



Name:

Class: Deal

Teacher: Ms Blackwell

Knowledge Organiser

Term 4



"Education is education. We should learn everything and then choose which path to follow."

Malala Yousafzai

How to use your Knowledge Organiser

Using in Class	
Quiz your neighbour	Your teacher will give you a topic and you can create questions to test your neighbour's knowledge and understanding
Multiple choice quiz	A quick quiz based on the knowledge organiser
Key words	Tell your teacher if any key words from your knowledge organiser come up in lessons
Spelling Tests	Using the key words, your teacher might give you some spelling tests
Extended Writing	Using this key information, create longer pieces of writing showing your specialist knowledge
Knowledge test	At the end of the unit, your teacher might give you a test based on your knowledge organiser

Using at Home	
Catching up	Use the knowledge organiser to catch up on any lessons you have missed
Quiz yourself	Read through the information, repeat it to yourself, cover and test your knowledge
Create Flashcards	Turn the information in to revision cards
Application	Use this information to add to any homework or classwork, including longer pieces of writing
Revise	Use the information to revise for any assessments or end of topic tests

Science Term 4

Key words:

Aerobic Using oxygen

Anaerobic Not using oxygen

Oxidation A reaction with oxygen. In this case, food molecules like glucose reacting with oxygen.

Fatigue Tiredness. In muscles is caused by a build-up of lactic acid, which is produced during anaerobic respiration.

Oxygen debt After exercise, the lactic acid has built up and caused an extra need for oxygen – called the oxygen debt.

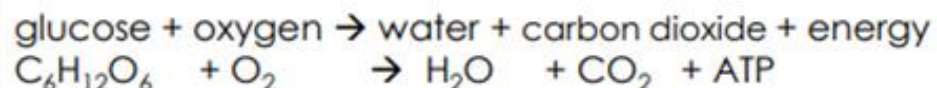
Key difference

Respiration is a chemical reaction that happens in all living cells. It releases **energy** from glucose.

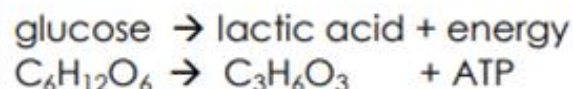
This energy allows all the other processes that keep us alive to happen.

It is **not** the same as breathing. **Breathing** is the movement of your lungs that brings in the oxygen for respiration and gets rid of the carbon dioxide produced.

Equation for aerobic respiration



Equation for anaerobic respiration



The Response To Exercise.

During exercise, more energy is required by the body than when resting, due to increased muscle contractions. The body reacts to this increased demand for energy by:

- **The heart rate, breathing rate, and volume of each breath all increase.**
- Together, these increase the amount of oxygenated blood reaching the muscles.
- The **oxygenated blood provides the extra oxygen and glucose** needed for respiration in muscle cells, to release more energy to meet demand.

Websites that might be useful:

<https://www.bbc.com/bitesize/guides/zq349j6/revision/1>

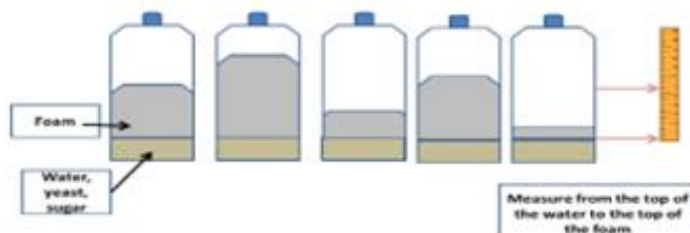
<https://www.bbc.com/bitesize/articles/zth9ng8>

<https://www.bbc.com/bitesize/articles/zcsbmsg>

Extension ideas to research:

- Why are some people better at sprinting than others?
How can you improve your endurance?

How can we measure the rate of respiration?



When yeast cells respire aerobically they produce carbon dioxide which creates a foam. We can measure the height of the foam produced in a certain time to give us an indication of how fast they are respiring.

English Term 4

Important Information

Plot:

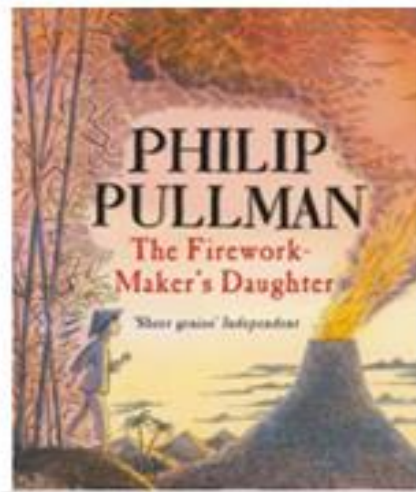
More than anything else in the world, Lila wanted to be a Firework Maker. But every firework maker must make a perilous journey to face the terrifying Fire Fiend! Can Lila survive? Especially as she doesn't know she needs special protection to survive his flames....

Themes:

Humour, good versus evil, traditions, teamwork, greed, poverty.

Setting:

Mount Merapi, "a country east of the jungle".



Name of book:	The Firework Maker's Daughter
Date Published:	4 th November 2004
Author:	Philip Pullman
Genre:	Fantasy Story

MAIN CHARACTERS

Lila	A young girl, daughter of Lachland.
Lachland	Lila's father
Razvani	The Fire Fiend on Mount Merapi
Hamlet	A white elephant
Chulak	Hamlet's caretaker
Dr Puffenflask	A firework maker
Colonel Sparkington	A firework maker
Signore Sorcini	A firework maker

VOCABULARY

Amulet	A piece of jewellery thought to protect against evil or danger.
Billboard	A large outdoor board for displaying adverts
Boulevard	A large road
Grating	A harsh sound
Idleness	Being lazy
Jeer	To make rude or mocking remarks.
Lotus	A type of flower
Roosting	A place where birds settle down for the night.
Rupee	The official currency of India
Steamed	A group of people moving in the same direction, continuously.
Toiled	To have worked hard
Trundled	To walk heavily or slowly

What Can the Book Teach Us?

- To follow your dreams
- Friendships should be treasured.
- Do not take friends and family for granted.

Quotes

"So Lila said no more about being a Firework Maker and Lachland said no more about husbands."

"When you reach the heart of the fire, all your illusions vanish."

"You had to put love into your fireworks."

RE Term 4

Life after death-

- Many non-believers reject the belief in an afterlife, because they believe there is no evidence for it, and argue that beliefs about the afterlife do not make sense.
- Others reject it because they see the ideas of an afterlife as a way of controlling the behaviour and choices of believers.
- Christians would reject many of these arguments and offer alternative viewpoints about the existence of life after death.

Origins and values of human life-

- Evolution is a scientific theory, which suggests that different species, including humans have developed from earlier forms.
- Christians disagree about scientific and non-religious explanations of the origins of human life.
- Many Christians believe it is important to respond to the challenges posed by these explanations.

Origins and value of the universe-

- The Big Bang Theory is the most widely held scientific theory about the origin of the universe.
- Some Christians reject the Big Bang Theory, but others believe that religion and science are compatible.
- Christians believe that the universe has value because it was designed and created by God.

Key Vocabulary	
Theist	a person who believes in the existence of a god.
Agnostic	a person who believes that nothing is known or can be known of the existence or nature of God.
Atheist	a person who disbelieves or lacks belief in the existence of God.
Facts	a thing that is known or proved to be true.
Beliefs	an acceptance that something exists or is true, especially one without proof.
Opinions	a view or judgement formed about something, not necessarily based on fact or knowledge.
Interpretation	the action of explaining the meaning of something.
Evolution	the process by which different kinds of living organism are believed to have developed from earlier forms during the history of the earth.
Universe	all existing matter and space considered as a whole.

Art Term 4

Dale Chihuly is an American artist born in 1941. He works in glass, creating elaborate sculptures. Chihuly lost vision in one eye and now delegates the creation of his designs to others, leading us to question who is the artist? The person who designs the piece or the person who creates it? Should the creator get equal credit for Chihuly's work?



Junk modelling uses recycled materials to make art. Artists like Caroline Saul, Sumer Erek, Miwa Koizumi and Robert Bradford use plastics, paper, glass and other materials which would otherwise have been thrown away to create beautiful pieces of art.



Key vocabulary

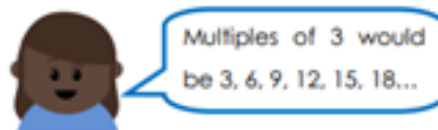
Sculpture	A model or statue made out of different materials such as stone, metal, cardboard and clay
3-d (dimensional)	A solid object which you can see all the way around.
Imagination	When you imagine something, you make a picture of it in your mind.
Create	Making something out of different materials.
Modelling	Making a 3-d shape.
Materials	The items you use to make the sculpture which can be natural such as wood, stone or paper, or manmade such as metal and plastic.



Maths Term 4

Multiples

Multiples are the result of multiplying two numbers together. They can be seen as extended times tables.



Prime Numbers

A **prime number** is a number that only has 2 factors – 1 and itself.

5 is a prime number as it can only be divided by 1 and itself. 5 is not in any other times tables.



6 is not a prime number as it can be divided by 1 and itself but also by 2 and 3.



Square numbers

A square number is a number that has been multiplied by itself. The symbol to show this is 2 .

When square numbers are represented in an array, it forms a square shape.



$2^2 = 2 \times 2 = 4$ $3^2 = 3 \times 3 = 9$
 $4^2 = 4 \times 4 = 16$ $5^2 = 5 \times 5 = 25$

It's important to remember that 2 doesn't mean 'multiply by 2'.

Cube numbers

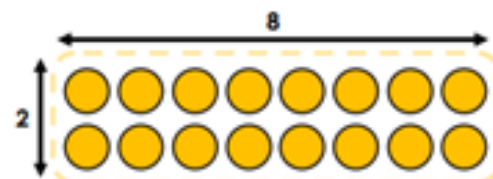
A cube number is a number that has been multiplied by itself then multiplied by itself again. The symbol to show this is 3 .

$2^3 = 2 \times 2 \times 2 = 8$ $3^3 = 3 \times 3 \times 3 = 27$
 $4^3 = 4 \times 4 \times 4 = 64$ $5^3 = 5 \times 5 \times 5 = 125$

It's important to remember that 3 doesn't mean 'multiply by 3'.

Factors

Factors are the numbers that multiply together to make a product.



$2 \times 8 = 16$

factor factor product

To find all factors of a given number, it is best to work systematically. Start at one and ask yourself what factor it is paired with to make the product you are requiring. Then, you can try the next logical number for example 2. There are some numbers that will and some numbers that will not be a factor of your product.

Short Division

		3	8
4	1	5	2

$15 \div 4 = 3$ remainder 3
Remember to regroup any remainders and move them into the next column.

	4	5	5	r	3
5	2	2	7	8	

$28 \div 5 = 5$ remainder 3
If your calculation has a remainder, remember to record it in the answer using the letter *r*.

Long Multiplication

$2543 \times 67 = 170381$

		2	5	4	3		
	x			6	7		
		1	7	8	0	1	
		1	5	2	5	8	0
		1	7	0	3	8	1

Before multiplying by the number in the tens column, remember to use zero as a placeholder because the 6 in 67 is 6 tens (60).

e. world's population:

The world's population is **growing**. In 2015 it was estimated at 7.3 billion people. This number is expected to rise to 9.7 billion by 2050.

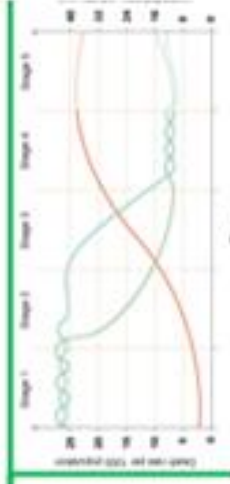
The population and population growth rate of different countries depend on a number of factors. These include but are not limited to:

- Availability of birth control
- The quality of healthcare (particularly for infants)
- The proportion of women in education
- The industries that people work in (When people rely on farming and have little technology, they often need large families to provide extra workers.)

Demographic transition model:

The demographic transition model shows how the population of most countries has changed and will change over time.

It is broken down into **five stages** which are **linked to a country's development**. Not all countries definitely follow this model.



Population pyramids:

- Population pyramids are graphs which show the age and gender of a population for one specific year.

The shape of population pyramids change according to where they are in the **demographic transition model**. This diagram shows the basic shapes at each stage.



Key words and terms:

Birth rate:

The number of babies born per year for every 1000 people.

Death rate:

The number of people who die per year, per 1000 people.

Natural Increase:

The number of people added to, or lost from, the population each year due to births and deaths per 1000 people.

Population growth rate:

The number of people added to, or lost from, the population each year, looking at both natural increase and migration. This is given as a percentage.

Migration:

When people move from one area to another.

Population Pyramid:

A graph which shows the age and gender of a population.

Demographic:

A particular part of a population (For example, "women").

Demographic Transition Model:

An explanation for how a country's population changes over time.

Key words and terms:

Population density:

The number of people living in an area.

Population distribution:

The spread of people across the world (where people live).

Population growth rate:

The number of people added to, or lost from, the population each year, looking at both natural increase and migration. This is given as a percentage.

Migration:

When people move from one area to another.

Demographic:

A particular part of a population (For example, "women").

Demographic Transition Model:

An explanation for how a country's population changes over time.

Geography Term 4