Spinning in space

Level 2 and 3 investigating outcomes

Student	Stage	Key Learning Area	Date
		Science	

Task	Students investigate the length and direction of shadows during one day.

	Investigating unit outcomes	Beginning	Developing	Achieving
Level 2	Identify some variables that can be investigated.	Students can discuss what a variable is.	Students can describe a variable in the investigation.	Students can identify a variable in the investigation e.g. the position and length of the shadow.
	Make and record observations.	Students can observe shadow length and position throughout the period of a day.	Students can make and share observations about shadows and record observations.	Students can make and share observations about shadow length and position, explaining the reasons for the different positions.

	Investigating unit outcomes	Beginning	Developing	Achieving
Level 3	Show awareness of the need for fair testing.	Students can identify what makes a test unfair.	Students can describe what a fair test is.	Students can describe what a fair test is and explain the importance of a fair test.
	Make measurements and observations.	Students can make observations of shadows.	Students can make observations and measure the length of shadows.	Students can make observations and measure shadows, explaining the reasons for the difference in measurements by observing the positions of the sun.
	Record measurements in a table and display results in a column graph.	Students can record their measurements of shadows in a table.	Students can record their measurements of shadows in a table and construct a column graph with teacher support.	Students can record measurements in a table and display results in a column graph, describing relationships and patterns in the data.

Spinning in space

Level 2 and 3 conceptual outcomes

Student	Stage	Key Learning Area	Date
		Science	

Task	Students reflect on their learning and represent what they know about what causes day and night and the positions and movements of the Sun, Earth and Moon.

	Conceptual unit outcomes	Beginning	Developing	Achieving
Level 2	Describe the shapes and sizes of the Sun, Earth and Moon	Students can observe the Sun, Earth and Moon.	Students can describe the shapes and sizes of the Sun, Earth and Moon.	Students can describe the shapes and sizes of the Sun, Earth and Moon, making comparisons between each size.
	Describe the apparent movement of the Sun across the sky from East to West	Students can observe how shadows change.	Students can observe shadows and describe the apparent movement of Sun from East to West.	Students can observe shadows and describe the apparent movement of the Sun from East to West, suggesting reasons for the changing shadows.
	Describe changes in shadows, and differences between day and night and relates these changes to the spinning of the Earth.	Students can observe changes in shadows and the transition from day to night.	Students can observe changes in shadows and the transition from day to night and suggest reasons for these changes.	Students can observe changes in shadows and the transition from day to night, explaining the spinning of the Earth on its axis as the reason for these changes.

	Conceptual unit outcomes	Beginning	Developing	Achieving
Level 3	Describe the shapes and sizes, positions and movements of the Sun, Earth and Moon	Students can observe the shapes and sizes of the Sun, Earth and Moon.	Students can describe the shape, size and position of the Sun, Earth and Moon in comparison to each other.	Students can describe the shapes, size and position of the Sun, Earth and Moon in comparison to each other and explain the movement of each.
	Explain how day and night occur on Earth	Students know that day and night are related to the spinning of the Earth.	Students can explain that people on the side of the Earth facing the Sun experience day and people on the opposite side of the Earth experience night.	Students can explain that light from the Sun shines on the side of the Earth facing the Sun and the opposite side of the Earth is in shadow. As the Earth spins round people experience day and night as they move in and out of the sunlight and shadow.