SCHOLASTIC

ABC

BOOK CLUB

2013 is the International Year of the Mathematics of Planet Earth.

Our planet is the setting for dynamic processes of all sorts, including the geophysical processes in the mantle, the continents and the oceans, the atmospheric processes that determine our weather and climates, the biological processes involving living species and their interactions, and the human processes of finance, agriculture, water, transportation and energy.

Whether findings are directly from the mathematical sciences or from branches of chemistry, physics or biology, the chances are that some form of mathematics is used.

There are four international themes for the year:

- A PLANET TO DISCOVER
- A PLANET SUPPORTING LIFE
- A PLANET AT RISK
- A PLANET ORGANISED BY HUMANS

Let's get excited and proud of their mathematicians and scientists!

VISIT:
***www.scholastic.co.nz/toolkit* to access supporting resources.**

A Planet to Discover

The Solar System

Our solar system was formed roughly five billion years ago. The Sun is the centre of Earth's solar system. The word 'solar' relates to the sun. Eight planets, their moons, asteroids (chunks of rock) and comets (balls of ice and dust) all revolve around the Sun. They spin and travel in huge circles around the Sun with each planet travelling at a different speed in its own orbit. Gravity keeps the planets in their orbit.

The Sun is a gigantic ball of flaming gases that shoots out flames thousands of kilometres high. The heat and light given off by the Sun are essential to life on Earth.

Mercury, Venus, Earth and Mars are the four planets closest to the Sun. They are known as the inner planets. The outer planets are Jupiter, Saturn, Uranus and Neptune. In 2006 Pluto was deemed a dwarf planet so it no longer holds planet status.

Introducing the Solar System

A terrific way for young children to learn about the solar system is to let them see it, explore it and build it through craft mediums. Children usually enjoy drawing the Sun in their pictures and that enthusiasm can be extended to drawing and learning about the planets. The solar system can be recreated using playdough, drawing or painting materials, tissue or crepe paper, or balloons and balls. Children can choose their craft medium to create each planet while learning it about its properties and its location within our solar system.

Playing games is a fun way to introduce the solar system. Use objects such as balls and marbles to make a learning centre with proportional representations of the planets. Children can navigate their way through the solar system to gain an understanding of the distances between the planets. Children could even dress up like the planets and simulate their movement around the Sun.

Create a Class Library

Create a class library with texts that illustrate and talk about the planets and Sun. Have plenty of books on hand for children to access during quiet reading time. There are many books written for children that discuss astronomy in a fun and educational way and introduce them to the solar system concepts.

After reading some books together with the class, brainstorm a list of solar system-related words to create a word wall display. These can then be used when the children are completing writing tasks about the topic or in labelling activities.

New Terminology

Learning new terminology can be made easier for children with the use of pictures. Download the *Universal Words* blackline master from the Teacher Toolkit. Ask children if they are familiar with any of these words (asteroid, comet, Earth, Moon, space shuttle, telescope). Use pictures or videos from your computer or interactive whiteboard to demonstrate the different items and to give children a realistic representation of each term. The children can then complete the matching and colouring activity independently.

Create a Space Alphabet

Have children make alphabet cards using astronomy terms such as 'A for astronaut', 'S for Space Shuttle', 'P for Planet', and 'M for Mars'. Give each child a sheet of A4 card and assign each of them a letter of the alphabet. Some children may require assistance choosing a related word. These could be chosen from the list of words you brainstormed together earlier. Children could illustrate their cards ready for display around the room, or they could be compiled into a class alphabet book.

Fun Ways to Remember the Order of the Planets from the Sun

Mercury	My	Many	My	Mother
Venus	Very	Very	Vicious	Veronica
Earth	Educated	Elderly	Earthworm	Enjoyed
Mars	Mother	Men	Might	My
Jupiter	Just	Just	Just	Jam
Saturn	Served	Snooze	Swallow	Sandwich
Uranus	Us	Under	Us	Under
Neptune	Noodles	Newspapers	Now	Neptune

My Place in Space

Help children to recognise their place in the world and the universe! Download the *My Place in Space* blackline master from the Teacher Toolkit. You will need a list of your students' addresses for this activity. It is a good idea to create a temporary word list on the board for children to recognise their own street names and suburbs. Ask children if they know what state or territory they live in. Then ask if they know the name of the country, planet or solar system in which we all live. Children fill in their Place in Space as they go.

Big and Little

To reinforce the concept of relative size of the planets, have children create their own paper mobile of the solar system. Download the *Big and Little Planets* blackline master from the Teacher Toolkit. Children should colour the planets and compare their sizes. Before putting the planets onto a mobile, ask children to cut out their planets and arrange them in order, from smallest to largest or largest to smallest. Which planet is the biggest? Which planet is the smallest? After you complete your investigations children then attach their planets to a coathanger and make a mobile for the classroom or for their bedroom.

Resources available in the 2013 *School Essentials* catalogue

- *Simple Tape Measure,* page 174
- *Primary Shapes Template Set,* page 175
- *Place Value Answer Board Set,* page 179
- *0 – 30 Number Line Floor Mat,* page 189
- *Far out Solar System Mapping Tool,* page 205
- *Inflatable Solar System,* page 206
- *Giant Magnetic Solar System,* page 206
- *Light Up Moon Model,* page 207
- *Weigh Out! Talking Planetary Map,* page 208
- *Primary Science Magnet Set,* page 212
- *Early Years Themes: Science,* page 220
- *Science Lessons for the Smartboard,* page 221
- *Planet Posters* page 227

Free Teacher Toolkit Resources available at *www.scholastic.co.nz/toolkit*

- *Space Word Search* blackline master
- *Space Memory Game* blackline master
- *Label the Planets* blackline master
- *Universal Words* blackline master
- *My Place in Space* blackline master
- *Big and Little Planets* blackline master

Mathematics of Planet Earth 2013

www.mpe2013.org