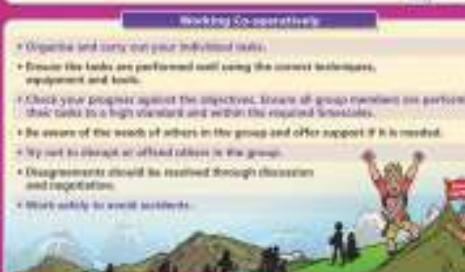
Problem Solving

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FS009

FS009L

Working with Others	
Sometimes goals can be achieved by working on your own. However, there will be times when you will need to work with other people to achieve shared goals.	
Planning	
<ul style="list-style-type: none"> Identify group objectives and negotiate individual responsibilities. As a group, decide on resources and the timescales which are needed to meet your objectives. Show respect for others and listen to their opinions. 	
Working Co-operatively	
<ul style="list-style-type: none"> Organise and carry out your individual tasks. Ensure the tasks are performed well using the correct techniques, equipment and tools. Check your progress against the objectives. Ensure all group members are performing their tasks to a high standard and within the required timescales. The success of the work of others in the group and offer support if it is needed. Try not to disrupt or offend others in the group. Disagreements should be resolved through discussion and negotiation. Work safely to avoid accidents. 	
Review to Improve Performance	
<ul style="list-style-type: none"> Evaluate the tasks throughout and not just once they have completed. When evaluating the group's performance, contribute your own opinions and also listen to the input of others. As a group, identify how individual and group performance could be improved. 	
	Relationships <ul style="list-style-type: none"> Understand your role Co-operate
	<ul style="list-style-type: none"> Respect Be supportive

Working with Others

paberplakat

lamineeritud

FS010

FS010