PLAN
Planning for assessment

Examples of Work

J.R.

Rocks - Year 3

Primary Science
Education Consultancy

THE
Partnership

Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Description of activity

The pupils were asked to record any knowledge about rocks that they had prior to starting the topic.

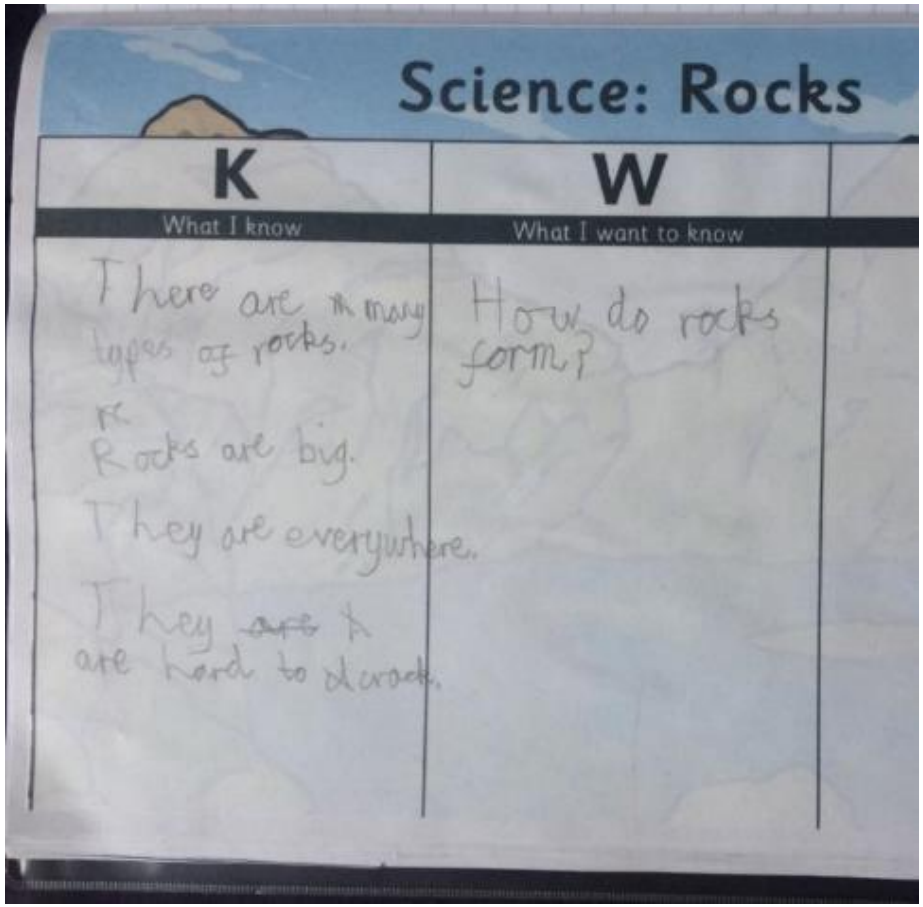
EVIDENCE OF LEARNING

Oral evidence

Teacher observations

Because of the topic title on the KWL grid, J.R. focused only on rocks and did not consider fossils or soils.

Examples of work



ASSESSMENT

Knowledge

J.R. has little current knowledge of the different types of rocks. He is not using the specific scientific vocabulary for this topic. He shows no prior knowledge of the uses of rocks. He recognises one property of rocks – 'hard'.

Working scientifically

Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Description of activity

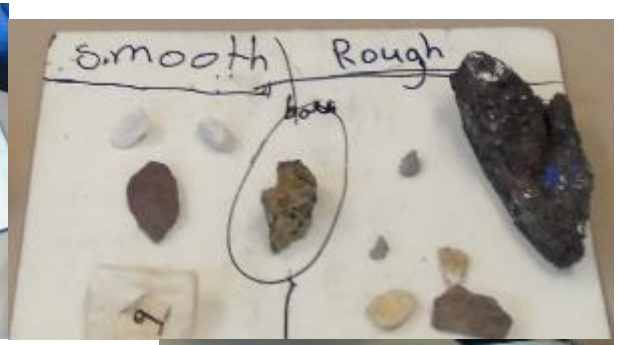
The pupils worked in groups to sort the rocks in different ways using their own criteria.

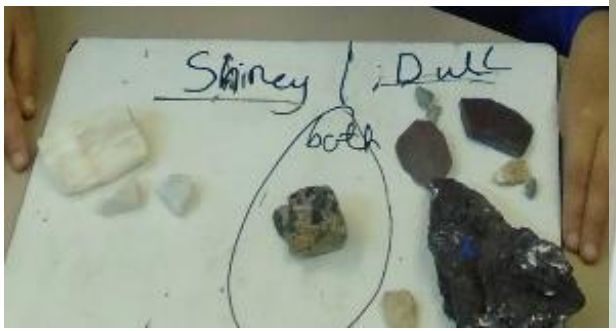
EVIDENCE OF LEARNING

Oral evidence

Teacher observations

Examples of work





ASSESSMENT

Knowledge

J.R.'s group has sorted the rocks by texture, size, appearance and weight.

Working scientifically

J.R. made simple observations and classified rocks using his own criteria, recording with discrete and overlapping sets.

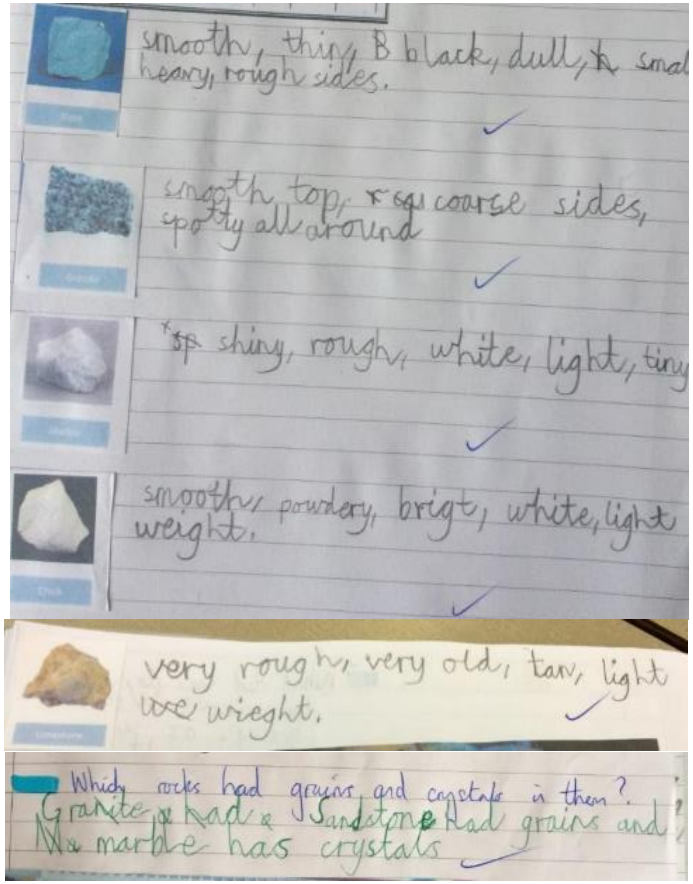
Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Description of activity

After grouping the rocks, the pupils took a closer look at the different types of rock describing them in more detail.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		J.R. used a wider range of vocabulary to describe the appearance and simple physical properties of a selection of rocks.
Teacher observations		Working scientifically

Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Description of activity

The pupils were presented with the question, 'Which rock would be best suited to build steps outside?' First the pupils identified the properties that the rock would need. Then, they planned a series of comparative tests to determine the most suitable rock for the purpose.

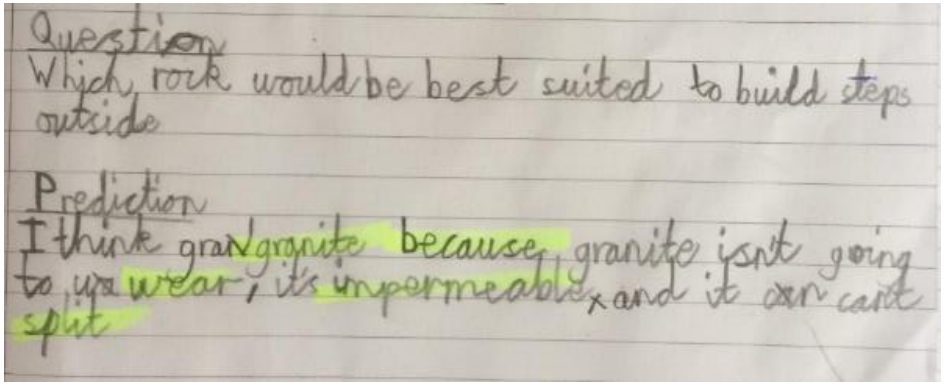
EVIDENCE OF LEARNING

Oral evidence

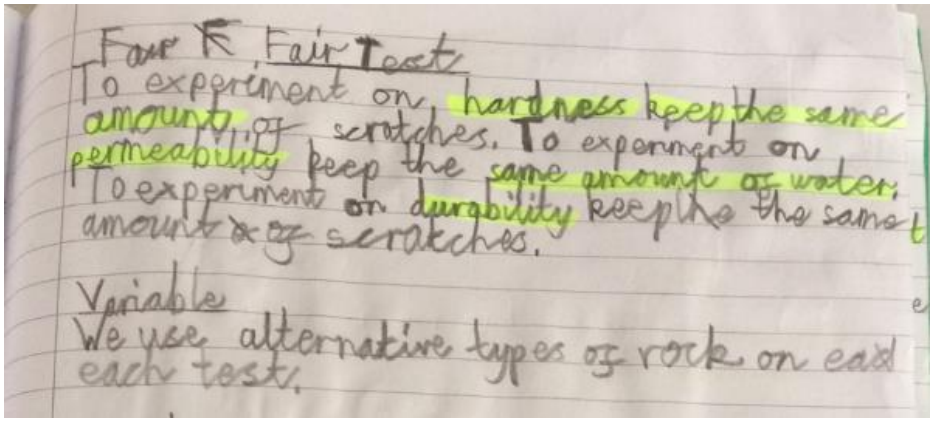
Teacher observations

The durability test involved rubbing not scratching.

Examples of work


Question
Which rock would be best suited to build steps outside

Prediction
I think granite because granite isn't going to wear, it's impermeable and it can't split


Fair Test
To experiment on hardness keep the same amount of scratches. To experiment on permeability keep the same amount of water. To experiment on durability keep the same amount of scratches.

Variable
We use alternative types of rock on each test.

ASSESSMENT

Knowledge

Working scientifically

J.R. used his knowledge of properties and his previous observations of rocks to make a prediction. He set up a comparative test, identifying variables to change and control.

Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Description of activity

Then, they carried out the comparative tests to determine the most suitable rock for the purpose.

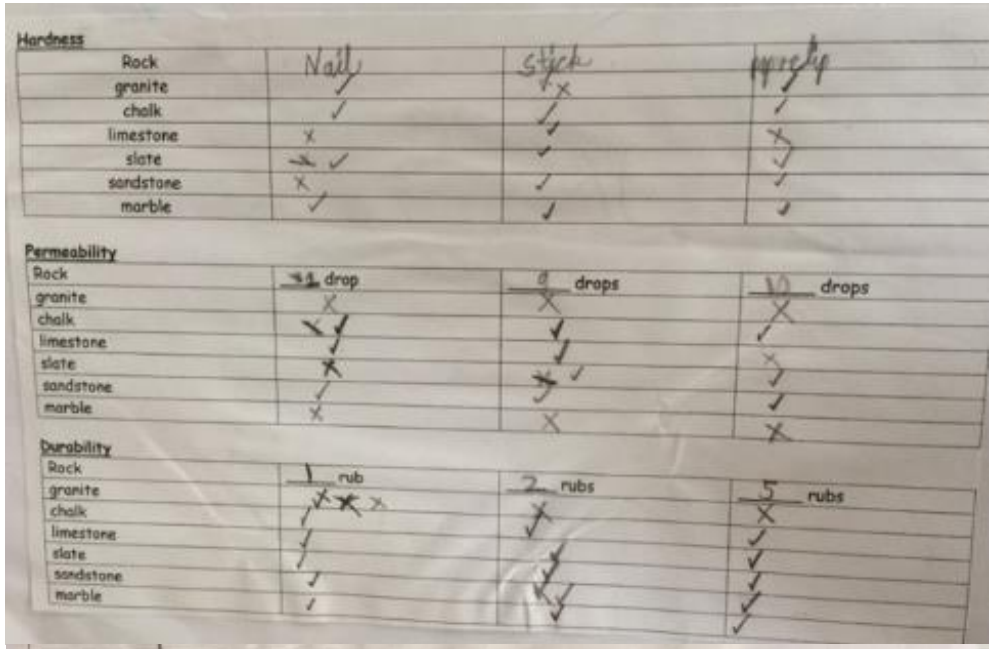
EVIDENCE OF LEARNING

Oral evidence

Teacher observations

J.R. awarded marks to the rocks for each property based on the number of crosses in the row. For durability, 3 crosses for granite shows that it is durable (in all three rub tests there was no marking). For permeability, 3 crosses indicates that it is not permeable as a cross indicates that no water soaked in.

Examples of work



Hardness

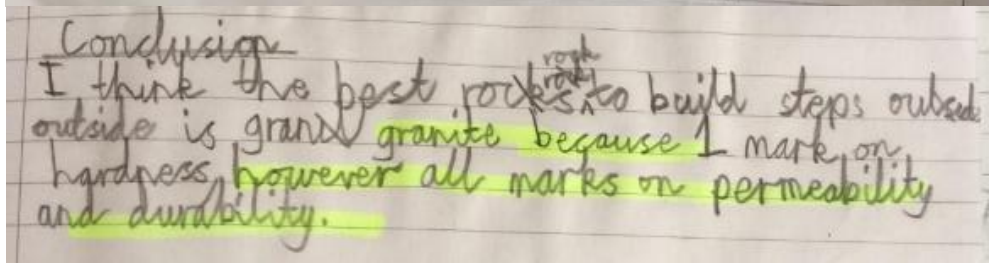
Rock	Nail	Stick	Fingernail
granite	✓	✗	✓
chalk	✓	✓	✓
limestone	✗	✓	✓
slate	✗ ✓	✓	✓
sandstone	✗	✓	✓
marble	✓	✓	✓

Permeability

Rock	1 drop	6 drops	10 drops
granite	✗	✗	✓
chalk	✗ ✓	✓	✗
limestone	✓	✓	✓
slate	✗	✓	✓
sandstone	✓	✗	✓
marble	✗	✗	✗

Durability

Rock	1 rub	2 rubs	5 rubs
granite	✗ ✗ ✗	✗	✗
chalk	✓	✓	✓
limestone	✓	✓	✓
slate	✓	✓	✓
sandstone	✓	✓	✓
marble	✓	✓	✓



Conclusion

I think the best rock (rocks) to build steps outside is granite because 1 mark on hardness, however all marks on permeability and durability.

ASSESSMENT

Knowledge

J.R. tested and understood the properties of hardness, permeability and durability and applied his knowledge to select a rock that is suitable for the purpose.

Working scientifically

J.R. recorded his data on a prepared table. He drew a conclusion from his results which answers the original question.

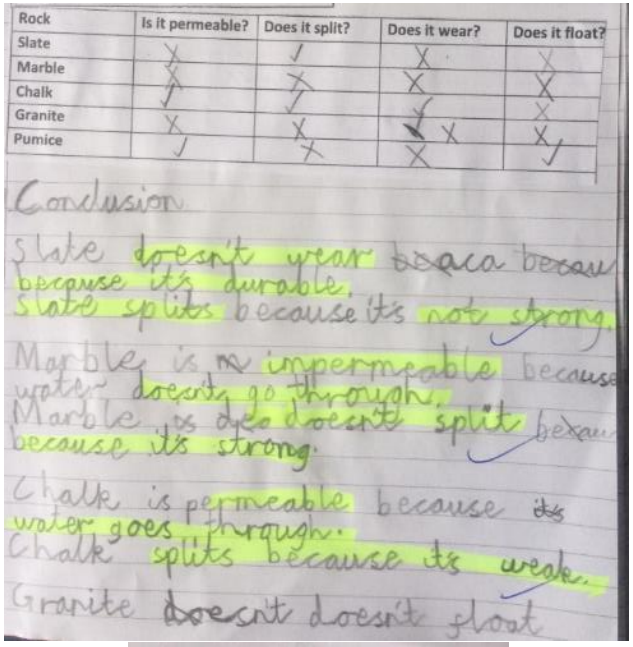
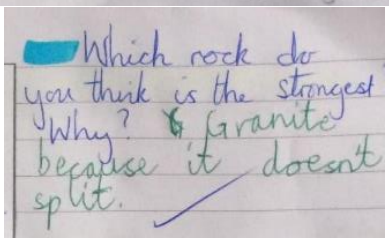
Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Description of activity

To consolidate their understanding and explore a wider range of properties, the pupils conducted a 'virtual experiment' and recorded the results.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		J.R. compared the rocks and gave simple definitions of the properties. His answer to the marking question uses evidence from the experiment, but this activity did not require him to apply this knowledge.
Teacher observations		Working scientifically
		J.R. wrote statements about the rocks which are consistent with the data.

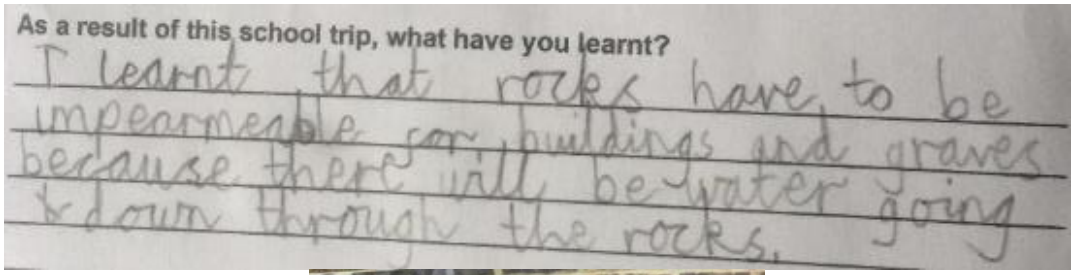
Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Description of activity

The class went on a walk to a local church and its cemetery to observe the uses of a range of types of rock and changes to them over time.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
"Marble is a good rock for graves because it does not wear away and you can read the names. Sandstone wears away, so it is harder to read. "	 	In the churchyard, J.R. noted that there were many different types of rock and identified and described them. He could identify different types of rock and why they had been used. In his report, he showed simple understanding of weathering and permeability.
Teacher observations		Working scientifically

Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Describe in simple terms how fossils are formed when things that have lived are trapped within rock.

Description of activity

After watching some videos, the class discussed the stages of fossil formation and recorded the process in their own words.

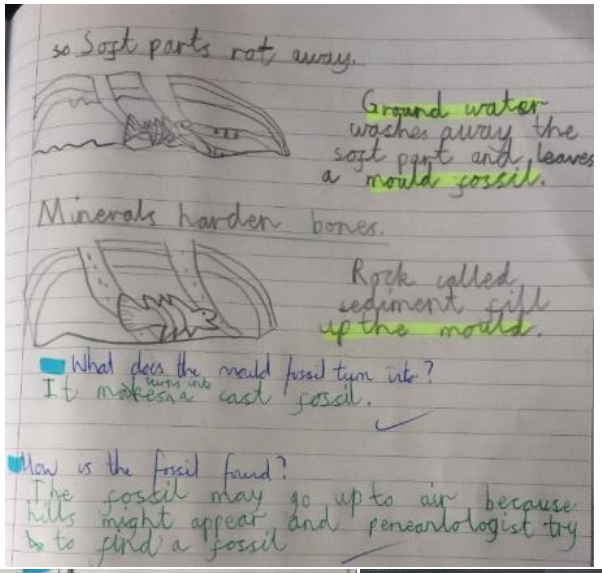
EVIDENCE OF LEARNING

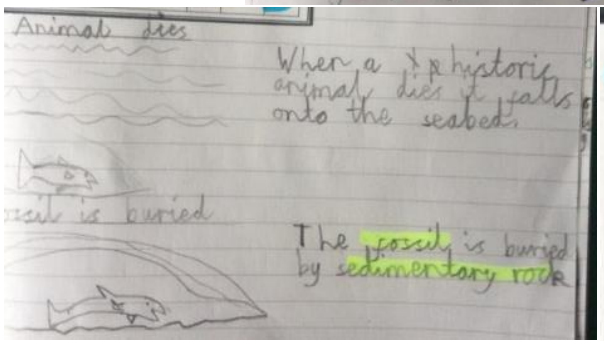
Oral evidence

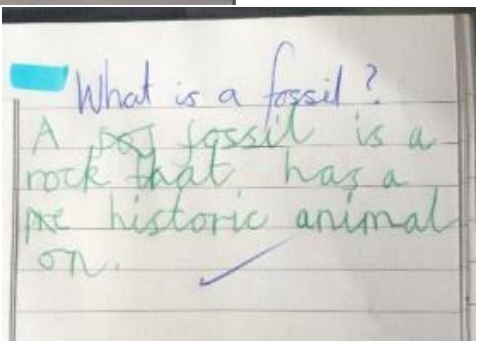
Teacher: “Is it a fossil when it is first buried?”

J.R.: “Not until the animal has rotted away.”

Examples of work







ASSESSMENT

Knowledge

J.R. defined a fossil in his own words.

J.R. described the sequence of fossil formation in his own words using scientific vocabulary. He also knows why buried fossils appear at the surface.

Teacher observations

Working scientifically

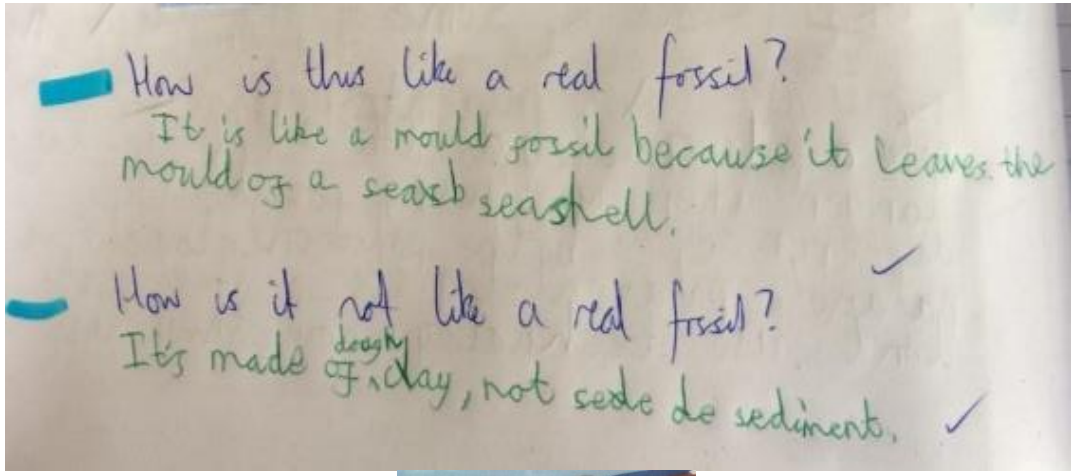
Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Describe in simple terms how fossils are formed when things that have lived are trapped within rock.

Description of activity

The pupils made their own fossils by pressing a shell into clay and making a plaster cast.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		J.R. applied his knowledge of the process of fossil formation to make simple comparisons between his model fossil and the real ones.
Teacher observations		Working scientifically

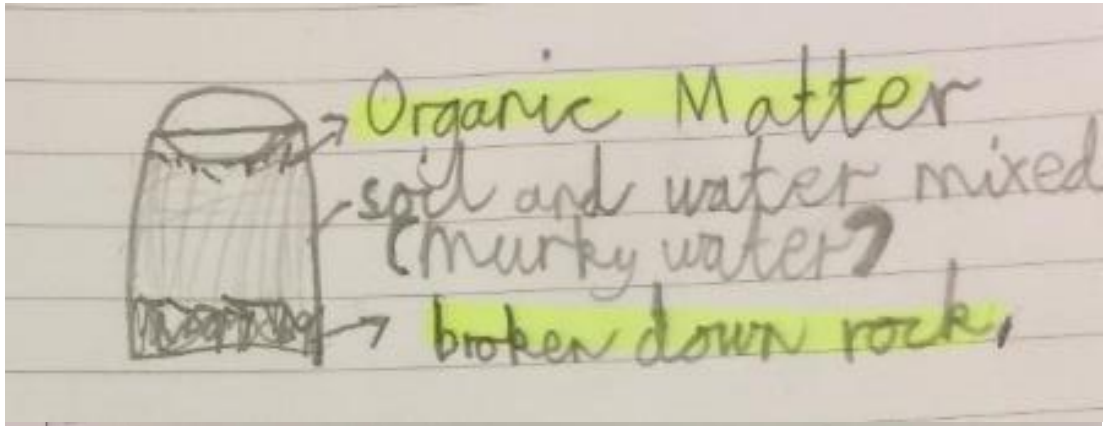
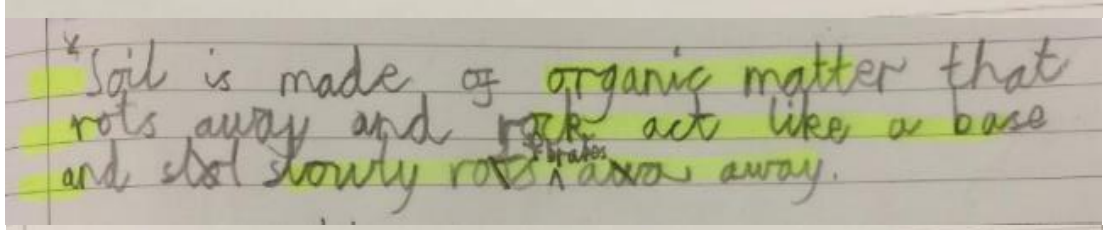
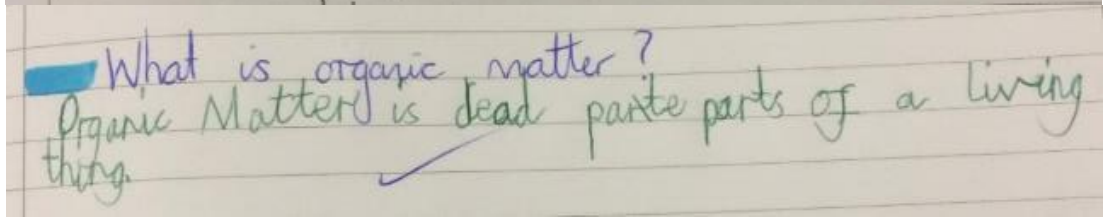
Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Recognise that soils are made from rocks and organic matter.

Description of activity

The pupils filled a cup/bottle a quarter full of soil and topped it up to three-quarters full with water. They then shook it, to mix it. The pupils observed this over a period of time as it separated showing what the soil was made from. They were then asked to record their observations.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		J.R. correctly labelled the main components of the soil and wrote a simple description of how soil is formed. He described what organic matter is.
Teacher observations		Working scientifically
		J.R. presented his observations as a labelled diagram.

Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Recognise that soils are made from rocks and organic matter.

Description of activity

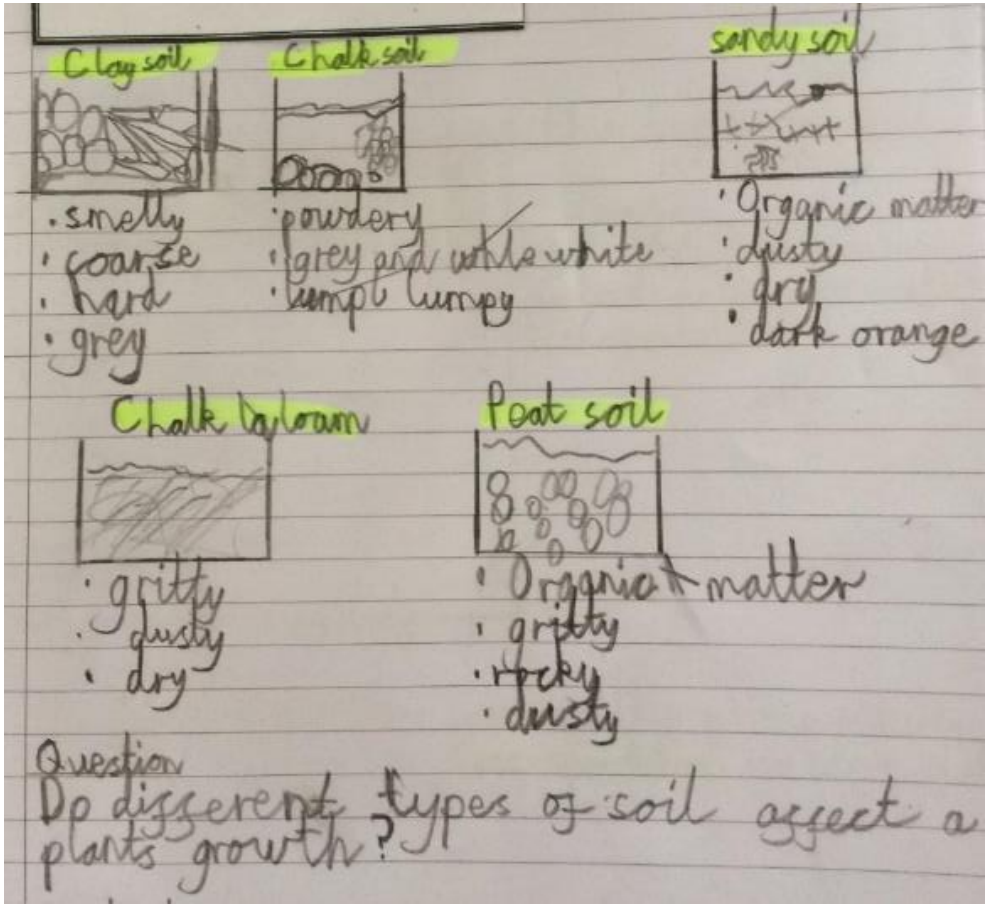
As part of a later topic on plants, the pupils made observations of the characteristics of different soil types.

EVIDENCE OF LEARNING

Oral evidence

Teacher observations

Examples of work



ASSESSMENT

Knowledge

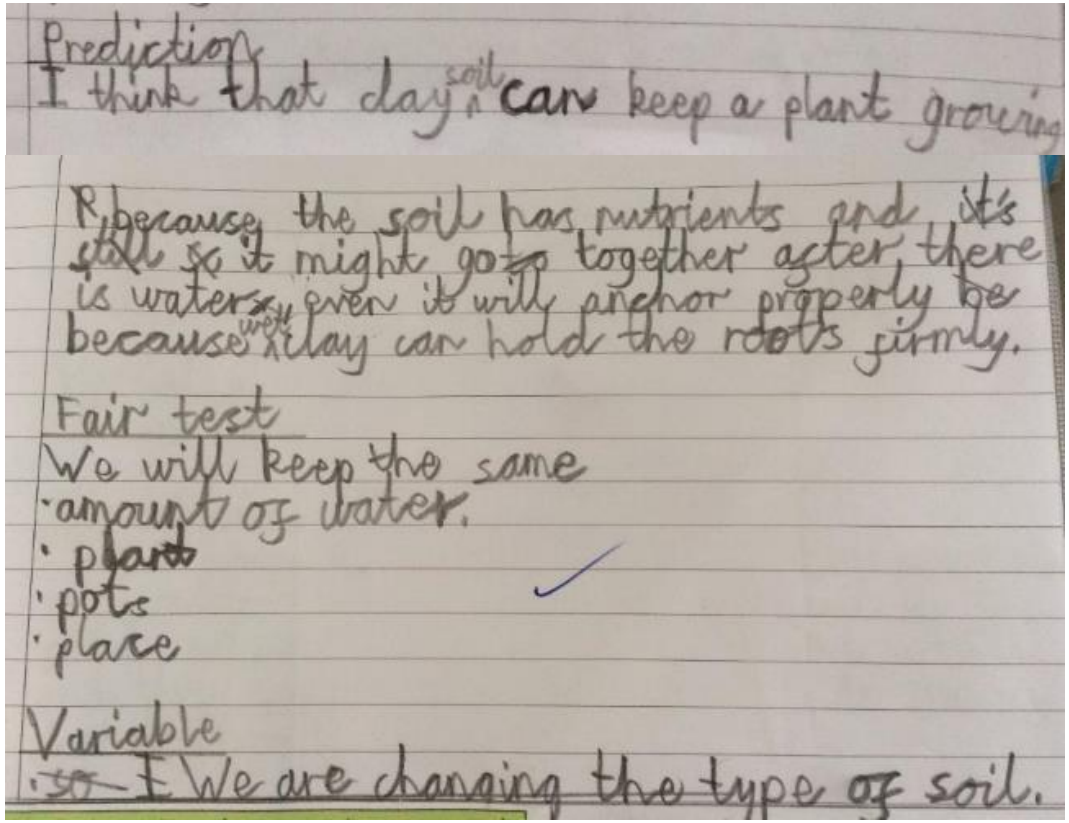
J.R. remembered the components of soil and identified them in some of the different soil types.

Working scientifically

J.R. used drawings and notes to record his observations of the soils.

J.R. wrote the final question when asked to think how this activity might link to their current topic of plants.

Year	3	Topic	Rocks
Focus of assessment (National Curriculum statements)			
• Recognise that soils are made from rocks and organic matter.			
Description of activity			
The pupils then set up a test to answer their question.			

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		J.R. demonstrates an understanding that plants require nutrients and to be anchored in the ground (Year 3 - Plants statement).
Teacher observations		Working scientifically
		J.R. used his knowledge of the constituents of soil and the needs of plants to make a prediction. He also identified control and independent variables.

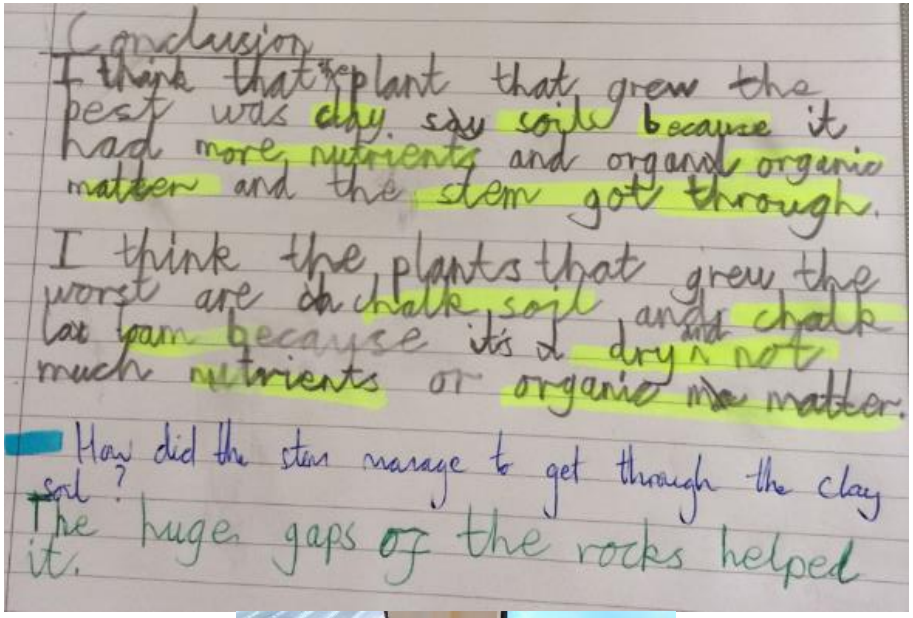
Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Recognise that soils are made from rocks and organic matter.

Description of activity

The pupils then used their results to write a conclusion.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
	 	J.R. compared the water holding properties of the different soils and demonstrates again that he understands that soils contain organic matter. His observations of the effect of grain size were linked to his observations of the stems emerging.
Teacher observations		Working scientifically
		J.R. links his knowledge of what plants need to grow and his observations of the characteristics of the different soils when drawing a conclusion.

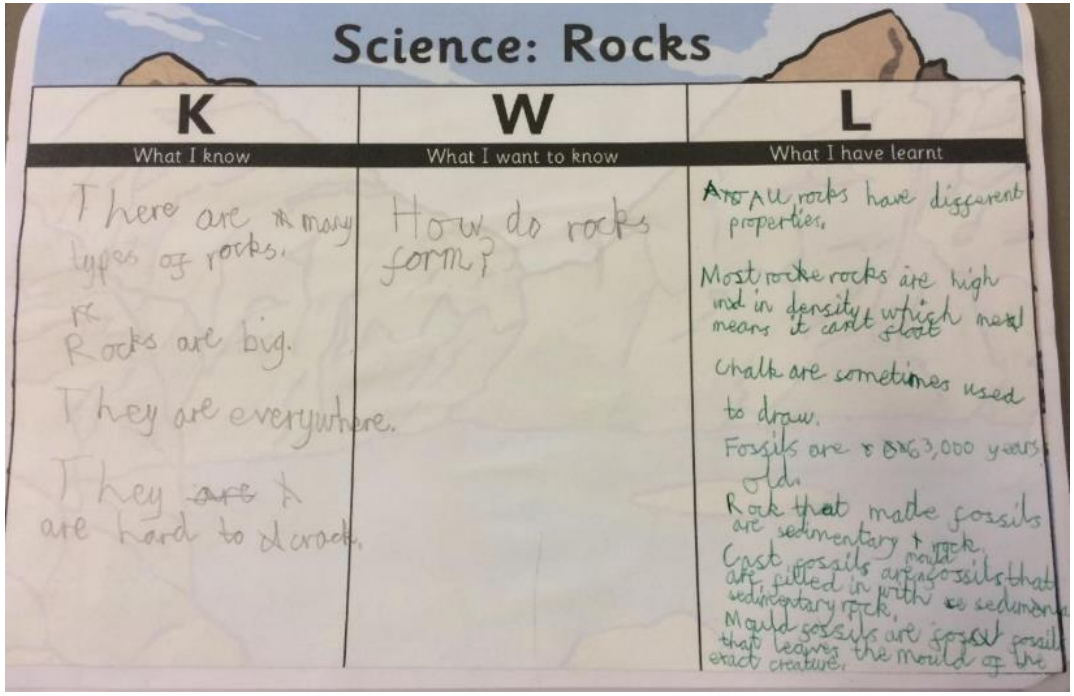
Year	3	Topic	Rocks

Focus of assessment (National Curriculum statements)

- Recognise that soils are made from rocks and organic matter.

Description of activity

The pupils added what they had learnt about rocks during the topic to the table they completed at the start.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
Teacher: "Why is chalk used for drawing?" J.R.: "Because it is soft and crumbly so it rubs off."		J.R. refers to properties and uses of rocks, although he does not link them until prompted. He includes more information about fossils but does not refer to soils.
Teacher observations		Working scientifically

Overall summary

Secure

J.R. can use a range of criteria to sort and compare rocks. He has used observations and tests to extend his knowledge of their properties and he can apply his knowledge to suggest which rocks are best suited to particular purposes. J.R. can sequence the stages of fossil formation and uses his knowledge in his comparison of a real and model fossil. J.R. knows the constituents of soil and recognises that not all soils are the same. He can apply this knowledge in the context of growing plants.