Year 5 Spring Knowledge Organisers

Knowledge Organiser: Year 5 - **Changes of Materials**

Careers connected to changes of materials: laboratory technicians, technical associates, research analysts, chemistry teachers.

Spring 1
Science (Changes of materials)

Lesson Sequence

1. Use evaporation to recover the solute from a solution

2. Recognise and describe reversible changes

3. Observe chemical reactions and describe how we know new materials are made

4. Investigate rusting reactions

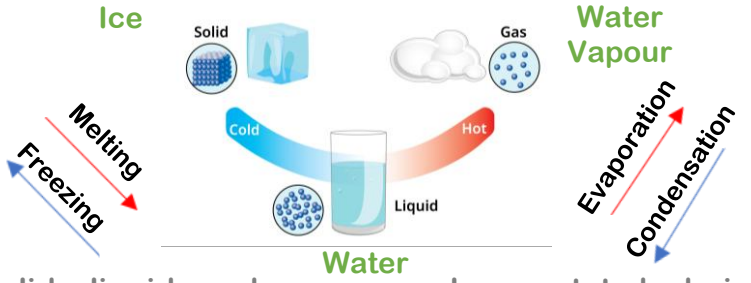
5. Investigate burning reactions

6. Investigate chemical reactions - acids and bicarbonate of soda

Evaporation

If a solid has **dissolved** in water (for example in a salt solution), **heating** it causes the water to **EVAPORATE**, leaving the solid (salt) behind.

Changes of State



Solids, liquids and gases can change state by being **heated** or **cooled**.

Irreversible Changes




These are **CHEMICAL** changes – they **cannot** be reversed as a new material has been made.

Reversible Changes

liquid chocolate
– cool –
solid cholate

solid lolly
– heat –
liquid lolly

mixture of rice and flour
– sieve –
both separated

dissolved sugar
– evaporation (heat) –
solid sugar

These are **PHYSICAL** changes – they **can** be reversed as no permanent change has been made.

Spring 1 and 2
Religious Education (Islam)

Religious Education

What does it mean to be Muslim in Britain today?

Making connections

- What is the meaning of the Arabic root word 'slm'?
- How many times a day do Muslims pray?
- What does prayer involve?

New knowledge I need to remember

- ◊ Muhammad is the messenger and the Holy Qur'an is the message (from God)
- ◊ The 5 pillars of Islam help guide a way of living for Muslims
- ◊ The Hajj journey has many important parts and is completed once during a lifetime

Key words

Census, Islam, Muslim, Shahadah, Salah, Sawm, Zakat, Hajj, spiritual, Mecca, Muhammad, Prophet, pilgrimage, Allah, Hadith, Commandments, Qur'an

Future learning: Find out about the links between Islam, Christianity and Judaism.

Skills

- Make links
- Describe
- Make reasoned judgements
- Relate to life
- Debate

Knowledge Organiser

Year 5 – Our connected world

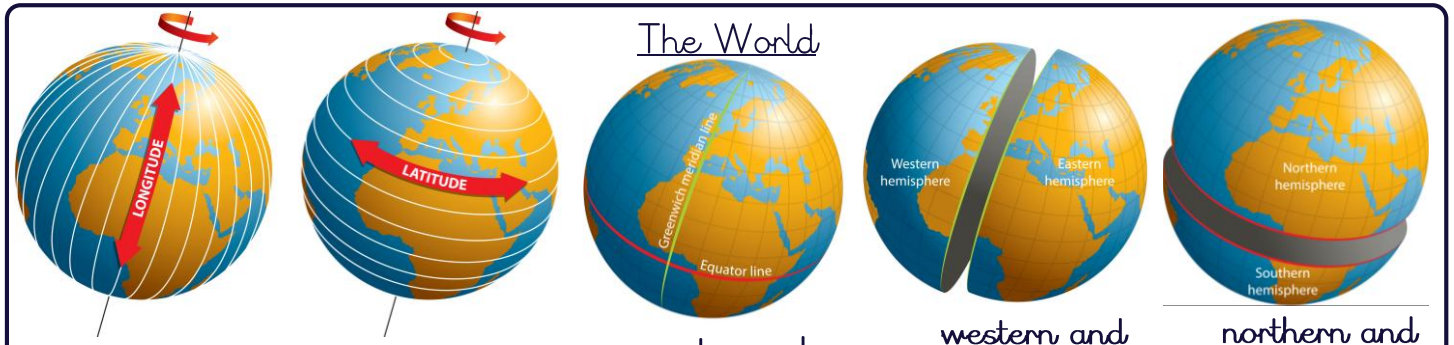
Careers connected to this unit: climatologist, meteorologist, environmental scientist

Spring 1
Geography (Our connected world)

Lesson Sequence

1. How do Geographers locate places around the world?
2. Why do we have different time zones around the world?
3. How are natural resources distributed around the world?
4. What is global trade?
5. How do extreme weather events impact trade?
6. Assessment: How is our world connected?

The World



longitude | latitude | equator and meridian line | western and eastern hemisphere | northern and southern hemisphere

An atlas or globe will have lots of imaginary lines drawn to help Geographers. The equator splits the globe into the Northern and Southern hemisphere whilst the Meridian line splits it into the Western and Eastern. Lines that run North and South are known as longitude and lines that run West and East are known as latitude.

Climate change

Climate change is the long-term change in temperature and weather patterns on Earth. These are caused by human activities that release greenhouse gases. These gases trap heat in the atmosphere, warming the planet creating problems like melting glaciers and causing extreme weather.

Our planet's resources

People need some natural resources to make energy but many of these are not renewable. It is important to find renewable sources of energy so our planet doesn't run out!

Renewable	Non-renewable

Year 5: Forces
Knowledge Organiser

Careers connected to this unit: physicist, mechanical engineer, naval engineer, aerospace engineer

PHYS

Spring 2
Science (Forces)

Lesson Sequence


1. Explore gravity and the life and work of Isaac Newton


2. Examine the connection between air resistance and parachutes


3. Explore factors which affect water resistance


4. Investigate the effects of friction on different surfaces


5. Investigate mechanisms - levers and pulleys

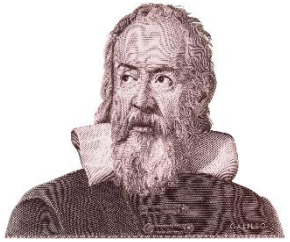

6. Investigate mechanisms - gears

Forces in action

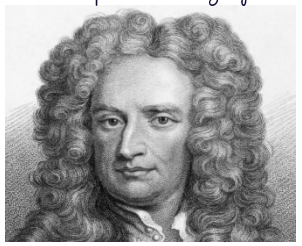
Mass and Weight

The mass of an object is how much matter it is made of and can be measured in grams/kilograms.

Weight is how much gravitational force is needed to pull an object and is measured in Newtons.



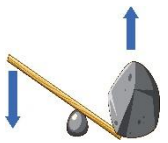
Galileo Galilei conducted experiments to test mass and the speed things fall.



Sir Isaac Newton developed the theory of gravity.

Mechanisms

Pulleys
A pulley is a wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object.



Levers
Levers are a bar that rotates around a point. They make it easier to lift a heavy load.

Gears/Cogs
Gears are toothed wheels that mesh together. They rotate in opposite directions.

Spring 2
History (Maya civilisation)

Year: 5 Subject: History Unit Title: The Maya

Timeline

1100 B.C.	800 B.C.	400 B.C.	300 B.C.	100 B.C.	600	800	900	1502
The first hunter-gatherers settle on the pacific coast	Village farming and trade become established	First solar calendars invented	Cities become centres for trade and Kings begin to rule	First pyramids are built	Cities start expandin q quickly	Building of stepped pyramid of Chichen-Itza	Decline of Mayan cities	First contact with Europeans is made

Golden Thread

Civilisations

Monarchy

Disciplinary Knowledge

Compare and Contrast

Key Vocabulary

Word	Definition
Astronomy	The Maya were able to predict solar eclipses and used observatories and shadow-casting devices.
Calendar	These were circular and charted the movements of the sun, moon, stars and planets, with 365 days in a year.
Hieroglyphics	They used about 800 symbols to create writing, often on folded pages forming a book (codex)
Maize	The staple food of the Maya which was so important that they even had a maize god
Pok- a Tok	A game where large rubber balls were aimed at stone hoops. Losers were sometimes sacrificed to the gods!
Pyramids	Built with a temple at the top to give sacrifices to the gods, others were built for the gods themselves.
Sacrifice	Humans and animals were used as a blood offering to gods, mostly war prisoners by decapitation or heart removal
Stelae	Stone monuments glorifying Kings and record his deeds, although early examples were of mythical scenes.

Clothing

Commoners and slaves wore plain loincloths, but the elite added feathers, animal skins or gems. Noblemen covered their lower half with a colourful garment and wore large, elaborate headdresses. Women wore skirts and tunics. Footwear was simple, usually being barefoot or sandals.

Trade

Merchants drove their human caravans along roads, down rivers and around coasts to trade with fellow Maya and other Mesoamericans. The geography was so varied that they relied on trade to get the things they needed off each other, from maize, fish and salt to stingray spines (used for bloodletting) and valuable stones such as jade and obsidian.

What happeadned to the Maya?

Around 900, many cities in the southern lowlands were abandoned but states in the uplands of the Yucatan peninsula continued to flourish until the arrival of the Spanish in 1502. One belief is that the Toltecs and the Aztecs took over with their own empires but later, when the Spanish arrived, they forced them to give up their gods and become Christians.

We are Historians:

Similarities and differences: compare the way society operates today with the ways it was run in the times of the Ancient Maya. explore the use of Mayan symbols to discover how they were used during the Maya civilisation.

Cause and consequence: explore the decline of the Maya

Maya society

Maya society was organised into city states that had their own king. They lived in an absolute monarchy- you had to do as the king said. Levels of society were organised into a pyramid, with the most important people towards the top and the least important at the bottom.