

Year 7 Block 3 Knowledge Organisers

Name:

Tutor Group:

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2025-26 Homework

Work Hard | Be Kind

Block 3 - Homework Hand in schedule

Homework will be checked first thing each morning in tutor time. You will need to come to school each day with your homework book and Knowledge Organisers.

The table shows which subject you will hand in on each day.

Day	Date	Subject
Mon	19/01/2026	French
Tue	20/01/2026	English
Wed	21/01/2026	PE
Thu	22/01/2026	Maths
Fri	23/01/2026	Science
Mon	26/01/2026	Geography
Tue	27/01/2026	English
Wed	28/01/2026	Art
Thu	29/01/2026	Maths
Fri	30/01/2026	Science
Mon	02/02/2026	French
Tue	03/02/2026	English
Wed	04/02/2026	Music
Thu	05/02/2026	Maths
Fri	06/02/2026	Science
Mon	09/02/2026	History
Tue	10/02/2026	English
Wed	11/02/2026	DT
Thu	12/02/2026	Maths
Fri	13/02/2026	Science

Feb Half Term		
Mon	23/02/2026	French
Tue	24/02/2026	English
Wed	25/02/2026	Drama
Thu	26/02/2026	Maths
Fri	27/02/2026	Science
Mon	02/03/2026	DT
Tue	03/03/2026	Science
Wed	04/03/2026	French
Thu	05/03/2026	Maths
Fri	06/03/2026	Art
Mon	09/03/2026	English
Tue	10/03/2026	Science
Wed	11/03/2026	Geography
Thu	12/03/2026	Maths
Fri	13/03/2026	Music
Mon	16/03/2026	English
Tue	17/03/2026	Computing
Wed	18/03/2026	History
Thu	19/03/2026	Maths
Fri	20/03/2026	PE
Mon	23/03/2026	English
Tue	24/03/2026	Science
Wed	25/03/2026	Geography
Thu	26/03/2026	Maths
Fri	27/03/2026	Drama
Mon	30/03/2026	English
Tue	31/03/2026	French
Wed	01/04/2026	Health
Thu	02/04/2026	Maths

How to complete your homework

For all subjects except Maths and English, homework tasks are based around Knowledge Organisers. Maths will be complete through Sparx Maths and English homework through MyOn - see separate sheets for information.

To complete your homework, you must:

1. Check the hand in schedule (previous page) for the week so that you can see which Knowledge Organisers you need to be learning and what the deadline date is.
2. Carefully study the sections of the Knowledge Organiser that you are learning.
3. Use the questions and guidance at the back of the booklet to help you – either answer the questions or complete the task which is written there. Complete all of your homework in your homework book, including your Sparx Maths notes. Put the deadline date and subject at the top of the page, so that you can clearly see when the work will be checked by your tutor and teacher.
4. Make sure you remember your homework book **every day**; it will be checked each morning by your tutor and also in your lessons.

You may be set additional 'optional' homework tasks to complete by your teachers to deepen your knowledge, particularly for revision in the build up the to end of block assessments.

On the next page there are some optional extra ideas for ways you could use your Knowledge Organisers

What are 'self-quizzing questions'?

Here is a section of a Science Knowledge Organiser. You could test your grasp of this knowledge by asking yourself,

"What ions are found in acids?"

"Are all acids poisonous?"

These are examples of self-quizzing questions.

In your homework book, you should write the questions and their answers.

2. Acids (pH 1-6)



- Acids are a family of chemicals, examples are lemon juice, vinegar and Coca Cola. There is also acid in our stomach.
- Acids contain Hydrogen (H⁺) ions.
- **Strong acids** like hydrochloric acid are very corrosive this means they destroy skin cells and cause burns.
- **Weak acids** like vinegar are safe to eat but are still irritant to sensitive parts of the body.

How else can I use my Knowledge Organiser?

The Knowledge Organisers in this booklet will help you learn a wide range of knowledge to prepare you for your lessons as well as the multiple-choice tests at the end of this block of learning.

To get the most out of your Knowledge Organisers, you should be learning sections and then testing yourself. There will be set tasks each week based on the Knowledge Organisers, and there are some optional ideas below that you could try in addition to this if you wish.

Learning Key vocabulary:

- Highlight key terms for a subject and look up the definitions
- Write a sentence using the key terms you have highlighted
- Practice spellings – read, cover, say, write and check to learn the correct spellings of key terms

Quizzes/questions:

- Write some self-quizzing questions based on the information read
- Test your friends and family on their knowledge of a subject
- Get your parents/carers to ask you some questions
- Create exam style questions and then swap with a friend

Reflecting on learning:

- Before a topic – rank order your confidence and then revisit at the end of the topic, rank again and consider where you have improved
- Add more detail to the Knowledge Organiser after you have been taught that topic
- Traffic light (red, amber, green) each box based on how confident you are

Revision:

- Create 2-3 flashcards each week based on each box
- Create a mind map showing the key information from the Knowledge Organiser
- Read ahead to develop skills, knowledge and understanding so you feel more confident before lessons

General use:

- 50 words, 30 words, 10 words – summarise the information on the Knowledge Organiser from 50 words to 30 words to 10 words
- Pictionary – learn the definitions then draw it for your friends/family to guess
- Elevator pitch – summarise the information in a box/whole Knowledge Organiser for a 30 second presentation
- Generation game – like the famous conveyor belt – look at the Knowledge Organiser and then try to remember as many items as possible
- Key term stories – write a short story using 6 key words that are found on the Knowledge Organiser
- Scavenger hunt – read through the Knowledge Organiser with a friend/family member and see who can find specific information/facts first
- Read, cover, check – read the box, write out what you can remember, check what you have missed (then add in purple pen)

Maths Homework – Sparx Maths

What is Sparx Maths?

- Sparx Maths is an online platform we use at King’s Oak Academy, it can be accessed at <https://www.sparxmaths.uk/>
- Each weekly task on Sparx is made up of questions linked to learning in the classroom (either past, current or future) plus some times table questions.
- This should take approximately one hour per week (if it takes longer one week then it will take less time in future weeks).
- Each question has a short video you can watch if you are getting stuck.
- For each question, write down the **bookwork code, your working, and the answer** in your homework book. **You should also mark your own work.**
- You will be able to redo a question if you get it wrong. This is where you have the biggest opportunity to learn.
- To **successfully complete** your Sparx homework you need to achieve **100% completion** each week, meaning you need to get **every question correct**.
- This is because questions are set at **exactly the right level for you**.

What if I get stuck and keep getting a question wrong?

Remember this is the point where you are going to learn the most!

- Attempt each question before watching the video.
- Show your working out in your book.
- Watch the video.
- Copy down the method shown in the video into your book.
- Try the question again. Show your working out in your book.
- Copy the question in your book.
- Ask your Maths teacher to help you **before** it is due in.

You can gain ‘Positive Points’ for your Sparx work by:

- a) Completing Sparx homework early.
- b) Completing the optional XP boost questions.
- c) Completing the optional target questions.
- d) Completing independent learning tasks based on topics you find difficult.

Year 7 Curriculum:

Question topics will be set by your Maths teacher to make sure that they fit with the topics you are studying each term, as set out in the table here:

	Term 1	Term 2	Term 3 and Term 4	Term 5 and Term 6
Year 7	Fractional thinking Probability Factors, multiples, primes Fractions (+/-) AP1	Algebraic thinking Directed number Manipulating algebra Exploring sequences AP2 (DOOYA)	Proportional reasoning Fractions (\times/\div) Proportion Ratio Units of measure	Using shape Coordinates & straight-line graphs Properties of shape Notation/labelling conventions Perimeter & area Circles – area & circumference AP3 (DOOYA)

Every week, use the KOA Student Home Page to log into:

Renaissance MyOn

School: King's Oak Academy

Username: _____

Password: _____



To complete your homework:

- Click on 'Assignments'.
- Click on the task with the correct due date on it.
- Click on one of the books listed to choose it.
- Read it 😊 You will need to read a book every week.
- Take a quiz when you have finished.
- When you have completed your myON reading assignment, please write 'English Homework', the date and title of the book or article you read in your homework book for your tutor to check.
- If you are struggling to get online at home, you can check a book out of the LRC or AG8 with Mrs Cox.

To read a book:



To find information on a book:



To add a book to My List:



To take a quiz:



Week 1

Date	Day	Week	Subject	Questions
19/01/2026	Mon	1	French	Look-say-cover-write-check the ' What is your favourite subject? ' box. You should try each word between 3 and 5 times - more if you find a particular word difficult.
20/01/2026	Tue	1	English	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
21/01/2026	Wed	1	PE	1. What is the first phase of the warmup?
				2. How long should you hold each stretch for in a warmup?
				3. How long should you hold a stretch for in a cool down?
				4. What are the 2 personality types?
				5. What is the most relaxed leadership style?
				6. What is the leadership style where the leader makes all the decisions?
				7. What does a democratic leader do?
				8. Name a sport that would suit an extrovert.
				9. Name a sport that would suit an introvert.
				10. What should the main component of a session consist of?
22/01/2026	Thu	1	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
23/01/2026	Fri	1	Science	1. Name an illness that is communicable (you can catch).
				2. Name an illness that is non-communicable (you cannot catch).
				3. What could you use to see something that is too small to see with just your eyes?
				4. True or false: all bacteria are bad.
				5. True or false: you can be vaccinated against the common cold.
				6. Cholera is caused by which type of pathogen?
				7. Antibodies that cross the placenta from mother to baby are an example of which type of immunity - active or passive?
				8. Which type of blood cells are involved with your body's immune system - red or white?
				9. What waterproof layer stops pathogens from entering your body?
				10. Name one type of food that is produced using microbes.

Week 2

Date	Day	Week	Subject	Questions
26/01/2026	Mon	2	Geography	1. What is erosion?
				2. What is condensation?
				3. What is precipitation?
				4. What is infiltration?
				5. What is transpiration?
				6. What is surface runoff?
				7. What is throughflow?
				8. In which course of the river would you find the source?
				9. In which course of the river is the river widest?
				10. Identify two impacts of flooding.
27/01/2026	Tue	2	English	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
28/01/2026	Wed	2	Art	Read through the information on Term 3 part 1 then answer the following questions:
				1. What is positive space?
				2. What is negative space?
				3. Where is Escher from?
				4. What inspired Escher when creating his artwork?
				5. Compare examples of M.C. Escher and E.A. Seguy's work on the knowledge organiser. What do these works have in common?
				6. Which artist's work do you prefer? Why?
				7. What materials can you use for block printing?
8. Why has Zentangle become popular?				
29/01/2026	Thu	2	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
30/01/2026	Fri	2	Science	1. Name the part of the female reproductive system that produces the eggs/ova.
				2. Name the part of the male reproductive system that produces the sperm.
				3. Where in the female reproductive system does the baby develop?
				4. In which part of a cell is the genetic information stored?
				5. Is the scrotum found in the male or female reproductive system?
				6. Another term for the sex cells is g_____.
				7. Name an adaptation of the sperm that helps it do its function.
				8. Define the term 'fertilisation'.
				9. True or false: fertilisation happens in the vagina.
				10. A fertilised egg is called a z_____.

Week 3

Date	Day	Week	Subject	Questions
02/02/2026	Mon	3	French	Look-say- cover-write-check the 'What do you think?' box. You should try each word between 3 and 5 times - more if you find a particular word difficult.
03/02/2026	Tue	3	English	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
04/02/2026	Wed	3	Music	1. What does the term 'dynamics' mean in music?
				2. What does the term 'tempo' mean in music?
				3. What does the term 'structure' mean in music?
				4. What does the term 'melody' mean in music?
				5. What does the term 'instrumentation' mean in music?
				6. What is the note length of a crotchet? Draw a crotchet.
				7. What is the note length of a quaver? Draw a quaver
				8. What is the note length of a semi-quaver? Draw a semi-quaver
				9. When was the Baroque Era in music history?
				10. When the Classical Era in music history?
05/02/2026	Thu	3	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
06/02/2026	Fri	3	Science	1. What are kinetic, chemical and gravitational potential 'types' of?
				2. What do we call the energy store (type) a moving object has?
				3. What energy store (type) does food have?
				4. What energy store does a spring have?
				5. When you throw a ball in the air, energy is transferred from the kinetic energy store of a ball to the gravitational potential energy store of the ball. True or false?
				6. What is the law of conservation of energy?
				7. It is possible to have an efficiency greater than 100%. True or false?
				8. What is the more 'scientific' name for heat energy?
				9. How does heat transfer in solids and in liquids?
				10. How does heat transfer when there are no particles (i.e. in a vacuum)?

Week 4

Date	Day	Week	Subject	Questions
09/02/2026	Mon	4	History	1. Who was Edward VI raised by? How did this impact his religious beliefs?
				2. What happened during Edward VI's reign?
				3. What was the Prayer Book rebellion?
				4. What happened during the reign of Mary I?
				5. What happened to Protestants during Mary's reign?
				6. Why was she called 'Bloody Mary'?
				7. What happened during the reign of Elizabeth I?
10/02/2026	Tue	4	English	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
11/02/2026	Wed	4	DT	1. What are fabrics made from?
				2. What are the 2 categories of fabrics?
				3. Where does wool come from?
				4. Define synthetic
				5. Name 3 synthetic fabrics.
				6. What are the environmental concerns with synthetic fabrics?
				7. What kind of fabric comes from plants and animals?
				8. Where does silk come from?
12/02/2026	Thu	4	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
13/02/2026	Fri	4	Science	1. Define hypothesis.
				2. Define independent variable.
				3. Define dependent variable.
				4. Define control variable.
				5. How do you calculate a mean?
				6. What does anomalous data mean?
				7. How should a results table be laid out?
				8. What 4 things should be in a method?
				9. What piece of equipment is used to heat substances?
				10. What piece of equipment is used to protect the desk from heat?

Week 5

Date	Day	Week	Subject	Questions
23/02/2026	Mon	5	French	Look-say - cover-write-check the ' What is your teacher like? ' box. You should try each word between 3 and 5 times - more if you find a particular word difficult.
24/02/2026	Tue	5	English	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
25/02/2026	Wed	5	Drama	1. What does body language mean in Drama?
				2. Suggest some other physical skills actors can use to communicate how they are feeling. Give at least 2 examples.
				3. What does status mean in Drama?
				4. What are facial expressions?
				5. What does energy on stage mean?
				6. What does body tension show?
				7. What do mannerisms show?
				8. Give an example of a mannerisms that might show a person is nervous.
				9. What does use of space mean on stage?
				10. What does gait show in Drama?
26/02/2026	Thu	5	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
27/02/2026	Fri	5	Science	1. What piece of equipment is used to accurately measure out volumes of a liquid?
				2. What piece of equipment is used to measure temperature of a substance?
				3. What piece of equipment is used to move small amounts of solid powders?
				4. What does discontinuous data mean?
				5. Name an example of discontinuous data.
				6. How do you plot discontinuous data?
				7. What variable is plotted on the X axis?
				8. What variable is plotted on the Y axis?
				9. What does continuous data mean?
				10. Name an example of continuous data.

Week 6

Date	Day	Week	Subject	Questions
02/03/2026	Mon	6	DT	Sketch 2 different monster ideas then annotate them using ACCESSFM.
03/03/2026	Tue	6	Science	1. The average gestation period for humans is how many weeks long?
				2. True or false? The blood of the mother and the baby mix together in the placenta.
				3. A period (menstruation) is when the wall of the _____ breaks down.
				4. The egg is released on day ____ of the menstrual cycle.
				5. State one adaptation of a sperm cell.
				6. State one adaptation of an egg cell.
				7. How do you plot continuous data?
				8. Define 'independent variable'.
				9. Define 'dependent variable'.
				10. Define 'control variable'.
04/03/2026	Wed	6	French	Look-say-cover-write-check the ' What is your school uniform like? ' box. You should try each word between 3 and 5 times - more if you find a particular word difficult.
05/03/2026	Thu	6	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
06/03/2026	Fri	6	Art	Using the success criteria provided, complete an observational drawing of the eye on Term 3 part 2. Drawing should be done in pencil and completed in the box on the knowledge organiser sheet.

Week 7

Date	Day	Subject	Questions
09/03/2026	Mon	Science	1. What does conduction mean?
			2. What does convection mean?
			3. What does radiation mean?
			4. What type of energy increases as an object is raised higher?
			5. What are the three ways thermal energy can be transferred?
			6. If an objects motion changes what type of transfer is involved?
			7. What do Sankey diagrams show?
			8. What is the equation for power?
			9. What is 1W equivalent to?
			10. Define 'equilibrium'.
10/03/2026	Tue	English	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
11/03/2026	Wed	Geography	1. Describe a waterfall.
			2. Describe a V-shaped valley.
			3. Describe a meander.
			4. Describe a delta.
			5. What are two physical causes of flooding?
			6. What are two human causes of flooding?
			7. What are the social impacts of flooding?
			8. What are the economic impacts of flooding?
			9. What are the environmental impacts of flooding?
12/03/2026	Thu	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
13/03/2026	Fri	Music	1. Which notes are in the spaces in the treble clef?
			2. Which notes are on the lines in treble clef?
			3. Which notes are in the spaces in bass clef?
			4. Which notes are on the lines in bass clef?
			5. What does the context mean in music?
			6. When was the Baroque Era in music history?
			7. When was the Classical Era in music history?
			8. When was the Romantic Era in music history?
			9. Where do you find 'C' on the keyboard?
			10. When using your right hand on the piano, what finger number is your thumb?

Week 8

Date	Day	Subject	Page	Questions
16/03/2026	Mon	Computing	28 - 30	1. What is computational thinking used for?
				2. What does decomposition mean?
				3. What shape is used for a decision in a flowchart?
				4. What is an algorithm?
				5. What does abstraction mean in computing?
				6. What shape represents input or output in a flowchart?
				7. What is a sequence in an algorithm?
				8. What does selection allow an algorithm to do?
				9. What is iteration?
				10. What do flowcharts show?
17/03/2026	Tue	English	MyOn	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
18/03/2026	Wed	History	17 - 18	1. When did Henry VIII marry Anne Boleyn?
				2. What did Henry famously do in 1535?
				3. What did Thomas Cranmer introduce in 1549?
				4. Put the 4 Tudor monarchs in chronological order.
				5. What were the four causes of the break with Rome?
				6. Who were the key people during the Reformation?
19/03/2026	Thu	Maths	SPARX	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
20/03/2026	Fri	PE	20	1. What is the last phase of the warmup?
				2. What is the first phase of a warmup?
				3. How many parts of a warmup are there?
				4. How many personality types are there?
				5. What is the least relaxed leadership style?
				6. What is the leadership style where the leader makes no decisions?
				7. What does an Autocratic leader do?
				8. Name 2 sports that would suit an extrovert.
				9. Name 2 sports that would suit an introvert.
				10. What is an example of a main component of a lesson?

Week 9

Date	Day	Subject	Questions
23/03/2026	Mon	Science	1. What does a fungi have that a bacteria doesn't?
			2. What is a capsid?
			3. What breaks down pathogens in tears?
			4. How does mucus stop pathogens?
			5. what is vaccination?
			6. What is the urethra?
			7. What happens in day 1 - 5 of the menstrual cycle?
			8. What is the placenta?
			9. How are egg cells adapted for reproduction?
			10. How are sperm cells adapted for reproduction?
24/03/2026	Tue	English	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
25/03/2026	Wed	Geography	1. Define erosion.
			2. Define transportation.
			3. Define deposition.
			4. Draw and label a diagram of the water cycle.
			5. Draw and label a diagram of a river watershed, source, tributary, confluence and mouth.
26/03/2026	Thu	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.
27/03/2026	Fri	Drama	1. What is the difference between eye contact and focus?
			2. List 5 physical acting skills (skills using the body)
			3. List 5 vocal acting skills (skills using the voice)
			4. What does volume mean in Drama and why is it important?
			5. What does pace mean in Drama and why is it important?
			6. What does pause mean in Drama?
			7. Why would an actor use pause on stage?
			8. What does pitch mean in Drama?
			9. What does diction mean in Drama?
			10. What does tone mean in Drama?

Week 10

Date	Day	Subject	Questions
30/03/2026	Mon	French	Look-say-cover-write-check the 'verbs at school' box. You should try each word between 3 and 5 times - more if you find a particular word difficult.
31/04/2026	Tue	English	Complete your reading activity on MyOn and log the date and title of the book in your homework book.
01/04/2026	Wed	Health	1. What colour chopping board do you use when cutting raw meat?
			2. People who are lactose intolerant are not allowed to consume what?
			3. What is the purpose of an electric whisk?
			4. What is a pescatarian diet?
			5. After you have cooked some chicken what colour chopping board do you use to cut it up?
			6. Are Vegans allowed to eat fish?
			7. Why would you use scales whilst cooking?
			8. Define a regular diet.
			9. A white chopping board is used for what product?
			10. If you are gluten free, what must you avoid eating?
02/04/2026	Thu	Maths	Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book.

Year 7 – Art - Bugs and Insects Term3 - Part 1



Keywords:

Positive space: is the main focus of an artwork. Here the **vase shape**.

Negative space: is the space around the main object/ person, often the background- here it is **the faces & background**.

Collage: the technique and the resulting work of art in which pieces of paper, photographs, fabric and other ephemera are arranged and stuck down onto a supporting surface.

Block print: also called relief printing - is the process of carving patterns, shapes and designs into a 'block'. The block could be made of wood, *acrylic* plastic sheet, lino or metal.

Zentangle: is an easy-to-learn, relaxing, and fun way to create beautiful images by drawing structured patterns.

Content: In this project you will

Develop knowledge - building bug and insect images using a variety media

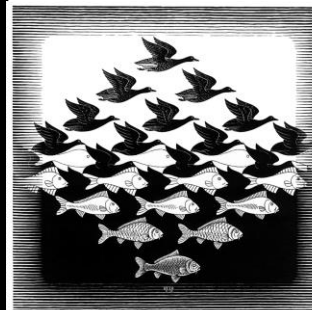
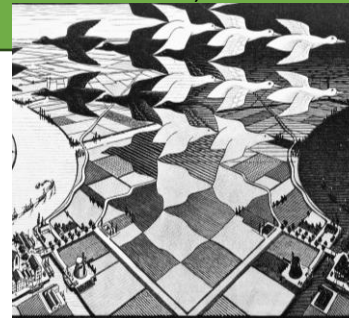
Understand- How to use reduction method in print making

Develop skills- drawing, collage, print making, showing the influence of other artists in your own work

Outcome- mix media collage to form the final bug design

M.C. Escher

The Dutch artist Maurits C. Escher (1898-1972) was a draftsman, book illustrator, tapestry designer, and muralist, but his primary work was as a printmaker. Born in Leeuwarden, Holland, the son of a civil engineer, Escher spent most of his childhood in Arnhem. The main subjects of Escher's early art are Rome and the Italian countryside. While living in Italy from 1922 to 1935, he spent the spring and summer months traveling throughout the country to make drawings. Later, in his studio in Rome, Escher developed these into prints.



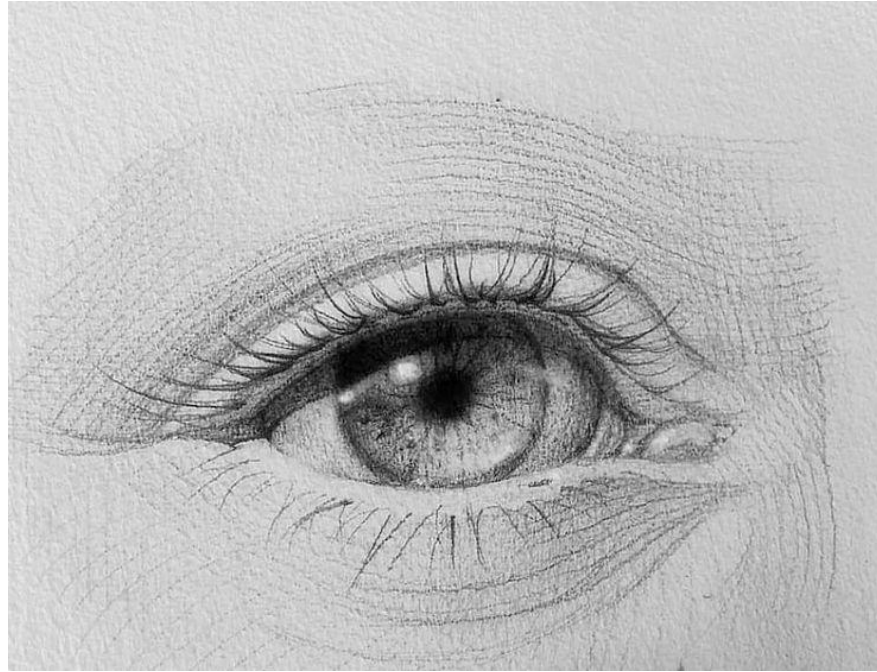
E.A. Seguy

E.A. Seguy was an artist and designer active in Paris during the first three decades of the 20th century. Very little is known about him, even his actual name and birth/death dates are in dispute. During my search for more information, I even stumbled across an odd theory that blames the confusion on the presence of not one but two E.A. Seguy's living and working in Paris during this time period. Regardless of the mystery and speculation surrounding his life, what we do know about Seguy can be found in the design folios he left behind.

Year 7 – Art: Facial Features Term 3 - Part 2

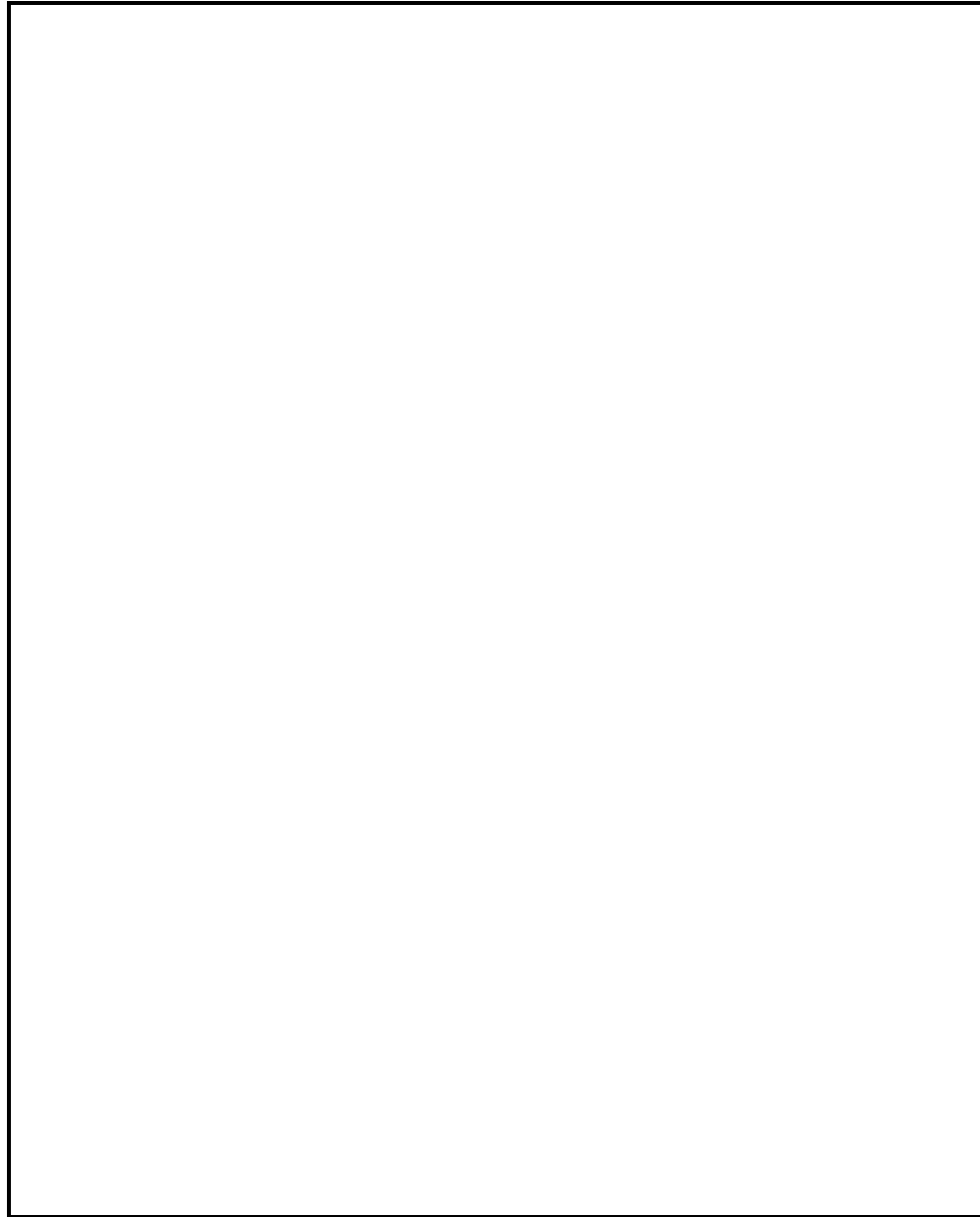
Observational drawing:

Use the image below to create an observational drawing in the box provided. Use the success criteria to guide your drawing.








Success criteria:

- Lightly sketched outlines and main shapes
- Must have a range of tones from light to dark
- Use mark making to build texture, take care of the direction of lines
- Pay attention to details, reflection and shadows must shown in your drawing



Y7 Computer Science: Computational Thinking

	Key vocabulary	Definition
1	Computational thinking	The steps you take to find the best solution to a complex problem
2	Decomposition	Breaking a complex problem down into smaller, easier to solve problems
3	Abstraction	Focusing on the important information in a problem and ignoring the irrelevant details
4	Pattern recognition	Finding similarities and patterns in order to solve complex problems more efficiently
5	Algorithm	A sequence of logical instructions for carrying out a task
6	Program	Sequences of instructions for a computer written in programming language (e.g. Python)
7	Programming	The process of writing computer software
8	Sequence	The specific order in which instructions are performed in an algorithm.
9	Selection	Allows for more than one path through an algorithm (IF and ELSE)
10	Iteration	The process of repeating steps. Loops (WHILE and FOR)
11	Flowcharts	Show the flow of an algorithm without lots of detail.

Symbol	Name	Function
	Start/end	An oval represents a start or end point
	Arrows	A line is a connector that shows relationships between the representative shapes
	Input/Output	A parallelogram represents input or output
	Process	A rectangle represents a process
	Decision	A diamond indicates a decision

Year 7 - Drama

Script & Character

Body Language	How a person uses their body to communicate how they are feeling.
Gait	How narrow or wide a person's stance (legs and shoulders) is to show their level of confidence i.e. the more confident a person is the wider gait they tend to have).
Gesture	Hand or head movement to back up dialogue or to be used instead of dialogue e.g. thumbs up to say that something is good.
Mannerism	Idiosyncrasies and habits that are particular to us. We might fiddle with our hair or shift our weight from one foot to the other. It's important that you're able to remove any habits of your own that might interfere with characterisation.
Energy	The term 'energy' in drama is used to describe how an actor uses movement, gestures, gait and posture to show the type energy their character has
Body tension	How relaxed or tensed an actor's muscles are
Posture	How tall a person stands or sits e.g. hunching or standing tall with their head held high.
Eye contact & focus	The state in which two people are aware of looking into one another's eyes. Or where the eyes are looking
Use of space	The way the actor moves around the performance space
Status	The importance of a character compared to the other characters on stage
Facial Expression	How a person uses the muscles in their face to show how they are feeling e.g. frowning to show that they are sad.
Volume	This is how loud or quiet a performer speaks. This can range from a Stage whisper to shouting really loud. The way in which an actor uses volumes helps show the audience what mood the character is in as well as what the situation is.
Pitch	How high or low the actor's voice is
Pause	A moment of silence or stillness used for effect
Pace	Speed of delivering lines/dialogue
Diction	Diction is how clearly you speak.
Tone	This is how an actor speaks to show what mood their character is in e.g. Happy, sad, angry etc.

Year 7 Bird feeder Project



Health and Safety Check:

Aprons on and done up?



Goggles on when using machines?



Hair tied back?



PPE = Personal protective equipment

Design Brief Analysis

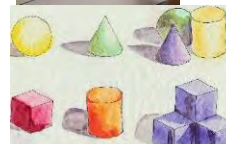
A design brief is a statement telling you what to do. To understand exactly what you need to do you need to break it down. The easiest way to break it down is by using the 5Ws and H to ask some questions. These questions could be:

- Who is going to use it?
- What materials could it be made from?
- How much will it cost to make?

1 km = 1000 m

1 m = 100 cm

1 cm = 10 mm



We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.

ACCESS FM - Helpsheet

A is for **Aesthetics**



Aesthetics means **what does the product look like?**
What is the: Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?

C is for **Cost**



Cost means **how much does the product cost to buy?**
How much does it: Cost to buy? Cost to make?
How much do the different materials cost? Is it good value?

C is for **Customer**



Customer means **who will buy or use your product?**
Who will buy your product? Who will use your product?
What is their: Age? Gender?
What are their: Likes? Dislikes? Needs? Preferences?

E is for **Environment**



Environment means **will the product affect the environment?**
Is the product: Recyclable? Reusable? Repairable? Sustainable?
Environmentally friendly? Bad for the environment?
6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Refuse

S is for **Size**



Size means **how big or small is the product?**
What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit?
Would it be improved if it was bigger or smaller?

S is for **Safety**



Safety means **how safe is the product when it is used?**
Will it be safe for the customer to use? Could they hurt themselves?
What's the correct and safest way to use the product? What are the risks?

F is for **Function**



Function means **how does the product work?**
What is the product's job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?

M is for **Material**



Material means **what is the product made out of?**
What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?

Key words:

Aesthetics
Design Brief
Annotations
Manufacture
Evaluation
Target market

Tools and Equipment:



Steel Rule

Tri Square



Tenon saw

Coping Saw



Bench hook

File



Abrasive paper

Design sketching



- When drawing your design sketches, make sure they are in 3D and must always be drawn in **PENCIL**.
- When rendering use colouring pencils.
- Get creative with your ideas. Your imagination has no limits.



Evaluation:



Designers evaluate their finished products or prototypes in order to test whether they work well and if the design can be corrected or improved. Whatever you have designed it is important to evaluate your work constantly during the project.

Evaluation can take a variety of forms:

- General discussion with other pupils, staff and others.
- Questionnaires / surveys carried out at any time during the project.
- Your personal views, what you think of existing designs.
- Most important of all - what do you think of your designs, prototypes and finished products ?
- Can you think of any other ways of evaluating your work?

French

People Around Me. Year 7 French ARE 2 Knowledge Organiser

<u>Pronouns</u>	<u>Avoir – to have</u>	<u>Être – to be</u>
Je (I)	J'ai I have	Je suis - I am
Tu (you)	Tu as (you have)	Tu es – You are
il (he), elle (she)	Il a (he has), elle a (she has)	il /elle est - He is/she is
Nous (we)	Nous avons (we have)	Nous sommes – we are
Vous (you) (pl)	Vous avez (you have) (pl)	Vous êtes – you are (pl)
ils /elles (they)	Ils ont /elles ont (they have)	ils / elles sont – they are

Comparisons

Plus - more
Moins - less

Jean est plus intéressant que Paul
Paul est moins intéressant que Jean

Superlative

Le /la plus – the most
Le /la moins – the least

Jean est le plus intelligent
Marie est la moins sympa

Je m'appelle - My name is / I am called
Elle s'appelle - she is called
Il s'appelle – he is called
Ils s'appellent – they are called

Describe yourself (appearance and personality). Family, friends (describing others), pets,

To say “my” in French we must change how we say it to match the noun (whether it is masculine, feminine or plural). Whether you are male or female doesn't change which word you use.

Examples :

Mon père = my dad

Ma mère = my dad

Mes parents = my parents

	<u>Masc</u>	<u>Fem</u>	<u>Plural</u>
my	mon	ma	mes
your	ton	ta	tes
his/her	son	sa	ses

Adjective agreement.

Remember adjectives have to agree with the noun. Normally you would add an 'e' to make the adjective feminine but check out the following rules...

Il est paresseux – elle est paresseuse

Il est sportif – elle est sportive

Il est travailleur – elle est travailleuse

Il est gentil – elle est gentille

Il est mignon – elle est mignonne

Il est beau – elle est belle

Il est vieux – elle est vieille

Il est sympa – elle est sympa

7.3 My life at school

Quelle est ta matière préférée? What is your favourite warmup?

L'anglais	English
L'espagnol	Spanish
Le français	French
Le théâtre	Drama
Le dessin	Art
Le sport / l'EPS	PE
L'informatique	Computer Science
L'éducation civique	PSHE
L'histoire	History
La musique	Music
La technologie	Technology
La géographie	Geography
La religion	RE
Les mathématiques	Maths
Les sciences	Science
Les sciences humaines	Humanities

Comment est ton uniforme? What is your school uniform like?

Je porte ...	I wear..
Une veste	Blazer
Un pull	Jumper
Une chemise	Shirt
Un T-shirt	T-shirt
Un pantalon	Trousers
Une cravate	Tie
Une jupe	Skirt
Des chaussettes	Socks
Des chaussures	Shoes
Des collants	Tights

Verbes au collège Verbs at school

Étudier	To study
Écouter	To listen
Bavarder	To chat
Travailler	To work
Passer	To spend
Jouer	To play
Se reposer	To rest
Se relaxer	To relax

Comment est ton prof ? What is your teacher like?

Gentil (-le)	Kind
Agréable	Pleasant
Ennuyeux (-se)	Boring
Organisé (e)	Organised
Content (e)	Happy
Difficile	Difficult
Facile	Easy
Amusant (e)	Fun
Coléreux (-se)	Angry
Strict (e)	Strict
Grincheux (-se)	Grumpy
Fort (e)	Strong
Joli (e)	Handsome/ pretty
Horrible	Awful
Fascinant(e)	Exciting
Jeune	Young
Petit(e)	Small
Grand (e)	Tall
Parfait(e)	Perfect
Rapide	Fast
Riche	Rich
Bruyant(e)	Noisy
Sage	Wise
Sérieux(-se)	Serious
Timide	Shy
Travailleur(-se)	Hard working
Triste	Sad
Âgé(e)	Old

Que penses-tu? What do you think?

C'est	It is
Ce n'est pas	It isn't
Créatif	Creative
Intéressant	Interesting
Pratique	Practical
Utile	Useful
(in)confortable	(un)comfortable
Cher	Expensive
Bon marché	Cheap
À la mode	Fashionable
Démodé	Unfashionable
Sale	Dirty
Propre	Clean
Moche	Ugly



Vegetarian

Vegetarian diets restrict the consumption of all meat, poultry, and seafood. However, they can include various products of animal agriculture such as cheese, eggs, and milk.

Vegan

Being vegan involves avoiding all animal products, whether food or clothing (such as leather shoes). In contrast, plant-based refers to foods and meals that are predominantly based on plants.



Gluten Free

To follow a gluten-free diet, you must avoid wheat and some other grains while choosing substitutes that provide nutrients for a healthy diet.

Lactose Intolerant

If you are lactose intolerant, you may experience symptoms after eating dairy products and some prepared foods that contain dairy. Some dairy products have less lactose than others.

Pescatarian

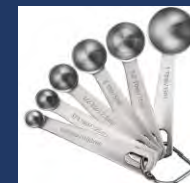
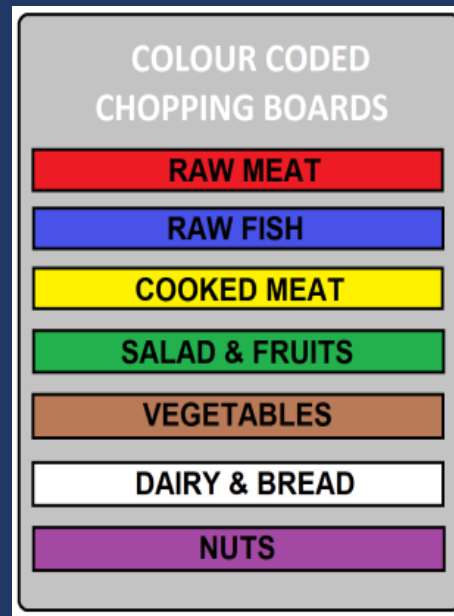
The pescatarian diet, or pescatarianism, involves eating a primarily vegetarian diet with the addition of fish and other seafood.

Regular Diet

The regular diet can also be referred to as a general or normal diet. Its purpose is to provide a well-balanced diet and ensure that individuals who do not require dietary modifications receive adequate nutrition.



Cooking Equipment



Scales

A scale or balance is a device used to measure weight or mass.

Measuring Spoons

A measuring spoon is a spoon used to measure an amount of an ingredient, either liquid or dry, when cooking.

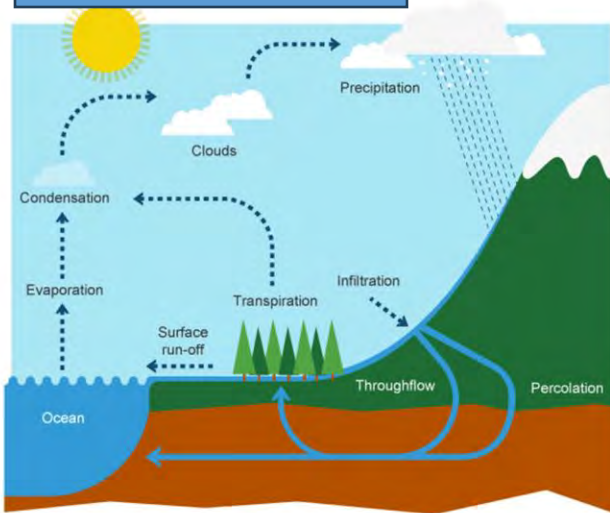
Electric Whisk

and mixers let you whip up you're baking or cooking favourites by mixing, whipping, kneading and more.

Cake Tin

It can be any shape of pan, made of any material, designed to hold any type of food stuff, sweet or savoury, solid or liquid.

The Water Cycle



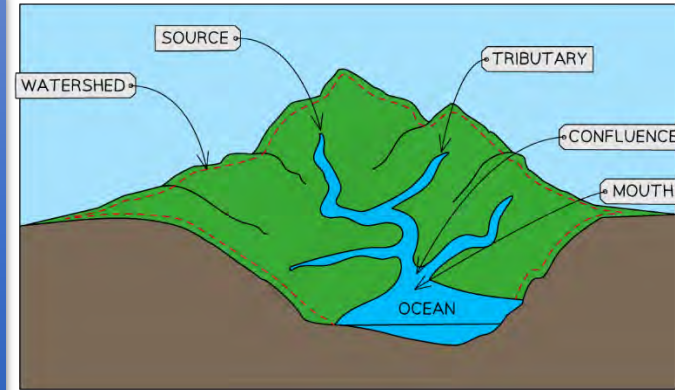
Year 7 Knowledge Organiser: Geography: How do rivers change the landscape of the UK?

River Processes

EROSION where rocks are worn away and the land changes shape.

TRANSPORTATION where eroded material is carried by the river downstream.

DEPOSITION where transported material is dropped when the river loses energy, such as when it enters the sea.



Evaporation

When sun heats water it changes into water vapour and rises.

Condensation

As air rises it cools and the water vapour forms clouds.

Precipitation

Water droplets that fall to the ground as rain, hail or snow.

Infiltration

Water soaks into the soil.

Transpiration

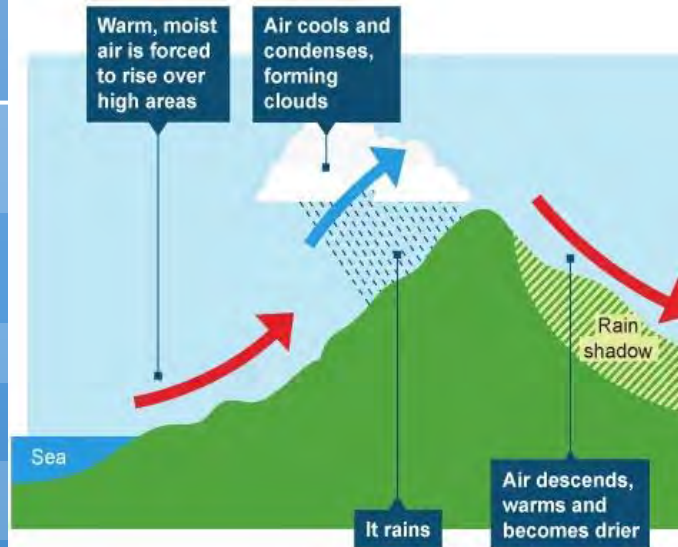
When moisture is evaporated from plants.

Surface runoff

When water runs off the surface of the land.

Throughflow

When water flows through the soil.



Weather

Day to changes in the atmosphere.

Climate

Average weather in a place over a longer time.

Climate graph

Shows average temperature and rainfall for a place over a year.

Range

The difference between the highest and lowest.

Total annual

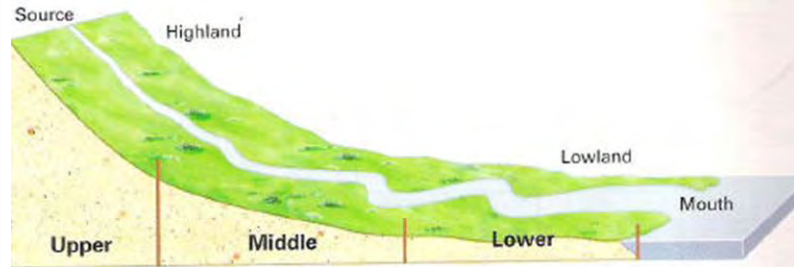
Add up all the months total.

River Processes

Erosion The wearing away of land.

Transportation The movement of material in a river.

Deposition The dropping of material by water.



Flooding



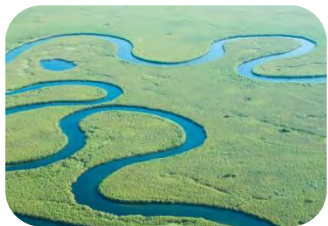
River landforms



Waterfall



V-Shaped Valley



Meander



Delta

Causes of flooding		Impacts of flooding		
Physical	Human	Social	Economic	Environmental
Heavy rainfall	New buildings	Homes flooded	Jobs lost	Water supplies contaminated.
Saturated ground	Deforestation	Loss of electricity and Wi-Fi	Businesses close	Debris left behind

Year 7 History – Block 4

Reformation: key events

1509, 11 June	Henry VIII marries Catherine
1517, 31 October	Martin Luther beginnings the Protestant Reformation in Germany
1527	Henry VIII tells Rome of his intentions to divorce Catherine of Aragon.
1529, 9 August	Thomas Wolsey (Archbishop of York) removed as Lord Chancellor
1533, January	Thomas Cranmer is appointed Archbishop of Canterbury
1533, 25 January	Henry VIII marries Anne Boleyn at Whitehall
1534	Act of Supremacy passed by Parliament
1535	Henry creates the Church of England and proclaims himself, not the Pope, to be the head of the Church of England
1536	Henry uses the Act of Supremacy to start the process of dissolving the monasteries.
1547, 28 January	Henry VIII dies, Edward VI accedes to the throne aged 9
1549	The First Book of Common Prayer is introduced by Thomas Cranmer and the Act of Uniformity 1549

Reformation - Keywords

- Monarch
- Protestant
- Catholic
- Heir
- Corruption
- Priest
- Monasteries
- Dissolution
- Reformation
- Pope
- Divorce

Reformation - Key People

- Henry VIII
- Martin Luther
- John Calvin
- Cardinal Thomas Wolsey
- Edward VI
- Thomas Cranmer, Archbishop of Canterbury.

Causes of the break from Rome and the start of the Church of England

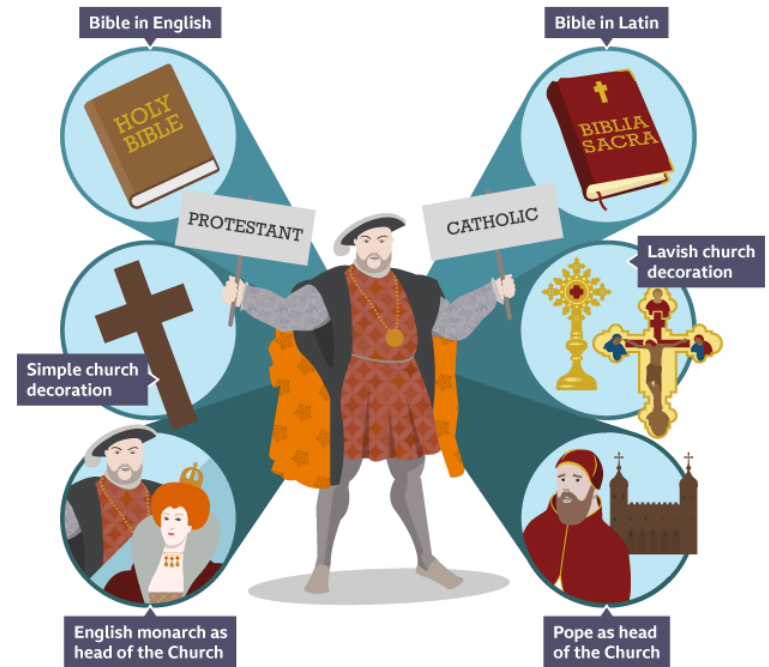
- Wanting to end his marriage
- The influence of Anne Boleyn
- Wealth and Power
- The rise of Protestantism



Long-term impact of the Reformation

Even after Henry's death in 1547, the effects of the Reformation in England continued to be felt.

- Henry's male heir, **Edward VI**, was raised by Protestant men such as his uncles, Edward and Thomas Seymour. During his short reign, England became an increasingly devout Protestant. This led to a Catholic rebellion in 1549. Known as the **Prayer Book Rebellion**, it was led by people who didn't like Edward's new Book of Common Prayer, or the changes he was making to the Church.
- **Under Mary I**, daughter of the Catholic Catherine of Aragon, England became a Catholic country once again. Many people who had been keen to keep their Catholic faith during the religious upheaval of the previous years celebrated Mary's arrival on the throne, throwing bonfires and parties. **Protestants**, however, were persecuted: **around 300 were executed during Mary's reign**. Others fled abroad. As a result of this brutal persecution, Mary earned the nickname of '**Bloody Mary**'.

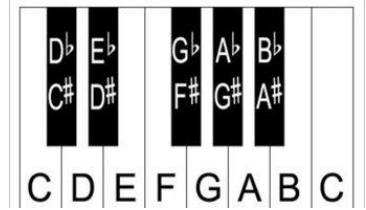
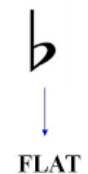
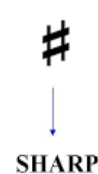
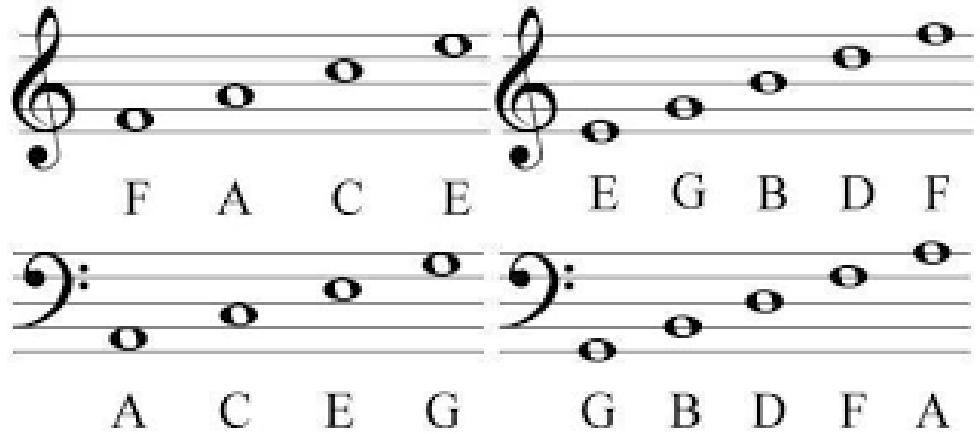


- Under **Elizabeth I**, daughter of Anne Boleyn, the religion of England changed again. Elizabeth shifted the country towards a more moderate Protestantism using acts of Parliament, which became known as the Religious Settlement. Elizabeth was opposed by Protestants who wanted even further reform, and Catholics who wished for the return to Rome. Elizabeth also had to deal with Catholic rebellions against her rule in both England and Ireland.

Year 7 Music Terms 3 & 4 – What Makes A Good Composer?

The Musical Elements – DR C SMITH

Dynamics	Volume of the music
Rhythm	Length & patterns of notes
Tempo	Speed of the music
Metre	Count (e.g. 4/4)
Context	Background information
Structure	Sections in the music
Melody	Main tune
Instrumentation	Instruments, voices & sounds
Texture	Layers in the music
Harmony	Chords in the music



Periods of Musical History

Baroque Era	1650-1725	Classical Era	1725-1810
Romantic Era	1810-1900	C20th onwards	1900-present

Piano hand position

Note Durations

	Semibreve	4 beats
	Minim	2 beats
	Crotchet	1 beat
	Quaver	½ beat
	Semi-quaver	¼ beat

Instrument Families



Strings	Violin, Viola, Cello, Double Bass, Harp
Woodwind	Flute, Clarinet, Oboe, Bassoon
Brass	Trumpet, Trombone, French Horn, Tuba
Percussion	Timpani, Bass drum, Snare drum, Cymbals, Maracas
Keyboard	Harpsichord, Organ, Piano, Synthesiser



Key Stage 3 Knowledge Organiser – Core PE Unit 3: Leadership

Components of a session	Description	Example
1 Aims and objectives	This is what you want your participants to achieve in your session.	‘To be able to control the ball using different parts of the foot’. ‘To be able to describe and demonstrate the teaching points of a short serve.’
2 Warm-up	3 part warm up to include <ul style="list-style-type: none"> - pulse raiser, - Mobilisers - Stretches held for 8-10 seconds 	A light jog to increase heart rate, followed by stretches for the main muscle groups and mobilisation of the joints such as leg swings and arm circles.
3 Main component	Skills and conditioned games or full game.	Serving into a hoop in badminton, followed by a game where you are only able to score points when serving.
4 Cool down	Pulse lowering activities and repeat of stretches from the warm up held for 15-20 secs.	Gentle jog, gradually decreasing to a walk, followed by stretches of the main muscle groups used in the main activity.

Leadership styles	Description	Advantages/Disadvantages
5 	Autocratic The leader makes all of the decisions and ensures instructions are followed.	Very good for safety with dangerous activities or inexperienced participants. Participants can become annoyed at having no say and rebel.
6 	Democratic There is collaboration between the leader and their participants when making decisions.	Participants feel valued, so can be more motivated. Can lead to disorganisation as too many opinions.
7 	Laissez-faire The leader makes few decisions and lets the participants choose what happens.	Can enhance team spirit. Participants may start to talk over the coach and make bad decisions based on personal preferences.

Personality type	Characteristics	Type of sport
8 	Introvert Shy; quiet; thoughtful; like to be on their own.	Tendency to play individual sports that need concentration or precision (fine motor skills) and do not like too much excitement (low arousal activities). E.g., rifle shooting, archery; athletics.
9 	Extrovert Sociable; enjoy interaction of others; enthusiastic; talkative; easily bored.	Tendency to play team sports with a fast pace and gross motor skills, needing less concentration (high arousal activities). E.g., football, basketball, netball.



SCIENCE: Energy stores and Transfers

Learning: To be able to identify energy stores and transfers and how heat is transferred by different materials.

Stores of energy

Energy can be stored in different ways, including:

- kinetic energy
- internal energy
- elastic potential energy
- gravitational potential energy
- electrical energy
- magnetic energy

All objects have internal energy. This includes:

- energy caused by the movement of particles in the object, sometimes called thermal energy
- energy due to the bonds between particles, sometimes called chemical energy

When an object is heated, its particles move more vigorously and its internal energy increases. Unless the object changes state (e.g melts or boils), its temperature will increase. This is measured in °C.

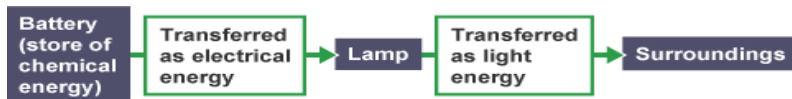
Energy can be transferred from one store to another in the following ways:

- by heating
- mechanically
- electrically
- by radiation



Some key examples:

1. If an object's motion changes = mechanical transfer
2. If an object is dropped = mechanical transfer
3. Completing an electrical circuit = electrical
4. Stretching a spring = mechanical
5. Metabolising food = heating (a weird one!)
6. Burning fuels = heating

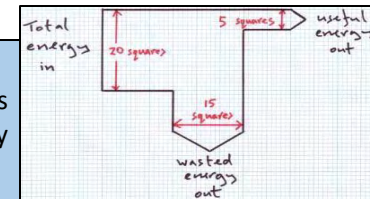


Energy can be stored or transferred, but **energy cannot be created or destroyed**. This means that the total energy of a system stays the same. When we use the word system, we mean objects that might transfer energy e.g. a battery to a lamp to the surroundings.

The idea that the total energy has the same value before and after a change is called **conservation of energy**.

Sankey diagrams.

These diagrams show how much energy is transferred into the system and where this energy goes.



The arrows should all be drawn to scale and the numbers on the arrows out of the system should add up to the value of the energy that went into the system. E.g. in the diagram 15 squares + 5 squares out adds up to the 20 squares that went into the system.

Key words

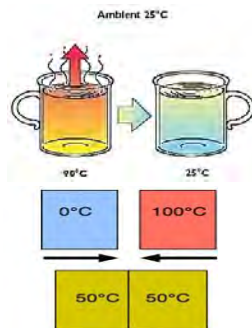
Key word	Definition
Energy	The ability to do work or make something happen
Joule	The unit of energy (symbol = J)
Watt	The unit of power (symbol = W)
Transfer	To change from one type of energy to another
Particle	A small unit of matter
Wave	Energy being transferred without matter
Conduction	Heat energy moving through a solid object
Convection	Heat energy being moved through a liquid or a gas by moving particles.
Radiation	Heat transfer through an energy wave
Equilibrium	When all are equal or the same
Insulator	A material that slows the transfer of energy
Conductor	A material that allows energy to easily move through

SCIENCE: Energy Stress and Transfers

Energy transfer and Heat

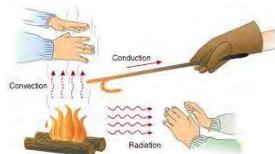
Some objects are hotter than others. Energy is transferred from the hotter object to the cooler one. This causes the difference in temperature between them to decrease.

When the temperatures are equal we say that a thermal equilibrium has been reached. Overall, no more energy transfer takes place.



How is energy transferred by heating?

Energy is transferred either by contact (conduction) or without any contact (by radiation or convection).



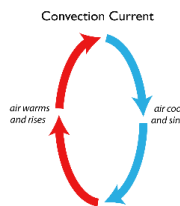
Conduction:

When a substance is heated, its particles gain internal energy and vibrate more. The particles bump into nearby particles and make them vibrate more. This passes internal energy through the substance by **conduction**, from the hot end to the cold end.



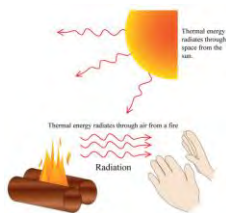
Convection:

The particles in liquids and gases can move from place to place. **Convection** happens when particles with a lot of thermal energy in a liquid or gas move upwards causing particles with less energy to fill the space that they leave. Thermal energy is transferred from hot places to cold places.



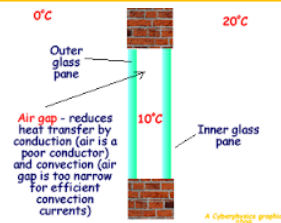
Radiation:

All objects transfer energy to their surroundings by infrared radiation. The hotter an object is, the more infrared radiation it gives off. No particles are involved in radiation.



Insulation:

Insulation (if a material is a poor conductor we say it is an insulator) is used to reduce energy transfers by heating. You will have some insulation in your own home e.g. double glazed windows or cavity wall insulation. This acts to stop conduction and convection through the walls and roof of your house.



Energy and power

- Power is the rate at which energy is used.
- The unit of power is the watt, which has the symbol W.
- 1 W is 1 J per second. So, for example, a 20 W electric lamp uses 20 J of electrical energy every second to stay alight.



Appliance	Power in W	Power in kW
Clock	10	0.01
Lamp	50	0.05
Drill	800	0.8
Iron	1250	1.25
Kettle	2400	2.4
Hot water heater	3000	3
Electric oven	12000	12

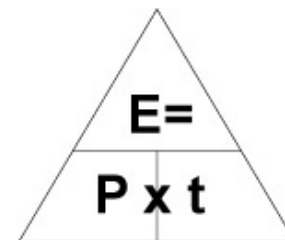
Sometimes, the values aren't all given in the same units. If you look at the table below, one column is given in kW, this means kilowatts (1kW = 1000W just like 1 kilometre is equal to 1000 metres).

To calculate power you divide the value of the energy transferred (in Joules) by the time taken for the transfer (in seconds).

$$P = \frac{E}{t}$$

$$\text{power} = \frac{\text{energy transferred}}{\text{time taken}}$$

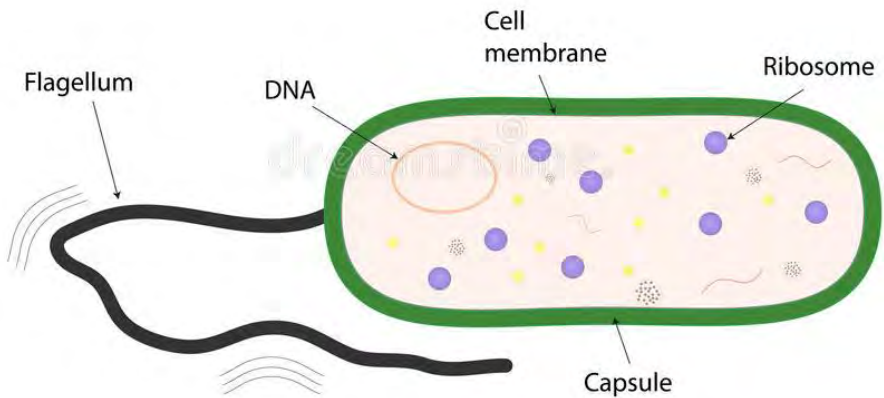
You can also rearrange the equation using the triangle on the left.



SCIENCE: Microbes and Disease

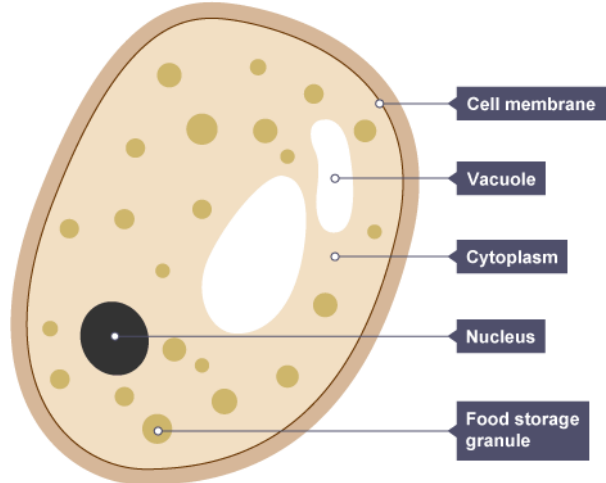
Learning: What micros are, what they do to other living organisms and how our bodily defences help protect us from them.

Bacteria

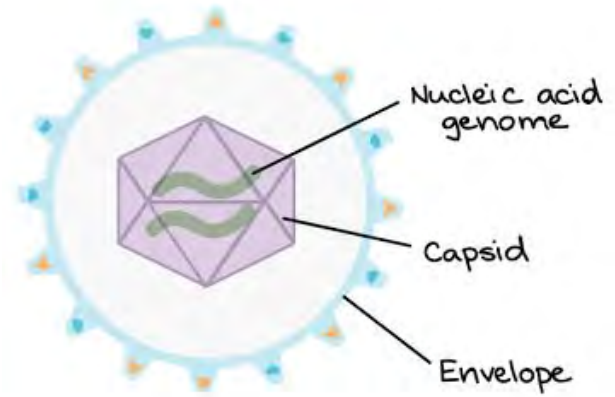


Structure	Function
Microbe	An organism that is microscopic
Pathogen	An organism that causes disease in other organisms.
Flagellum	A tail that bacteria can use to swim
Capsid	A protein shell on a virus
Antibodies	Small proteins made by white blood cells that attach to specific pathogens
Antibiotics	Substances that kill bacteria, often used in medicines
Memory cell	A type of white blood cell which stays in the body after infection to respond straight away if reinfection occurs.

Fungi

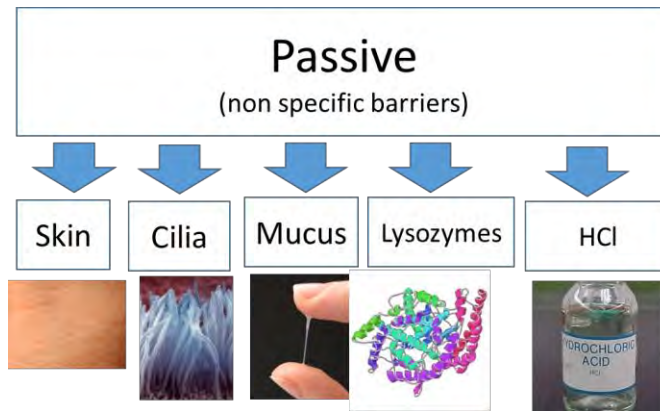


Viruses



The immune system – Non specific

- 1) The skin forms a physical barrier to stop pathogens getting inside your body.
- 2) Cilia are small hairs which line your airways and try to catch any pathogens that you breathe in.
- 3) Mucus sticks together pathogens to stop them getting inside your body.
- 4) Lysozymes are enzymes in tears which break down pathogens.
- 5) Hydrochloric acid in your stomach destroys pathogens on the food you eat.



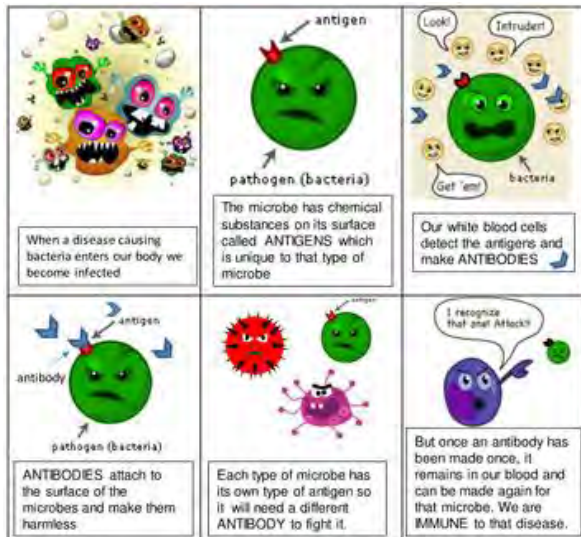
Antibiotics

Antibiotics are substances made by plants to kill bacteria. They only work on bacteria. Penicillin (seen below) is an example of an antibiotic.



The immune system – Specific

Once a pathogen gets inside your body it is the job of white blood cells to find and destroy it before it does too much harm.

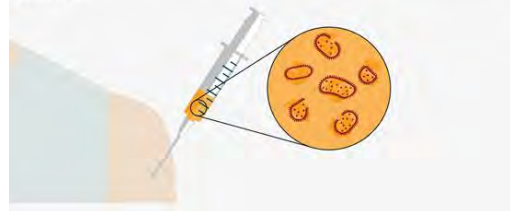


Vaccination

Vaccination is where you are injected with a dead or inactive version of a pathogen. This causes you to have an immune response, so that you have the right white blood cells to fight off the pathogen if you come into contact with it again. This doesn't give you the disease though as the pathogen cannot reproduce.

How vaccines work

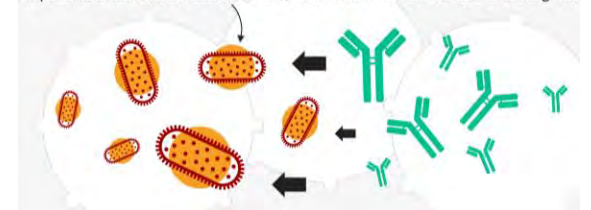
Weakened or dead disease bacteria introduced into the patient, often by injection



White blood cells triggered to produce antibodies to fight the disease



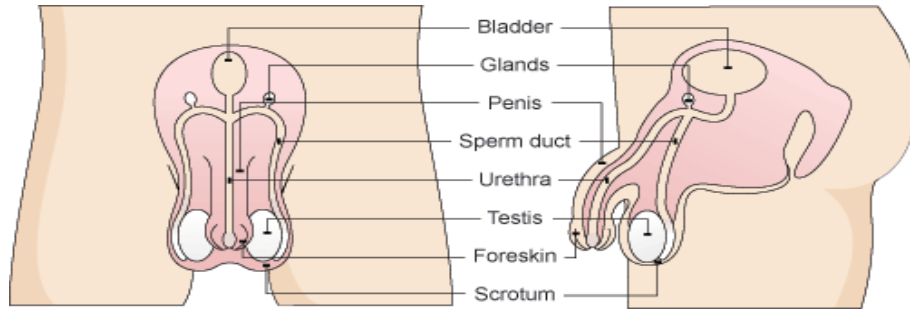
If patient encounters disease later, antibodies neutralise the invading cell



SCIENCE: Reproduction

Learning: The structure and function of the human reproductive systems, How specialised cells fuse to create an embryo and how contraception works.

Male reproductive system



Functions of male reproductive organs

Structure	Function
Testes	To produce gametes (sex cells) called sperm. Also makes male sex hormones.
Penis	Passes urine and semen out of the man's body.
Urethra	Tube inside the penis which carries urine and semen.
Sperm Duct	Sperm passes through these and mix with fluids produced by the glands, creating semen.
Glands	Produce fluids to provide the sperm cells with nutrients.

Gametes

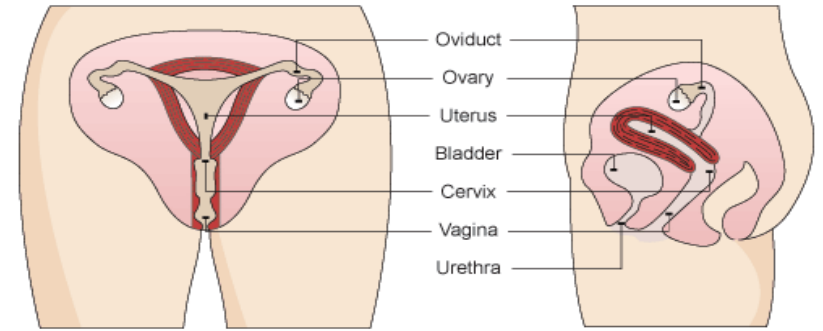
Gametes are sex cells. Female gametes are known as eggs (or ova). Male gametes are sperm.



Sperm cells are specially adapted for reproduction, they have:

- 1) A tail for movement
- 2) A head that has enzymes so it can get into the egg cell.
- 3) Lots of mitochondria for energy
- 4) Only half the genetic material a cell body cell needs

Female reproductive system



Structure	Function
Ovary	Contain undeveloped gametes (sex cells) called ova (or eggs). Every month, an egg matures and is released from the ovary.
Oviduct	Connects the ovaries to the uterus. Their cells are lined with cilia, tiny hairs that help waft the egg along to the uterus.
Uterus	A muscular bag with a soft lining, this is where an unborn baby develops.
Cervix	A ring of muscle which keeps the baby in place while the woman is pregnant.
Vagina	Muscular tube leading from the cervix to the outside of the woman's body. The vagina is where a man's penis enters during sexual intercourse.



Egg cells are specially adapted for reproduction, they have:

- 1) A tail for movement
- 2) A head that has enzymes so it can get into the egg cell.
- 3) Lots of mitochondria for energy
- 4) Only half the genetic material a cell body cell needs

SCIENCE: Reproduction

The menstrual cycle

Takes place in the female reproductive system. It involves a cycle of events which last approximately 28 days, stopping if a woman becomes pregnant.

Day 1-5: The uterus lining breaks down. This is called menstruation.

Day 5-14: A female **gamete** (egg cell) matures in one of the ovaries. The uterus

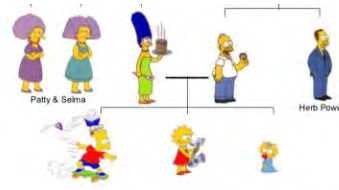
lining thickens. Day 14: The mature egg is released from the ovary. This is known as **ovulation**.

Day 14-21: The egg travels down the oviduct and towards the uterus. The cilia in the oviduct help to waft the egg to the uterus.

Day 21-28: If the egg cell does not meet with a sperm cell in the oviduct, the uterus lining will break down and the cycle will repeat.

Genetics

The nucleus created in fertilisation will contain genetic information from both parents. This is why the child that grows from the fertilised egg will have characteristics that can be seen in other related family members.



Fertilisation

Fertilisation will occur if the egg cell meets and joins with a sperm cell in the oviduct. The fertilised egg attaches to the uterus lining and the woman becomes pregnant. This stops the menstrual cycle, preventing the uterus lining from breaking down.

Birth

At the end of the gestation period the baby is ready to be born. The cervix relaxes and muscles in the wall of the uterus contract. Waves of muscle contraction push the baby out through the vagina.

Contraception

A Guide to Contraception

Contraception can seem daunting. You can find more information online, or by consulting with your GP or a sexual health specialist, or simply sitting down with a family member or friend who has an understanding of contraception.

External condom



A soft, usually latex, sheath placed over the erect penis. Prevents STIs as well as pregnancy. 98% effective when used perfectly. If not used correctly, can slip or slide off.

Contraceptive methods can be split into two types - some methods, such as condoms, you will have to think about often (in the pink boxes). Others, such as the implant, do not require you to think about them as often (in the blue boxes).

Combined pill (COC)



An oral pill containing both oestrogen and progesterone. When used perfectly the combined pill is up to 99% effective. Can reduce menstrual bleeding and period pain. Must remember to take every day.

Vaginal ring



A small, flexible ring inserted into the vagina that releases oestrogen and progesterone. If used perfectly is 99% effective. Stays in for up to 3 weeks, but you must be comfortable inserting and removing it.

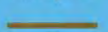
Remember! Only condoms, when used consistently and effectively, can protect against STIs.

Diaphragm/cap



A flexible cap placed against the cervix, to act as a barrier. Used with spermicide. When used perfectly is around 92-96% effective. Can be inserted any time before sex. Correct sized cap required.

The implant



A small, flexible rod that is implanted under the skin of the upper arm and releases progesterone. 99% effective and works for up to 3 years. Requires a short clinical procedure to insert and remove.

Intrauterine device (IUD)



A small copper and plastic anchor is placed inside the uterus. 99% effective. Works for up to 5-10 years, can be removed sooner. Can make periods heavier and more painful.

Progestogen-only pill (POP)



An oral pill containing only progesterone. When taken correctly is up to 99% effective. Can be used in most women under 35. Taken daily.

Contraceptive injection



A simple injection of progesterone. 99% effective when used correctly. Works for between 8-13 weeks. Cannot be removed from the body once taken so any side effects cannot be combated.

Awareness methods



Identify and understand fertile and infertile periods during the menstrual cycle. Can be 99% effective if done correctly. Can be used to plan and prevent pregnancy. While fertile, must use condoms.

Contraceptive patch



When stuck to the skin it releases progesterone and oestrogen into the blood. 99% effective when used correctly. Can make periods lighter, but can cause irritation to the skin.

Intrauterine system (IUS)



A small device placed inside the uterus which releases progesterone. 99% effective. Works for between 3-5 years but can be removed sooner. Spotting is common during the first few weeks.

Internal condom



Similar to the external condom but covers the outer area of the vagina. Around 95% effective when used correctly. Prevents against STIs. Not as accessible as male alternative condoms.

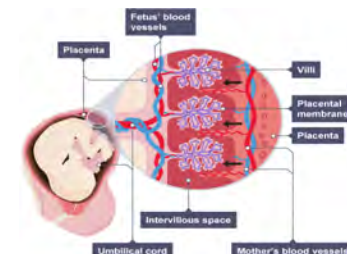
Sterilisation



A procedure where either the fallopian tubes or the tubes that carry sperm in men are tied, sealed, cut or otherwise blocked. Permanent, cannot be undone. Shouldn't be chosen if you may want to one day have children.

Gestation

It takes approximately 40 weeks for a baby (foetus) to develop in the uterus, this time is known as gestation.



The placenta is an organ which provides oxygen and nutrients from the mother to the developing foetus. It also helps to remove waste such as carbon dioxide. The foetus is connected to the placenta by the umbilical cord.

Science: Working Scientifically

Hypotheses and Variables

1	Hypothesis	A hypothesis is a prediction made about an experiment based on some previous scientific knowledge.
2	Dependent Variable	What we measure
3	Independent Variable	What we change
4	Control Variable	What we keep the same

Key Terms

1	Independent variable	The variable you change to find out its effect on the dependent variable
2	Dependent variable	The variable you measure to see how it changes
3	Control variable	Any variable that you must keep the same to ensure it doesn't affect the dependent variable
4	Mean	The total of the values divided by the number of values
5	Anomalous data	Data that does not fit the expected pattern

Methods

1	Contents of a method	<ul style="list-style-type: none"> A clear sequence Information on which equipment to use Volumes and masses for reagents Scientific language
<p>Precision Example method:</p> <ol style="list-style-type: none"> 25cm³ sulphuric acid was added to a small beaker. Using a spatula, excess insoluble base (copper oxide powder) was added to the acid. Check the base is in excess by looking for remaining powder in the beaker. The excess base was filtered out using filter paper in a funnel. The filtrate was allowed to filter into a conical flask. When filtration was complete, the filter paper was discarded and the filtrate solution was poured into an evaporating dish. The solution was left for a few days or the evaporating dish heated for the dissolved salt to crystallise. 		

Annotations in the example method:

- Sequencing**: Points to the numbered steps in the method.
- Scientific language**: Points to terms like 'sulphuric acid', 'insoluble base', 'filtrate', and 'crystallise'.
- Equipment**: Points to 'small beaker', 'spatula', 'filter paper', 'funnel', 'conical flask', and 'evaporating dish'.

Results Tables















1	Results table layout	The independent variable should always go in the first column, the dependent variable then goes in the column to the right of this.
2	Contents of a results table	<ul style="list-style-type: none"> Show all repeat measurements Include the units in the headings Circle anomalies Discount these when calculating a mean

Example results table:

Concentration of acid (M)	Time taken for reaction to complete (s)			Mean (s)
0.1	102.1	105.6	103.4	103.7
0.2	88.8	86.5	87.2	87.5
0.3	69.1	67.3	64.2	66.9
0.4	56.2	40.1	53.3	54.8
0.5	32.1	30.1	33.2	31.8

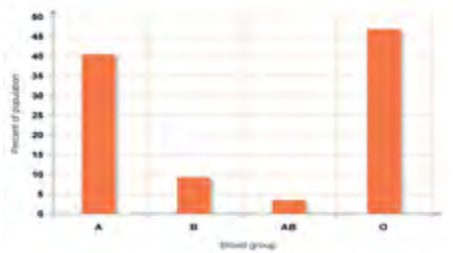
Science: Working Scientifically

Common laboratory equipment

1	Beaker		For pouring and transferring liquids and solutions.	8	Test Tube		For carrying out chemical reactions with small volumes of liquid
2	Conical Flask		For carrying out reactions	9	Boiling Tube		A boiling tube is used to heat substances in a Bunsen Burner
3	Bunsen Burner		To heat substances	10	Measuring Cylinder		To accurately measure out volumes of liquid
4	Tripod		To support	11	Spatula		To move small amounts of solid powders
5	Gauze		To place an object on for example conical flask that you are going to heat.	12	Stirring Rod		To stir solutions.
6	Heatproof mat		To protect the desk from the heat produced by the Bunsen Burner and any spillages from the substances which are being heated	13	Thermometer		To measure the temperature of a substance
7	Evaporating basin		To evaporate the water from solutions. Leaving behind the solute.	14	Tongs		To hold and move hot solids for example pieces of metal

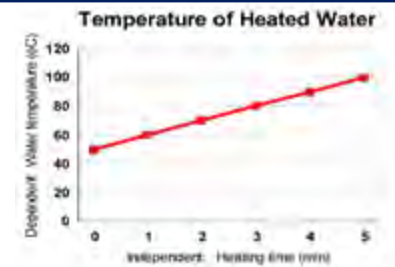
Science: Working Scientifically

6. Discontinuous data



1	Discontinuous data	Discontinuous or categoric data can only take certain values
2	Examples of discontinuous data	Eye colour and blood group,
3	How to plot discontinuous data	Bar Chart

7. Continuous data



1	Continuous data	Continuous data can take any value
2	Examples of continuous data	Height or temperature.
3	How to plot continuous data	Line Graph

8. Drawing good line graphs

1	x Axis	Plot the dependent variable
2	y Axis	Plot the independent variable
3	Drawing the graph	<ul style="list-style-type: none"> Label axis and include units Use small precise crosses to mark your points
4	Line of best fit	Line of best fit which goes smoothly though as many points as possible (this does not have to be a straight line)
5	Anomalies	Circle anomalies and don't include them when drawing the line of best fit

Labels for axes, with units given in brackets

Both axes have suitable scales (equal intervals)

Accurate line of best fit, passing through most points, excluding anomalies.

Neat, accurately placed plots.

Anomaly recognised and highlighted on the graph

Year 7 Design Technology

Block 1: Textiles

ACCESS FM - Helpsheet

We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.

In DT during Block 1 we will be completing a unit on **Textiles**. This will include developing our skills in sewing by hand by making 'Scrappy Monsters'. When designing or evaluating a product in DT we use ACCESSFM to help us remember the key requirements of any product.

- 'Textiles' is a general term to describe a product made from **fabric**.
- Fabrics are made from **fibres**.
- Individual fibres are weak, so they are spun and twisted together to make **yarn**.
- **Fibres** may be **natural or synthetic**.
- Some fibres and fabrics may be treated with flame retardants to reduce the risk of fire.

A is for **Aesthetics**



Aesthetics means **what does the product look like?**
What is the: Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?

C is for **Cost**



Cost means **how much does the product cost to buy?**
How much does it: Cost to buy? Cost to make?
How much do the different materials cost? Is it good value?

C is for **Customer**



Customer means **who will buy or use your product?**
Who will buy your product? Who will use your product?
What is their: Age? Gender?
What are their: Likes? Dislikes? Needs? Preferences?

E is for **Environment**



Environment means **will the product affect the environment?**
Is the product: Recyclable? Reuseable? Repairable? Sustainable?
Environmentally friendly? Bad for the environment?
6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Refuse

S is for **Size**



Size means **how big or small is the product?**
What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit?
Would it be improved if it was bigger or smaller?

S is for **Safety**



Safety means **how safe is the product when it is used?**
Will it be safe for the customer to use? Could they hurt themselves?
What's the correct and safest way to use the product? What are the risks?

F is for **Function**



Function means **how does the product work?**
What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?

M is for **Material**



Material means **what is the product made out of?**
What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?

• Natural Fibres

- come from animals or plants.
- Animal fibres include wool, silk, alpaca, angora, camel hair, cashmere and mohair.
- Plant fibres include cotton, linen, jute and hemp.

Examples:

- **Cotton** - from plants, strong, durable, absorbent, creases easily. Common types; denim, calico, flannelette, used for underwear, shirts and blouses, T-shirts and jeans.
- **Wool** - from sheep, warm, soft, absorbent, crease resistant. Common types; felt, flannel, used for jumpers, suits, dresses and carpets.
- **Silk** - from the cocoon of silk moth, smooth, lustrous and strong. Common types; chiffon, organza, crepe and velvet, used for dresses, shirts and ties.

• Synthetic Fibres

- made by people, usually from oil or chemicals.
- Oil is a fossil fuel. A finite resource. Extracting, processing and transporting oil can cause environmental damage and pollution.
- Large-scale industrial processes are used.
- Synthetic fibres are not usually biodegradable.

Examples:

- **Polyamide (Nylon)** - from two different chemical monomers, strong, durable, warm, creases resistant. Used for tights, sportswear, upholstery and carpets.
- **Polyester** - from coal and oil, strong, durable, elastic, creases resistant. Used for sportswear, mixed with cotton in shirts and trousers.
- **Elastane (Lycra)** - from the polyurethane chemicals, high extension and elasticity (stretch). Used to improve comfort and appearance when added to other fabrics. Used for sportswear, underwear, socks and suits.

