



Example Scheme of Work – MKSHK Year 2 Science

Teacher		Pre-Prep	2	Year	2	No of pupils		Subject	Science
Topic	Introduction to Space							No. of lessons	5

About this Unit Children are introduced to space. They carry out various investigations to answer questions posed about the earth, sun and moon. Children are introduced to new vocabulary. A challenging scheme – concepts should be introduced at their most basic level.

Lesson	Learning <i>(what is to be learnt and the evidence of the learning)</i>	Learning Activities <i>(the planned activities/tasks to develop knowledge, skills and understanding in the subject)</i>	Differentiation <i>(learning activities/ resources/tasks to support and extend learners)</i>	Assessment Opportunities/AfL <i>(method of identifying achievement/assessment strategies to move learning forward)</i>
1	To investigate whether the Earth, sun and moon are flat or spherical.	<p>What would the Earth, sun and moon look like if you were travelling in outer space? Children to draw a picture on a mini whiteboard or piece of scrap paper. When finished, children to discuss their drawings with a partner and then discuss the questions on the slides as a class: Is the Earth flat? Is the sun bigger than the moon? Does the sun move? Listen to children’s ideas.</p> <ul style="list-style-type: none"> • Explain what the difference between a sphere and a flat circle is. Show children the picture of the moon on the slides. Would this picture suggest that the moon is flat or spherical? What about this picture of the Earth? Children to discuss ideas. • Explain that the Earth, moon and sun are all spherical and that it is only in the past 50 years or so that we have photographic evidence of this. However, we knew the Earth was spherical long before this. • Can you think of any other evidence that the world is round and not flat? Children to discuss ideas then go through the suggestions on the slides, e.g. ships sailing around the world, objects disappearing over the horizon. • Explain that before the 16th century, most people believed that the Earth 		<p>Do children recognise that the Earth, sun and moon are spherical?</p> <p>Can children give examples of evidence to prove that the Earth, sun and moon are spherical?</p> <p>Can children describe why people have not always believed that the Earth was spherical?</p>

		was flat. Why do you think this was? Children to discuss ideas as a class.		
2	To find out about the size of the Earth, sun and moon and how far away from each other they are.	<ul style="list-style-type: none"> • Which do you think is biggest out of the Earth, the sun and the moon? Which do you think is smallest? • Why? • Go through the information on the slides about the actual sizes of the Earth, sun and moon. • Show children the pictures of different examples of spheres on the slides (or preferably have the object for the children to hold and look at) and ask them to choose one that they think could represent the Earth, sun and moon in terms of size. • Explain that if the pea represents the Earth, then the sun would be the beach ball and the moon would be the bead. • If the sun and the moon are so different in size, why do they look a similar size from where we are? • Invite children to share their ideas then go through the explanation on the slides about distance. 		<p>Can children choose 3 spheres to represent the relative sizes of the sun, Earth and moon?</p> <p>Do children know the actual sizes of the sun, Earth and moon?</p> <p>Do children know approximately how far away from each other the Earth, sun and moon are?</p>
3	To find out about the Earth's axis and its rotation.	<p>Tell children that an experiment was done to find out what happened to shadows throughout the day. Show children the pictures of the results on the slides and two children's explanations for what is happening. Who is right? How do you know? Children to discuss ideas.</p> <ul style="list-style-type: none"> • Go through the information on the slides about the Earth rotating on its axis and how this makes it appear as though the sun is moving across the sky. Explain that it is the same as when you are on a moving train and the houses outside seem to be whizzing by. • Can you use this information to explain why we have night and day? Children to discuss with a partner and then discuss ideas as a class. Go through the explanation on the slides and show why we have different time zones. 		<p>Do children know that shadows change position during the day and why?</p> <p>Do children know that the Earth spins on its axis once every 24 hours, making the sun appear as though it is travelling across the sky?</p> <p>Can children explain why night and day do not happen at the same time in different parts of the world?</p>
4	To use data to draw conclusions about the sun at different times of the year.	<p>Show children the pictures on the slides showing someone getting up at different times of the year. Can you explain why these pictures are different? Invite children to share ideas.</p> <ul style="list-style-type: none"> • Explain that as well as spinning on its axis, the Earth rotates around the sun. Go through the explanation on the slides for why this affects the time of sunrise and sunset at different times of the year. 		<p>Can children use data into a graph accurately?</p> <p>Can children use graphs to answer questions and draw conclusion?</p> <p>Can children explain why the</p>

		<ul style="list-style-type: none"> • Show children the data on the slides for the time of sunrise and sunset for each month of the year on the slides. Is there a better way we could arrange this data? Children to think, pair, share their ideas. • Tell children that their challenge today will be to arrange this data on a line graph. What do you need to think about when you are drawing a graph? Discuss ideas as a class. 		length of daylight changes throughout the year?
5	To find out about the Earth's orbit of the sun and the definition of a year.	<p>What is a year? Children to think, pair, share their ideas then list on the slides (e.g. the time it takes to get from one birthday to the next, the time it takes to get through the four seasons, etc.).</p> <ul style="list-style-type: none"> • Explain that a year is the time it takes for a planet to orbit the sun. Go through the information on the slides about the Earth's year and explain that other planets have longer or shorter years than we do because it takes them a longer or shorter amount of time to orbit the sun. • Give children a calculator each. Show children the person on the slides who wants to find out how old they would be on Mercury. Go through the calculation together and then challenge children to find out how old they would be on Mercury. EXTEND - a year on Mars is 687 days. How old would you be on Mars? 		<p>Do children know that a year is defined as the length of time it takes for a planet to orbit the sun?</p> <p>Do children know that an Earth year is 365.25 days?</p> <p>Can children explain why we have different seasons throughout the year?</p>