PLAN
Planning for assessment

Examples of Work

Melissa

Earth and space - Year 5

Primary Science
Education Consultancy

THE
Partnership

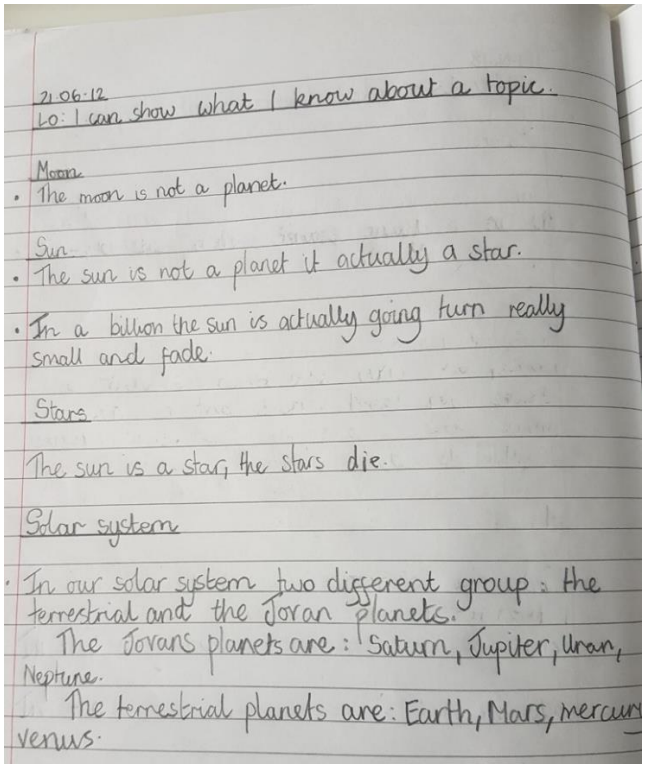
Year	5	Topic	Earth and space

Focus of assessment (National Curriculum statements)

- Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System.
- Describe the movement of the Moon relative to the Earth.
- Describe the Sun, Earth and Moon as approximately spherical bodies.
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.

Description of activity

The pupils were given the key vocabulary for the topic and asked to use this to prompt them to recall what they already knew about Earth and space.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
Teacher: "How do you know these things?" Melissa: "I am interested in space, so I borrow books from the library to read about it and also watch TV programmes."		Melissa demonstrates substantial knowledge about the Solar System which is based on her prior reading and television viewing.
Teacher observations		Working scientifically

Year	5	Topic	Earth and space

Focus of assessment (National Curriculum statements)

- Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System.
- Describe the movement of the Moon relative to the Earth.

Description of activity

The pupils were shown videos that demonstrated the movement of the Earth and the Moon and were then presented with the concept cartoon to discuss.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
"The Sun does not spin. "The Earth spins on its axis and this takes 24 hours. "The Earth travels around the Sun. It takes approximately 365 days. "The Moon travels around the Earth and this takes 28 days."		Melissa demonstrates that she understands the key facts.
Teacher observations		Working scientifically

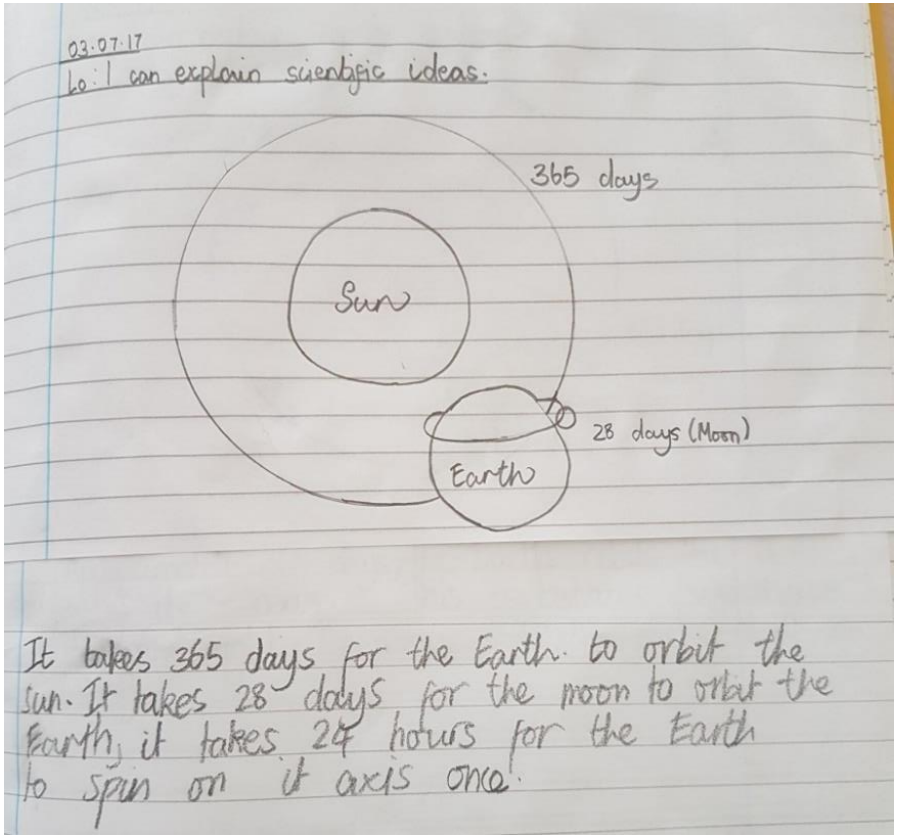
Year	5	Topic	Earth and space

Focus of assessment (National Curriculum statements)

- Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System.
- Describe the movement of the Moon relative to the Earth.

Description of activity

The pupils carried out research about the movement of the Earth, Sun and Moon and were then asked to show their learning using a clear diagram and some explanatory text.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		The diagram and text show that Melissa has a good understanding of the movement of the Earth and Moon and can express this clearly.
Teacher observations		Working scientifically
		Melissa presents the findings from her research enquiry.

Year	5	Topic	Earth and space

Focus of assessment (National Curriculum statements)

- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.

Description of activity

The teacher showed the class a video that showed how the spinning of the Earth caused night and day. The pupils were then given a torch and ball, to represent the Sun and Earth, and asked to create a model to explain how day and night occur.

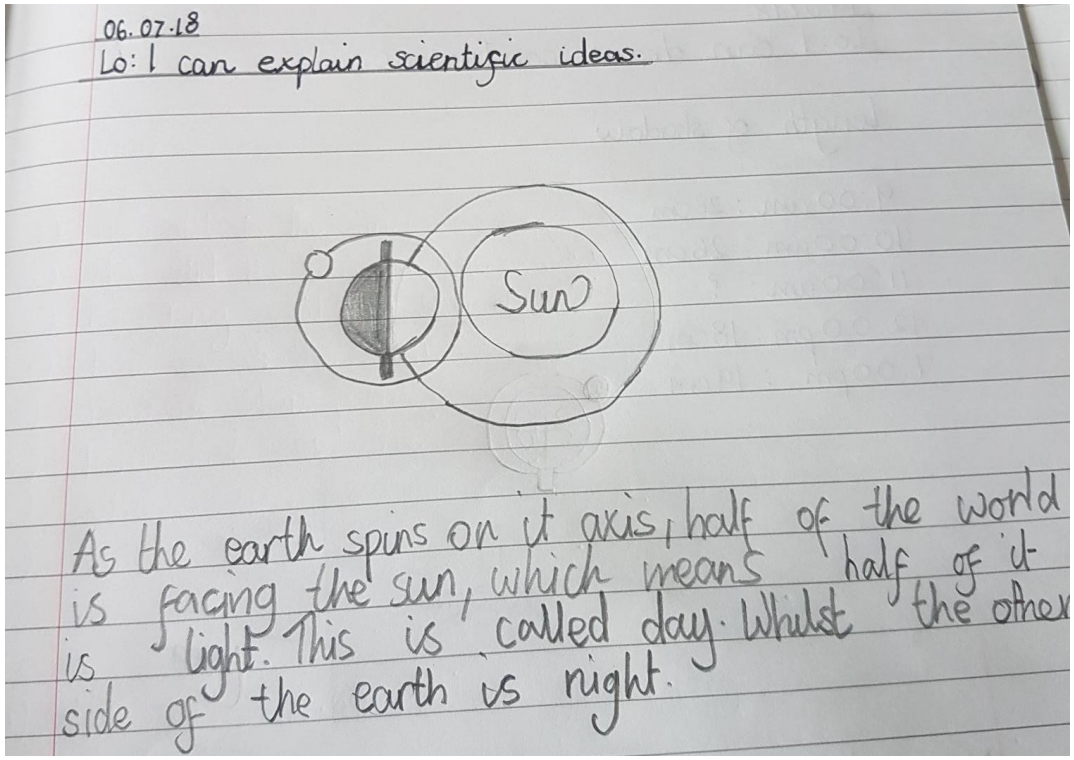
EVIDENCE OF LEARNING

Oral evidence

"This part of the ball away from the torch is dark, but this part is light. When the ball spins, the bit in the dark comes into the light. That's why we have day and night."

Teacher observations

Examples of work



ASSESSMENT

Knowledge

The diagram and text show that Melissa knows day and night are caused by the spinning of the Earth and she can express this clearly.

Working scientifically

Melissa presents the findings from her research enquiry.

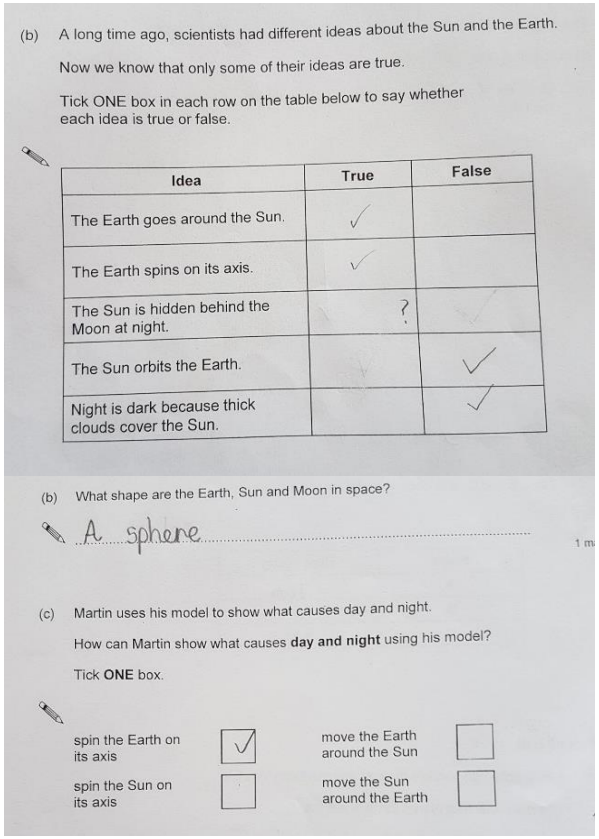
Year	5	Topic	Earth and space

Focus of assessment (National Curriculum statements)

- Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System.
- Describe the movement of the Moon relative to the Earth.
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.

Description of activity

The pupils were given some questions to answer as a mid-unit assessment.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		Melissa demonstrates secure knowledge about the movement of the Earth and how this causes day and night.
Teacher observations		Working scientifically

(b) A long time ago, scientists had different ideas about the Sun and the Earth.

Now we know that only some of their ideas are true.

Tick ONE box in each row on the table below to say whether each idea is true or false.

Idea	True	False
The Earth goes around the Sun.	✓	
The Earth spins on its axis.	✓	
The Sun is hidden behind the Moon at night.	?	
The Sun orbits the Earth.		✓
Night is dark because thick clouds cover the Sun.		✓

(b) What shape are the Earth, Sun and Moon in space?

A sphere

(c) Martin uses his model to show what causes day and night.

How can Martin show what causes **day and night** using his model?

Tick **ONE** box.

- spin the Earth on its axis ☑
- move the Earth around the Sun ☐
- spin the Sun on its axis ☐
- move the Sun around the Earth ☐

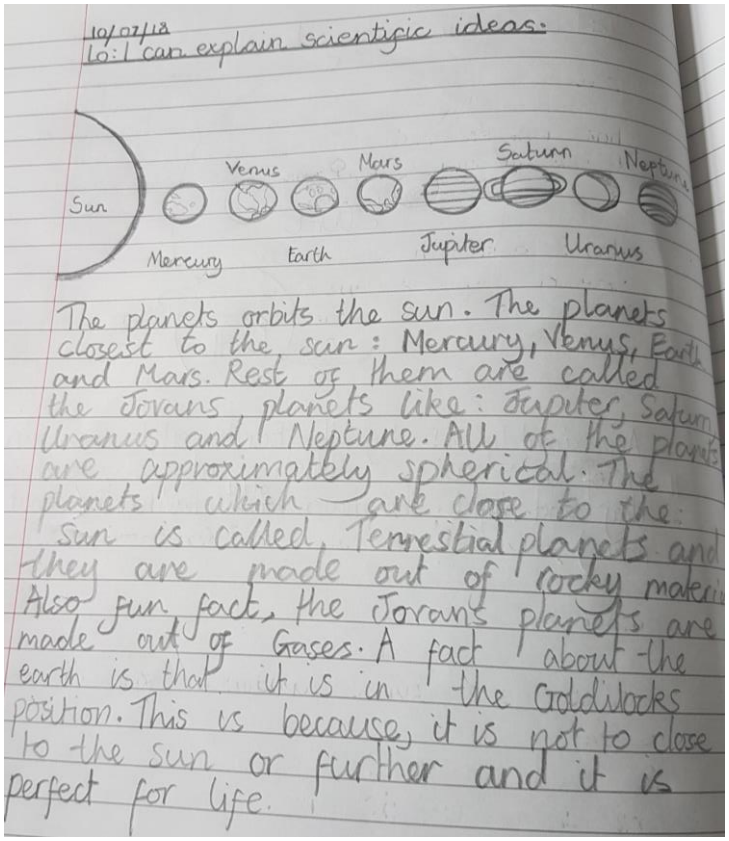
Year	5	Topic	Earth and space

Focus of assessment (National Curriculum statements)

- Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System.
- Describe the Sun, Earth and Moon as approximately spherical.

Description of activity

To provide the teacher with time to work with pupils that were not yet secure with the movement of the Earth and how this causes day and night, some pupils (including Melissa) were provided with iPads and links to videos to learn more about the planets.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		Melissa shows good retention of facts from the videos that she watches and also notes that all the planets are approximately spherical.
Teacher observations		Working scientifically

Year	5	Topic	Earth and space

Focus of assessment (National Curriculum statements)

- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.

Description of activity

The class were given the challenge to gather evidence to explore how shadows changed during the day. Each group were given a range of resources to choose from.

EVIDENCE OF LEARNING

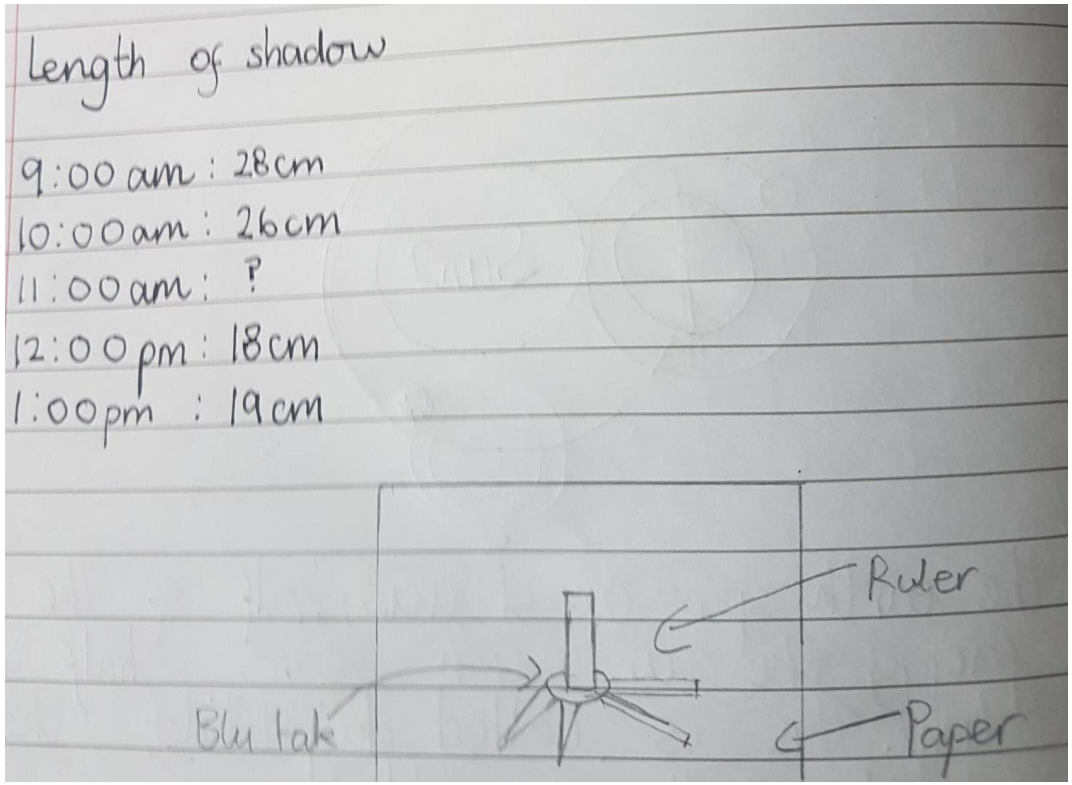
Oral evidence

Teacher: "Why does the Sun appear to move across the sky during the day?"

Melissa: "The Sun does not move, and the Earth orbits the Sun. As it orbits, it spins on its axis. This means that, when we are facing the Sun, it is day. As we are spinning, the Sun appears to move across the sky until the time when it is night time and we cannot see the Sun. We are facing away from the Sun."

Teacher observations

Examples of work



ASSESSMENT

Knowledge

Melissa shows an understanding that the apparent movement of the Sun across the sky is caused by the spinning of the Earth.

Working scientifically

Melissa's group used an opaque ruler to cast the shadow and chose to measure the length of the shadow each hour. She also noted how the shadow moved in position by copying it onto the paper.

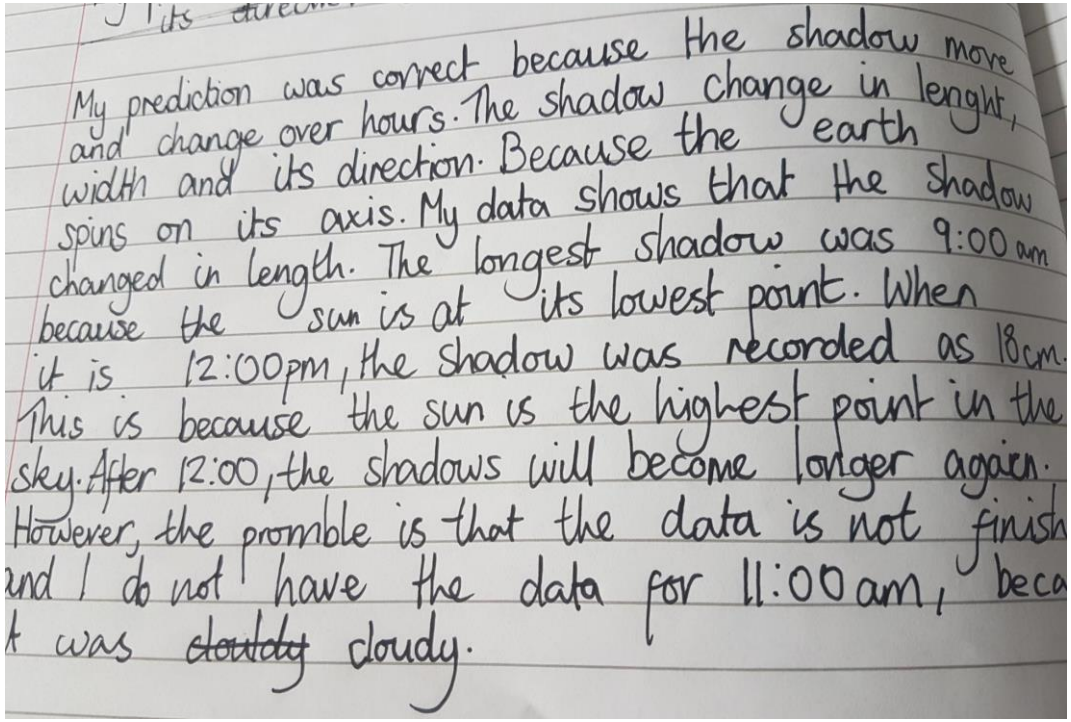
Year	5	Topic	Earth and space

Focus of assessment (National Curriculum statements)

- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.

Description of activity

The pupils were then asked to write about their findings.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		
Teacher observations		Working scientifically
		Melissa talks about the range of her results and also uses her subject knowledge to explain the cause and effect i.e. that when the Sun is higher in the sky, the shadow is shorter. She also points out the missing data (11am) and gives an explanation for this.

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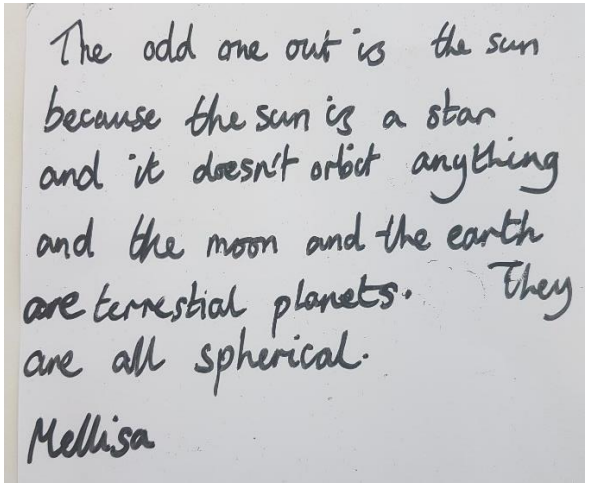
Focus of assessment (National Curriculum statements)

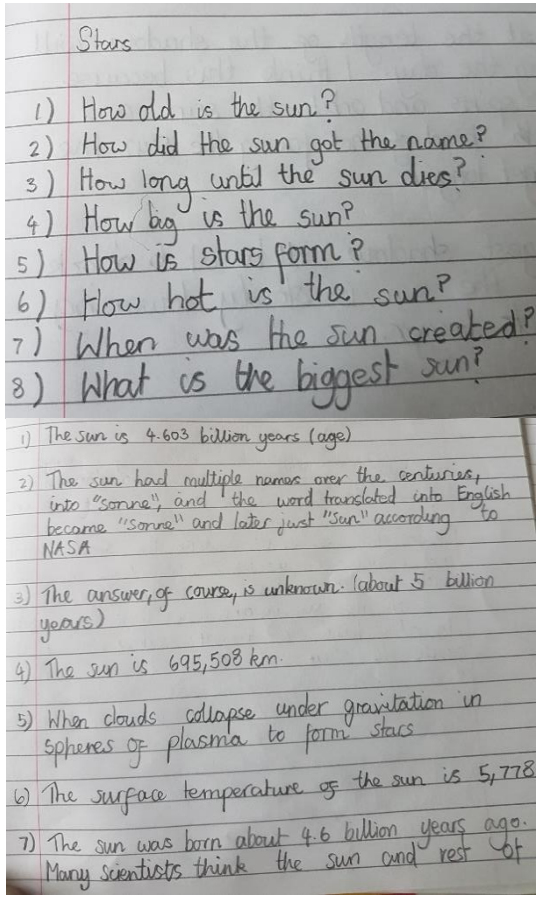
- Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System.
- Describe the movement of the Moon relative to the Earth.
- Describe the Sun, Earth and Moon as approximately spherical bodies.

Description of activity

The pupils were shown these three images of the Earth, Sun and Moon and asked to think about how they are all the same and how they are different.

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
	 	Melissa demonstrates again that she knows that the Earth, Sun and Moon are spherical.
Teacher observations		**Working scientifically**
There is an implication that the Earth and Moon are both orbiting. There is an inaccuracy present here, as the Moon is a satellite not a planet.		

	Year	5	Topic	Earth and space
	Focus of assessment (National Curriculum statements)			
	Description of activity			
	The children were asked to generate questions to help them research further facts about stars.			

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
"I used several websites to research but only looked for answers in each one. If I did it again, I would check that the answers were correct, as some websites can be trusted more than others."		
Teacher observations		Working scientifically
		Melissa generates a good range of questions. Her questions show that she understands that the Sun is a star. Melissa chooses appropriate websites and finds the answers to her questions. She recognises that some websites are more trustworthy than others.

Overall summary

Secure

Melissa describes the movement of the Earth relative to the Sun and explains how this causes night and day and the apparent movement of the Sun across the sky. Melissa also describes the movement of the Moon relative to the Earth. Melissa knows that the Sun, Earth and Moon are approximately spherical.

Acknowledgements

- Page 3 *Concept Cartoons in Science Education*, Naylor S, Millgate House Education