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LESSON 8

THE MOON AND THE STARS

CONTENT DESCRIPTIONS

Science Understanding

Earth and space sciences

Earth's rotation on its axis causes regular changes, including night and day (ACSSU048)

Science as a Human Endeavour

Nature and development of science

Science involves making predictions and describing patterns and relationships (ACSHE050)

Science Inquiry Skills

Questioning and predicting

With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (ACSIS053)

Planning and conducting

Suggest ways to plan and conduct investigations to find answers to questions (ACSIS054)

Processing and analysing data and information

Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS057)

Compare results with predictions, suggesting possible reasons for findings (ACSIS215)

Evaluating

Reflect on the investigation, including whether a test was fair or not (ACSIS058)

Communicating

Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (ACSIS060)

NOTE: To help explain the concepts in this lesson arrange a visit to the planetarium.

RESOURCES

Metre ruler or stick
Matt, single-coloured ball
Models of the Earth and the moon
Pictures and posters of the moon
Models of the planets or three different-sized balls
Poster paper
Texta

SKILLS

Observing
Researching

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ACTIVITIES

- Display pictures and posters of the moon.
- Look at the moon in relation to the Earth using a model. Focus on the size.
- Write these three questions on poster paper:
  - Can we see the moon during the day?
  - Why does the moon appear to shine?
  - Where does the moon get its light?
- Ask the students where they could find the answers.
- Allocate one question per student as a homework task. Students are to research the answer and share what they find out with the class. Write the students' findings on the poster paper.
- If the moon is in the sky during a bright sunny day, take the students out to have a look at it. Make observations.
- Attach a matt, single-coloured ball to a stick or a metre ruler and hold it up in front of the moon in the sky. Observe the reflection of the sun on the ball and the reflection of the sun on the moon. Both will be illuminated. The ball is a model of the moon that demonstrates how the sun illuminates it.
- Students are to predict if the moon will be in the sky in the same position all day.
- Every hour during the day, observe the position of the moon.
- Ask the students why they think the moon is changing position in the sky. Make it explicit that the moon rotates on its axis. Relate this back to the Earth rotating and tell the students that the moon orbits the Earth very quickly. Tell the students that, like the sun, the moon appears to move because the Earth rotates. The side facing away from the Earth never sees the Earth. Demonstrate this using a model of the planets or three different-sized balls.
- Ask the students what makes the moon appear to be different shapes. Over several months ask the students to observe the moon at night at the same time once a week. Have the students record their observations on their worksheet ("Moon diary"). After a couple of months ask the students if they can see a pattern in what they have drawn.
- Ensure that your students are aware that the sun is a star. Ask them why the sun seems so much bigger than other stars. Revise previous lessons about this.
- Arrange a visit to the planetarium.

EXTENSION

Look at and name all of the planets in the solar system.

ASSESSMENT

Ask the students to complete a self-evaluation sheet (see page 35) and file this in their portfolios.

LANGUAGE

Introduce and explain the following terms:

Earth	stars	Venus
sun	light	Mercury
planet	reflect	Jupiter
rotate	moon	Uranus
spin	Mars	Saturn

LESSON 7
CONDENSATION

CONTENT DESCRIPTIONS

Science Understanding
Chemical sciences
A change of state between solid and liquid can be caused by adding or removing heat (ACSSU046)

Science as a Human Endeavour
Nature and development of science
Science involves making predictions and describing patterns and relationships (ACSHE050)

Use and influence of science
Science knowledge helps people to understand the effect of their actions (ACSHE051)

Science Inquiry Skills
Questioning and predicting
With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (ACSIS053)

Planning and conducting
Suggest ways to plan and conduct investigations to find answers to questions (ACSIS054)

Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate (ACSIS055)

Processing and analysing data and information
Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS057)

Compare results with predictions, suggesting possible reasons for findings (ACSIS215)

Evaluating
Reflect on the investigation, including whether a test was fair or not (ACSIS058)

Communicating
Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (ACSIS060)

RESOURCES

Trees or bushes exposed to the sun
Plastic bottles
Plastic bags
Cling wrap
Elastic bands
Water
Classroom windowsill
Digital camera or digital video camera

SKILLS

Predicting
Investigating
Questioning
Observing

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