King's Oak ACADEMY

# Year 8 Block 3 Knowledge Organisers

Name:

Tutor Group:

Contents:



**2025-26**

# Homework

# 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'?

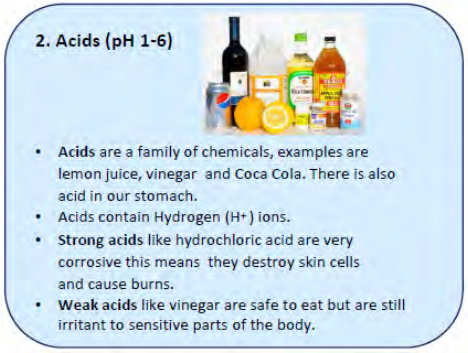
Here is a section of a Science Knowledge Organiser. You could test your grasp of this knowledge by asking yourself,

*"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.



## 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 8 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:

| | AP1 | AP2 + DOYA | | AP3 + DOYA |
|---|---|---|---|---|
| Year 8 | **Delving into data**<br>Angle<br>Interpreting & comparing<br>Averages<br>Scatter graphs | **Formalising algebra**<br>Solve equations<br>Sequences (nth term)<br>Graphs of linear functions, y=mx+c | **Proportional relationships**<br>Percentages<br>Convert between fractions, decimals & percentages<br>Ratio – linking to fractions<br>Scale diagrams | **Geometrical reasoning**<br>Pythagoras<br>3D shape<br>Volume<br>Angle, constructing triangles |

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

**Renaissance MyOn**

**School: King's Oak Academy**

**Username:** _____

**Password:** _____

RENAISSANCE myON Digital Reading Platform

**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:** Read

**To find information on a book:** Info

**To add a book to My List:** Add

**To take a quiz:** Take AR Quiz

# Week 1

| Date | Day | Subject | Questions |
|---|---|---|---|
| 19/01/2026 | Mon | French | Look-say-cover-write-check the 'Where do you go?' box. You should try each word between 3 and 5 times - more if you find a particular word difficult. |
| 20/01/2026 | Tue | English | Complete your reading activity on MyOn and log the date and title of the book in your homework book. |
| 21/01/2026 | Wed | 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 | Maths | Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book. |
| 23/01/2026 | Fri | Science | 1. What is a species? |
| | | | 2. What is variation? |
| | | | 3. What are the two types of variation? |
| | | | 4. Name a characteristic that is genetically inherited. |
| | | | 5. What is natural selection? |
| | | | 6. Define what is biodiversity? |
| | | | 7. What is a species? |
| | | | 8. What is a gene? |
| | | | 9. Other than sexual reproduction, where can genetic variation come from? |
| | | | 10. What does extinct mean? |

# Week 2

| Date | Day | Subject | Questions |
|---|---|---|---|
| 26/01/2026 | Mon | Geography | 1. How long have humans lived in China? |
| | | | 2. What was the first dynasty in China? |
| | | | 3. When did the Zhou dynasty take over? |
| | | | 4. What famous historical monument did the Qin dynasty construct? |
| | | | 5. Who was the leader of the Chinese communist party? |
| | | | 6. What did the Communists rename China to? |
| | | | 7. What was the Cultural Revolution in 1966? |
| 27/01/2026 | Tue | English | Complete your reading activity on MyOn and log the date and title of the book in your homework book. |
| 28/01/2026 | Wed | Art | Read through the information on Term 3 part 1 then answer the following questions: |
| | | | 1. What makes a successful artist page? |
| | | | 2. How would you describe Tim Burton's work? |
| | | | 3. What does Tim Burton use to design his characters? |
| | | | 4. How do you refine your work? |
| | | | 5. What is Modroc used for? |
| | | | 6. What are the 3 dimensions? |
| | | | 7. Why are sculptures 3D? |
| | | | 8. What is pinch pot? |
| | | | 9. What are the primary colours? |
| | | | 10. How do you make brown? |
| 29/01/2026 | Thu | Maths | Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book. |
| 30/01/2026 | Fri | Science | 1. Name an example of continuous variation. |
| | | | 2. Name an example of discontinuous variation. |
| | | | 3. State the difference between continuous and discontinuous data. |
| | | | 4. Name an extinct species. |
| | | | 5. Why might a species become extinct? |
| | | | 6. Are lions predators or prey animals? |
| | | | 7. Name an adaptation of a cactus. |
| | | | 8. Name an adaptation of a polar bear. |
| | | | 9. What is biodiversity? |
| | | | 10. Why is biodiversity important? |

# Week 3

| Date | Day | Subject | Questions |
|---|---|---|---|
| 02/02/2026 | Mon | French | Look-say-cover-write-check the 'Where do you stay?' and 'How do you travel?' boxes. You should try each word between 3 and 5 times - more if you find a particular word difficult. |
| 03/02/2026 | Tue | English | Complete your reading activity on MyOn and log the date and title of the book in your homework book. |
| 04/02/2026 | Wed | Music | 1. What are 4 main periods of music history? |
| | | | 2. Identify a famous piece written by Pachelbel |
| | | | 3. Identify a famous piece written by Beethoven |
| | | | 4. What are the instruments in the keyboard family? |
| | | | 5. What do dynamics mean in music? |
| | | | 6. What does tempo mean in music? |
| | | | 7. What does structure mean in music? |
| | | | 8. What does melody mean in music? |
| | | | 9. Name two string instruments. |
| | | | 10. Name two woodwind instruments. |
| 05/02/2026 | Thu | Maths | Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book. |
| 06/02/2026 | Fri | Science | 1. Is time an example of continuous or discontinuous data? |
| | | | 2. Is shoe size an example of continuous or discontinuous data? |
| | | | 3. Is weight an example of continuous or discontinuous data? |
| | | | 4. What is the name of the process where new species emerge? |
| | | | 5. To be classified as a new species, the offspring produced must be fertile. True or false? |
| | | | 6. What is natural selection? |
| | | | 7. Darwin's theory of evolution says that the long-necked giraffes will only have baby giraffe offspring that also have long necks. True or false? |
| | | | 8. What is variation? |
| | | | 9. Why might a species become extinct? |
| | | | 10. What are the human reproductive cells? |

# Week 4

| Date | Day | Subject | Questions |
|---|---|---|---|
| 09/02/2026 | Mon | History | 1. What is globalisation? |
| | | | 2. What does economic mean? |
| | | | 3. What does legacy mean? |
| | | | 4. Define abolition. |
| | | | 5. Define auction. |
| | | | 6. Define plantation. |
| | | | 7. Define legislation. |
| | | | 8. Define emancipation. |
| | | | 9. What does **dehumanising** mean? |
| | | | 10. What are Human Rights? |
| 10/02/2026 | Tue | English | Complete your reading activity on MyOn and log the date and title of the book in your homework book. |
| 11/02/2026 | Wed | DT | 1. What is a 'schematic diagram'? |
| | | | 2. What are 2 features of a 'good' solder joint and a 'bad' solder joint? |
| | | | 3. Name 4 'output' devices. |
| | | | 4. What does LED stand for? |
| | | | 5. Who invented the 'Anglepoise' lamp? |
| | | | 6. Name one of the 6R's that means the lamp can be easily disassembled. |
| 12/02/2026 | Thu | Maths | Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book. |
| 13/02/2026 | Fri | Science | 1. Put the metals in the order of reactivity from most reactive to least reactive: Iron, Gold, Potassium, Calcium. |
| | | | 2. Metal + acid --> ? + ? |
| | | | 3. Describe the reaction between an acid and platinum. |
| | | | 4. Describe the reaction between an acid and calcium. |
| | | | 5. What kind of salt does hydrochloric acid make? |
| | | | 6. What kind of salt does sulphuric acid make? |
| | | | 7. What is the test for hydrogen? |
| | | | 8. Name 3 properties of metals |
| | | | 9. What does malleable mean? |
| | | | 10. True or false: Non-metals are good conductors of heat. |

## Week 5

| Date | Day | Subject | Questions |
|---|---|---|---|
| 23/02/2026 | Mon | French | Look-say-cover-write-check the 'What is the weather?' box. You should try each word between 3 and 5 times - more if you find a particular word difficult. |
| 24/02/2026 | Tue | English | Complete your reading activity on MyOn and log the date and title of the book in your homework book. |
| 25/02/2026 | Wed | Drama | 1. Explain pitch and what is can show |
| | | | 2. What is the difference between an accent and a dialect? |
| | | | 3. What is diction? |
| | | | 4. What is the key term for speaking with strength? |
| | | | 5. What is a monologue? |
| | | | 6. What is a duologue? |
| | | | 7. What does it mean to improvise in Drama? |
| | | | 8. Give an example of a regional dialect from London? |
| | | | 9. What is a character? |
| | | | 10. What is intonation? |
| 26/02/2026 | Thu | Maths | Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book. |
| 27/02/2026 | Fri | Science | 1. Metal + acid --> |
| | | | 2. Name a property of metals |
| | | | 3. One the periodic table, where are metals found? |
| | | | 4. Which metal is most reactive out of sodium, silver and magnesium? |
| | | | 5. How do you test for carbon dioxide? |
| | | | 6. How do you test for hydrogen? |
| | | | 7. How do we extract aluminium for its ore? |
| | | | 8. Carbon + silver oxide --> |
| | | | 9. Carbon + magnesium --> |
| | | | 10. Why are some metals like gold found in the ground in a pure form? |

## Week 6

| Date | Day | Subject | Questions |
|---|---|---|---|
| 02/03/2026 | Mon | DT | Draw a schematic diagram to demonstrate a simple electronic circuit – using USB power, LED, battery and switch. |
| 03/03/2026 | Tue | Science | 1. What did Lamarck believe about animal evolution? |
| | | | 2. What is biodiversity? |
| | | | 3. All humans have the same DNA. True or false? |
| | | | 4. What is the name of the process where new species emerge? |
| | | | 5. To be classified as a new species, the offspring produced must be fertile. True or false? |
| | | | 6. Metal + acid --> |
| | | | 7. Name a property of metals. |
| | | | 8. What kind of salt does hydrochloric acid make? |
| | | | 9. What kind of salt does sulphuric acid make? |
| | | | 10. What kind of salt does nitric acid make? |
| 04/03/2026 | Wed | French | Look-say-cover-write-check the 'What do you visit?' box. You should try each word between 3 and 5 times - more if you find a particular word difficult. |
| 05/03/2026 | Thu | Maths | Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book. |
| 06/03/2026 | Fri | Art | Complete the one-point perspective drawing on the knowledge organiser sheet. Use the examples to help you. You must use a ruler when drawing the lines. |

# Week 7

| Date | Day | Subject | Questions |
|---|---|---|---|
| 09/03/2026 | Mon | Science | 1. All metals are magnetic. True or false? |
| | | | 2. What is a displacement reaction? |
| | | | 3. Tin is less reactive than Aluminium. Complete the following word equation: Tin nitrate + Aluminium → _____ + ____ nitrate |
| | | | 4. Electrons which are able to move in a metal are called_____ electrons. |
| | | | 5. What does brittle mean? |
| | | | 6. Name 2 ways we can observe that a chemical reaction is happening. |
| | | | 7. What type of salts does nitric acid make? |
| | | | 8. What type of salts does hydrochloric acid make? |
| | | | 9. Zinc + Hydrochloric acid --> ? + ? |
| | | | 10. Sodium + Nitric acid --> ? + ? |
| 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. Who does China share borders with? (all answers are on page 3 of the Geography section) |
| | | | 2. Which mountain ranges separate China from its neighbours? |
| | | | 3. What are the major rivers in China called? |
| | | | 4. What types of animals are there in China? |
| | | | 5. Describe the different cultural mix of people in China (people). |
| | | | 6. What are the two main economic industries in China? |
| 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. Name the instruments in the string family. |
| | | | 2. Name the instruments in the woodwind family |
| | | | 3. Name the instruments in the Brass family |
| | | | 4. Name two composers from the Baroque Era |
| | | | 5. Name two composers from the Classical Era |
| | | | 6. Name two composers from the Romantic Era |
| | | | 7. What is the difference between rhythm & tempo in music? |
| | | | 8. What does texture mean in music? |
| | | | 9. How many black keys are between C and C on a piano? |
| | | | 10. What is the famous piece called that is written by J. S. Bach? |

# Week 8

| Date | Day | Subject | Questions |
|---|---|---|---|
| 16/03/2026 | Mon | Computing | 1. What is pattern recognition?<br>2. What shape is used for the start and end of a flowchart?<br>3. What is a program?<br>4. What does programming mean?<br>5. What shape represents a process in a flowchart?<br>6. Why are arrows used in flowcharts?<br>7. Which keywords are commonly used for selection?<br>8. Which keywords are commonly used for iteration?<br>9. Why are flowcharts useful when designing algorithms?<br>10. Which programming language is mentioned as an example? |
| 17/03/2026 | Tue | English | Complete your reading activity on MyOn and log the date and title of the book in your homework book. |
| 18/03/2026 | Wed | History | 1. What sort of things would be considered human impacts of enslavement?<br>2. What sort of things would be considered economic impacts of enslavement?<br>3. What sort of things would be considered as global impacts of enslavement?<br>4. Define Empire.<br>5. Define colony.<br>6. Define imperialism.<br>7. Define decolonisation.<br>8. What was the Indian Mutiny?<br>9. What does the term 'Jewel in the crown' mean?<br>10. What is a penal colony? |
| 19/03/2026 | Thu | Maths | Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book. |
| 20/03/2026 | Fri | PE | 1. What does the fitness component "Power" refer to, and can you give an example of it in sport?<br>2. What is "Reaction" in terms of fitness, and why is it important in games?<br>3. Why is power an important fitness component in physical education?<br>4. How can students develop their reaction during PE lessons?<br>5. Can you describe a practical activity that improves power?<br>6. Give an example of a sport that relies heavily on reaction time and explain why.<br>7. How does reaction influence performance in team sports?<br>8. What is the difference between power and muscular strength<br>9. Why might improving power benefit a person's performance in athletics? |

# Week 9

| Date | Day | Subject | Questions |
|---|---|---|---|
| 23/03/2026 | Mon | Science | 1. What does malleable mean? |
| | | | 2. Which is more reactive – sodium or calcium? |
| | | | 3. Metals are usually what state at room temperature? |
| | | | 4. Metal oxide + carbon --> ? + ? |
| | | | 5. If gold is dropped into acid, what would you expect to see? |
| | | | 6. If iron is dropped into acid, what would you expect to see? |
| | | | 7. If potassium is dropped into acid, what would you expect to see? |
| | | | 8. What is the test for carbon dioxide? |
| | | | 9. What is the test for hydrogen? |
| | | | 10. Why is gold used in jewellery? |
| 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. What is communism? |
| | | | 2. What grain is China the top producer of? |
| | | | 3. How many of China's cities have at least 1 million residents. |
| | | | 4. How much of China's land is covered by forests? |
| | | | 5. When was the one-child policy ended? |
| 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 a monologue and a duologue? |
| | | | 2. What is a script? |
| | | | 3. What is a rehearsal in Drama? |
| | | | 4. What is the difference between pronunciation and enunciation? |
| | | | 5. Which accent would you give a wealthy, royal character and why? |
| | | | 6. What is pace? |
| | | | 7. What is tone? |
| | | | 8. What is a scene? |
| | | | 9. What is an audience in Drama? |
| | | | 10. What is a performance? |

## Week 10

| Date | Day | Subject | Questions |
|---|---|---|---|
| 30/03/2026 | Mon | French | Look-say-cover-write-check the 'What do you do?' 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 are the two types of carbohydrates and give an example of each? |
| | | | 2. What is the main purpose of carbohydrates in the body? |
| | | | 3. How do saturated fats differ from unsaturated fats in terms of sources? |
| | | | 4. What is protein used for in the body? |
| | | | 5. Why are micronutrients important? |
| | | | 6. What role does iron play in the body and where can you find it? |
| | | | 7. What is the function of calcium, and which foods provide it? |
| | | | 8. Why is dietary fibre important, and what are some good sources? |
| | | | 9. How do minerals like sodium and potassium help the body? |
| | | | 10. What is the importance of drinking water? |
| 02/04/2026 | Thu | Maths | Complete your Sparx. Remember to write down your workings and bookwork codes in your homework book. |

# Art Year 8 Creatures and Characters

**Develop knowledge** – how to design in 2D to be translated into 3D, inspired by Tim Burton's characters.

**Understand** – how to refine artwork connect to the artist's style.

**Develop skills** – drawing, 3D modelling skills, painting and colour mixing.

**Outcome** – To improve your understanding of how to develop your ideas for 3D work.

**Keywords**:

**REFINE:** Make minor changes so as to improve your work.

Modroc: is a plaster-impregnated bandage that can be used to make sculptures, models, and casts for a variety of art project.

3D: 3 dimensions that has height, width, and depth, and can be viewed from multiple angles.

Sculpture: is a three – dimensional art form that is physically presented in height, width, and depth.

Pinch pot: is a traditional pottery – making technique that involves shaping a ball of clay into a vessel using your fingers.

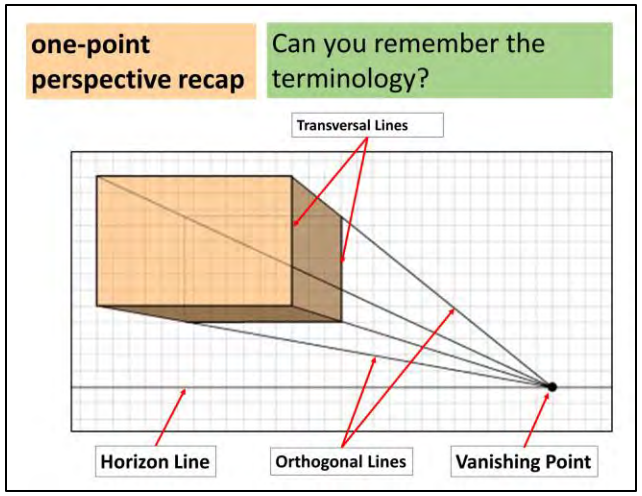
**ARTIST**

**Tim Burton**

Tim Burton uses shapes and symbols to communicate his character's emotions. For example, the faces of his troubled heroes and heroines are often geometric shapes. The eyes, faces, and bodies of many characters are composed of circular or organic shapes. Burton often uses circles to suggest unhappiness.

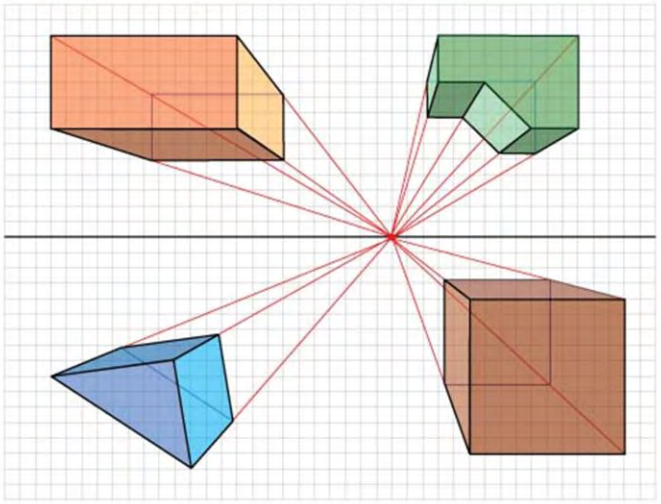
Known for his gothic style, Tim Burton's characters are quite easily identifiable due to the recognizable eccentric aesthetic. Often depicted with exaggerated features, such as unique costumes and enhanced makeup, these characters visually define their personalities and roles in the movies through their appearances.

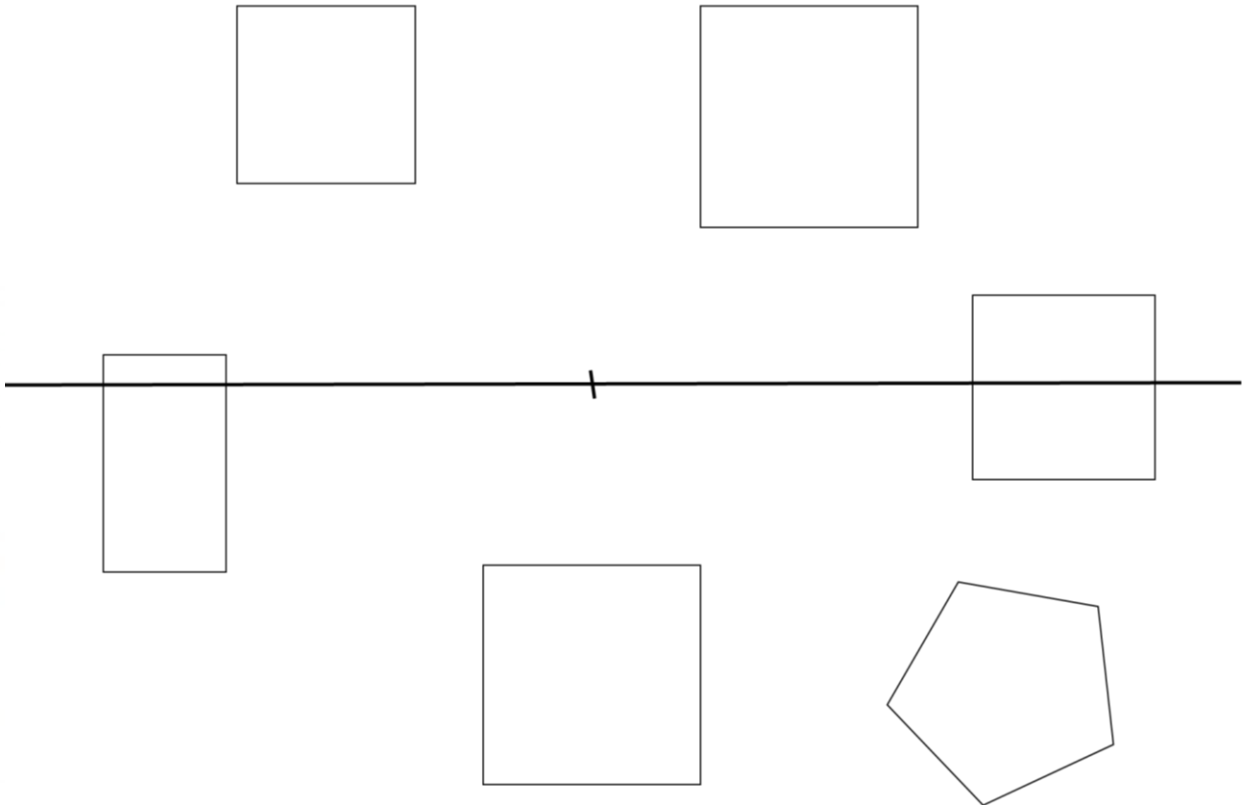
# Art - Environment – Term 3 Part 2




Observational drawing:

Practice the 1-point perspective technique and make these shapers 3D and in perspective.





# Year 8 Drama Terms 3-4: Scripted Extracts including Shakespeare

1. Developing your knowledge, skills and understanding of Shakespeare.
2. Exposure to Shakespearean texts or scenes.
3. Exposure to Shakespearean language.
4. Understanding of contemporary theatre roles with an historical context.

## Skills

| | |
|---|---|
| **Pitch** | This is how high or low a performer makes their voice when playing different roles. Pitch can show the age, gender and mood of the character. |
| **Accent** | This informs the audience what country you are from e.g. England. |
| **Diction** | This is how clearly you speak using enunciation and pronunciation. |
| **Volume** | This is how loudly or softly you speak, this could be from a stage whisper to shouting. |
| **Emphasis** | This is when a performer puts extra focus on a word or words within a sentence to make a point, this can be done by elongating, speaking louder or changing the tone of your voice. |
| **Intonation** | This is varying your voice so that it goes up and done, this help the fluency of your speech and helps the audience stay engaged with your dialogue. |
| **Projection** | This is speaking with strength. Opening your mouth wider creates a bigger projection. |
| **Dialect** | This is similar to speaking with an accent except it is more specific i.e. it tells the audience what region you are from e.g. London. |
| **Tone** | This is showing the mood that your character is feeling e.g. happy, sad, excited, frustrated etc. |
| **Received Pronunciation** | This is when you speak with a posh accent, taking care to enunciate each letter in every word. Performers use the front of their mouths when they are delivering their dialogue to give a nasal sound. |
| **Cockney** | This is speaking with an East End (London) dialect. |
| **Enunciation** | This is how well a performer speaks e.g. good enunciation means sounding out every letter in every word. |
| **Pronunciation** | This is the accent or mood you speak a line of dialogue with e.g. speaking English with a French accent. |
| **Pace** | This is how fast or slow a performer speaks. A character who is tired or bored may speak with a slow pace compared with a happy, excited character who will speak with a fast pace. |

| Key Words | Definition |
|---|---|
| **Scene** | A section of a play/act |
| **Dialogue** | Speech |
| **Duologue** | Two people speaking |
| **Performance** | A showcase where actors share the characters and story to an audience |
| **Improvise** | Creating a piece of unscripted work |
| **Script** | Written dialogue |
| **Audience** | Spectators |
| **Character** | A person who you play in role |
| **Rehearsal** | Practicing a scene/performance |

# DT – Electronics – Term 3-4

## 6R's

**REDUCE** - reduce the materials we use in manufacturing and at home.

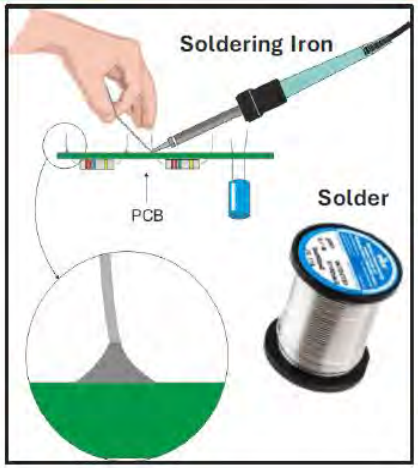
**REUSE** - reuse materials rather than throwing them away.

**REFUSE** - do not buy or use a product, if it is not environmentally sustainable or it is not necessary.

**RETHINK** - consider how products are made, so that they are sustainable. Rethink your lifestyle i.e. walk instead of driving a car, for a short journey.

**REPAIR** - design products so that they are repairable.

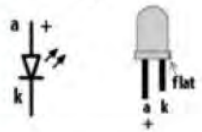
**RECYCLE** - design products so that they can be disassembled/recycled




Electric circuits are represented by drawn ***schematic diagrams*** like the one on the right.

In the diagram, ***symbols*** are used to represent each part of the circuit.

**LED**



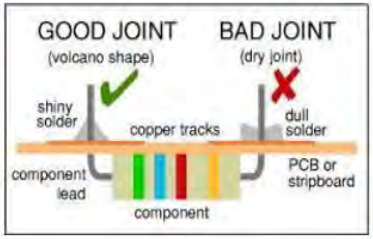

convert electrical energy directly into light, delivering efficient light generation with little-wasted electricity.

**Resistor**

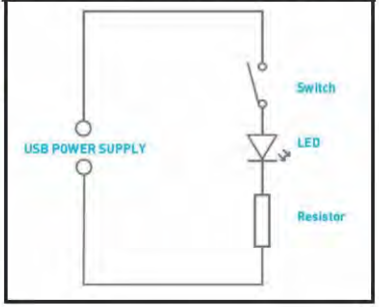
A resistor is an electrical component that limits or regulates the flow of electrical current in an electronic circuit.

**Switch**

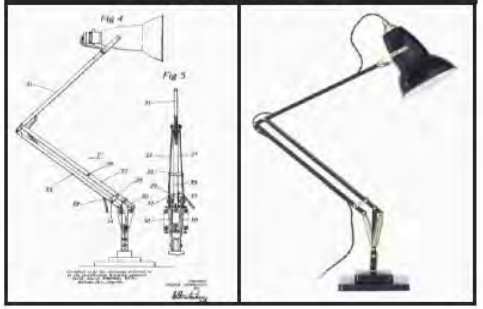

An electrical switch serves the purpose of controlling the flow of electrical current within a circuit.




## Schematic drawing




## Anglepoise Lamp



## George Carwardine

Car suspension designer George Carwardine designed the Anglepoise lamp in 1931 and his design has remained largely unchanged for over 80 years. George Carwardine worked as an engineer specialising in car suspension systems. He soon recognised that car suspension springs could be applied to other situations to solve problems and the Anglepoise lamp was invented.

The use of springs in the design meant that the Anglepoise can be repositioned easily without needing to be clamped into position. This made the lamps perfect for tasks where the light source would have to be constantly readjusted as the person using it needed to change their view of the task they were undertaking. They were used by surgeons in hospital operating theatres and by navigators in the World War II military aircraft.

The Anglepoise lamp is still made today and has inspired many modern day adjustable lamps.

Wing nuts

## Key Terms

**Circuit** - Interconnected components that allow electric current to flow.

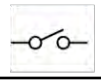
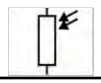
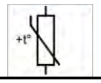
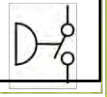
**PCB** – Printed circuit board

**Solder** - a low-melting alloy

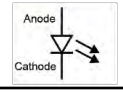
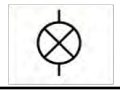
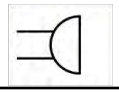
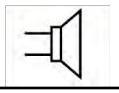
**Wire strippers** - remove the outer plastic insulation from electrical wires

## Input/ output devices

**Input devices** are electrical or mechanical sensors that use signals from the environment, such as light levels, temperature and pressure, and convert them into signals that can be passed into processing devices and component's

| Toggle (latching) | Push to make (PTM) Normally open | Push to break (PTB) Normally closed | Light dependent resistor (LDR) | Thermistor | Pressure switch |
|---|---|---|---|---|---|
|  |  |  |  |  |  |

**Output devices** are the part of an electronic system that most people are most aware of. The output can be, for example, a light, sound or movement.

| Light emitting diode (LED) | Lamp | Buzzer | Speaker |
|---|---|---|---|
|  |  |  |  |

# Food Knowledge Organiser - Nutrition

## The importance of nutrition

Listed below are the macro-nutrients and micro-nutrients. You need to know their function in the body and know examples of food items for each. You need to know why they are needed in the diet and why there is a need for a balanced/varied diet.

## Macro-nutrients

**Carbohydrates -** Carbohydrates are mainly used in the body for energy. There are two types of carbohydrates which are:

- **Starch** - Examples include bread, pasta, rice, potatoes and cereals.
- **Sugar** - Examples include sweets, cakes, biscuits & fizzy drinks.

**Fat -** This is needed to insulate the body, for energy, to protect bones and arteries from physical damage and provides fat soluble vitamins. There are two main types of fat which are:

- **Saturated fat** - Examples include butter, lard, meat and cheese.
- **Unsaturated fat** - Examples include avocados, plant oils such as sunflower oil, seeds and oily fish.

**Protein -** Protein is mainly used for growth and repair in the body and cell maintenance. There are two types of protein which are:

- **High biological value (HBV) protein** - Includes meat, fish, poultry, eggs, milk, cheese, yogurt, soya and quinoa.
- **Low biological value (LBV) protein** - Includes cereals, nuts, seeds and pulses.

## Micro-nutrients

### Vitamins

- **Fat soluble vitamin A** - Main functions include keeping the skin healthy, helps vision in weak light and helps children grow. Examples include leafy vegetables, eggs, oily fish and orange/yellow fruits.
- **Fat soluble vitamin D** - The main function of this micro-nutrient is to help the body absorb calcium during digestion. Examples include eggs, oily fish, fortified cereals and margarine.
- **Water soluble vitamin B group** - Helps absorbs minerals in the body, release energy from nutrients and helps to create red blood cells. Examples include wholegrain foods, milk and eggs.
- **Water soluble vitamin C** - Helps absorb iron in the body during digestion, supports the immune system and helps support connective tissue in the body which bind cells in the body together. Examples include citrus fruits, kiwi fruit, cabbage, broccoli, potatoes and liver.

### Minerals

- **Calcium** - Needed for strengthening teeth and bones. Examples include dairy products, soya and green leafy vegetables.
- **Iron** - To make haemoglobin in red blood cells to carry oxygen around the body. Examples include nuts, beans, red meat and green leafy vegetables.
- **Sodium** - Controls how much water is in the body and helps with the function of nerves and muscles. Examples include salt, processed foods and cured meats.
- **Potassium** - Helps the heart muscle to work correctly and regulates the balance of fluid in the body. Examples include bananas, broccoli, parsnips, beans, nuts and fish.
- **Magnesium** - Helps convert food into energy. Examples include wholemeal bread, nuts and spinach.
- **Dietary fibre (NSP)** - Helps digestion and prevents constipation. Examples include wholegrain foods (wholemeal pasta, bread and cereals), brown rice, lentils, beans and pulses.
- **Water** - Helps control temperature of the body, helps get rid of waste products from the body and prevents dehydration. Foods that contain water naturally include fruits and vegetables, milk and eggs.

# Year 8 French - Knowledge Organiser - Present tense holidays

## The present and future tenses

There are three types of verbs in French and in their infinitive form they end in:
**-er -ir -re**

For the **present tense,** depending on the pronoun, we change the ending of the verb using the table below :

| **Pronouns** | **-er** | **-ir** | **-re** |
|---|---|---|---|
| **Je** (I) | -e | -is | -s |
| **Tu** (you) | -es | -is | -s |
| **il** (he), **elle** (she) | -e | -it | / |
| **Nous** (we) | -ons | -issons | -ons |
| **Vous** (you) (pl) | -ez | -issez | -ez |
| **ils / elles** (they) | -ent | -issent | -ent |

**Examples:**
Porter = to wear > je porte = I wear
Finir = to finish > nous finissons = we finish
Vendre = to sell > ils vendent = they sell

**The Near Future :**
The near future **tense** (le futur proche) is used to express something that will be happening in the very near future. It is formed by conjugating the verb ***aller*** (to go) in the present tense, followed by an infinitive.

| **English** | To go (present) | Infinitive |
|---|---|---|
| I am going to go | Je vais | aller |
| You are going to play | Tu vas | jouer |
| He/she/we are going to visit | Il/elle/on va | visiter |
| We are going to swim | Nous allons | nager |
| You (pl.) are going to read | Vous allez | lire |
| They are going to do | Ils/elles vont | faire |

**Going to or living in a country**
In French the word "to" or "in" with countries changes depending on if they are masculine, feminine, plural or a town/city. Countries which end in "e" are almost always feminine (this really helps)
**Examples :**
Je vais **en** Espagne **(feminine)** → I go **to** Spain
Je vais **au** Portugal **(masculine)** → I go **to** Portugal
Je vais **à l'**hôtel **(vowel)** → I go **to the** hotel
Je vais **aux** Etats-Unis **(plural)** -> I go **to** the USA
Je vais **à** Paris **(town/city)** -> I go **to** Paris

# French Vocab List - Present Holidays (Page 1)

| | Tu vas où? | Where do you go? |
|---|---|---|
| | Je vais | I go |
| | À Paris/ Londres | to Paris / to London |
| | En France | to France |
| | En Espagne | to Spain |
| | En Angleterre | to England |
| | En Écosse | to Scotland |
| | En Irlande | to Ireland |
| | Au Pays de Galles | to Wales |
| | Au Portugal | to Portugal |
| | Au Pakistan | to Pakistan |
| | En Pologne | to Poland |
| | En Somalie | to Somalia |
| | Aux Caraïbes | to the Caribbean |
| | Au Royaume Uni | to the UK |
| | Aux États-unis | to the States |
| | Aux Pays Bas | to the Netherlands |

| | Tu restes où? | Where do you stay? |
|---|---|---|
| | Je reste dans | I stay in |
| | un hôtel cinq étoiles | A (five star) hotel |
| | Un camping | A campsite |
| | Un appartement | An appartment |
| | Une caravane | A caravan |
| | Une tente | A tent |
| | Une auberge de jeunesse | A youth hostel |
| | Un mobil-home | A static caravan |
| | Chez mes grand-parents | At my grand-parents' |
| | Un hôtel de luxe | A state-owned luxury hotel |
| | Un B&B | A B&B |

| | Comment Voyager? | How do you travel? |
|---|---|---|
| | Je voyage/ nous voyageons | I travel / We travel |
| | à pied | by foot |
| | à vélo | by bike/pushbike |
| | en moto | by motorbike |
| | en voiture | by car |
| | en train | by train |
| | en bateau/ en bateau de croisière | by boat / by cruiseship |
| | en métro | by tube |
| | en car | by coach |
| | en bus | by bus |
| | en avion | by plane |

| | Que fais-tu? | What do you **do...?** |
|---|---|---|
| | Se relaxer | To rest |
| | S'amuser (je m'amuse) | To have fun (I have fun) |
| | Bronzer | To sunbathe |
| | Visiter des monuments | To visit monuments |
| | Aller à la plage | To go to the beach |
| | Aller au restaurant | To go to the restaurant |
| | Faire du shopping | To go shopping |
| | Se promener | To go for walks |
| | Prendre des photos | To take photos |
| | Acheter des souvenirs | To buy souvenirs |
| | Faire du sport | To do (play) sports |
| | Faire du sport nautique | To do water sports |
| | Danser en boîte | To dance in a club |

# French Vocab List - Present Holidays (Page 2)

| | **Qu'est**-ce que tu visites? | What do you visit? |
|---|---|---|
| | Je visite/ Nous visitons | I visit /We visit |
|  | La plage | The beach |
|  | La piscine | The swimming pool |
|  | Le centre-ville | The town centre |
|  | Le musée | The museum |
|  | Le marché | The market |
|  | Le stade de foot/ rugby | The (football/rugby) stadium |
|  | Le parc d'attraction | The theme park |
|  | Les monuments | The monuments |
|  | Les magasins | The shops |
|  | Les cafés | The cafés |
|  | Les restaurants | The restaurants |
| | L'office de tourisme | The tourist office |

|  | Quel temps fait-il ? | What is the weather like? |
|---|---|---|
|  | Il fait beau/ il fait mauvais | It is good /bad weather |
|  | Il fait chaud/ froid | It is hot/cold |
|  | Il y a du soleil | It is sunny |
|  | il fait 25 degrés | It is 25 degrees |
|  | Il pleut | It is raining |
|  | Il neige | It is snowing |
| | Il y a du vent | It is windy |
| | Il y a des nuages | There are clouds |

| | **C'est** où? | Where is it…? |
|---|---|---|
|  | C'est loin | It's far |
|  | C'est proche/ à proximité | It's nearby |
|  | C'est à 5 minutes d'ici | It's 5 minutes away |
|  | **C'est** à 300 mètres d'ici | It's 300 metres away |
|  | Allez tout droit | Go straight on |
|  | Aux feux, continuez tout droit | At the traffic lights go straight on |
|  | Au rond-point tournez à droite | At the roundabout turn right |
|  | Tournez à gauche | Turn left |
|  | Tournez à droite | Turn right |
|  | Prenez la première | Take the first |
| | Prenez la deuxième | Take the second |
|  | Traversez le pont | Cross the bridge |

# GEOGRAPHY - ASIA DEVELOPMENT – CASE STUDY; CHINA (PAGE 1)

**History of China**

Human ancestors lived in what is now China **at least 400,000 years ago.** By about 2000 BCE people began living in settled groups and farming. Eventually, those groups formed communities and then dynasties, or royal families, to rule over the communities.

**Ancient China**

The first dynasty for which there are written records was the Shang. It took power over part of China in the 1700s BCE. The Shang created bronze tools and written documents. Their neighbors, the Zhou, took over their territory about 1050 BCE. The Zhou Dynasty ruled a loose collection of states.

**Imperial China**

The leaders of one of those states, **the Qin, unified China in 221 BCE**. The Qin set up the first great Chinese empire. In fact, the name China comes from their name. They also began to construct the **Great Wall of China**.

From 202 BCE to 1279 CE, the Han, Sui, Tang, and Song dynasties ruled China. During that time the Chinese made advances in science, literature, and the arts. China also greatly expanded its territory.

In the early 1200s the **Mongols** of Central Asia, led by **Genghis Khan**, began conquering parts of China. By 1279 they controlled all of the territory. They ruled as the Yuan Dynasty. The Ming Dynasty overthrew the Mongols in 1368. Another group, the Manchus, took over as the Qing Dynasty in 1644. The Qing Dynasty continued until 1912. It was China's last dynasty.


**Communism**

In 1928 the Nationalists, a group led by **Chiang Kai-shek**, took control of China. During invasions by Japan in the 1930s and World War II (1939–45), however, the Chinese **Communist** Party grew strong. Civil war soon broke out between the Nationalists and the communists, led by **Mao Zedong**. In 1949 the communists defeated the Nationalists, who fled to the island of **Taiwan**.

**The communists renamed the country the People's Republic of China.** They set up a communist government with **Mao Zedong** as its leader. In 1958 Mao started a program, called the Great Leap Forward, to modernize China's economy. The plan failed, however, and many people died of starvation. In 1966 Mao began the **Cultural Revolution**. Its goal was to strengthen people's belief in communism. Instead, it led to widespread disorder and violence. Young people criticized and, in some cases, attacked anyone who did not share their idea of what Mao's teachings meant. The unrest continued until Mao died in 1976.

# INFORMATION ABOUT CHINA – PAGE 3

## Geography

China shares borders with **Mongolia**, **Russia**, **North Korea**, **Vietnam**, **Laos**, **Myanmar**, **India**, **Bhutan**, **Nepal**, **Pakistan**, **Afghanistan**, **Tajikistan**, **Kyrgyzstan**, and **Kazakhstan**. The Yellow, East China, and South China seas lie to the east. The **Himalayan**, **Karakoram**, and Altai mountain ranges separate China from its neighbours to the west.

The Qinghai-Tibet Plateau in the southwest is a cold, mountainous region. The northwest is a highland with large desert basins. The east holds almost all of China's lowlands. China's major rivers are the **Huang He**, the **Yangtze**, and the Pearl.


## People

The Han, or the ethnic Chinese, make up more than 90 percent of the population. Mandarin, a type of Han Chinese, is the official language. China has about 55 minority groups. Many people follow traditional Chinese beliefs. But growing numbers of people practice **Buddhism**, **Christianity**, **Islam**, and other religions.

About 58 percent of the people live in cities. More than 100 cities have at least 1 million residents. In the 1970s the government began trying to control the growing population. The one-child policy, in which most families were allowed to have only one child, became official in 1980. This policy ended in 2016. Families were then allowed to have two children.

## Plants and animals

Forests cover over 20 percent of China's land. Among the many trees are tung, camphor, lacquer, and star anise trees. Mangrove swamps are found along the South China Sea. **Rainforests** grow in parts of southern China.

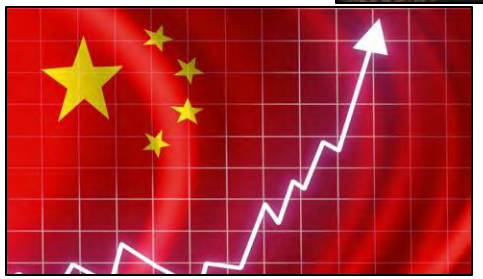
**Giant pandas**, Chinese paddlefish, and giant salamanders live in the wild only in China. Other animals and birds include **monkeys**, **alligators**, pheasants, and laughing thrushes.


## Economy

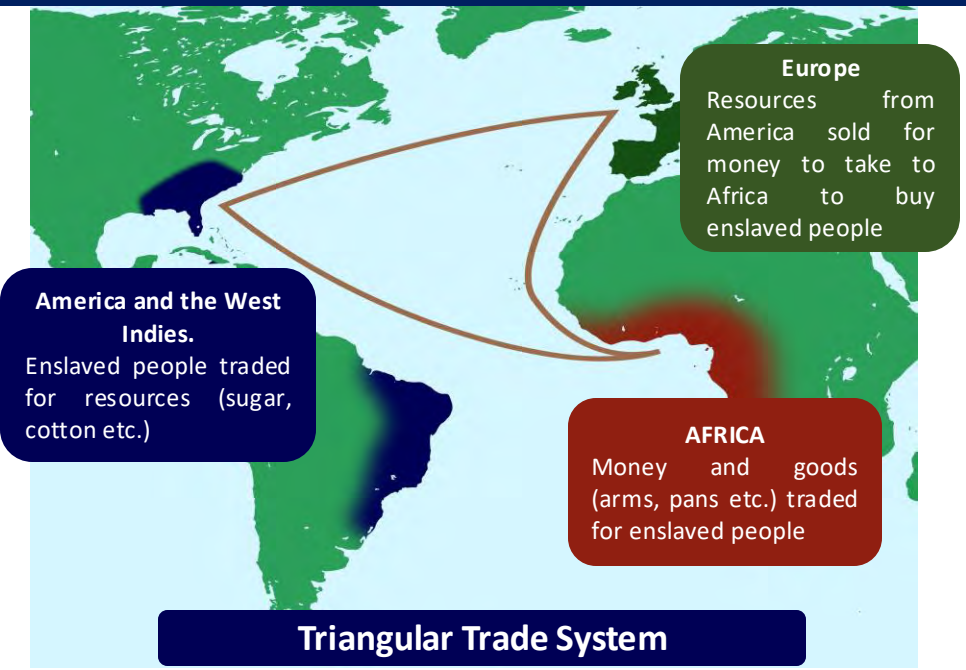
China's communist government once owned most of the businesses and farms in the country. (**Communism** is a system in which everyone works to create wealth, but people get only as much as they need.) Today individuals are allowed to own businesses. As a result, the economy is growing steadily.

Mining and manufacturing are the most important economic activities. Mines produce zinc, lead, copper, iron ore, coal, and other minerals. Factories make cement, steel, iron, paper, chemicals, fabrics, electronic products, household appliances, and cars. Service industries, including finance and health care, are becoming increasingly important.

Agriculture is a smaller part of the economy. However, **China is the world's top producer of rice.** It also produces corn, wheat, soybeans, peanuts, fruits, vegetables, tobacco, cotton, pigs, and chickens.



# History - Trans-Atlantic Enslavement



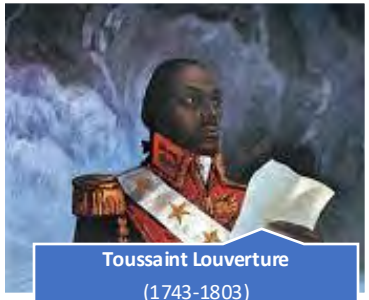

**Triangular Trade System**

## Key terms for this unit

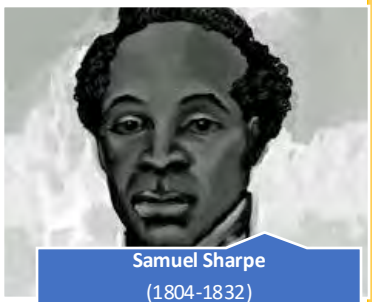
| | |
|---|---|
| Globalisation | The global reach of empire |
| Economic | The financial impact of slavery |
| Legacy | How are the legacies of slavery still visible in society and Bristol in particular |
| Abolition | The action of abolishing a system, practice, or institution |
| Auction | Where enslaved people were sold |
| Plantation | The places where enslaved people were forced to work to produce tradable goods |
| Emancipation | Freedom from slavery |
| Dehumanising | To deprive of positive human qualities |
| Human Rights | The basic rights and freedoms that belong to humans |
| Underground Railroad System | The system used to help enslaved people escape from the Southern states in America to the free states |
| Resistance | To resist your treatment (Active/Passive) |
| Revolt | To take violent action against an establishment |
| Legislation | An act or law |
| Impact | A marked effect or influence. |
| Oppression | Prolonged cruel and unjust treatment at the hand of the slavers |

## Key people for this unit

**Harriet Tubman** (1822-1913)
Helped to free at least 70 enslaved people, using the **Underground Railroad System**



**Toussaint Louverture**
(1743-1803)
One of the leaders of the **Haitian Revolution**- he helped liberate (free) Haiti



**Samuel Sharpe**
(1804-1832)
An enslaved Jamaican, who led the **Jamaican Rebellion**- helping to abolish the Slave trade

## Impacts

**Human Impact**

The human cost of the Slave Trade- its effect on people and the human experience

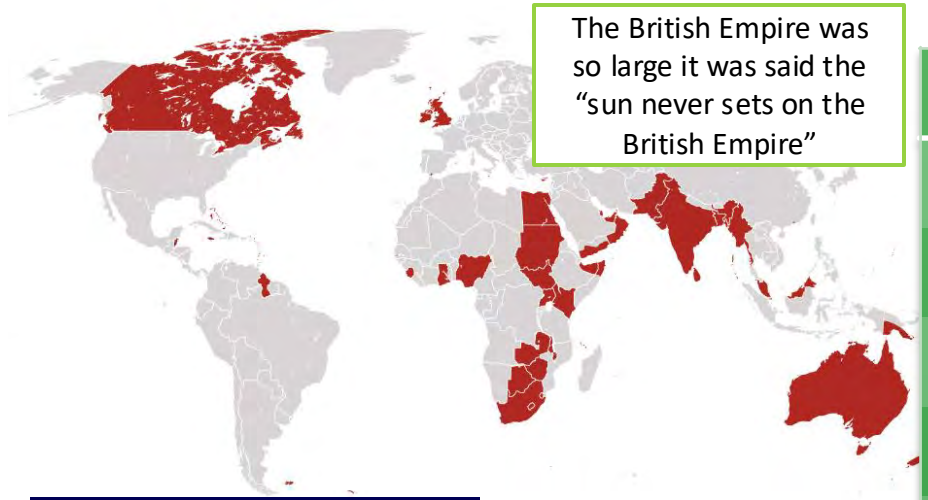
**Economic Impact**

The monetary (money) impact of the Slave Trade- how did it effect the wealth of countries and people?

**Global Impact**

How the Slave Trade created and increased global links. The link between the Slave trade and the Empire.

# History - The British Empire



The British Empire was so large it was said the "sun never sets on the British Empire"

**1500s**
England begins to establish itself as a naval power and looks to control more land

**1770**
Captain James Cook landed his ship in Australia

**1833**
Britain abolished slavery

**1842**
Britain took control of Hong Kong after the opium wars with China

**1857**
The Indian Mutiny and the start of the British Raj in India

**1901**
Australian independence

**1919**
Amritsar massacre

**1947**
Indian independence

**1997**
Hong Kong was handed back to China.

**Key terms for this unit**

| | |
|---|---|
| Empire | When countries are ruled/controlled by another country. |
| Colony | A country that is controlled by an empire. Eg. India, South Africa, Australia, Canada. |
| Imperialism | When a country wants to extend their power, usually by force |
| Decolonisation | When colonies got their independence (freedom) and were no longer controlled by an Empire |
| Indian Mutiny | When Indians fought back against British rule in India in 1857 |
| "Jewel in the Crown" | The phrase used to describe India, the most important and valuable British colony |
| Penal colony | When convicts (criminals) were sent to Australia |
| Aboriginals | The people native to Australia. They have lived there for over 60,000 years |
| Opium | A drug |

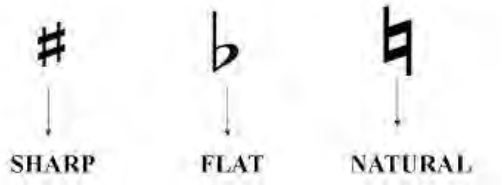
**Reasons for wanting an Empire (there are others)**

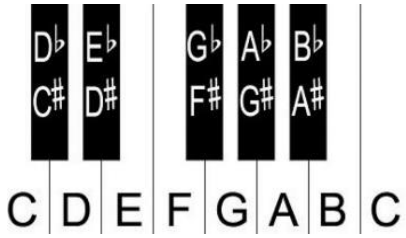
| Trade (and money) | Warfare | Political power and influence | Religion |
|---|---|---|---|
| The British could make huge amounts of money from trading across the Empire. They could also access resources which otherwise were not available to them. | The British used soldiers from around the Empire in their army. | The British became one of the most powerful countries in History. Even today, Britain is far more powerful than its size suggests. | The British tried to spread Christianity across the Empire, often ignoring local religions and cultures. |

# Music - What makes a great composer? Shaping my musical toolkit

## Composers & Pieces

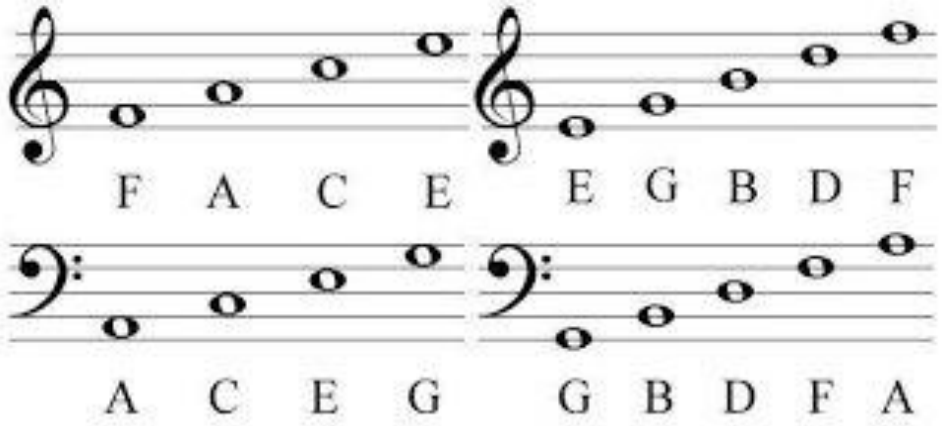
| | | |
|---|---|---|
| Pachelbel | 1653 - 1706 | Canon in D |
| Bach | 1685 - 1750 | Toccata & Fugue |
| Mozart | 1756 - 1791 | Eine Kleine Nachtmusik |
| Beethoven | 1770 - 1827 | Moonlight Sonata |
| Chopin | 1810 - 1849 | Funeral March |
| Tchaikovsky | 1840 – 1893 | Dance of the Sugar Plum Fairy |




## Periods of musical History

- Baroque Era – 1650-1725.
- Classical Era – 1725-1810.
- Romantic Era – 1810-1900.
- 20th Century Era – 1900 onwards.




## The Musical Elements – DR C SMITH

| | |
|---|---|
| Dynamics | Volume of the music |
| Rhythm<br>Tempo<br>Metre | Length & patterns of notes<br>Speed of the music<br>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 |

## 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 |

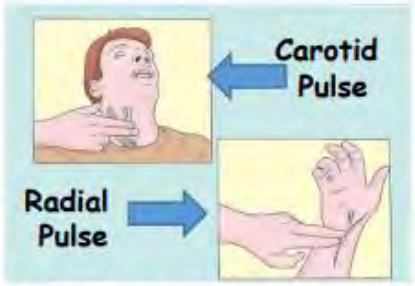
# Core PE Unit 3: Leadership

| Components of a session | Description | Example |
|---|---|---|
| **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'.<br>'To be able to describe and demonstrate the teaching points of a short serve.' |
| **Warm-up** | 3 part warm up to include pulse raiser, stretches held for 8-10 seconds and mobilisation. | 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. |
| **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. |
| **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 |
|---|---|---|
| **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. |
| **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. |
| **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 |
|---|---|---|
| **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. |
| **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. |

## How to take your heart rate.




Working Out Target Zones
(Use a calculator!)

1. Calculate HR Max (220-age)
2. Find the lower training threshold
*HR Max x 0.60*
3. Find the upper training threshold
*HR Max x 0.85*
4. Write down the target zone (lower threshold to the upper threshold)

**Max Heart rate = 220 bpm - age**

220 – 12 = 208bpm

60% - Lower training threshold – 208 x 0.60 = **125bpm**

85% - Upper training threshold – 208 x 0.85 = **177bpm**

## Key Muscles

**Biceps**
Upper arm at front

**Tricep**
Upper arm at back

**Quadriceps**
Top of legs at front

**Hamstrings**
Top of legs at back

**Abdominals**
Stomach muscles

**Gluteals**
Muscles of the bottom

## Components of fitness

1) Flexibility - *The amount or range of movement that you can have around a joint* (Gymnastics- bridge/dance – twisting through levels/reaching for a pass/interception)

2) Speed - *The ability of the body to move quickly* (Sprint/ outrun opponent/ run-up in long jump/ moving to net for drop shot)

3) Balance - an even distribution of weight enabling someone to remain upright and steady - (Gymnastics – 1 point balance, reaching to receive a shot in tennis)

4) Cardiovascular endurance or stamina - The ability of the cardiovascular system (heart & blood vessels) to work for a long period of time without becoming over tired (long distance running/cycling/swimming/playing for a full game of basketball etc)

5) Strength - *to be physically strong* (Dance/gymnastics/sit-up/press-up/Holding off an opponent)

6) Agility - The ability to change the position of the body quickly and control the movement (Dodging in basketball/netball/ moving around a defender tackling in football/ changing direction to meet n opponents shot in tennis)

7) Co-ordination - The ability to use two or more body parts together (Hand-eye coordination in tennis & netball/ eye-foot coordination passing ball in football)

8) Muscular endurance - *The ability of the muscle or group of muscles to repeatedly contract without rest* (sit-ups/press-ups/ step-ups etc in 1 min)

9) Power - The ability to perform strength performances quickly - (take-off in long jump, jumping for a ball, throwing a ball/ kicking a ball)

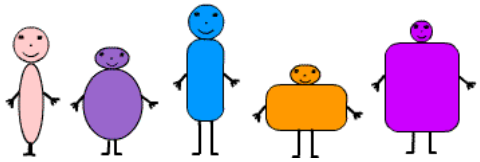
10) Reaction - The time taken to respond to a stimulus (reacting to the gun or 'Go' at the start of a race/ reacting to intercept a pass/ reacting to meet a shot in tennis)

# SCIENCE: Evolution

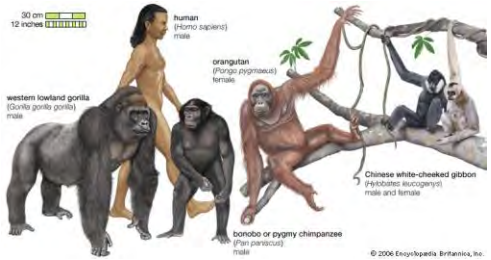
**Learning:** To understand variation and how it can lead to new species occurring or the extinction of a species.

## Variation

This is the small differences between all organisms of the same species...



Or differences between different species.




This happens due to small differences in our DNA:

## Types of variation

Variation can be continuous: this means that it can be measured directly and there are an inflate amount of possible values.

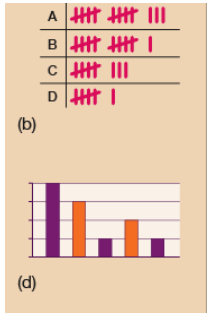
Examples are:

1) Weight
2) Height
3) Age
4) Length
5) Time


Variation can be discontinuous: this means that the things being counted fall into a specific group or category and you cannot have values in-between the categories.

Examples are:

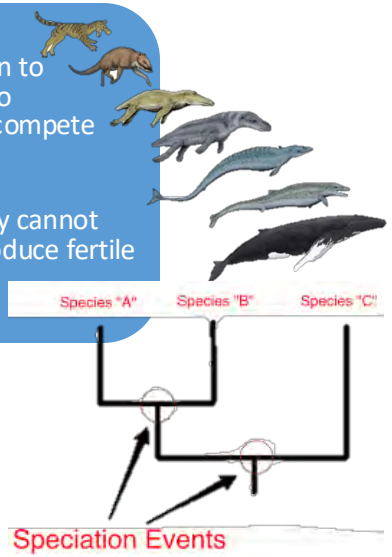
1) Shoe size
2) Eye colour
3) Biological gender




## Evolution by natural selection

The idea that small changes from generation to generation over huge time scales can lead to differences in a species that allow them to compete more successfully in their environment.

If the organisms change enough so that they cannot reproduce with the original organism to produce fertile offspring they are classed as a new species.




| Key Terms | Definitions |
|---|---|
| Variation | The differences between individuals within a species |
| Continuous variation | a characteristic that changes gradually over a range of values. E.g. Height |
| Discontinuous variation | A characteristic of any species with only a limited number of possible values. E.g. blood groups |
| Inherited | Variation in a characteristic that is a result of **genetic** information from the parents. |
| Environmental | Some variation is the result of differences in the surroundings, or what an individual does. |
| Natural selection | a process by which a species changes over time in response to changes in the environment, or competition between organisms, in order for the species to survive. The members of the species with the most desirable characteristics are able to produce the best-adapted offspring. |
| Species | a group of similar organisms that can breed with one another to produce fertile offspring |
| Extinction | When there are no remaining individuals of a species alive |
| Evolution | Charles Darwin first proposed the theory of **evolution** by natural selection.. Those living things that were better adapted to the environment survived and the best characteristic was inherited. |

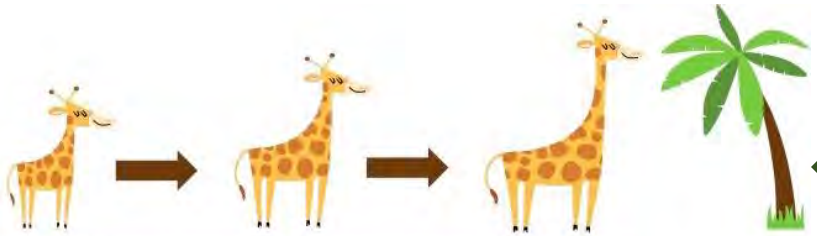
# SCIENCE: Evolution

**Extinction**
When there are not enough individuals of a species left to keep a breeding population, a species will become extinct. This means that it will no longer exist on the planet. This is usually caused by fast environmental change.

**Biodiversity**
This is the number of different species that exist and how many of them there are. Biodiversity is important because all species that exist are relied upon by other species in some way shape or form. To remove a species from a habitat will cause problems for most if not all other species in that habitat.

Also, lots of our medicines and products rely on discoveries from species that exist in our world.

## The development of theories of evolution



**Jean Baptiste Lamarck** – Evolution by *Transformation* (1809)

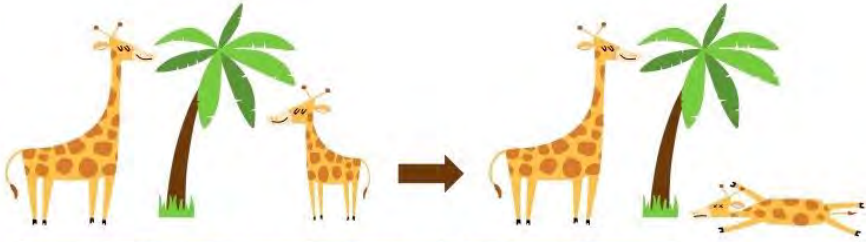
Long-necked giraffes evolved as generations of giraffes stretched their necks to reach higher leaves

**Lamarck**
This theory suggested that animals could change themselves within their lifetime if they needed to suit their environment.

The example being that if a giraffe needed to reach higher to get food, it could simply stretch its neck and that would change its body.

**Darwin and Wallace**
This theory suggested that an organism cannot change in its lifetime, but instead some animals are more successful at surviving than other: it is these that pass on their genes to future generations so the species can change slowly over a very long time span.

So the giraffe still gets a longer neck, but it takes thousands of years of passing on small genetic changes.



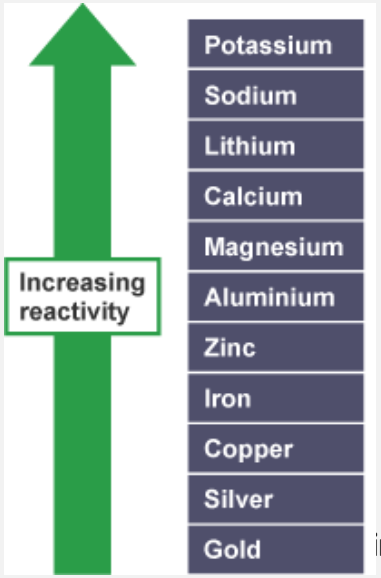
**Charles Darwin** – Evolution by *Descent with Modification* (1859)

Long-necked giraffes are randomly born and have more offspring due to their competitive advantage

# SCIENCE: Metals and Reactivity

**Learning**
Use patterns of reactivity to make predictions for chemical reactions

## The reactivity series




The reactivity series shows a list of metals in the order of how reactive they are. The metals towards the top of the list react readily with air and water and violently with acid.

The metals towards the bottom of the list do not even react with acid.

The order of the reactivity series can be remembered using a mnemonic.

**"Pond slime can make a zoo interesting - the long crinkly sort goes purple."**

| Metal | Reaction with acid |
|---|---|
| Potassium Sodium | Explosive, very exothermic reaction – should not be carried out in the school laboratory |
| Calcium | Violent reaction, produces large amounts of hydrogen quickly |
| Magnesium | Rapid reaction, produces hydrogen gas readily |
| Aluminium Zinc | Fast reaction, noticeable amounts of gas evolved. |
| Iron Tin | Slow reaction, gas evolved very slowly. Reaction more noticeable in concentrated acid. |
| Lead Copper Silver Gold Platinum | No observable reaction |

## Reactions of metals with acid

The general equation for the reaction of a metal with acid is:

**Metal + acid → salt + hydrogen**

The test for hydrogen is sometimes called the squeaky pop test. Hydrogen makes a small 'pop' when it is placed near a lit wooden splint.

Rules for acids: **sulphuric acid** always makes a **sulphate** salt

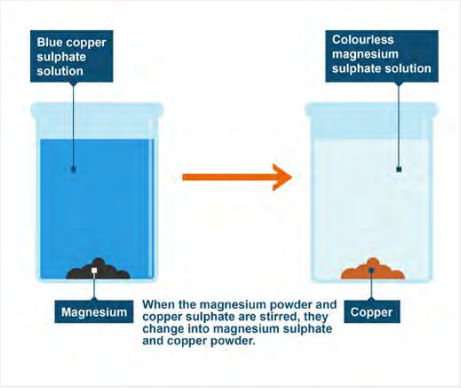
**Hydrochloric acid** always makes a **nitrate** salt

**Nitric acid** always makes a **nitrate** salt

## Displacement reactions

Displacement reactions involve a reaction between a metal and a compound of a different metal.

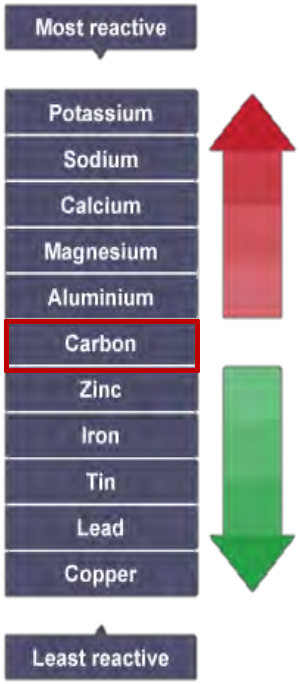
**A more reactive metal will displace a less reactive metal from its compounds.**




For example the more reactive magnesium will displace the less reactive copper from the copper sulfate solution.

**Magnesium + copper sulfate → magnesium sulfate + copper**

# SCIENCE: Metals and Reactivity



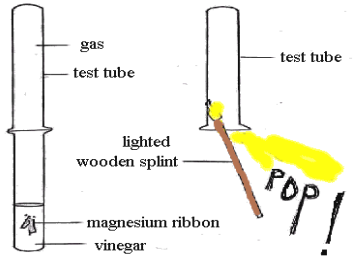

Carbon can be placed into the reactivity series.

Metals which are less reactive than carbon can be extracted by reduction with carbon.

Metals that can be extracted by this method are zinc, iron, tin, lead and copper.

**Test for Carbon Dioxide:**
Bubble the gas through limewater, if it turns the limewater cloudy then it is carbon dioxide.

**Test for Hydrogen**
Add a lit splint to the gas collected, if it 'pops' then it is hydrogen




The general equation for this reaction is:

**metal oxide + carbon → metal + carbon dioxide**

### Extraction of metals high in the reactivity series

Metals that are higher than carbon in the reactivity series have to be extracted by a process known as **ELECTROLYSIS.**

**ELECTROLYSIS** literally means pulling apart with electricity and can only be done on compounds that have been melted or dissolved in a substance called an electrolyte. Aluminium us the most common example of a metal extracted by this method.

**Properties of metals and non-metals**

| Property | Metals | Non-metals |
|---|---|---|
| Appearance | Shiny | Dull |
| State at room temp | Solid (except mercury) | Half are solids, half are gases, one is liquid (bromine) |
| Density | High | Low |
| Strength | Strong | Weak |
| Malleable or brittle | Malleable (can bend without breaking) | Brittle (will shatter when hammered) |
| Conduction (heat/electricity) | Conduct both well | Poor (graphite only non-metal conductor) |
| Magnetic | Only iron, cobalt and nickel | None |

# 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 |