2018 national curriculum assessments

Key stage 2

Teacher assessment exemplification

Science

Standards & Testing Agency

[BLANK PAGE]

This page is intentionally blank.

Contents

Guidance

Teacher assessment judgements

- Teachers should assess their pupils according to their school's assessment policy, and use the statutory teacher assessment framework[1] to make a judgement at the end of the key stage. This judgement should be based on day-to-day evidence from the classroom, which shows that a pupil has met the 'pupil can' statements within the framework. Teachers should not produce evidence specifically for the purpose of local authority moderation. However, a sample of evidence from the pupil's classroom work must support how the teacher has reached their judgements.
- Local authorities may find it useful to refer to the exemplification materials to support external moderation visits. The materials show what meeting the 'pupil can' statements might look like for each standard. However, moderators should not expect or require teachers to provide specific evidence similar to the examples in this document.
- When making a statutory end-of-key stage judgement against the teacher assessment frameworks, year 6 teachers should have evidence from the classroom that pupils have grasped all the 'working scientifically' statements and all the 'science content' taught in the final year of the key stage. A single example of a pupil's work may also provide evidence for multiple statements.
- Teachers should base their teacher assessment judgement on a broader range of evidence than that shown in this document. Evidence will come from day-to-day work in the classroom and may include work from different curriculum subjects, although a pupil's work in science alone is likely to produce the range and depth of evidence required. Teachers can also use pupils' answers to test questions as evidence to support their judgements.
- Teachers should consider a range of evidence from the classroom on which to base their teacher assessment judgements. This may include:
    - pupils' recordings of, and responses to, their practical science work
    - teachers' records or notes about a child's practical science work
    - answers to questions in science quizzes
    - summative tasks used by schools

Using exemplification materials

- Exemplification materials provide examples of pupils' work to support teachers in making judgements against the statutory teacher assessment frameworks at the end of the key stage. If teachers are confident in their judgements, they do not need to refer to this document.
- Exemplification materials illustrate only how 'pupil can' statements in the frameworks might be met. They do not dictate a particular method of teaching or the evidence expected from the classroom, which will vary from school to school.
- This document contains examples of science drawn from a sample of year 6 pupils. It shows teachers how they might judge whether a pupil has met the expected standard within key stage 2 (KS2) science.
- When considering science content that has been taught before the final year of the key stage, year 6 teachers will draw on assessment judgements that have been made earlier in the key stage. There is no requirement to produce specific evidence for these statements. The 'pupil can' statements relating to science content indicate where the topic appears in the national curriculum.
- Examples of pupils' work that demonstrate understanding of the science content taught in year 5 are included in this document to guide judgements made in that year.
- Where specific sections of a statement are exemplified, these are highlighted in bold.

---

[1] www.gov.uk/government/publications/teacher-assessment-frameworks-at-the-end-of-key-stage-2

Key stage 2 science teacher assessment framework

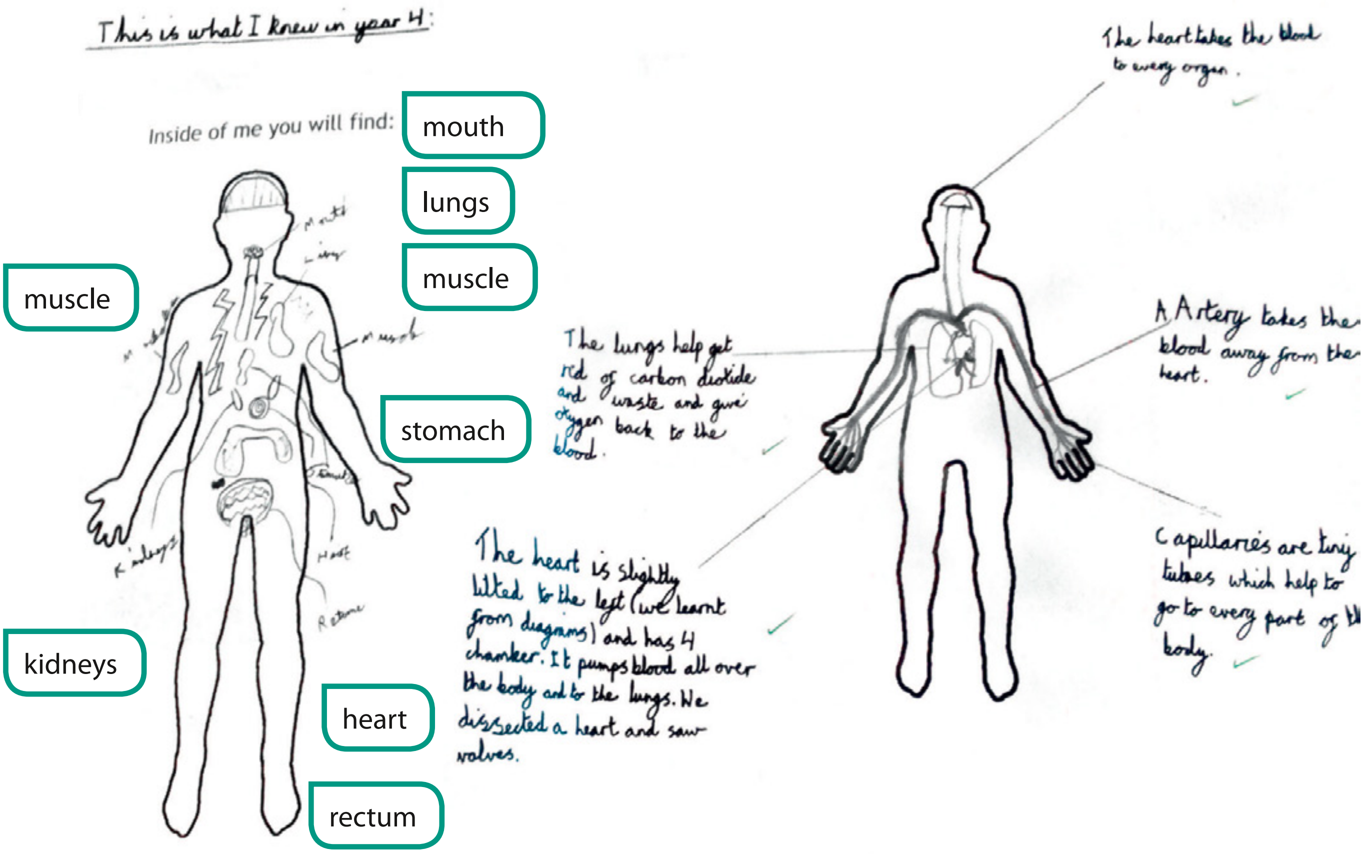
Teachers should follow the guidance for using this science framework set out in the complete teacher assessment frameworks.

Working at the expected standard
Working scientifically The pupil can, using appropriate scientific language from the national curriculum: • describe and evaluate their own and others' scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources • ask their own questions about the scientific phenomena that they are studying, and select the most appropriate ways to answer these questions, recognising and controlling variables where necessary (i.e. observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests, and finding things out using a wide range of secondary sources) • use a range of scientific equipment to take accurate and precise measurements or readings, with repeat readings where appropriate • record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • draw conclusions, explain and evaluate their methods and findings, communicating these in a variety of ways • raise further questions that could be investigated, based on their data and observations.
Science content
The pupil can: • name and describe the functions of the main parts of the digestive (year 4), musculoskeletal (year 3) and circulatory systems (year 6); and describe and compare different reproductive processes and life cycles in animals (year 5) • describe the effects of diet, exercise, drugs and lifestyle on how the body functions (year 6) • name, locate and describe the functions of the main parts of plants, including those involved in reproduction (year 5) and transporting water and nutrients (year 3) • use the observable features of plants, animals and microorganisms to group, classify and identify them into broad groups, using keys or other methods (year 6) • construct and interpret food chains (year 4) • describe the requirements of plants for life and growth (year 3); and explain how environmental changes may have an impact on living things (year 4) • use the basic ideas of inheritance, variation and adaptation to describe how living things have changed over time and evolved (year 6); and describe how fossils are formed (year 3) and provide evidence for evolution (year 6) • group and identify materials (year 5), including rocks (year 3), in different ways according to their properties, based on first-hand observation; and justify the use of different everyday materials for different uses, based on their properties (year 5)

Science content (continued)
• describe the characteristics of different states of matter and group materials on this basis; and describe how materials change state at different temperatures, using this to explain everyday phenomena, including the water cycle (year 4) • identify and describe what happens when dissolving occurs in everyday situations; and describe how to separate mixtures and solutions into their components (year 5) • identify, with reasons, whether changes in materials are reversible or not (year 5) • use the idea that light from light sources, or reflected light, travels in straight lines and enters our eyes to explain how we see objects (year 6), and the formation (year 3), shape (year 6) and size of shadows (year 3) • use the idea that sounds are associated with vibrations, and that they require a medium to travel through, to explain how sounds are made and heard (year 4) • describe the relationship between the pitch of a sound and the features of its source; and between the volume of a sound, the strength of the vibrations and the distance from its source (year 4) • describe the effects of simple forces that involve contact (air and water resistance, friction) (year 5), that act at a distance (magnetic forces, including those between like and unlike magnetic poles) (year 3), and gravity (year 5) • identify simple mechanisms, including levers, gears and pulleys, that increase the effect of a force (year 5) • use simple apparatus to construct and control a series circuit, and describe how the circuit may be affected when changes are made to it; and use recognised symbols to represent simple series circuit diagrams (year 6) • describe the shapes and relative movements of the Sun, Moon, Earth and other planets in the solar system; and explain the apparent movement of the sun across the sky in terms of the Earth's rotation and that this results in day and night (year 5).

Exemplification: working at the expected standard

Title	**Changing ideas about circulation**
Science content statement(s)	**The pupil can name and describe the functions of the main parts of** the digestive (year 4), musculoskeletal (year 3), and **circulatory systems** (year 6); and describe and compare different reproductive processes and life cycles in animals (year 5).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language from the national curriculum, **describe and evaluate their own and others' scientific ideas related to topics in the national curriculum** (including ideas that have changed over time), **using evidence from a range of sources.**
Context	In this activity, pupils were asked to recall facts from their previous studies of the human body. They drew and labelled these on the outline of the human body. The teacher then demonstrated a heart dissection, and went on to ask pupils to carry out some research about the circulatory system, using books available in the classroom. This focused on the heart, blood vessels and lungs. They were asked to present this information in a similar diagram, so that they could compare the 2 versions.
Comment	Using information from books, the pupil has presented what they have learned for themselves about the main parts of the circulatory system (heart, blood vessels, lungs), in comparison with ideas they held before, such as the position and relative size of the heart and lungs.

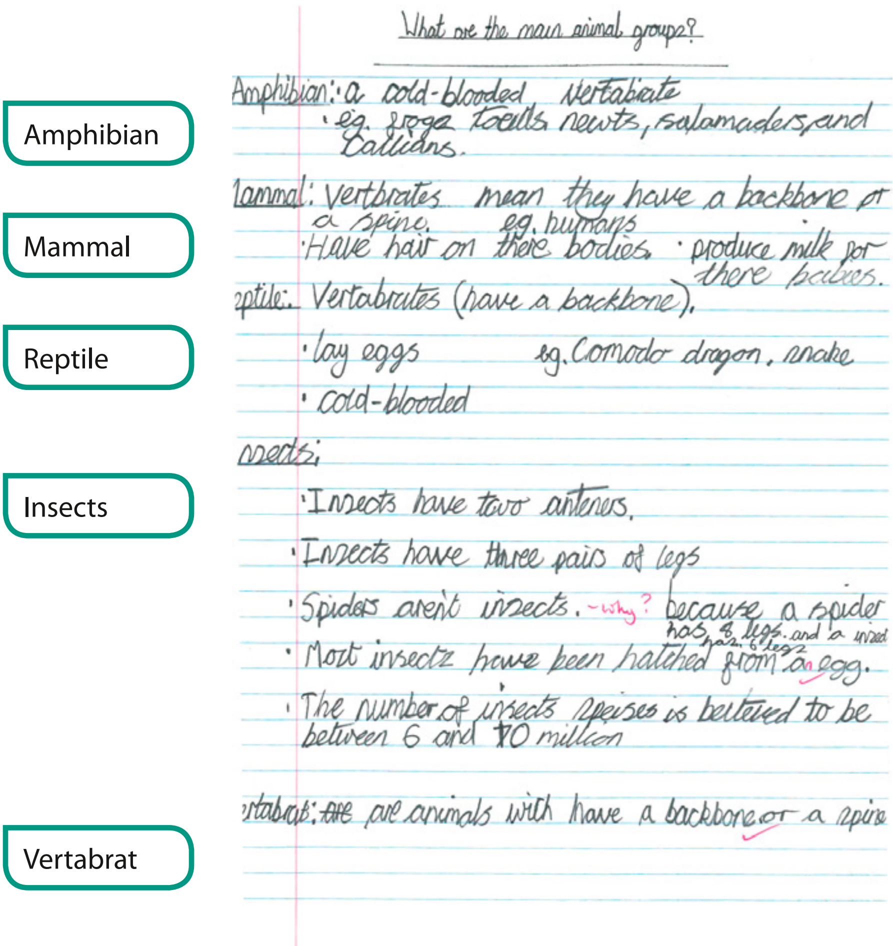


Title	Food groups and body function.
Science content statement(s)	**The pupil can describe the effects of diet,** exercise, drugs and lifestyle **on how the body functions** (year 6)
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language from the national curriculum: • ask their own questions about the scientific phenomena that they are studying, and select the most appropriate ways to **answer** these **questions**, recognising and controlling variables where necessary (i.e. observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests, and finding things out **using a wide range of secondary sources**) • **record data** and results **using** scientific diagrams and labels, classification keys, **tables,** scatter graphs, bar and line graphs
Context	In previous lessons, the class had been learning about the effects of exercise and lifestyle on how their bodies function. They had also been learning about the main food groups. In this activity, pupils were asked to use the internet to find out what each food group does for the body, and to report their findings in a table created electronically. They were also instructed to include examples of food from each group found in their own diet.
Comment	The pupil used secondary sources to gather evidence of the function of each food group in the human diet. They applied their understanding and identified examples of each food group in their own everyday diet. They had not considered the impact of a balanced or unbalanced diet.

Food Group	What does it do for the body?	Where to find it
Carbohydrates	They give you energy.	Pizza, Pasta, Potatoes and Parsnip
Proteins	They help repair the body.	Egg, Poultry, Fish and Beans
Fats	They give you energy.	Butter, Cream, Cheese and Milk
Fibre	They help you digest your food.	Brown rice, Apples, Barley and Oats
Vitamins	They are good for your skin, bones and teeth.	Oranges, Grapes, Apples and Lemon
Minerals	Magnesium is good for your nerves. Iron is good for blood. Calcium is good for your bones.	Magnesium= Banana and Okra Iron= Apricots and nuts Calcium= Spinach and Oyster

Title	Classifying animal groups
Science content statement(s)	**The pupil can use the observable features of** plants, **animals and microorganisms to group, classify and identify them into broad groups, using keys or other methods** (year 6).
Working scientifically statement(s) (if applicable)	N/A
Context	In previous lessons, pupils had been learning about animals and plants and their broad classifications. In this activity, based on their previous knowledge, pupils were given images of the main animal groups and asked to label them with the observable and behavioural features that are used to classify them into the following groups: mammals, amphibians, birds, fish, insects and reptiles.
Comment	The pupil used the observable and behavioural features of animals to classify them as mammals, amphibians, birds, fish, insects and reptiles.

Title	Features used to classify animals
Science content statement(s)	**The pupil can use the observable features of** plants, **animals and microorganisms to group, classify** and identify **them into broad groups,** using keys or **other methods** (year 6).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language from the national curriculum, ask their own questions about the scientific phenomena that they are studying, and select the most appropriate ways to **answer** these **questions,** recognising and controlling variables where necessary (i.e. observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests, and **finding things out using a wide range of secondary sources**).
Context	In previous lessons, pupils had been studying animals, plants and their habitats. In this activity, pupils were asked to use books and the internet to research, and then describe in their own words, the observable features used to classify mammals, amphibians, birds, fish, insects and reptiles.
Comment	The pupil independently used secondary sources of information to find out the features used to classify animals as mammals, amphibians, birds, fish, insects or reptiles.



What are the main animal groups?

Amphibian: a cold-blooded vertabrate
· eg. frogs toads newts, salamaders, and Calicians.

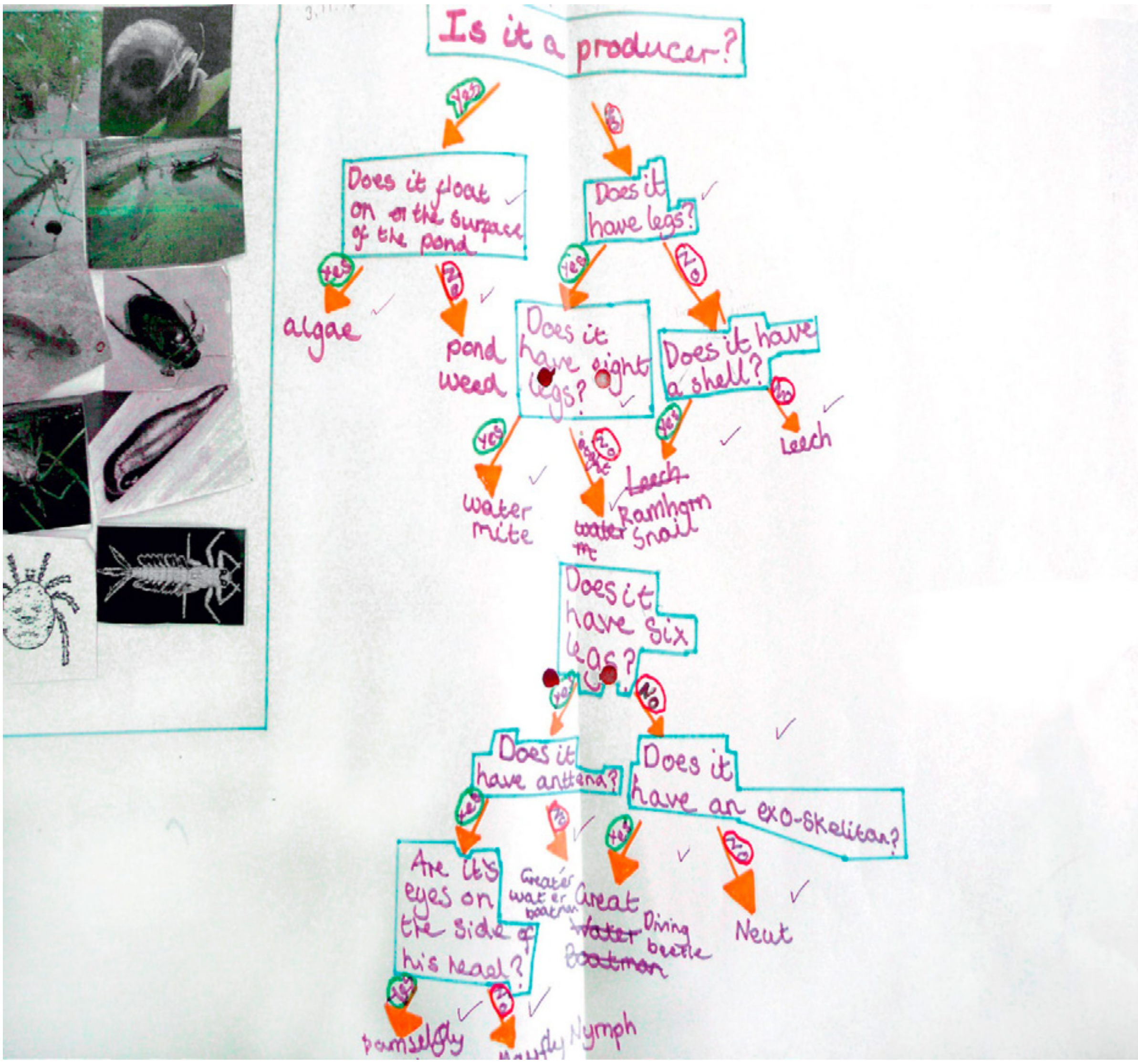
Mammal: Vertbrates mean they have a backbone or a spine. eg. humans
· Have hair on there bodies. · produce milk for there babies.

Reptile: Vertabrates (have a backbone).
· lay eggs eg. Comodo dragon, snake
· cold-blooded

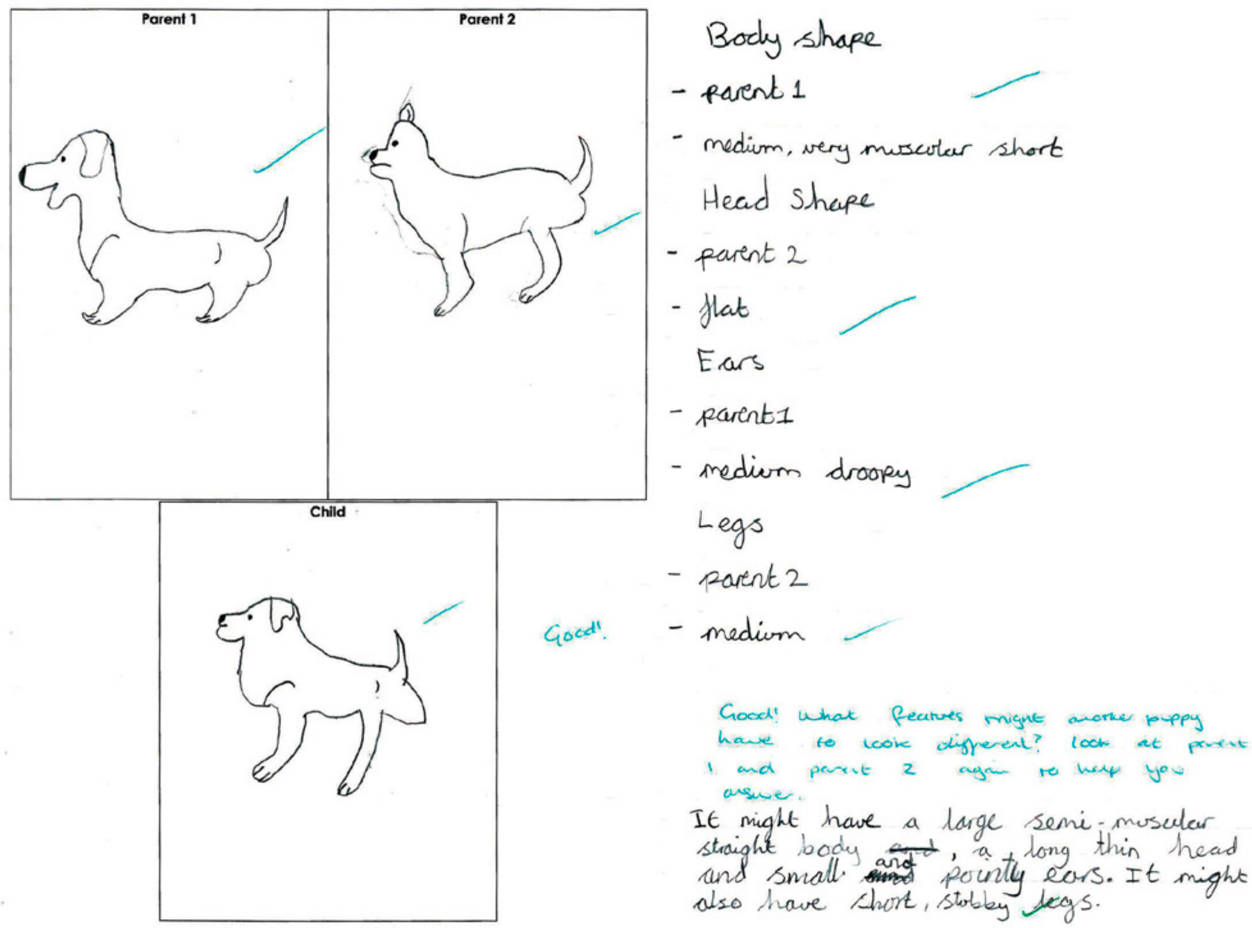
Insects:
· Insects have two anteners.
· Insects have three pairs of legs
· Spiders aren't insects. - why? because a spider has 8 legs. and a insect has 6 legs
· Most insects have been hatched from an egg.
· The number of insects speises is believed to be between 6 and 10 millon

Vertabrat: ~~are~~ are animals with have a backbone or a spine

Title	Making a classification key: pond animals
Science content statement(s)	**The pupil can use the observable features of plants, animals and microorganisms to group, classify and identify them into broad groups, using keys** or other methods (year 6).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language and ideas from the national curriculum, **record data** and results **using** scientific diagrams and labels, **classification keys,** tables, scatter graphs, bar and line graphs.
Context	In previous lessons, pupils had conducted fieldwork at a local Royal Society for the Protection of Birds nature reserve, including pond dipping. They looked at the observable features of the animals they found in the pond, and used classification keys to identify them. In this activity, pupils were asked to create their own classification key to identify animals found in the pond habitat. They were told to generate their own yes/no questions to sort the animals.
Comment	The pupil used observational evidence to devise clear and appropriate questions that lead to single answers. From this, they then created a classification key to sort and identify a range of pond animals.



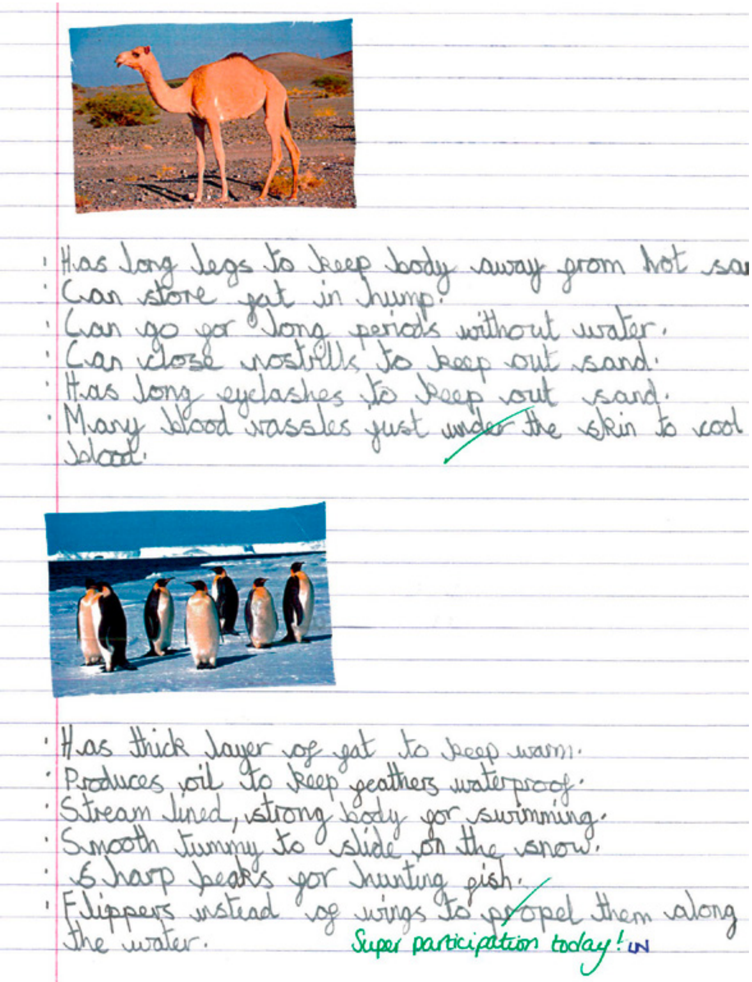
Title	Inherited characteristics of dogs
Science content statement(s)	**The pupil can use the basic ideas of inheritance, variation** and adaptation to describe how living things have changed over time and evolved (year 6); and describe how fossils are formed (year 3) and provide evidence for evolution (year 6).
Working scientifically statement(s) (if applicable)	N/A
Context	In previous lessons, pupils had learnt about how some of the characteristics of parents are passed on to offspring. In this activity, pupils were asked to draw 2 dogs and their 'child', indicating which parent's characteristics have led to those of the child. The written prompt by the teacher was to encourage the pupils to think about other offspring.
Comment	The pupil used the basic ideas of inheritance and variation, for example, that offspring inherit characteristics from both parents, but that not all offspring have identical characteristics to each other.



Good! What features might another puppy have to look different? Look at parent 1 and parent 2 again to help you answer.

It might have a large semi-muscular straight body, a long thin head and small and pointy ears. It might also have short, stubby legs.

Title	Adaptation: camels and penguins
Science content statement(s)	**The pupil can use the basic ideas of** inheritance, variation and **adaptation** to describe how living things have changed over time and evolved (year 6); and describe how fossils are formed (year 3) and provide evidence for evolution (year 6).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language from the national curriculum, ask their own questions about the scientific phenomena that they are studying, and select the most appropriate ways **to answer these questions**, recognising and controlling variables where necessary (i.e. observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests, **and finding things out using a wide range of secondary sources**).
Context	In previous lessons, the class had used secondary sources of information to find out about a range of different animals and their habitats. In this activity, pupils were asked to choose 2 animals and use secondary sources of information to find out how they are adapted to their environment. This pupil chose camels and penguins.
Comment	The pupil used appropriate scientific language to explain how each animal has adapted to its environment, referring to the environmental conditions and their impact.



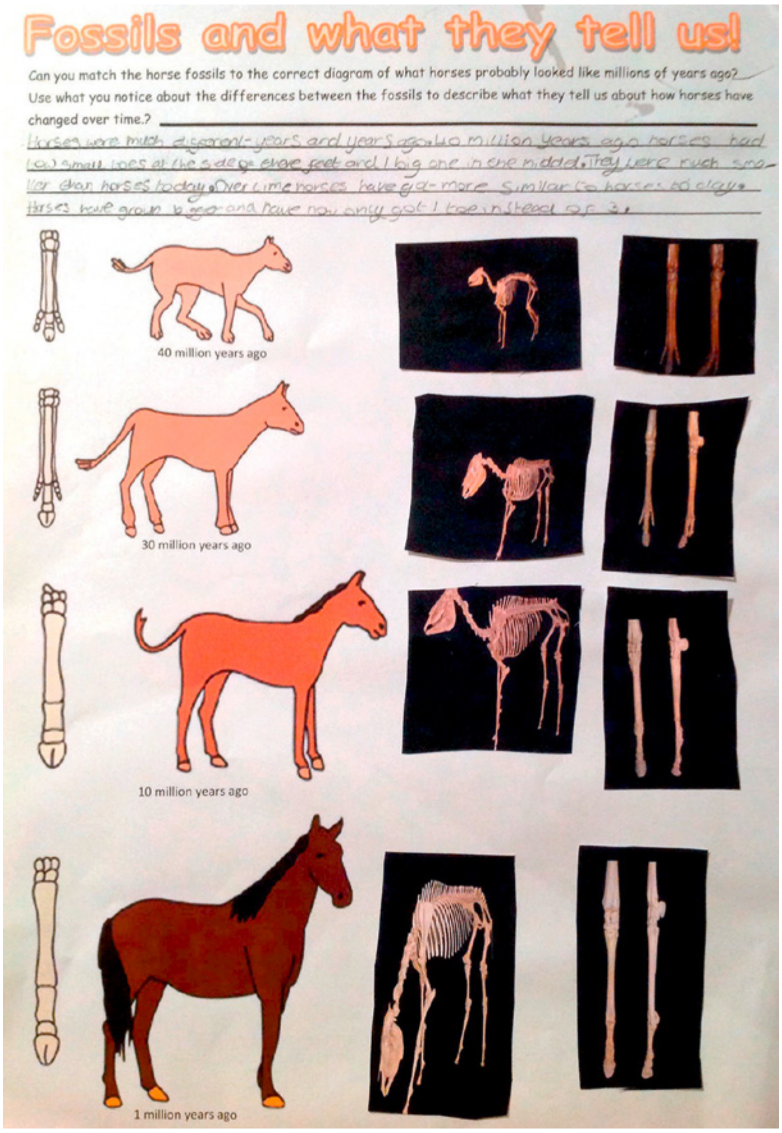
· Has long legs to keep body away from hot sa
· Can store fat in hump.
· Can go for long periods without water.
· Can close nostrils to keep out sand.
· Has long eyelashes to keep out sand.
· Many blood vassles just under the skin to cool blood.

· Has thick layer of fat to keep warm.
· Produces oil to keep feathers waterproof.
· Stream lined, strong body for swimming.
· Smooth tummy to slide on the snow.
· Sharp beaks for hunting fish.
· Flippers instead of wings to propel them along the water.
Super participation today! LN

- Has long legs to keep body away from hot sand.
- Can store fat in hump.
- Can go for long periods without water.
- Can close nostrils to keep out sand.
- Has long eyelashes to keep out sand.
- Many blood vessels just under the skin to cool the blood.

- Has thick layer of fat to keep warm.
- Produces oil to keep feathers waterproof.
- Stream lined, strong body for swimming.
- Smooth tummy to slide on the snow.
- Sharp beak for hunting fish.
- Flippers instead of wings to propel them along under the water.

Title	**Fossil horses**
Science content statement(s)	**The pupil can use the basic ideas of inheritance, variation** and adaptation **to describe how living things have changed over time and evolved** (year 6); and **describe how fossils** are formed (year 3) and **provide evidence for evolution** (year 6).
Working scientifically statement(s) (if applicable)	N/A
Context	In previous activities, pupils were introduced to the idea of evolution as a change over time, and were asked to think about where any evidence might come from to support the idea. Having discussed what they could remember about fossil formation, pupils were provided with a worksheet with images of horses and their fossilised skeletons, together with the prompt, and asked to describe what it might tell us about horse evolution.
Comment	The pupil described, in simple terms, the evidence that the fossils provide about the way horses' skeletons have changed over time.



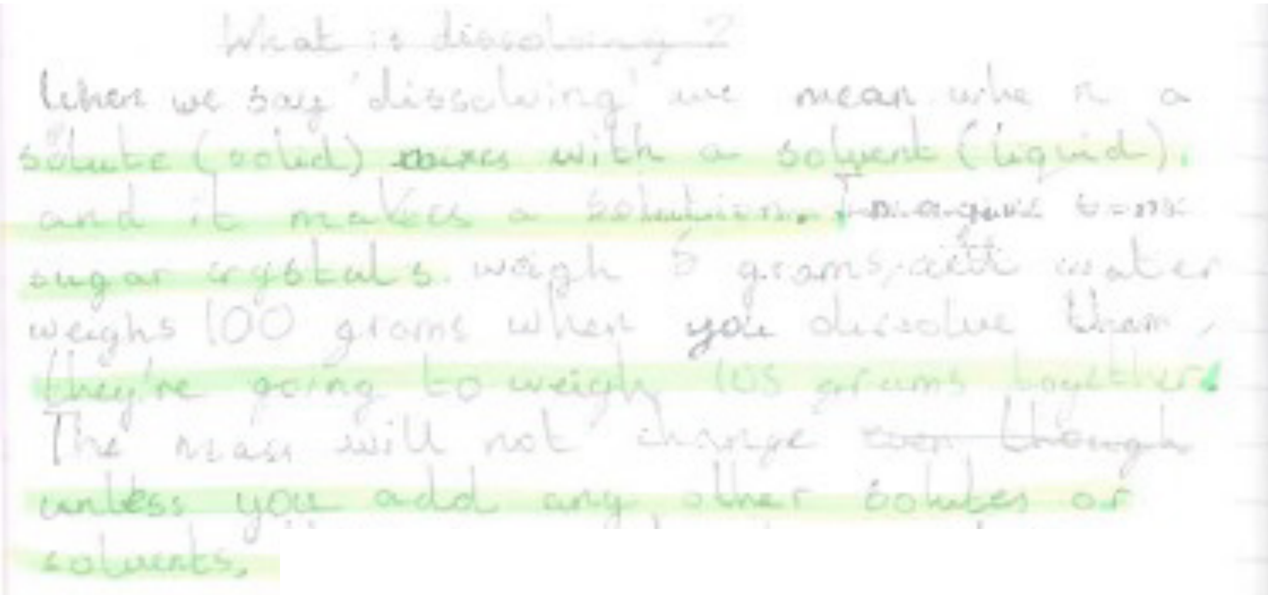
Horses were much different years and years ago. 40 million years ago horses had 2 small toes at the sides of their feet and 1 big one in the middle. They were much smaller than horses today. Over time, horses have got more similar to horses today. Horses have grown bigger and have now only got 1 toe instead of 3.

Title	Dissolving explanation
Science content statement(s)	The pupil can identify and describe what happens when dissolving occurs in everyday situations; and describe how to separate mixtures and solutions into their components (year 5).
Working scientifically statement(s) (if applicable)	**The pupil can, using appropriate scientific language from the national curriculum, draw conclusions**, **explain** and evaluate their methods and **findings**, **communicating these in a variety of ways.**
Context	In previous lessons, pupils had carried out practical work, which involved dissolving different amounts of sugar in a fixed volume of water and measuring how the mass changed. They focused in particular on accurate measuring and looking out for patterns. Having reviewed a variety of non-fiction science books, pupils were encouraged to bring all their ideas together in this activity and use scientific vocabulary to explain dissolving, as if they were writing for a non-fiction science book.
Comment	The pupil described the process of dissolving. They used appropriate scientific vocabulary throughout.

What is dissolving?

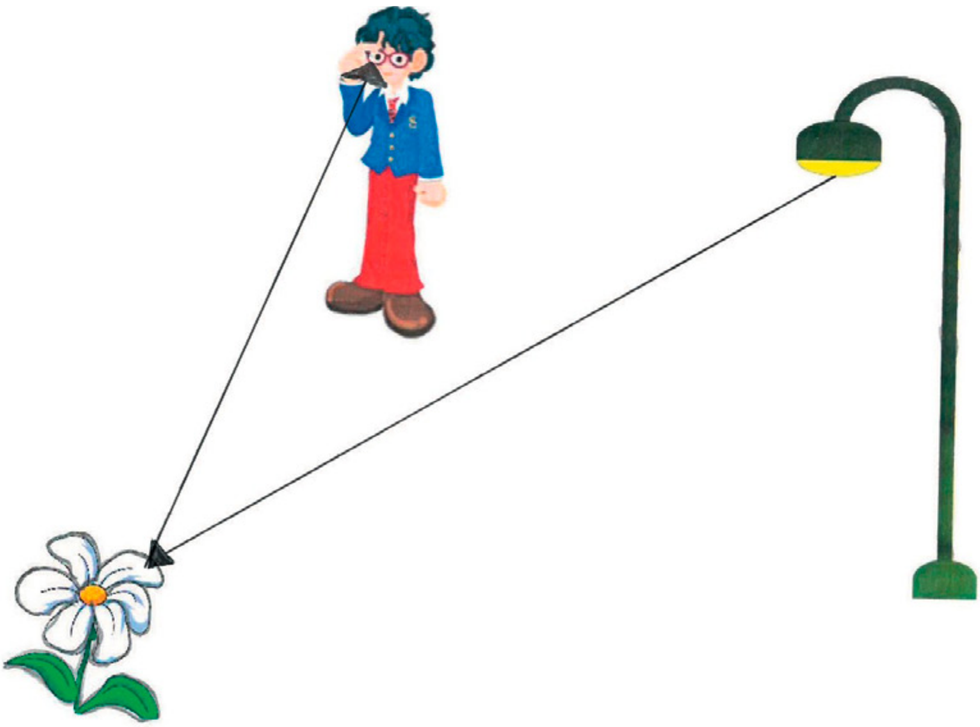
When we say dissolving we mean when a solute (solid) mixes with a solvent (liquid) and makes a solution.

Imagine some sugar crystals weigh 5 grams and water weighs 100 grams, when you dissolve them they're going to weigh 105 grams together. The mass will not change unless you add any other solutes or solvents.



What is dissolving?
When we say 'dissolving' we mean whe n a solute (solid) mixes with a solvent (liquid), and it makes a solution. Imagine some sugar crystals weigh 5 grams and water weighs 100 grams when you dissolve them, they're going to weigh 105 grams together. The mass will not change even though unless you add any other solutes or solvents.

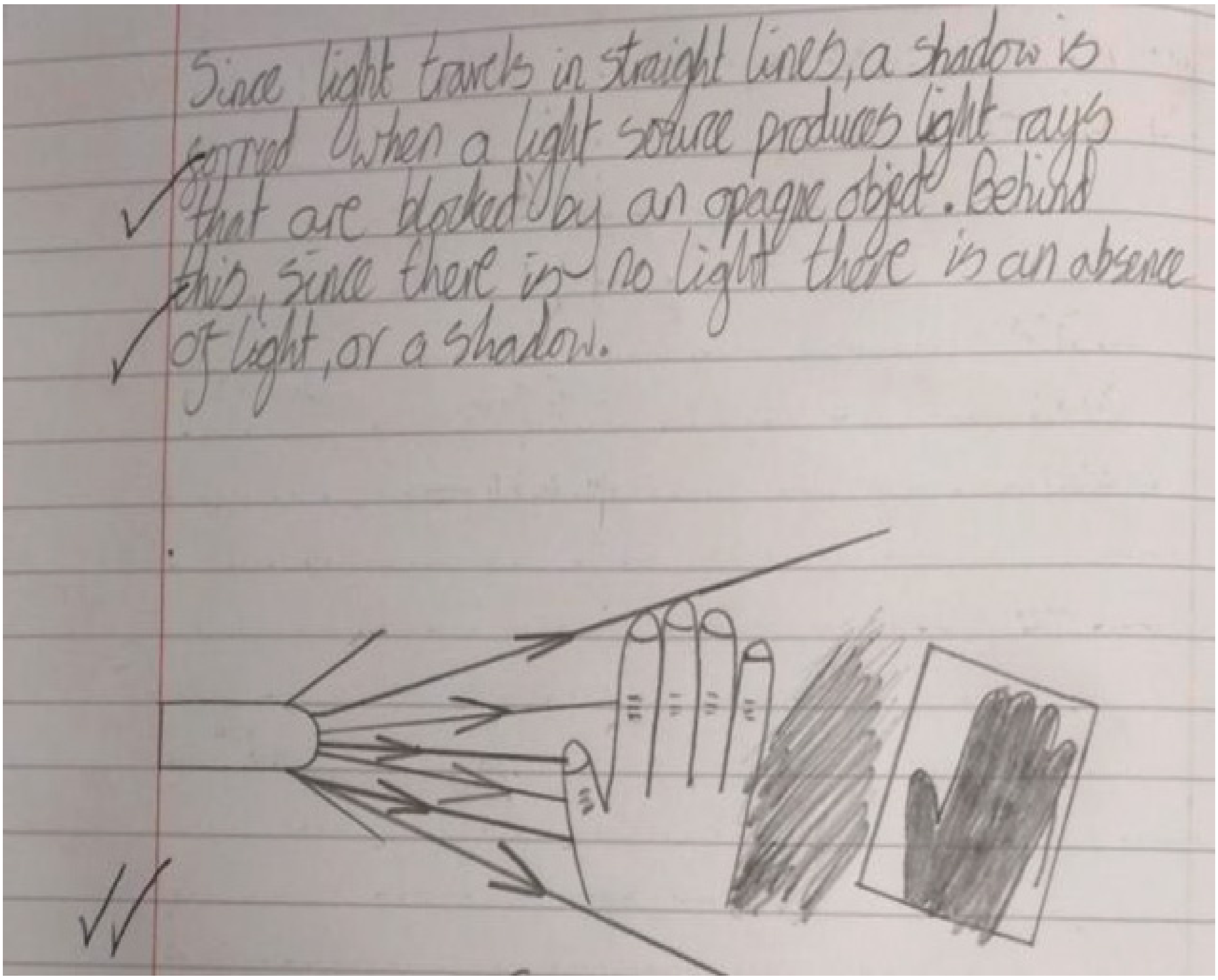
Title	How we see
Science content statement(s)	**The pupil can use the idea that light from light sources, or reflected light, travels in straight lines and enters our eyes to explain how we see objects** (year 6), and the formation (year 3), shape (year 6) and size of shadows (year 3).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language from the national curriculum, **record data** and results **using scientific diagrams** and labels, classification keys, tables, scatter graphs, bar and line graphs.
Context	In previous lessons, pupils had learnt that light travels in straight lines and had spent time exploring with torches and objects to experience and describe the phenomena of how we see objects. In this activity, pupils were asked to show their understanding by drawing a diagram, and then explain in their own words what is happening.
Comment	The pupil drew the light travelling in a straight line from the source to the flower and reflected from the flower to the boy's eyes, to explain how he could see it.



The boy ~~sees~~ can see the flower because the light from the light source travels to the flower then reflects off the flower to the boy's eyes.

The light travels to the flower then reflects off it to the boy's eyes.

Title	Shape of shadows
Science content statement(s)	**The pupil can use the idea that light from light sources, or reflected light, travels in straight lines** and enters our eyes to explain how we see objects (year 6), **and the formation** (year 3), **shape** (year 6) and size **of shadows** (year 3).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language and ideas from the national curriculum, **record data** and results **using scientific diagrams** and labels, classification keys, tables, scatter graphs, bar and line .
Context	In previous lessons, pupils had investigated how to change the size of shadows, building on their learning from year 3. In this activity, pupils made shadows of different shaped objects and explained the shapes of the shadows.
Comment	The pupil used the idea of light travelling in straight lines to show in a diagram how the shape of the shadow is formed.



Since light travels in straight lines, a shadow is formed when a light source produces light rays that are blocked by an opaque object. Behind this, since there is no light there is an absence of light, or a shadow.

Title	**Shoe friction investigation**
Science content statement(s)	**The pupil can describe the effects of simple forces that involve contact (air and water resistance, friction)** (year 5), that act at a distance (magnetic forces, including those between like and unlike magnetic poles) (year 3), and gravity (year 5).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language and ideas from the national curriculum: • ask their own questions about the scientific phenomena that they are studying, and select the most appropriate ways to answer these questions, **recognising and controlling variables where necessary** (for example, observing changes over different periods of time, noticing patterns, grouping and classifying things, **carrying out comparative and fair tests**, and finding things out using a wide range of secondary sources) • **use a range of scientific equipment to take accurate and precise measurements or readings, with repeat readings where appropriate** • **record data and results using scientific diagrams and labels,** classification keys, **tables**, scatter graphs, bar and line graphs • **draw conclusions**, **explain** and evaluate their methods and **findings, communicating these in a variety of ways** • **raise further questions that could be investigated, based on their data and observations**
Context	In previous lessons, pupils had identified different types of forces and considered some of the effects that forces can have. They learnt that friction is a contact force that slows down moving objects and acts in the opposite direction to motion. In this activity, pupils were challenged to plan an enquiry to find out which surfaces involve the most friction, using the resources that were provided. Some decided to use Newton metres to measure forces, but in this example they tip a ramp to find the angle at which a shoe would move.
Comment	The pupil collected measurements, repeatedly checking for reliability, to ensure fair testing. They calculated the average angle at which the slope needed to be for the shoe to slide and then used this data to organise the surface materials into order of increasing friction. They went on to draw a conclusion, explaining which material had the least and most friction, and using scientific ideas about materials, began to explain why. They predicted that the materials must have different surfaces, for example rough and smooth, identifying a prediction that they could go on to test.

Which surface gives the best friction?

Aim

My aim is to find out which surface gives the best friction.

Prediction

I predict that the carpet will give the best friction.

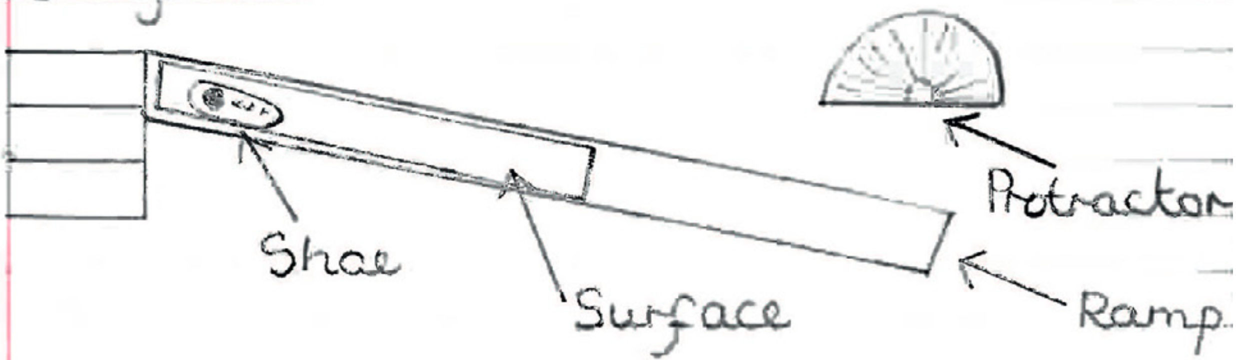
I think this because the Carpet looks rough and it can hold the grip of the slippy shoe.

Method

- In this investigation I will be changing the surface of a ramp to see how it affects friction.
- I will use carpet, lino, wood, corrugated card and a bin bag.
- I will be measuring the angle of the ramp.

- I will keep the shoe same.

Diagram



Results

Surface	Angle 1	Angle 2	Angle 3
Wood	35°	35°	30°
Carpet	48°	40°	45°
Lino	42°	43°	41°
Bin Bag	30°	37°	29°
Corrugated Card	41°	40°	43°

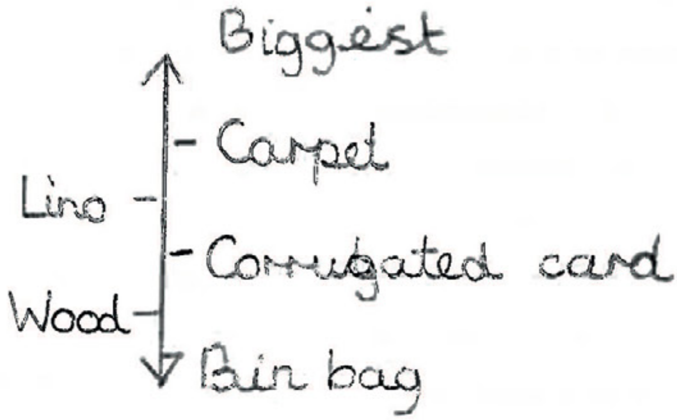
Biggest →

Surface	Average
Carpet	44°
Lino	42°
Corrugated Card	41°
Wood	33°
Bin Bag	32°

Smallest →

Conclusion

I have found out that Carpet had the biggest friction and the Bin bag had the smallest friction.



My prediction was right because I predicted carpet would have the large st friction and the carpet had the hold of the grip of the shoe so the carpet was the best surface.

I think the bin bag had the smallest friction because it was slippy and you could easily slide through the surface. The bin bag cannot get the hold of the grip of the shoe which tells me that it isn't suitable for slippy shoes.

The surfaces reacted differently to the shoe. ~~becau~~ I think this is because the material was different and the roughness and the softness of the surface must be different.

Title	Resistance in liquids investigation
Science content statement(s)	**The pupil can describe the effects of simple forces that involve contact (air and water resistance, friction**) (year 5), that act at a distance (magnetic forces, including those between like and unlike magnetic poles) (year 3), and gravity (year 5).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language from the national curriculum: • **ask their own questions about the scientific phenomena that they are studying**, and **select the most appropriate ways to answer these questions**, **recognising and controlling variables where necessary** (i.e. observing changes over different periods of time, noticing patterns, grouping and classifying things, **carrying out comparative and fair tests**, and finding things out using a wide range of secondary sources) • **use a range of scientific equipment to take accurate and precise measurements or readings, with repeat readings where appropriate** • **record data and results using scientific diagrams and labels,** classification keys, **tables**, scatter graphs, bar and line graphs • **draw conclusions**, **explain** and evaluate **their methods and findings**, communicating these in a variety of ways
Context	In previous lessons, pupils had talked about landing a probe on a planet and discussed how the forces on the probe might be different if the planet was made of different substances. In this activity, pupils were challenged to plan and carry out an enquiry, using the resources on their table, to explore this and find out if different liquids provided different drag forces.
Comment	The pupil identified the variables to carry out a fair test in order to compare the drag force (friction) of different liquids. They ensured they had accurate measurements, repeatedly for reliability and then calculated the mean average. They used their measurements to put the liquids into order of friction, and their conclusion was consistent with the data. They began to use scientific ideas to justify their observations, for example by thinking about the possible reason for the differences in the drag force in the liquids. However, the attempted use of the idea of molecules is above what would be expected at KS2.

Which liquid causes the most friction (drag)?

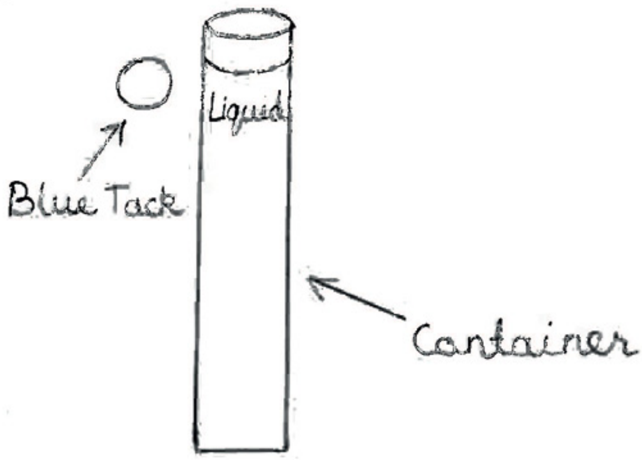
The variable I will change is the liquid.

The variable I will measure is the time.

The variables I will keep the same to make it a fair test is the amount of liquid and the blue tack.

Which liquid causes the most friction (drag)?

The variable I will change is the liquid.
The variable I will measure is the time.
The variables I will keep the same to make it a fair test is the amount of liquid and the blue tack.



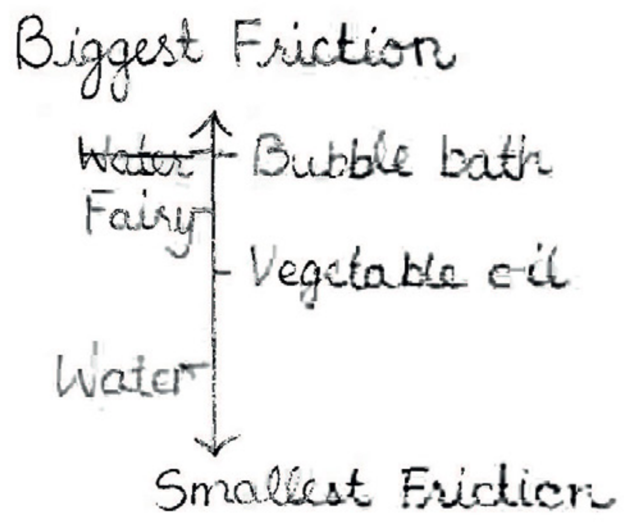
1. First, pour the liquid into the container.
2. Put the blue tack in the liquid and time it with a stop watch - until the blue tack sinks at the bottom of the container.
3. Continue the same method for the other 3 liquids.

1. First, pour the liquid into the container.
2. Put the blue tack in the liquid and time it with a stop watch - until the blue tack sinks at the bottom of the container.
3. Continue the same method for the other 3 liquids.

Results

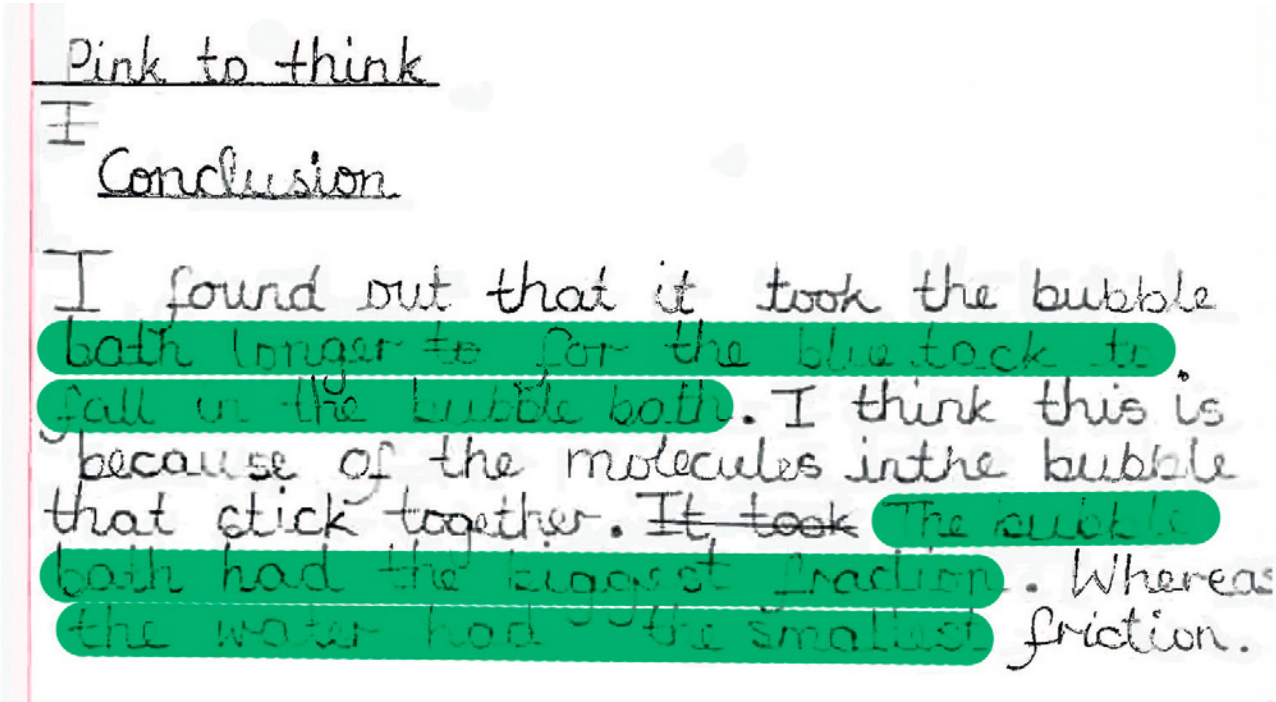
Liquid	Test 1	Test 2	Test 3	Average
Fairy	32 sec	32 sec	31 sec	31 r2
Bubble Bath	1.26min	1.29min	1:37sec	1r3
Water	1 sec	1 sec	1 sec	1
Vegetable oil	3 sec	3 sec	5 sec	3r2

Conclusion



I think this because the molecules hold each other tightly whereas the ~~wa~~ molecules of the water are just touching each other.

I think this because the molecules hold each other tightly whereas the molecules of the water are just touching each other.



Pink to think

I

Conclusion

I found out that it took the bubble bath longer ~~to~~ for the blue tack to fall in the bubble bath. I think this is because of the molecules inthe bubble that stick together. ~~It took~~ The bubble bath had the biggest fraction. Whereas the water had the smallest friction.

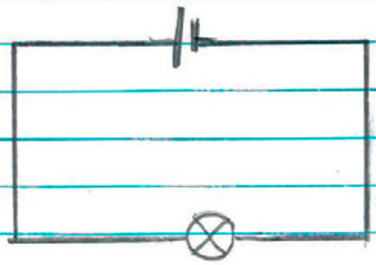
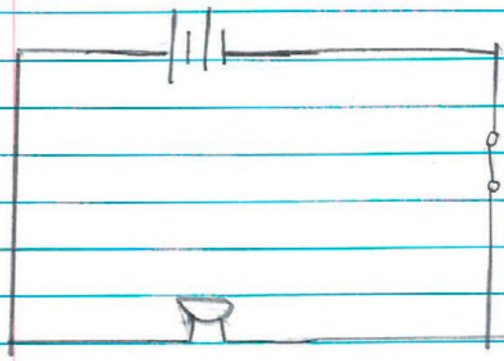
Conclusion

I found out that it took the bubble bath longer for the blue tack to fall in the bubble bath.

The bubble bath had the biggest friction whereas the water had the smallest friction.

Title	Circuit diagrams
Science content statement(s)	**The pupil can use simple apparatus to construct** and control **a series circuit, and describe how the circuit may be affected when changes are made to it; and use recognised symbols to represent simple series circuit diagrams** (year 6).
Working scientifically statement(s) (if applicable)	The pupil can, using appropriate scientific language from the national curriculum: • ask their own questions about the scientific phenomena that they are studying, and **select the most appropriate ways to answer** these **questions,** recognising and controlling variables where necessary (i.e. observing changes over different periods of time, **noticing patterns,** grouping and classifying things, carrying out comparative and fair tests, and finding things out using a wide range of secondary sources) • **record data and results using scientific diagrams** and labels, classification keys, tables, scatter graphs, bar and line graphs
Context	In previous lessons, pupils had shared their own ideas about electricity. In this activity, they were given simple apparatus and asked to construct a series circuit, before drawing a circuit diagram to represent it. They were challenged to draw further diagrams with different components and constructions, and to describe how the circuit is affected.
Comment	The pupil constructed circuits and then represented the circuits in circuit diagrams using correct symbols. They noticed a pattern in the relationship between voltage and bulb brightness.

You need a circuit to work it!

Circuit Diagram	What I notice
	The lamp is quite bright. I used a cell that it is 1.5v and a lamp joint with crocodile clips.
	I added an extra cell so I've got 3v. With a lamp. The lamp went really bright with a larger amout of voltage.
	I added a motor to the circuit and the lamp went dimmer where the power was also going to the motor as well as the lamp.
	I added a buzzer and a switch and tried turning it on and off. (opening and closing) and the buzzer worked when the switch was closed.

The larger the voltage the brighter the bulb.

Standards & Testing Agency

2018 key stage 2 teacher assessment exemplification: science
PDF version product code: STA/18/8191/e ISBN: 978-1-78644-945-0

For more copies
Additional printed copies of this booklet are not available. It can be downloaded from www.gov.uk/government/publications

If you have any queries regarding these exemplification materials contact the national curriculum assessments helpline on 0300 303 3013 or email assessments@education.gov.uk