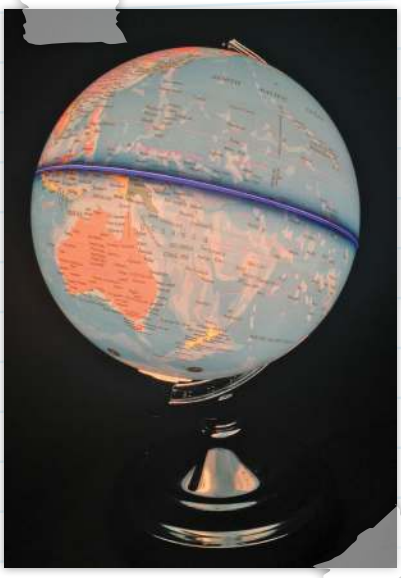
TEACHER RESOURCE

SCIENCE CONTENT/ CURRICULUM LINK
• EARTH SYSTEMS/ ASTRONOMICAL SYSTEMS

STARDOME OBSERVATORY & PLANETARIUM
FACTS, RESOURCES AND ACTIVITIES ON...

EARTH AND ITS FAMILY



In space, small things go around big things - moons around planets, and planets around stars.

The planets closer to the Sun move around faster than those further away.

Have you seen a globe of the world? A globe like this is a model of the planet we live on called Earth. Earth and the other planets (there are eight including Earth) are huge balls moving through space.

Earth looks like its flat to us because it is so big compared to us, but it's actually round.

We don't fall off Earth because, no matter where we are on it, it tries to pull us towards its centre. So 'down' for people everywhere is towards the ground.

Most planets have air around them but not all. Earth has nice air that we can breathe, but the other planets don't. The smaller planets have rocky surfaces we could walk on, but the bigger planets are made of gas and have no real surfaces.

Earth has a surface. On our globe of Earth, you can see a lot of blue. The blue represents the oceans that cover most of Earth. You can also see brown/green which represents all the land (countries, islands, and continents). Our country Aotearoa New Zealand is small and is made up of two main islands – you know their names – can you find them on the globe?

In space, small things go around big things. Earth and the other seven planets move in big circles (called orbits) around something that is much bigger than they are. That big thing is called the Sun. The Sun is VERY big, much bigger than the planets, and is very hot and bright. If it weren't for the Sun shining, we would not have daytime, and we would freeze!

The planets closer to the Sun are the hottest while the planets further away are the coldest. This is like standing close to (or far away from) a fire.

Earth is just the right distance from the Sun for it to be the right temperature for us to live.

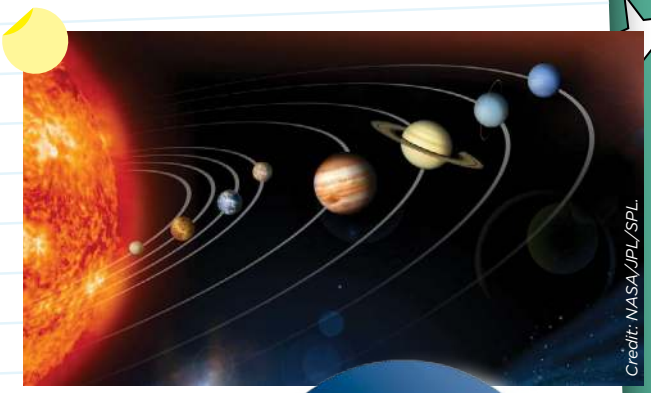
The Sun and the planets together make up what we call the Solar System, but there are some other smaller things in the Solar System as well. Some of these are called moons.

All but two of the planets have moons going around them. Earth has one big moon that goes around it. It is called the Moon.

Check out these other resources...

For a singing Solar System, see this video:
https://www.youtube.com/watch?v=F2prtmPEjOc

For our more advanced Solar System resources and activities see:
- Scale of the Solar System
- Why Planets are Different



Credit: NASA/JPL/SPL

DISCUSSION POINTS

- Why are the planets different colours?
- Why are the planets closer to the Sun hotter than those further away?
- Why do the inner planets have to go faster than the outer ones?

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ACTIVITY

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MAKE YOUR OWN SOLAR SYSTEM

Kids love getting their hands dirty. Let them do so by making a Solar System model out of playdough.

If helpful, begin your lesson with a model of something the children already know, like a model car, then move on to an Earth model. One (or more) inflatable globes that the children can get hold of would be great. Show images of the Solar System with the planets in order, and the (rough) comparative sizes as you explain the activity.

Unless you have LOTS of playdough, you won't be able to make the planets to scale. If Earth is 1.5cm wide, the Sun would have to be 1 metre!

You'll need:

- Various colours of playdough (or you can make your own!)
- Black sheet/card
- Ruler and white ink pen

Instructions:

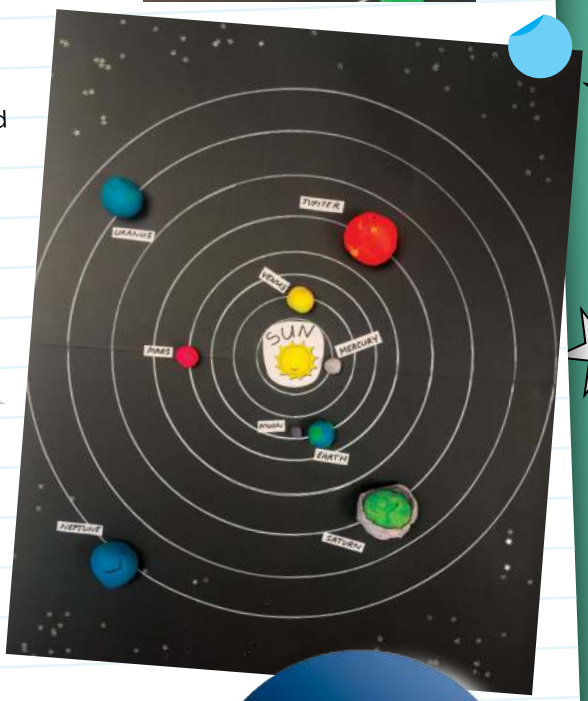
Let students play with the playdough colours to try and replicate the planets. Some planets may be harder than others, and the child may require help for the green land playdough on Earth, or the worm-like rings on Saturn.

On a large black sheet, draw eight circles around one another as your planet orbits, with the Sun in the centre.

You won't be able to do this to scale, but for early primary school, as long as you spread the outer four orbits out a bit more than the inner ones it will be fine. For pre-schoolers, drawing circles around the Sun is enough to demonstrate that the 'small' things go around the one 'big' thing.

Place the planets on their orbits and move them around the Sun to demonstrate how they move. You could do this each day, moving the inner planets further than the outer ones, to demonstrate that the closer ones move faster.

This is a table top activity, but you could make the same one with bottle tops or card to hang on the classroom wall.



Solar System activities can easily be scaled up or down depending on year level.

- Older kids could also make a playdough Moon, to orbit Earth.
- Use varying sizes of polystyrene balls as planets and hang them from a wire coat hanger to create a mobile.
- Make a papier mache model – http://www.instructables.com/id/Papier-Mache-Planets/
- Spend the whole afternoon on your Solar System by making your own playdough first! Here's a great recipe – http://www.bestrecipes.com.au/recipe/no-cook-play-dough-L2119.html

Take a photo of your activity and send it to us. We'd love to see it! education@stardome.org.nz

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