



Ashley Junior School

Ready • Respectful • Responsible



AJS Science Learning Journeys

Science



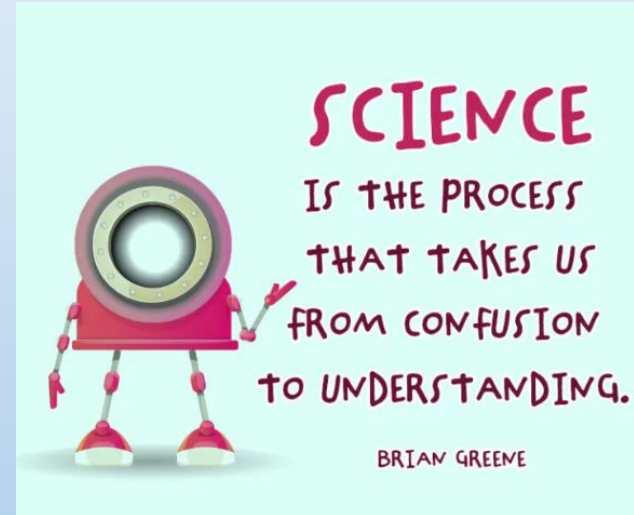
Definition



A **scientist** researches, examines and investigates our world to gather a better understanding of how it works.

As **scientists** we are learning to...

- be curious and question what we **think** we know
- **independently** and **collaboratively** observe and investigate different types of scientific enquiries
- gather, record and present data in different ways
- **reflect** upon and question our findings from research and experiments to inform our understanding of the world, the uses and implications of science today and for the future





Intent

It is our aim that all children will:

- Have a passion for science and recognise its application in past, present and future technologies.
- Develop confidence and competence in their working scientifically skills by taking the initiative in planning and carrying out scientific investigations.
- Solve challenging problems and report scientific findings through a variety of methods including written, verbal, modelled and visual explanations according to their learner style and ability.
- Through a range of investigations and enquiries, develop their skills in observation, identification, classification, interpretation of data, predicting, drawing conclusions and communicating scientifically.

We intend that all children will develop the ability to work scientifically through a range of investigations that include practical experiments, hypothesising using existing knowledge and drawing conclusions from their observations. They will leave our school with a solid foundation of scientific knowledge that will serve as a bedrock for their future secondary Science lessons.

Implementation:

Enquiry types - each learning journey is constructed as a series of lessons involving a range of enquiry types. Children have access to the enquiry types at the back of their science book and in resources issued from the subject lead and class teachers. Example from Year 4 Sound Learning Journey:

Scientific enquiry:
What makes the best string telephone?



Implementation:

TAPS Working Scientifically Cycle



Asking questions

Asking questions that can be answered using a scientific enquiry.



Setting up tests

Deciding on the method and equipment to use to carry out an enquiry.



Making predictions

Using prior knowledge to suggest what will happen in an enquiry.



Observing and measuring

Using senses and measuring equipment to make observations about the enquiry.



Recording data

Using tables, drawings and other means to note observations and measurements.



Interpreting and communicating results

Using information from the data to say what you found out.



Evaluating

Reflecting on the success of the enquiry approach and identifying further questions for enquiry.



Working Scientifically Skills - Embedded in all lessons are the full range of working scientifically skills.

Children have access to the working scientifically skills at the back of their science book and in resources issued from the subject lead and class teachers. These documents demonstrate the progression between the year groups of each of the skills, and acts as a guide for staff and pupils in the assessment of their age-related working scientifically skills.

Implementation



Science



'As an AJS Scientist' definition:

Our 'As an AJS Scientist' poster is a visual prompt in all classrooms to support the children's understanding of what it means to be a scientist and how we can all associate ourselves with these scientific abilities and skills.

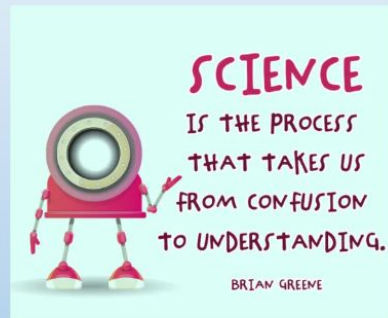
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- gather, record and present data in different ways
- **reflect** upon and question our findings from research and experiments to inform our understanding of the world, the uses and implications of science today and for the future



In alignment with our Scientific Enquiry types and our Working Scientifically skills, the definition of a scientist scaffolds the children's understanding of how best to seize the moment to be a scientist in school and prepares them for the demands of our Science curriculum.

In addition to planned Learning Journeys, other opportunities in school such as school visits, trips and termly challenges encourage and expose the children to be a scientist outside the classroom.



Impact

By the end of their time at Ashley Junior School, children will be able to:

- Demonstrate clear progression and a deeper understanding of a range of scientific ideas through end of topic assessment.
- Be independent with practical science and be able to choose and plan appropriate types of investigation to answer enquiry questions.
- Be confident to read, spell, pronounce and use scientific vocabulary accurately.
- Use ideas and knowledge to predict how the world works and understand that scientific ideas have, and will, change over time.
- Ask questions about their science learning and reflect on their knowledge.
- Enjoy science and find enthusiasm in their learning which they can build upon in secondary school.

Option A

Model based on teaching missing content for new year 4 first then year 3.

	Set A – year 1	Set B – year 2
Autumn 1	Year 4 Animals including humans – living things and habitats (Biology)	Year 3 Plants – life cycles (Biology)
Autumn 2	Animals including humans continued Year 4 Sound – (physics)	Year 3 Rocks (Chemistry)
Spring 1	Year 4 States of matter (chemistry)	Year 3 Animals including humans – nutrition and skeleton (Biology)
Spring 2	States of matter continued Year 4 Animals including humans – teeth and digestion (Biology)	Year 3 Forces and magnets (Physics)
Summer 1	Animals including humans continued Year 4 Electricity (physics)	Year 3 Plants – what they need and how they grow (Biology)
Summer 2	Electricity continued	Year 3 Light (Physics)

**AJS Science
Learning Journeys
Year 3/4-Cycle A**



Cycle A Year 3/4: Sound

WALT: evaluate how different materials absorb sound



WALT: identify how sound changes over distance



WALT: explore and explain how the size of vibrations affect the volume of a sound



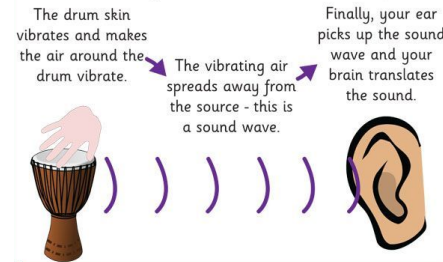
WALT: find and record patterns between the pitch of the sound and the object that made it



WALT: explain how to make the best string telephone
(Focused assessment)



WALT: question how different sounds are made



Key Vocabulary

Sound	Pitch (high/low)
Source	Volume
Medium	Faint
Vibrate	Quiet
Vibration	Loud
	Insulation

Retrieval:

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Key Questions:

1) How are sounds made?

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Cycle A Year 3/4: Sound

WALT: evaluate how different materials absorb sound

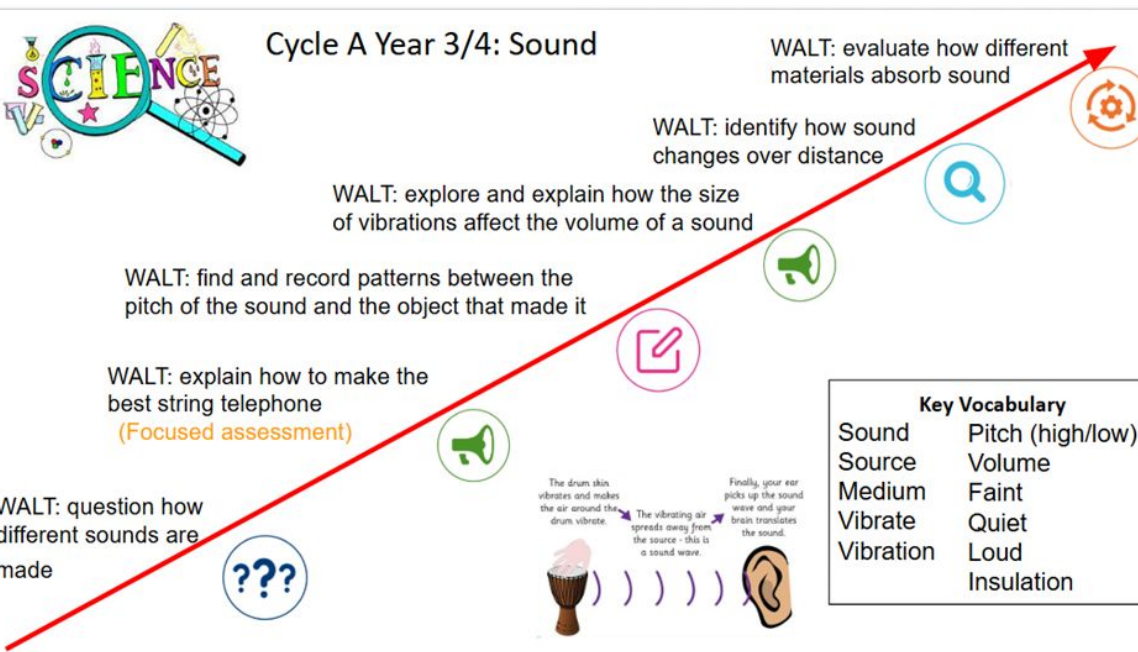
WALT: identify how sound changes over distance

WALT: explore and explain how the size of vibrations affect the volume of a sound

WALT: find and record patterns between the pitch of the sound and the object that made it

WALT: explain how to make the best string telephone
(*Focused assessment*)

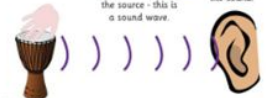
WALT: question how different sounds are made



The drum skin vibrates and makes the air around the drum vibrate.

The vibrating air spreads away from the source - this is a sound wave.

Finally, your ear picks up the sound wave and your brain translates the sound.



Key Vocabulary	
Sound	Pitch (high/low)
Source	Volume
Medium	Faint
Vibrate	Quiet
Vibration	Loud
	Insulation

2) What affects the pitch of a sound?

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3) How do vibrations affect the volume of a sound?

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Cycle A Year 3/4: Animals Including Humans + Living Things & Their Habitats

WALT: observe negative and positive effects of human impact on the local environment

WALT: recognise how environments can change naturally over time

WALT: observe and identify living organisms in our school grounds (Outdoor lesson)
(Focused assessment)

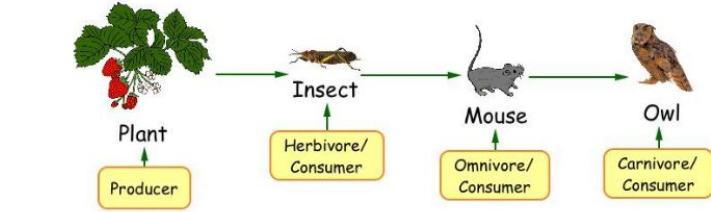
WALT: explore classification keys to group, identify and name living things

WALT: recognise that living things can be grouped in a variety of ways

WALT: model food chains(Outdoor lesson)

WALT: interpret food chains and identify producers, predators and prey

WALT: classify animals according to their different types of teeth



Key Vocabulary	
herbivore	classification
carnivore	classification keys
omnivore	environment
producer	habitat
consumer	human impact
predator	positive
prey	negative
	migrate
	hibernate

Retrieval:

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Key Questions:

1) Explain how and why the teeth of a carnivore are different to the teeth of a herbivore:

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Cycle A Year 3/4: Animals Including Humans + Living Things & Their Habitats

WALT: observe negative and positive effects of human impact on the local environment

WALT: recognise how environments can change naturally over time

WALT: observe and identify living organisms in our school grounds (Outdoor lesson)
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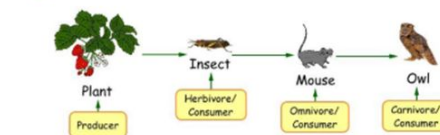
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Key Vocabulary

herbivore	classification
carnivore	classification keys
omnivore	environment
producer	habitat
consumer	human impact
predator	positive
prey	negative
	migrate
	hibernate

2) What is a classification key used for?

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3) Explain one negative and one positive effect of humans on their environment.

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Cycle A Year 3/4: States of Matter

WALT: demonstrate our understanding of the stages of the water cycle by creating our own models

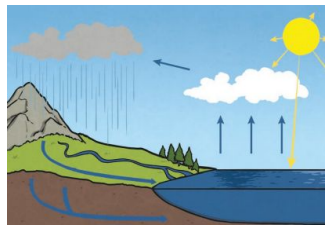


WALT: construct a table to record our observations of the process called condensation

WALT: plan a fair test to find the best conditions for evaporation to take place
(focused assessment)



WALT: use a thermometer to record the temperatures of the different states of water



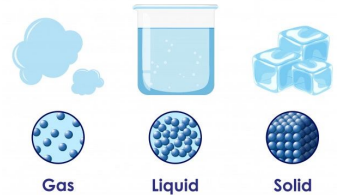
WALT: observe how materials change state when heated or cooled



WALT: classify materials according to their states of matter



States of Matter



Key Vocabulary

particle	melting
states of matter	melting point
solid	freezing
gas	boiling point
liquid	temperature
state change	evaporation
water cycle	condensation

Retrieval:

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Key Questions:

1) What can a gas or liquid do that a solid cannot?

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Cycle A Year 3/4: States of Matter

WALT: demonstrate our understanding of the stages of the water cycle by creating our own models



WALT: construct a table to record our observations of the process called condensation



WALT: plan a fair test to find the best conditions for evaporation to take place
(focused assessment)



WALT: use a thermometer to record the temperatures of the different states of water



WALT: observe how materials change state when heated or cooled



WALT: classify materials according to their states of matter



States of Matter



Key Vocabulary

particle	melting
states of matter	melting point
solid	freezing
gas	boiling point
liquid	temperature
state change	evaporation
water cycle	condensation

2) Explain how water changes state from a solid to a gas:

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3) Name two stages of the water cycle and the states of matter involved:

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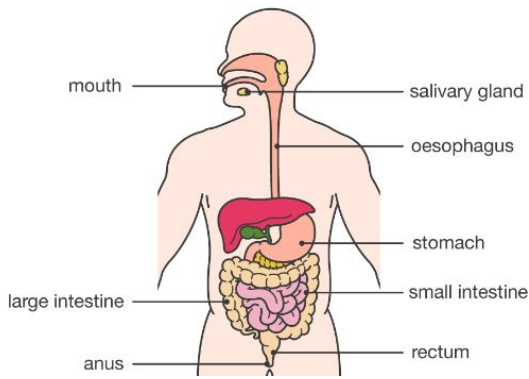
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Cycle A Year 3/4: Animals Including Humans -Teeth & Digestion

WALT: explain the functions of the organs in the digestive system



WALT: model the process of digestion
(Focused assessment)



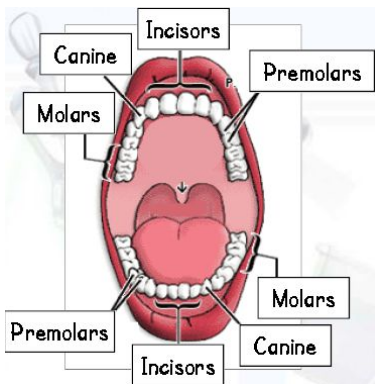
WALT: identify and name the organs in the digestive system



WALT: observe the effect of different substances on teeth



WALT: identify the different types of teeth in humans and their functions



Key Vocabulary

- | | |
|------------------|-----------------|
| digestive system | digestion |
| mouth | oesophagus |
| teeth | stomach |
| incisor | small intestine |
| canine | large intestine |
| molar | rectum |
| premolar | anus |
| saliva | |

Retrieval:

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Key Questions:

1) Name TWO different types of teeth and their function:

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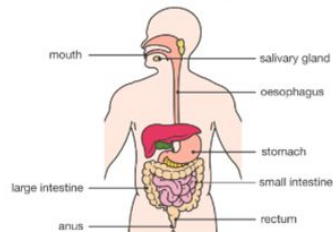
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Cycle A Year 3/4: Animals Including Humans -Teeth & Digestion

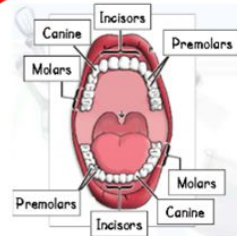


WALT: observe the effect of different substances on teeth

WALT: identify the different types of teeth in humans and their functions

WALT: model the process of digestion
(Focused assessment)

WALT: identify and name the organs in the digestive system



WALT: explain the functions of the organs in the digestive system

Key Vocabulary

digestive system	digestion
mouth	oesophagus
teeth	stomach
incisor	small intestine
canine	large intestine
molar	rectum
premolar	anus
saliva	

2) What is the first stage of digestion?:

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3) Choose an organ from the digestive system and explain its function::

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Cycle A Year 3/4: Electricity

WALT: identify which materials conduct electricity

(Focused assessment)



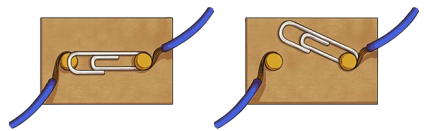
WALT: explore the role of a switch in a circuit



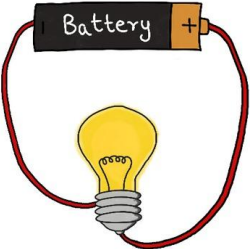
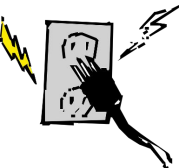
WALT: identify whether or not a lamp will light in a simple series circuit



WALT: investigate how to construct a simple circuit and name its components



WALT: classify mains and battery powered electrical devices in a Venn diagram



Key Vocabulary

electrical circuit	cell/battery
complete circuit	crocodile clip
incomplete circuit	bulb
component	wire
positive/negative	switch
connect	buzzer
connection	conductor
metal/non-metal	insulator

Retrieval:

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Key Questions:

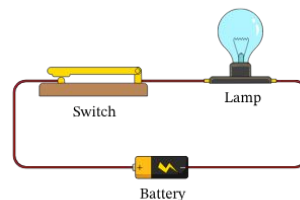
1) Draw a simple series circuit:

2) Will this bulb light up?

Explain why:

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3) What does a material need to be to conduct electricity?

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Give two examples:

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Cycle A Year 3/4: Electricity

WALT: identify which materials conduct electricity

(Focused assessment)



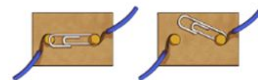
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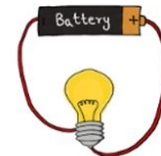
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connection	conductor
metal/non-metal	insulator

**AJS Science
Learning Journeys
Year 3/4-Cycle B**



Cycle B Year 3/4: Plants Life Cycle

WALT: answer questions about flowers, fruit and seeds.
(focused assessment)



WALT: ask questions about wind dispersal



WALT: understand how fruit develops from pollinated flowers.

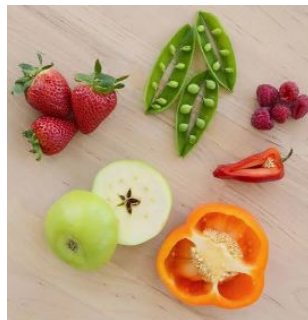
WALT: understand about pollination and the part bees play.



WALT: identify differences between the parts of a flower (reproductive)



WALT: explore the part flowers play in the life cycle



Key Vocabulary	
botany	stamen
botanist	seed
botanical	nectar
petals	pollination
reproduction	fertilisation
male	attract
female	pollen
stigma	dispersal
style	germination

Retrieval:

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Key Questions:

1) Name two different parts of a flower and their purpose

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2) Write an explanation of a bee's role in pollination.

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3) Describe two ways that seeds can be dispersed.

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Cycle B Year 3/4: Plants Life Cycle

WALT: answer questions about flowers, fruit and seeds.
(focused assessment)



WALT: ask questions about wind dispersal



WALT: understand how fruit develops from pollinated flowers.

WALT: understand about pollination and the part bees play.



WALT: identify differences between the parts of a flower (reproductive)



WALT: explore the part flowers play in the lifecycle



Key Vocabulary

Botany
Botanist
Botanical
Petals
Reproduction
Male
Female
Stigma
Style

Stamens
Seed
Nectar
Pollination
Fertilisation
Attract
Pollen
Dispersal
Germination



Cycle B Year 3/4: Rocks & Soil



WALT: model the formation of a fossil



WALT:celebrate the life of a palaeontologist



WALT: categorise different types of soil



WALT: classify different types of rocks
(Focussed assessment)



WALT:recognise and record different rocks in our environment



Key Vocabulary

rock	
stone	<i>Types of rock -</i>
pebble	<i>marble</i>
boulder	<i>chalk</i>
grain	<i>granite</i>
crystals	<i>sandstone</i>
layers	<i>slate</i>
hard or soft	
texture	
absorbs water	<i>Types of soil -</i>
fossil	<i>sand</i>
bone	<i>silt</i>
flesh	<i>clay</i>
minerals	

Retrieval:

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Key Questions:

1) Name two different rocks explain the differences between their properties:

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2) Name three different types of soils:

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3) Describe simply how fossils are formed:

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Cycle B Year 3/4: Rocks & Soil



WALT: categorise different types of soil

WALT: classify different types of rocks
(Focussed assessment)

WALT: recognise and record different rocks in our environment



WALT: celebrate the life of a palaeontologist



WALT: model the formation of a fossil



Key Vocabulary

rock	
stone	<i>Types of rock -</i>
pebble	<i>marble</i>
boulder	<i>chalk</i>
grain	<i>granite</i>
crystals	<i>sandstone</i>
layers	<i>slate</i>
hard or soft	
texture	
absorbs water	<i>Types of soil -</i>
fossil	<i>sand</i>
bone	<i>silt</i>
flesh	<i>clay</i>
minerals	

Cycle B-Year 3/4: Animals Including Humans- Nutrition and Skeletons



WALT: ask questions about how the different joints in our body work



WALT: identify the similarities and differences between different animal skeletons



WALT: ask questions about the differences in human skeletons
(Focused assessment)



WALT: create and evaluate our own model skeletons



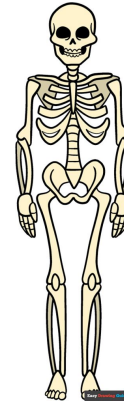
WALT: use secondary sources to help us label a skeleton



WALT: classify food according to their fat and sugar content



Linked to PSHE Autumn 1 for knowledge of food groups.



Key Vocabulary

Nutrition	Skeleton
Nutrients	Bones
Carbohydrates	Muscles
Sugars	Joints
Protein	Support
Vitamins	Protect
Minerals	Move
Fibre	Skull
Fat	Ribs
Water	Spine

Retrieval:

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Key Questions:

1) Name two foods high in sugar:

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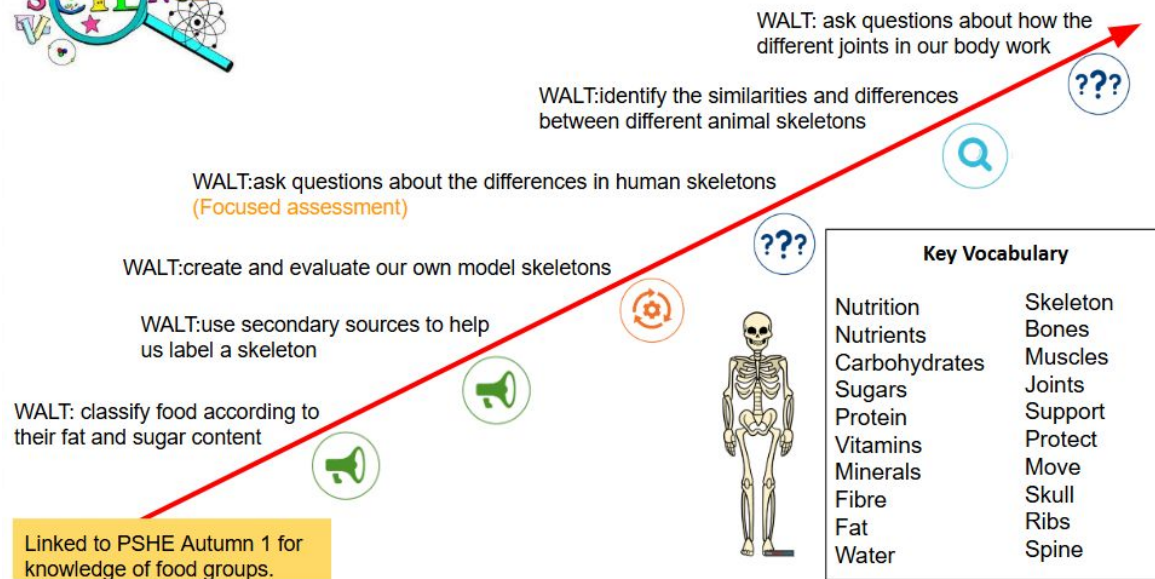
Name two foods high in fat:

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Cycle B-Year 3/4: Animals Including Humans- Nutrition and Skeletons



2) From your class investigation, explain two differences between human skeletons:

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3) Explain how our joints work:

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Cycle B Year 3/4: Forces and Magnets

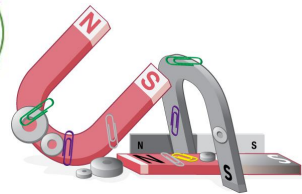
WALT: investigate the strength of different magnets (Focused assessment)



WALT: explain our understanding of contact and non-contact forces



WALT: observe how magnets attract and repel each other



WALT: classify materials as magnetic or non-magnetic



WALT: compare and record how objects move on different surfaces



WALT: explain our understanding that forces are a push or pull action



Key Vocabulary

bar magnet	force
ring magnet	push
button magnet	pull
horseshoe magnet	contact force
attract	non-contact force
repel	magnetic force
metal	magnetic material
poles	magnet
north pole	strength
south pole	

Retrieval:

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Key Questions:

1) What affects how objects move on different surfaces?

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Cycle B Year 3/4: Forces and Magnets

WALT: investigate the strength of different magnets (Focused assessment)



WALT: explain our understanding of contact and non-contact forces

WALT: observe how magnets attract and repel each other



WALT: classify materials as magnetic or non-magnetic



WALT: compare and record how objects move on different surfaces



WALT: explain our understanding that forces are a push or pull action



Key Vocabulary

bar magnet	force
ring magnet	push
button magnet	pull
horseshoe magnet	contact force
attract	non-contact force
repel	magnetic force
metal	magnetic material
poles	magnet
north pole	strength
south pole	

Attract or repel?



I think these magnets will

Attract or repel?



I think these magnets will

3) Explain the difference between contact and non-contact forces:

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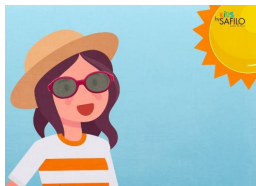
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Cycle B Year 3/4: Light

WALT: find patterns when investigating how shadows change size



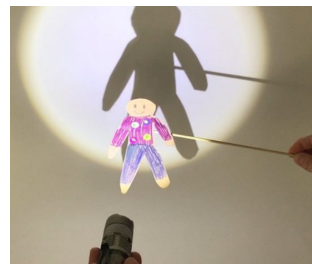
WALT: record which materials block light to form shadows
(Focused assessment)



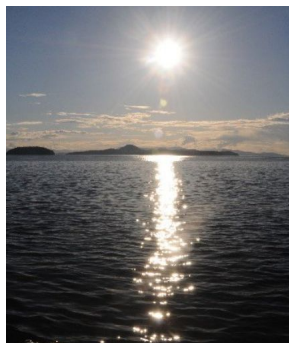
WALT: explain how the sun can be dangerous and ways to protect our eyes



WALT: predict which surfaces are best at reflecting light



WALT: classify natural and artificial light sources



Key Vocabulary

light	Sun
light source	sunlight
dark	dangerous
absence of light	shadow
surface	reflect
	mirror

Retrieval:

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Key Questions:

1) How are shadows formed?

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2) How is the sun harmful to your eyes?

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3) Which surfaces are best at reflecting light?

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Cycle B Year 3/4: Light

WALT: find patterns when investigating how shadows change size

WALT: record which materials block light to form shadows
(Focused assessment)

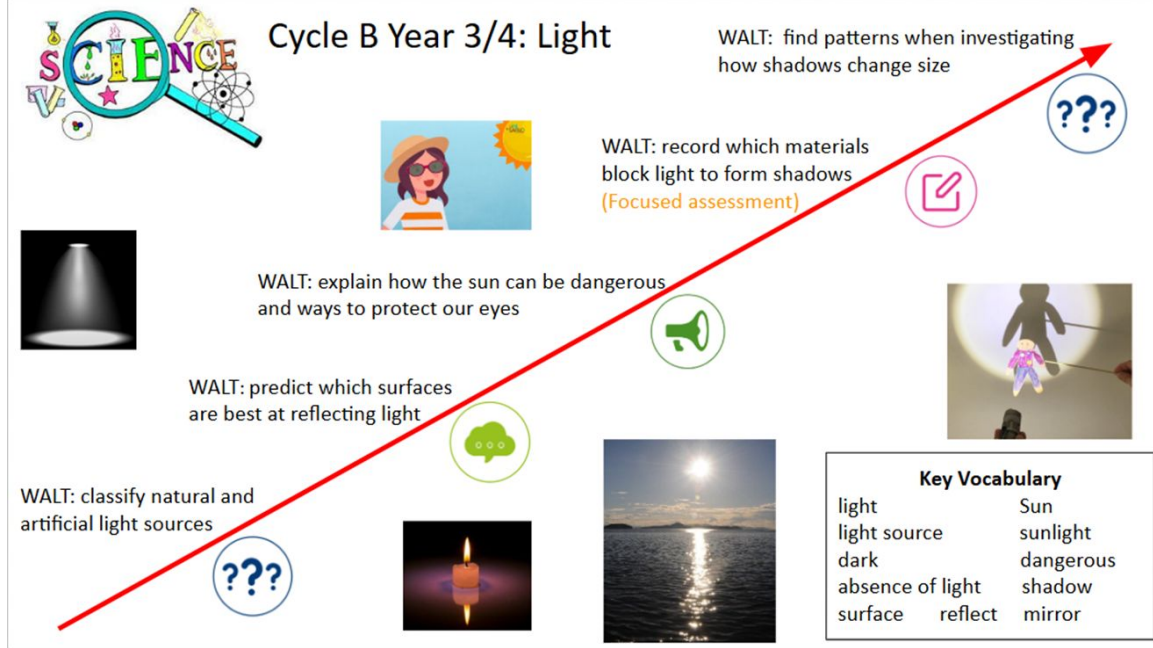
WALT: explain how the sun can be dangerous and ways to protect our eyes

WALT: predict which surfaces are best at reflecting light

WALT: classify natural and artificial light sources

Key Vocabulary

light	Sun
light source	sunlight
dark	dangerous
absence of light	shadow
surface	reflect
	mirror





Cycle B Year 3/4: Plants

WALT: enquire how different flowers disperse their seed



WALT: explore the role of a flower in the life cycle of a plant



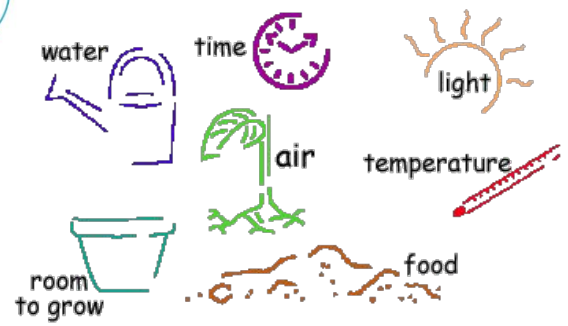
WALT: observe how water is transported in a plant



WALT: identify and describe the functions of different parts of flowering plants
(Focussed assessment)



WALT: observe the requirements of plants for life and growth



Key Vocabulary

- photosynthesis
- pollen
- insect/wind pollination
- male
- female
- seed formation
- seed dispersal
- wind/animal/water dispersal
- air
- nutrients
- minerals
- soils
- absorb
- transport

Retrieval:

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Key Questions:

1) Name three things plants require to help them grow:

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2) Fill in the missing gaps:
..... are brightly coloured to attract birds and insects.
..... take in water and from the soil.
..... catch the sunlight so plants can make their own.....
The holds up the plant up and water.

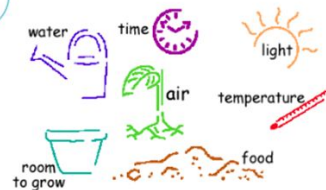
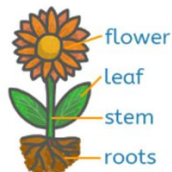
WALT: enquire how different flowers disperse their seed

WALT: explore the role of a flower in the life cycle of a plant

WALT: observe how water is transported in a plant

WALT: identify and describe the functions of different parts of flowering plants
(Focussed assessment)

WALT: observe the requirements of plants for life and growth



Key Vocabulary

photosynthesis
pollen
insect/wind pollination
male
female
seed formation
seed dispersal
wind/animal/water dispersal
air
nutrients
minerals
soils
absorb
transport

3) Describe using key vocabulary one way in which animals can help plants:

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**AJS Science
Learning Journeys
Year 5**

Year 5: Forces Learning Journey



WALT: suggest, devise and present a mechanism to lift a load

WALT: discover and present graphically our findings about different mechanisms

WALT: ask questions and research different mechanisms which allow a smaller force to have a greater effect

WALT: plan and carry out an enquiry to demonstrate our understanding of friction

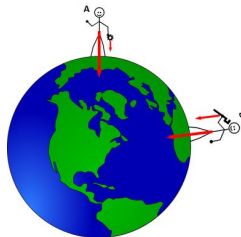
WALT: examine the repeatability of an investigation about water resistance.

WALT: control and change variables in an investigation about the effects of air resistance.

WALT: use force meters correctly to investigate the effect of gravity on an object.

WALT: draw scientific diagrams to demonstrate the effect of gravity on Earth.

WALT: identify different forces and raise questions for future enquiries about them.



Key Vocabulary

force
gravity
Earth
air resistance
water resistance
friction

mechanisms
simple machines
levers
pulleys
gears

Retrieval:

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Key Questions:

1) Label gravity and one other force in this diagram showing the directions of these forces using arrows.

An aeroplane flying



Year 5: Forces Learning Journey

(Focused assessment) WALT: control and change variables in an investigation about the effects of air resistance.

WALT: use force meters correctly to investigate the effect of gravity on an object.

WALT: draw scientific diagrams to demonstrate the effect of gravity on Earth.

WALT: identify different forces and raise questions for future enquiries about them.

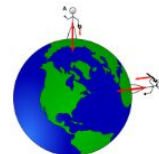
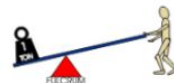
WALT: examine the repeatability of an investigation about water resistance.

WALT: plan and carry out an enquiry to demonstrate our understanding of friction

WALT: ask questions and research different mechanisms which allow a smaller force to have a greater effect

WALT: discover and present graphically our findings about different mechanisms

WALT: suggest, devise and present a mechanism to lift a load



Key Vocabulary

force
gravity
Earth
air resistance
water resistance
friction

mechanisms
simple machines
levers
pulleys
gears

2) Circle the correct word:

Friction is a force/weight that happens between two surfaces rubbing together. Friction always acts in the same/opposite direction to the moving object, and always slows down/ speeds up a moving object. Smooth surfaces like ice create some/no friction.

3) Choose a mechanism we have looked at and describe how it works:

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Year 5: Earth and Space

Learning Journey

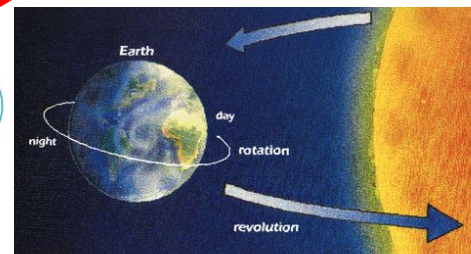
WALT: research and present information about planets in the solar system
(Focused assessment)



WALT: describe the movement of the Moon relative to the Earth



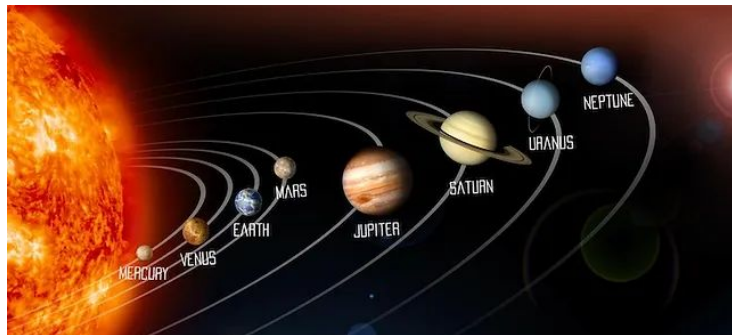
WALT: explain how the movement of the Earth creates night and day



WALT: question then demonstrate how the Earth and planets orbit around the Sun



WALT: construct a model of the solar system with the Sun at the centre



Key Vocabulary

Earth	Planets
Sun	Mercury
Moon	Venus
Spherical	Mars
Solar system	Jupiter
Orbit	Saturn
Star	Uranus
Rotates	Neptune

Retrieval:

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Key Questions:

1) How does the Earth orbit around the Sun?

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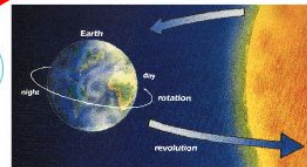


Year 5: Earth and Space Learning Journey

WALT: research and present information about planets in the solar system
(Focused assessment)



WALT: describe the movement of the Moon relative to the Earth



WALT: explain how the movement of the Earth creates night and day



WALT: question then demonstrate how the Earth and planets orbit around the Sun



WALT: construct a model of the solar system with the Sun at the centre



Key Vocabulary

Earth	Planets
Sun	Mercury
Moon	Venus
Spherical	Mars
Solar system	Jupiter
Orbit	Saturn
Star	Uranus
Rotates	Neptune

2) Why do we experience night and day?

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3) How does the Moon move around the Earth?

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Year 5: Properties of Materials Learning Journey

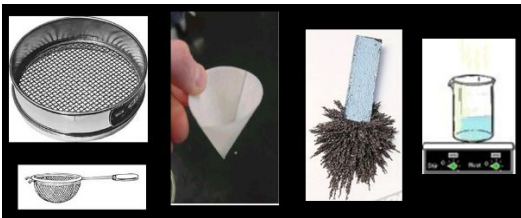
WALT: observe, record and explain an irreversible change



WALT: use a range of apparatus to demonstrate reversible changes



WALT: use a range of apparatus to separate mixtures

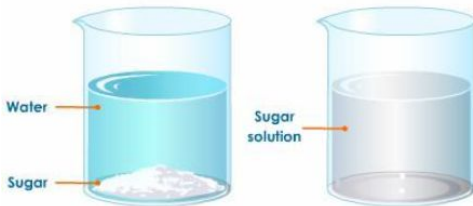


WALT: observe what happens when a solid dissolves in a liquid to form a solution

(Focused assessment)



WALT: categorise materials according to observed properties



Key Vocabulary:

thermal/electrical insulator/conductor
change of state
mixture
dissolve
solution
soluble
insoluble
filter
sieve

reversible change
irreversible change
burning
rusting
new material

Retrieval:

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Key Questions:

1) What is a solution? Give an example.

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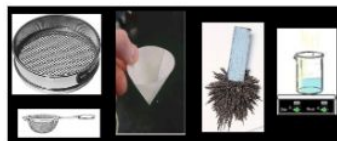


Year 5: Properties of Materials Learning Journey

WALT: observe, record and explain
an irreversible change



WALT: use a range of apparatus to
demonstrate reversible changes



WALT: use a range of apparatus to
separate mixtures



WALT: observe what happens when a solid
dissolves in a liquid to form a solution
(**Focused assessment**)



WALT: categorise materials
according to observed
properties



Key Vocabulary:

thermal/electrical insulator/conductor	
change of state	
mixture	reversible change
dissolve	irreversible change
solution	burning
soluble	rusting
insoluble	new material
filter	
sieve	

2) Explain TWO ways to separate a
mixture -use examples:

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3) Describe an irreversible change
and the new material made:

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Year 5: Living Things and Their Habitats

Learning Journey

WALT: research the stages of the life cycle of a plant



Key Vocabulary

life cycle	
reproduce	
sexual	metamorphosis
sperm	asexual
fertilises	plantlets
egg	runners
live young	cuttings

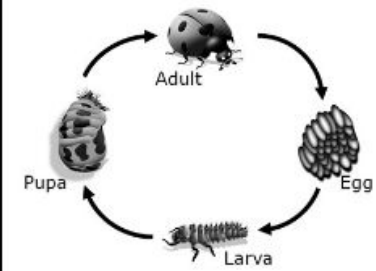
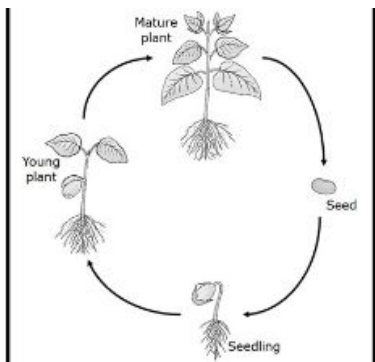
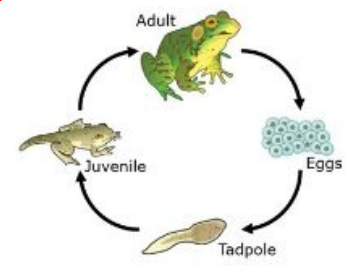
WALT: research and present life cycles involving metamorphosis
(Focused assessment)



WALT: compare the life cycles of different animals



WALT: identify differences in the life cycles of mammals



Retrieval:

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Key Questions:

1) Define the term **life cycle**:
Give examples.

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Year 5: Living Things and Their Habitats

Learning Journey

Key Vocabulary

life cycle	
reproduce	
sexual	metamorphosis
sperm	asexual
fertilises	plantlets
egg	runners
live young	cuttings

WALT: identify differences in the life cycles of mammals

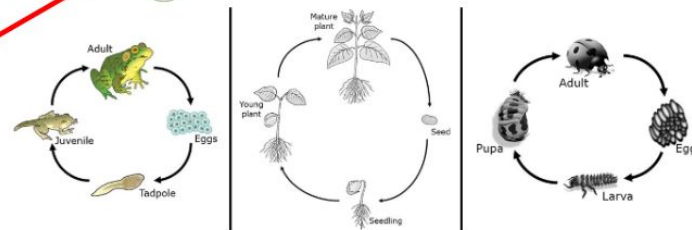


WALT: research and present life cycles involving metamorphosis
(Focused assessment)

WALT: compare the life cycles of different animals



WALT: research the stages of the life cycle of a plant



2) What does **metamorphosis** mean?
Give examples.

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3) What is the difference between **sexual** and **asexual** reproduction in plants?

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Year 5: Animals Including Humans

Learning Journey

Key Vocabulary

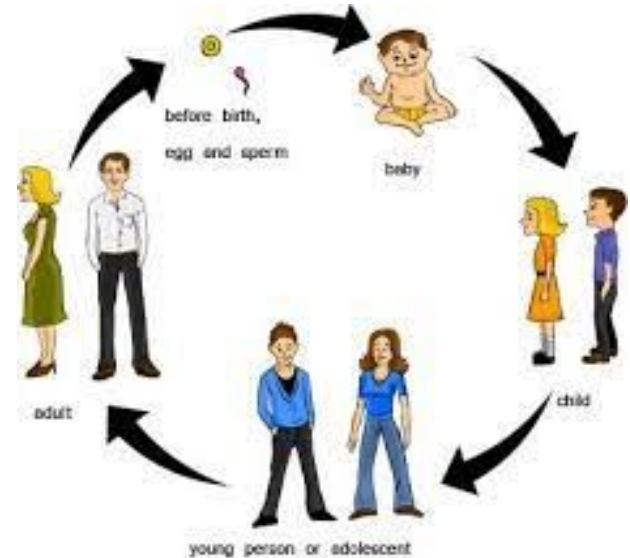
life cycle	
foetus	puberty
baby	adult
child	life span
adolescent	life expectancy

WALT: describe the changes in humans from childhood to adulthood (covered in PSHE - puberty videos)

WALT: research what happens to the body in old age

WALT: show graphically how children grow and change
(Focused assessment)

WALT: identify and explain the stages of the human life cycle from birth to old age



Retrieval:

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Key Questions:

1) Name the six stages of the human life cycle:

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Key Vocabulary

life cycle	
foetus	puberty
baby	adult
child	life span
adolescent	life expectancy

WALT: show graphically how children grow and change

(Focused assessment)

WALT: identify and explain the stages of the human life cycle from birth to old age

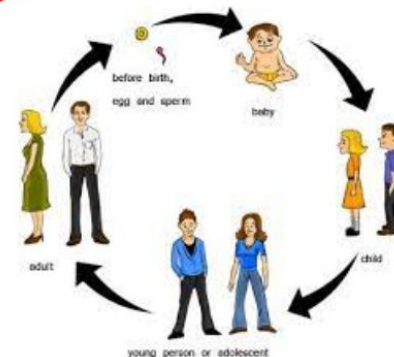


Year 5: Animals Including Humans

Learning Journey

WALT: describe the changes in humans from childhood to adulthood (covered in PSHE - puberty videos)

WALT: research what happens to the body in old age



2) Explain two changes to both boys and girls during puberty:

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3) Explain two changes that happen to the body in old age:

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**AJS Science
Learning Journeys
Year 6**



Year 6: Light Learning Journey

WALT: devise and present a device to see around a bend



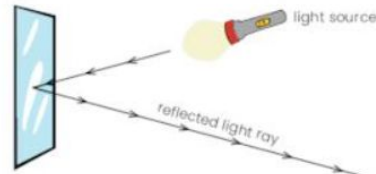
WALT: relate scientific theory to our observations of shadows



WALT: predict how a light ray travels when it hits a plane mirror



WALT: demonstrate and present our understanding of how light travels in straight lines



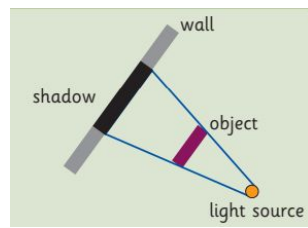
WALT: use scientific drawings to explain how light travels from light sources to our eyes



WALT: plan and carry out an enquiry to demonstrate our knowledge of shadows (outdoor lesson)



(Focused assessment)



Key Vocabulary

light	surface
light source	mirror
sunlight	reflect
shadow	straight line
absence of light	light ray

Retrieval:

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Key Questions:

1) Explain how a shadow is formed:

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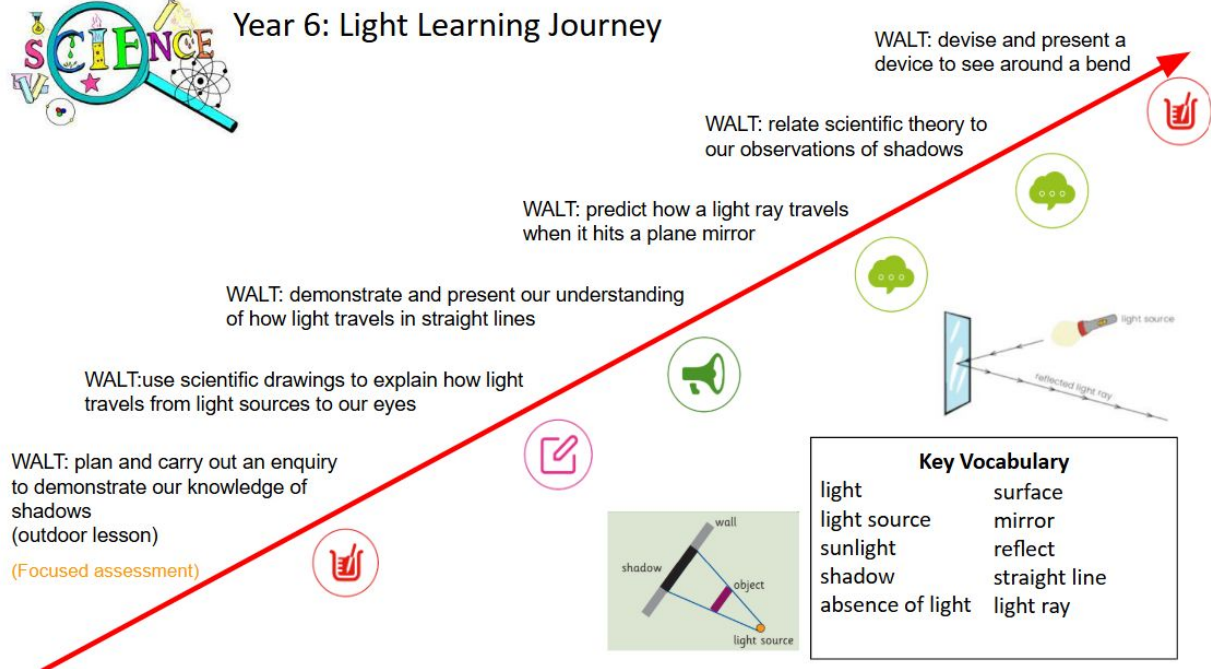
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Year 6: Light Learning Journey



2) What is reflection?

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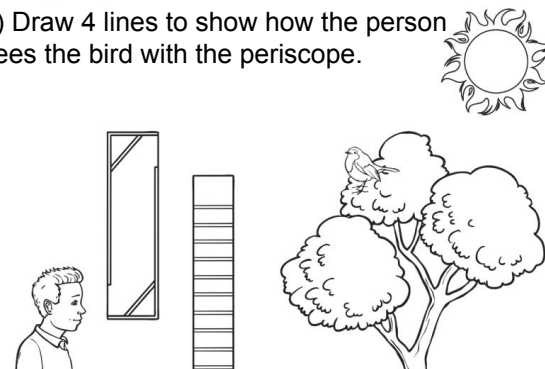
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3) Draw 4 lines to show how the person sees the bird with the periscope.





Year 6: Electricity

Learning Journey

WALT: demonstrate and model our understanding of electrical circuits.



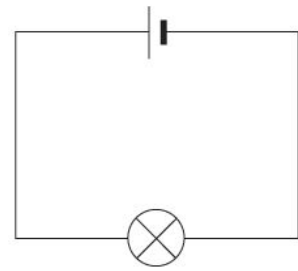
WALT: predict how components will function as different factors are changed within a circuit



WALT: plan a fair test to find the factors that affect the brightness of a bulb

(Focused assessment)

WALT: construct a simple series circuit and use symbols to draw it.



Key Vocabulary

complete circuit	component
incomplete circuit	cell/battery
circuit diagram	bulb
circuit symbol	wires
current	switch
voltage	buzzer
positive/negative	

Retrieval:

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Key Questions:

1) Draw a closed circuit with a cell, switch and bulb:



Year 6: Electricity

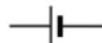
Learning Journey



WALT: demonstrate and model our understanding of electrical circuits.



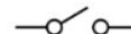
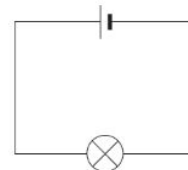
WALT: predict how components will function as different factors are changed within a circuit



WALT: plan a fair test to find the factors that affect the brightness of a bulb

(Focused assessment)

WALT: construct a simple series circuit and use symbols to draw it



Key Vocabulary

complete circuit	component
incomplete circuit	cell/battery
circuit diagram	bulb
circuit symbol	wires
current	switch
voltage	buzzer
positive/negative	

2) Explain one factor that can affect the brightness of a bulb:

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3) What happens to components in a circuit as more are added but the number of cells remains the same?

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Year 6: Evolution and Inheritance

Learning Journey

WALT: observe and explain how fossils provide evidence of evolution



WALT: recognise how living things have evolved over time



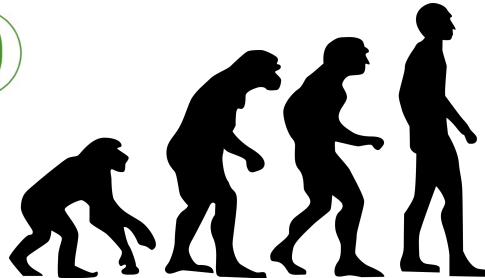
WALT: make predictions and conclusions based upon Darwin's theory of evolution
(Focused assessment)



WALT: identify and explain how living things are adapted to their environments



WALT: recognise and report how living things produce offspring of the same kind



Key Vocabulary

offspring
sexual reproduction
vary
variation
characteristics
adapted
inherited
inheritance
species
evolve
evolution

Retrieval:

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Key Questions:

- 1) Define the word inheritance:
Use examples.

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- 2) Define the word adaptation:
Use examples.

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- 3) Define the word evolution:
Use examples.

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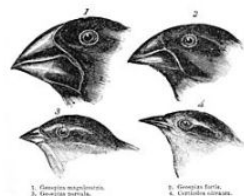
Year 6: Evolution and Inheritance

Learning Journey

WALT: observe and explain how fossils provide evidence of evolution



WALT: recognise how living things have evolved over time



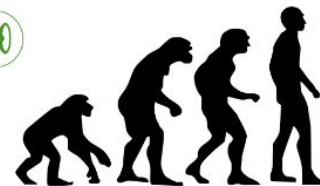
WALT: make predictions and conclusions based upon Darwin's theory of evolution
(Focused assessment)



WALT: identify and explain how living things are adapted to their environments



WALT: recognise and report how living things produce offspring of the same kind



Key Vocabulary

offspring
sexual reproduction
vary
variation
characteristics
adapted
inherited
inheritance
species
evolve
evolution



Year 6: Living Things and Their Habitats

Learning Journey

Key Vocabulary

Mammals		
Birds		
Fish	Insects	Flowering
Amphibians	Spiders	Non-flowering
Reptiles	Snails	Mosses
Vertebrate	Worms	Ferns
Invertebrate		Conifers

WALT: use our gained knowledge to develop and classify an imaginary animal



WALT: research the five animal classes and identify their key characteristics
(Focused assessment)



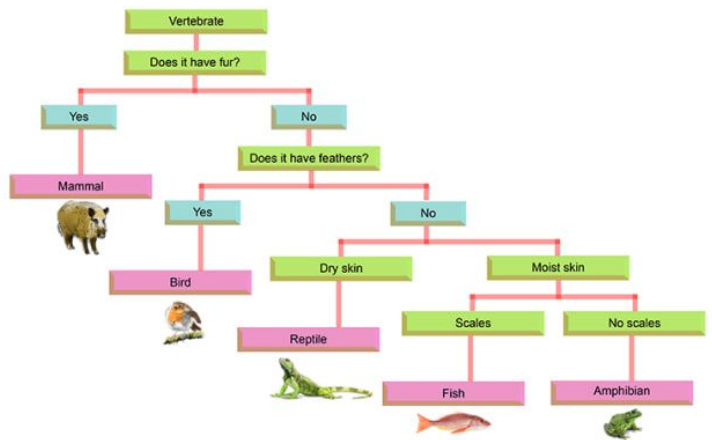
WALT: identify and classify invertebrates



WALT: develop a scientific model by generating questions for a classification key



WALT: classify living things



Retrieval:

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Key Questions:

1) What is the purpose of a classification key?

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Year 6: Living Things and Their Habitats

Learning Journey

Key Vocabulary		
Mammals		
Birds		Flowering
Fish	Insects	Non-flowering
Amphibians	Spiders	Mosses
Reptiles	Snails	Ferns
Vertebrate	Worms	Conifers
Invertebrate		

WALT: identify and classify invertebrates

WALT: develop a scientific model by generating questions for a classification key

WALT: classify living things

WALT: research the five animal classes and identify their key characteristics
(Focused assessment)

WALT: use our gained knowledge to develop and classify an imaginary animal



2) What is the difference between vertebrates and invertebrates?

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3) What are the key characteristics of mammals?

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Year 6: Animals Including Humans -Systems of the Human Body Learning Journey



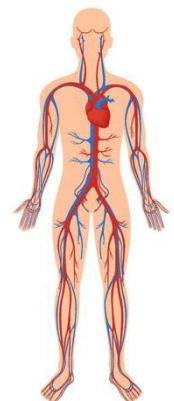
WALT: research and present the negative physical impact of drugs and other lifestyle choices

WALT: recognise the importance of diet and exercise for a healthy body

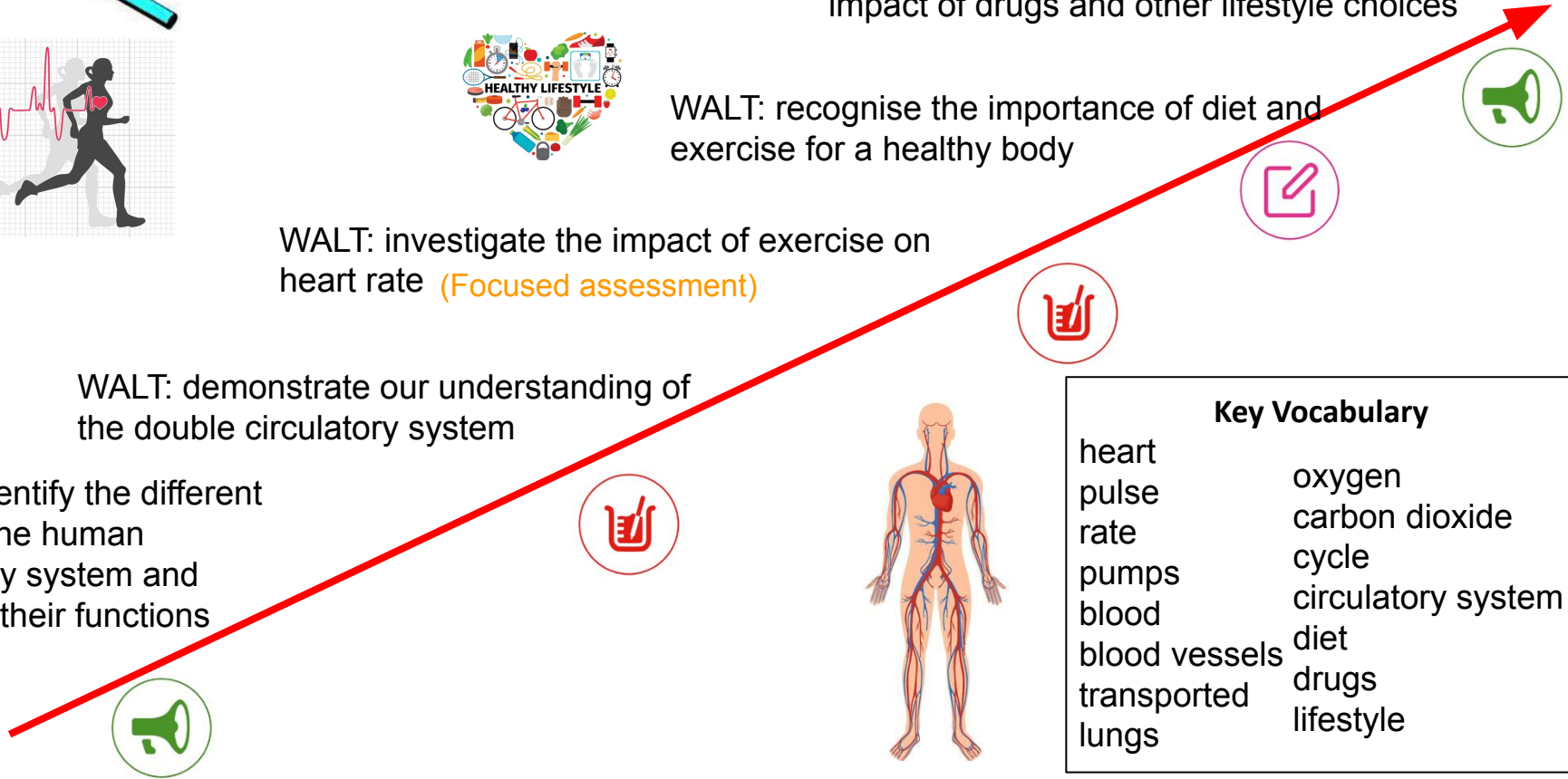
WALT: investigate the impact of exercise on heart rate (Focused assessment)

WALT: demonstrate our understanding of the double circulatory system

WALT: identify the different parts of the human circulatory system and describe their functions



Key Vocabulary	
heart	oxygen
pulse	carbon dioxide
rate	cycle
pumps	circulatory system
blood	diet
blood vessels	drugs
transported	lifestyle
lungs	



Retrieval:

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Key Questions:

1) Name an organ in the circulatory system and explain its function:

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Year 6: Animals Including Humans -Systems of the Human Body Learning Journey



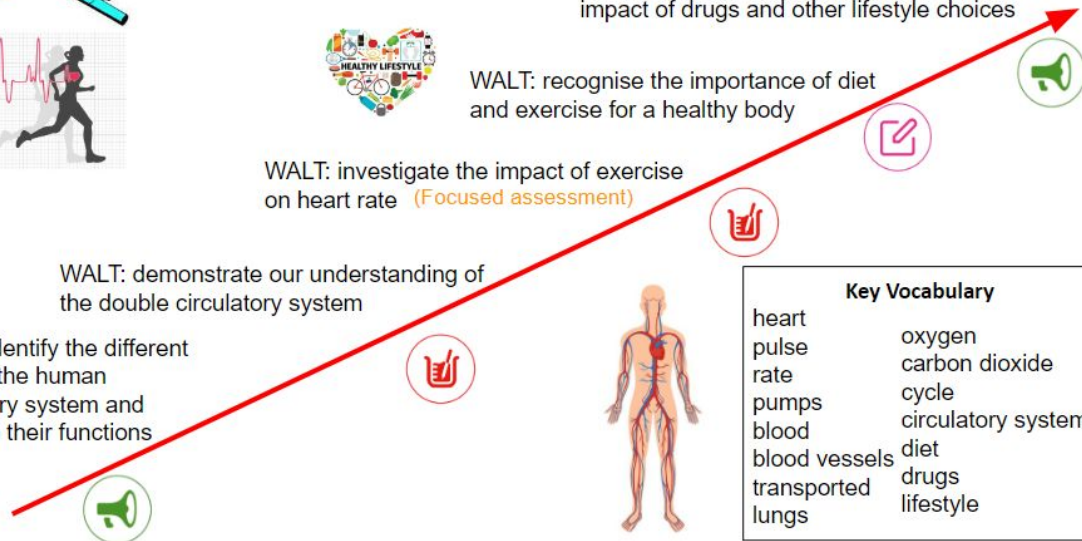
WALT: investigate the impact of exercise on heart rate (Focused assessment)

WALT: demonstrate our understanding of the double circulatory system

WALT: identify the different parts of the human circulatory system and describe their functions

WALT: recognise the importance of diet and exercise for a healthy body

WALT: research and present the negative physical impact of drugs and other lifestyle choices



Key Vocabulary

heart	oxygen
pulse	carbon dioxide
rate	cycle
pumps	circulatory system
blood	diet
blood vessels	drugs
transported	lifestyle
lungs	

2) Explain the impact of exercise on heart rate:

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3) Explain how exercise would benefit a body that has used drugs:

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