



1 Unit summary

This unit uses the persona of an alien visitor in need of help to understand life on Earth, to help the children see their own everyday experiences through new eyes and to begin to understand Earth's position in space.

Science learning

Seeing the world through Zarg's eyes will help children to observe carefully, using all of their senses. Learning about his distant planet will help them to understand that there are many other planets in our own Solar System and beyond. The notion of aliens will help them to understand that there are some things that scientists currently do not know.

Science for practitioners

The distances and numbers involved in space are so vast that they are difficult for adults, let alone young children, to understand. Our Sun is just one of an estimated 100 billion stars in our galaxy, which is

called the Milky Way. Until the early twentieth century it was believed that the Milky Way contained all of the stars in the Universe. It is now known that it is just one of billions of other galaxies.

Science progression

In Key Stage 1, children will find out about the seasons. In Key Stage 2 they will learn that the Sun is the star at the centre of our Solar System and will find out about the other planets that share our Solar System and about our own Moon.

Switched on Science links

- Key Stage 1, Year 1, Topic 1.7 – Seasonal Change

Prime areas

Communication and Language

The children will need to think very carefully about how they explain what they mean when they are talking to an alien who does not know as much as them. This is an engaging context that will help children to be more aware of the needs of their listener and of the need to say exactly what they mean.

Personal, Social and Emotional Development

Children are invited to empathise with an alien who is lost and far from home, and invited to find ways to make him feel happier. They can be encouraged to think about times that they have been lost or lonely and what helped them to feel better.

Physical Development

Thinking about the needs of Zarg, and explaining the things that he will need to stay healthy on Earth will help children to understand the impact of our own behaviour upon our health and wellbeing.

Specific areas

Literacy

When Zarg leaves (maybe at the end of the topic) he could leave behind an 'inter-galactic post box' which could be the focus of an adult-led literacy lesson, or a motivational context for children's emergent writing.

Mathematics

The numbers involved in astronomy are spectacularly huge! Although the children will be too young to comprehend these numbers they will enjoy exploring the idea of very large numbers, e.g. they might like to see the number 1 million written down. There will also be lots of opportunities to use comparative language such as 'bigger than', 'larger than' and 'further than'.

Understanding the World

When learning about the first Moon landing children can be encouraged to interview older family members to find out what they remember about the event. This will also be a chance for them to ask about other things that the older generation remember from their childhood and to compare their different experiences.

Expressive Arts and Design

Children will be able to apply their knowledge of a wide range of media as they design their own planets and the animals that live there. They could also use percussion instruments to compose some alien music.



2 Getting ready



Resources

Headdress costume for adult in role, Large box (large enough for a washing machine or piano), Online resources via My Rising Stars, Toy alien, Velcro.



Websites and books

The Man on the Moon! – Simon Bartram

Winnie in Space – Valerie Thomas and Korky Paul

Aliens love Underpants and *Aliens in Underpants Save the World* – Claire Freedman and Ben Cort

Q Pootle 5 – Nick Butterworth

Toys in Space – Mini Grey

Whatever Next! – Jill Murphy

The space trip planner on the PlanetQuest website can be used to calculate how long it would take to travel to different space destinations using a variety of transport.

Lots of fascinating images taken from the Hubble Space Telescope can be found on the Hubble website.

Mars photographs on the Hubble website

Video of an astronaut cleaning their teeth in space

Video inside the International Space Station:
How to wash your hair in space

Information about the Voyager space mission on the NASA website.



Key vocabulary

Astronaut, Earth, Galaxy, Light Year, Moon, Names of planets in our Solar System, Orbit, Planet, Rocket, Solar System, Space, Space Station, Star, Sun, Telescope.



Home science links

Ask children to interview older family members about their memories of the Moon landings. Some families may have telescopes or binoculars at home which they could use to observe the night sky with their child.



Health and safety

Children should be taught to never look directly at the Sun.



3 Explorations

Explaining phenomena to Zarg is a useful opportunity for children to be 'experts'. It is worth bringing him back into the classroom whenever you want children to think carefully about how they are explaining themselves.

Introductory activity

In this activity children are introduced to Zarg, an interplanetary visitor who has become stranded on Earth. Zarg could either be represented by a puppet, or by an adult in role. This should not involve an elaborate costume; a simple headband with antennae

would work. Children could hear the story of how Zarg became separated from his friends when the spacecraft that he was driving broke down. This first meeting will be a chance for children to reassure Zarg, and to find out what he will need from them.

Focussed exploration

Activity 1 – How to Look After Yourself on Earth

When they meet Zarg, he tells the children that he is not feeling well; he doesn't have any energy and feels a bit sick. Children might notice some empty crisp and sweet packets sticking out of his pocket. They are encouraged to ask about what he has been eating and find out that none of

the food from his home planet is available on Earth, so he has been eating Earth food. It turns out that he has not been making the healthiest choices! Children advise Zarg what food he should be eating, and reassure him that he can still have the occasional 'treat'.

Activity 2 – Gravity!

When children notice that Zarg seems to keep dropping things on purpose he explains that he has been in space for so long that he keeps forgetting about this thing called 'gravity' that you have on planets. Children can then watch a video of an astronaut brushing his teeth in space, and notice how, when he lets go of his toothbrush, it just hangs in the air in front of him.

They can be encouraged to imagine what it would be like to live in an environment with very low gravity and, in a PE lesson, could act out walking in a low-gravity environment. They could make a 'gravity simulator' by attaching an object to a box with a strong elastic band. They could also use a weaker elastic band to show the effects of the weaker force of gravity on the Moon.

Activity 3 – Welcome to My World

Once children know about the size and scale of the universe they might like to consider what the possibilities for life could be. This is an opportunity to let their imagination run wild, as they invent their own habitats and creatures. Don't restrict them to two dimensions. As well as pencil and paint, use modelling clay, junk, papier mâché and shadow puppets. Encourage children to think of names for

the alien animals and plants that they create and to talk about where they live and what they eat. Encourage children to consider the relationships between the different aliens that they have invented by asking questions such as '*I wonder if any of the animals might eat each other?*' By thinking about their aliens in this way children will begin to develop their understanding of habitats and food chains on Earth.

Free-flow exploration

Activity 1 – International Space Station

Enlist children's help to create an International Space Station. Start by watching some footage of the ISS before asking children what they will need. They might be able to use junk and string to make some convincing props; covering objects with tin foil might add to the effect. Stick-on Velcro is cheaply available

and will be useful for stopping their equipment flying around in zero gravity, just as on the real Space Station. Children might also be interested to learn that astronauts carry out lots of experiments in space, such as growing seeds with zero gravity, so they might like to set up their own gravity-free laboratory.

Taking it further

Children could link this work with the 'Super Hero Materials' topic as they find materials Zarg would find most suitable for various purposes,

such as keeping himself or his food warm, making a comfortable bed or washing his face.



4 Characteristics of effective learning

Playing and exploring

- Children are fascinated after interviewing older family members and enthusiastically share what they have learned in school.
- Children are able to suspend disbelief and 'buy into' the idea of an alien in the classroom.
- Children respond to the challenge of Zarg misunderstanding much of what they say by trying harder to explain what they mean.

Active learning

- Children are able to concentrate for a considerable period of time when they have chosen to work independently on the International Space Station.

- Children can work independently for a while on adult-initiated activities such as making an alien.
- Children show determination to see a project through.

Creating and thinking critically

- Children are able to have their own ideas to solve problems, e.g. by using more Velcro for heavy objects that keep falling down (due to the inconvenience of gravity in the class Space Station!)
- Children are able to comment on how they might make their alien 'even better next time' as they evaluate their work.

Early learning goals

ELG 1 Listening & Attention: All activities; **ELG 2 Understanding:** All activities; **ELG 3 Speaking:** All activities. **ELG 4 Moving & Handling:** Focussed exploration 3; **ELG 5 Health & Self-care:** Focussed exploration 1; **ELG 6 Self-confidence & Self-awareness:** All activities; **ELG 7 Managing Feelings & Behaviour:** All activities, especially Free-flow exploration 1; **ELG 8 Making Relationships:** All activities, especially Free-flow exploration 1; **ELG 9 Reading:** N/A; **ELG 10 Writing:** N/A; **ELG 11 Numbers:** Mathematics section; **ELG 12 Shape, Space & Measure:** Focussed exploration 3, Free-flow exploration 1, 2; **ELG 13 People & Communities:** Home/school links interviewing older family members; **ELG 14 The World:** Focussed exploration 2; **ELG 15 Technology:** All activities that use secondary sources; **ELG 16 Exploring & Using Media & Materials:** Focussed exploration 3; **ELG 17 Being Imaginative:** All activities, especially Focussed exploration 3 and Free-flow exploration 1.