





Introduction

Welcome to the Education Pack for 'Zoom!'.

Divided into Curriculum Areas, the activities are appropriate for EYFS to end of KS1 pupils (and can be extended to lower KS2). They provide contexts for learning which can be adapted to suit the learning stages of different ages of pupils.

A separate EYFS pack is also available to download from www.piedpipertheatre.co.uk.

Zoom! provides a great opportunity to heighten children's understanding and awareness of ways in which they can contribute to looking after their environment and therefore have a positive impact on climate change. 'Reduce, Reuse and Recycle' is a strong message that can be interpreted through all areas of the curriculum and our Education Pack aims to provide activities around this theme.

Space is also a major theme that runs through the play. You can find lots of ideas for using this as a curriculum theme in our <u>Education Pack for 'Star in a Jar'</u>.

The activities which follow should be seen as open ended – allowing children to take their learning and play in new directions as they respond to the stimuli of the story.

As preparation for the performance, or as a reminder to help stimulate further work we encourage you to look at our website where you will find a trailer, recordings of songs and images from the show. There are also illustrated and audio versions of the story of the play to share with your class.

We hope that this pack provides a useful jumping off point and welcome your feedback via nicola@piedpipertheatre.co.uk

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The Story of the Play

Illustrated and audio editions of this story for sharing with your class are available to download from the 'Teachers Resources' section of our website.

ZOOM!

It was a normal Friday night. Dad was trying to get Molly to go to bed. Molly was looking through her telescope, and filling in her Star Diary. Molly's Star Diary was very important. It was the book where she wrote down all the stars that she saw each night.

Molly knew a lot about stars and planets because when she grew up she was going to be a very, very, serious and famous scientist, astronomer and astronaut.

'Even the most very, very serious scientist-astronomer-astronauts need their sleep', Dad said. 'They've got to rest those mega brains.'

The phone rang and Dad went off to answer it. Molly was about to go to bed when she suddenly saw something in the sky. She ran to her telescope. What was it? A shooting star? A meteor? Whatever it was, it was going to land in the back garden. Molly grabbed her coat.

The back garden was dark and full of shadowy shapes as Molly crept outside. There was a loud banging sound and she ran to hide behind the biggest tree. Then the bushes rustled, someone...or something...was there!

The something was walking and talking, but it didn't look or sound like anything Molly had ever seen before. It was a space creature visiting from another planet!

The space creature had a special button that changed between hundreds of languages and at last they found English. The creature's name was Leelo, and it came from the planet Luniper. Molly had never heard of Luniper. It must be very far away; she knew all the planets in our solar system.

Leelo was carrying a broken part of a spaceship. It was the steering stick. When the spaceship crashed down to Earth, it had broken off. So had Leelo's most important spacesuit button...the ignition button to start the whole spaceship.









Leelo was very upset and began to cry; with the spaceship broken there was no way of getting home again. Molly said she would help Leelo find a way to fix it in the morning.

The next morning was Saturday and after gobbling down her breakfast Molly told Dad she wanted to play in the garden. She couldn't wait to get outside and find Leelo.

She found Leelo talking to a tree. Molly wondered what Leelo was doing. Leelo seemed very excited. Molly couldn't understand...it was only a tree.

'Tree?' asked Leelo. 'This is what you call your air cleaners?'

On Luniper they had many names for trees: Oxygen makers, Air cleaners, Life givers. Molly had never really thought much about trees, but Leelo thought they were very important.

Leelo spotted the wheelie bin. Leelo was really excited to find the rubbish inside, and tipped it out all over the lawn.

'Treasure!' Leelo said, picking up cardboard boxes and old milk bottles.

'Dad's not going to like this', Molly thought.

Leelo couldn't understand why we throw so many useful things away. On Luniper things were reused.

'Otherwise Luniper will run out of resources', Leelo explained. 'There would be nothing left!'

Molly thought hard about that. Was there stuff that she threw away that could be reused to help save Earth's resources? Suddenly she had a brilliant idea. Perhaps there was something that she could reuse to help mend Leelo's spaceship!

Molly rushed to the shed and came back with her rusty old scooter.

Leelo had never seen a scooter before. Molly rode it and then Leelo rode it; whizzing around on the scooter was fun. But that wasn't why Molly had found it.

'Leelo,' she said, 'I've got an idea. My scooter's old and rusty. It comes apart and...look! This top bit looks just like your steering stick.' Leelo's remaining buttons lit up with joy.









Leelo tied the bit from the scooter onto the spaceship with string. It was wobbly... but it worked. Now Leelo could steer the ship back to Luniper; but without a start button the spaceship would never get off the ground.

Molly had an idea. When Leelo had been sorting through the rubbish they'd found a milk bottle; maybe they could use the top for the start button? They tried attaching it but it was too small. Leelo was downhearted.

The stars were beginning to come out. Molly looked up at them. The North Star was shining brightly, lighting Leelo's way home if only she could find a way...

'First find the North Star then you'll know where you are,' she thought. 'That's what I always say when I look through my telescope'. Her telescope! An idea flashed into her head. She dashed into the kitchen.

On the side of her telescope was a round button. The focus button. The button you had to turn to bring the night sky into focus so you could see the stars. Molly took the milk bottle top from her pocket. The focus button was just a little bigger. The perfect size for Leelo's spacesuit.

Molly picked up the telescope and headed outside tell Leelo the good news, but just before she got to the door, something stopped her. She looked at her telescope again. Without the focus button the telescope wouldn't work. Molly hugged the telescope to her; it was her favourite thing in all the world; but without the button Leelo wouldn't be able be able to go home.

She had to help. She pushed the focus button onto the spacesuit; it fitted perfectly.

Leelo was delighted. Soon the spaceship would be zooming toward Luniper with its clean air, three moons, Zaazoo fruit, Zikzak nuts and, most importantly of all, Leelo's family and friends.

Leelo's favourite part about exploring was always the journey home.

'One day' Leelo said, 'Molly will fly back from a space mission. She will see the Earth getting bigger and bigger as she flies towards beautiful blue waters and green forests. She will know she is home. Look after your planet Molly.'

It was time for Molly and Leelo to say goodbye; they would never forget each other.

Molly watched as Leelo's spaceship flew off into the sky, getting smaller and smaller.

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The stars were shining brightly. It was a perfect night for star gazing.









English

Slogans: Reduce, Reuse, Recycle

Discuss what the slogan 'Reduce, Reuse, Recycle' means with the children.

(If you have an Eco Team in your school you could ask them to make a class presentation.)

Explain the term slogan - what are the features of a slogan?

Why are slogans used? What makes them effective? ('Reduce, Reuse, Recycle' is also a good opportunity to explain alliteration.) Can the children think of any slogans? They might think they can't but the following exercise may prove their power. What do the class think of if you say: 'I'm lovin' it'? (Mc Donalds) "No job is too big, no pup is too small!" (Paw Patrol) 'Every little counts' (Tesco)

Does your school have a motto – this is essentially a slogan – do the children know it?

Challenge the children to think of their own slogans for raising awareness of care for our environment and/or set the task of creating a poster, creating a dramatisation/advertisement for 'Reduce, Reuse, Recycle'.

Older children could give a presentation explaining their slogan to their peers.









Drama: What's My Action?

Leelo the Alien is able to speak many languages – but if we don't all speak the same language how can we make ourselves understood?

Can the children communicate with their classmates without speaking?

Put a range of simple activities on pieces of paper that are folded and put in a hat.

(e.g. brushing teeth, combing hair, riding a bike, digging a hole, drinking a drink, reading a book, etc.)

Volunteers take it in turns to pull out an activity and act it out for their classmates to guess. You could play this as a team game.

To extend this into a grammar activity showcasing verbs the guesser is asked to follow up their answer by picking out the verb.

The class could then come up with their own verbs to act out.

Alien Poster

An activity to practise using headings, labels and captions.

Children draw their own alien, give it a name (the Heading), and label the special features with a caption box giving more details e.g. the function of a part of the body.

Write instructions for . . .

The following ideas provide a context for instructional writing:

Can you write instructions for

- Making an alien or spacecraft from recycled materials (see Science section)
- Setting up a leaf experiment (see Science section)
- How to become a 'Planet Protector'











Compile a Class book about our Solar System

Children work as individuals, in pairs or larger groups to put together books that feature all the elements of non-fiction literature – including an **index**, a **glossary**, with each page featuring a planet or aspect of the solar system that requires a **heading**, **diagrams**, **labels** and **captions**.

This is a good way for children to apply their knowledge of non-fiction features. Provide children with sample books that they can use for research and as models for layout and design.

Keep a Diary

Molly keeps a star diary. Provide examples of how diaries are laid out by sharing some books that use a diary format – e.g. 'Diary of a Killer Cat' by Anne Fine, 'Diary of a Wimpy Kid' by Jeff Kinney, 'Diary of a Worm' by Doreen Cronin.

Leelo's Diary

Can the children write a diary entry for Leelo describing the visit to Earth? What might Leelo have wanted to remember? (Use the Story of the Play to help.)

Children could keep an individual diary (it could be part of their Learning Journals if they have them) or a class diary.

Also see links with Science and Maths Activities and keep a diary of phases of the moon.









Story writing: Out of This World

What would you do if an alien landed in your street, garden, yard, balcony?!

Use the play as a model for your story writing:

Introduction (where and who: think about character description - especially of the alien)

Problem (e.g. is the alien friend or foe? Does the alien need help like Leelo?) How do we solve the problem? (what is the action in the story?) Resolution (how does it end?)

To stimulate the children's ideas about life on another planet show them the short National Geographic Explorer Academy video (4 mins) with astronomer <u>Munazza Alam – Hunting for Earth Like Planets</u>

Hot Seating

Hot seating encourages children to listen and respond to their peers and adults, ask relevant questions and justify answers and opinions.

Children volunteer to be a character from the story – Leelo, Molly or Dad. The rest of the class formulate one or two questions to ask each character.

This is a good opportunity to expand children's questioning skills by helping them to develop the ability to ask 'open ended' questions – so that the person answering cannot just reply with 'yes' or 'no'. Encourage the use of how? why? when? what? where? to start the questions. Older pupils could write the down their questions and use the question mark correctly.

See the Star in the Jar Education Pack for the following English space-related activities:

A Glossary of Space A Planetarium Reading Corner Constellations – drawing, naming and creating a myth for your very own constellation Acrostic Star poem printable worksheet









Mathematics

What's the Time?

Molly is very good at telling the time. There are lots of opportunities to investigate the measurement of time for different levels of understanding and attainment.

Investigating how we measure units of time:

Seasons

Make a Seasons Wheel (there are lots of pre-printed resources on <u>www.twinkl.co.uk</u>)

To make a more advanced wheel use the <u>NASA website</u> to help to explain the Earth's orbit around the sun and why the southern and northern hemispheres have their warm summer at different times of the year.

Then children could make this wheel with 3 concentric paper circles fixed with a paper fastener in the middle (representing the sun). The outer wheel would name the seasons, the next wheel could be divided into the twelve months and the inner wheel could show the Earth on its axis in four different seasonal positions which the children need to line up and match.

How seasons affect the night sky

Molly notices that the stars she sees in the sky change according to different seasons.

The explanation is one that could be explored, depending upon the age and attainment of the children.

In a day, the Earth actually takes 23 hours and 56 minutes to turn on its axis. In 15 days this amounts to 1 hour earlier each day and in 30 days (about a month) 2 hours earlier. 2 hours earlier each month multiplied by 12 months equals 1 year.

This information could provide a lot of mathematical exploration for upper KS1/KS2 children.

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There is a great, but fast paced video explanation for older children 'Constellation Location', <u>here</u>. It explains why where you are on Earth, and what season you are in affects the constellations you can see.





Days and Hours

Children could keep a diary for a week or a timetable of activities for a day.

Calculate a passage of time

Molly gives some very precise times. Using individual clocks with digital faces and/or analogue face marked with minutes children could work out it is now 7.29 how many minutes more until...

Use TV timetables (simplified if necessary) for children to work out how long their favourite TV programmes last. They could use clock faces to help.

Or a time line:-

6.00	6.15	6.30	6.45	7.00	7.15
Channel 1	Art Ninja				Hey Duggee

Luniper Numbers

Leelo speaks many different languages but is having a little trouble translating Luniper numbers into Earth numbers.

The following printable sheet is a good chance for children to practise basic algebra by finding the missing numbers. The sheet uses bonds to 10 but you can adapt to make easier or more difficult.

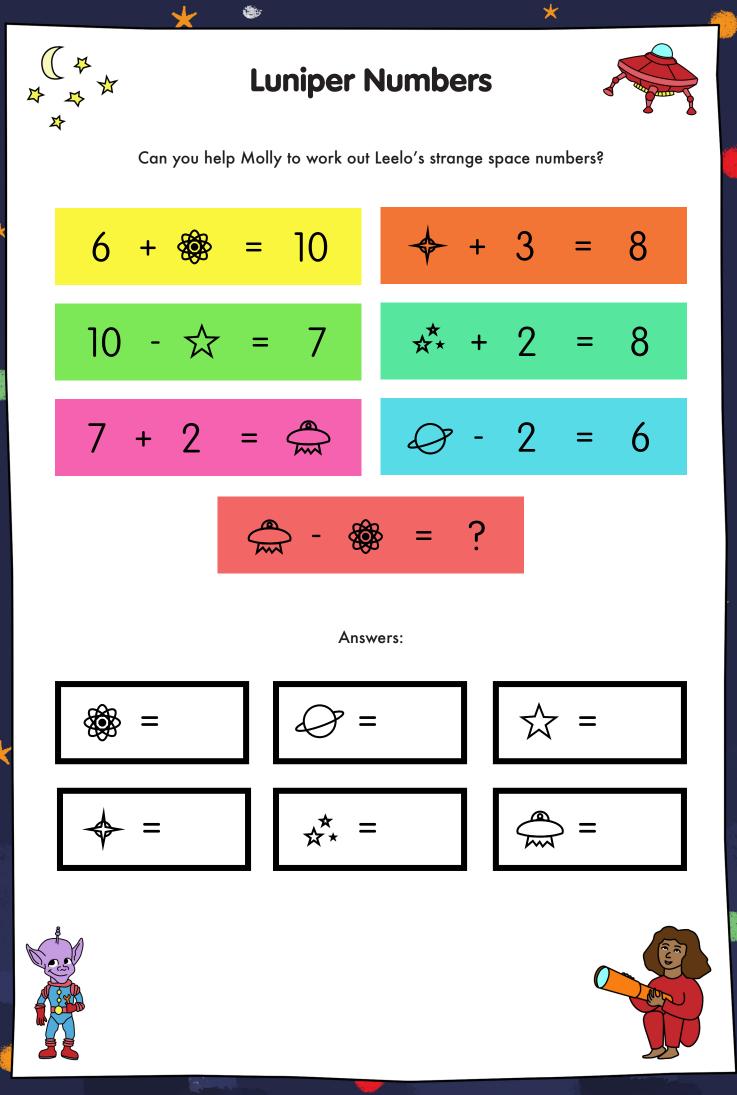
As an extension activity the children have to make up some of their own alien number calculations for a friend to answer.

See the Star in the Jar Education Pack for the following Maths space-related activities:

Shape – pointed stars Imagining huge numbers











Science

Zoom raises the issue of climate change in a way that is accessible to children.

The <u>National Geographic website</u> has a helpful summary of the science behind climate change. However, it is important to focus on what positive steps can be taken to meet the challenge. The article has some good suggestions for things that children can do.

The following activities follow under three main headlines for taking care of our environment:

1. REDUCE

Save our resources

First get children to make a list of all the activities they do that involve using power...

How many things do they use that are powered by electricity?

Powered by other fuels e.g. petrol?

How much water do they use each day?

If your school has an **ECO TEAM** invite them to give a presentation on saving resources to your class. If your school does not have an **ECO TEAM** this is a good prompt to set one up.

<u>www.ecoschools.org.uk</u> has many useful resources, including help setting up an Eco Team (alongside local authorities) that is relevant to all school ages from Early Years onwards.

Poster Campaign

Children could decide upon their own ways of trying to save resources, in school and at home e.g. turning off lights, shutting doors when the heating is on, walking to school, minimising use of plastic bottles etc. Make posters to remind others to save resources to post around the school. (This could tie in with the slogan activity in the English section.)









Wasting water

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'1 in 3 leave the tap running while brushing – wasting 24 litres of water a day.'

Source: Middlesex University 2014

Do any of the class leave the tap running while brushing their teeth?

Can they guess how much water that uses?

Show a 250ml bottle, 11 measuring jug, 51 bucket etc to help imagine volumes.

Divide the class into groups. Using a stopwatch each group times 10 seconds of running water into containers and get the class to measure the volume (should be approx. 11)

Explain that there are 60 seconds in a minute so 6 lots of this water would be wasted in a minute...and we need to double that for each two minute tooth brushing...and double that again for twice in one day!

To give visual context this is nearly 5 5l bottles, or you could collect empty drink bottles to show the total amount.

2. REUSE

Design an Alien

See Art and Design Section: 'Make an Alien or Spaceship from Recycled Materials'

Designing an alien can link to human biology – how do we breathe / move / eat etc.

How might this be different with your alien?

Do they have any other special features / abilities that humans do not?

Not All Machines Need Electricity

Encourage children to think about the machines that they see being used in everyday life. The six simple machines are: the lever and fulcrum (best example a see-saw) the ramp, wedge, pulley, wheel and axel, and screw. The explanatory science may be more suitable for KS2 but these machines will feature in most play areas for Early Years, Reception and Year 1.

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Provide children with a machine challenge- what is the best way to move this heavy wooden block using the play equipment? This will encourage them to use some of the equipment with a purpose. Then ask them to explain how the 'machine' helped them. Follow up discussion can be used to share the scientific principles as appropriate to the age and aptitude of the children.

3. RECYCLE

Online

The Eco Schools website is a vital resource for early years and KS1, explaining the seven steps towards gaining an Eco Green Flag award. The site is a mine of green information and has current recycling information for children.

The CBeebies characters Tee and Mo explain Reduce, Reuse and Recycle for the youngest children through their animated song <u>'Help our Little World'</u>. There is also an accompanying <u>game</u>.

For KS1 and up BBC Bitesize's <u>What should I do with my rubbish?</u> is an animated sequence that explores how litter and household waste can be recycled.

Sorting Materials

Sort materials for recycling according to their properties e.g. metal, plastic, wood, flexible, hard, shiny, etc. Give children a large group of different types of materials and ask them to sort according to their own criteria. Then ask them to sort into sets of materials that can be recycled or not. For the things that cannot be recycled- could they be reused?

Recycling Quiz

For the youngest children have some (clean!) waste objects and ask them to sort the objects into the correct recycling bins.

For older children have pictures of a wide range of objects that have been thrown away: which can be recycled?

This may lead to wider research into **upcycling** (again there are lots of craft ideas for creating useful items e.g. planters, bird feeders, etc on the Eco Schools and CBeebies websites). As well as suggesting donating items of clothing to charity shops it might be fun to see if children can transform old clothes into new outfits. (Why not host your own school 'Green Great British Sewing Bee'.)

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Recycle your wax crayons

Children can observe how materials can be changed by heating and cooling. Perhaps they can use their scientific skills to predict what will happen?

Make a collection of all the stubs of wax crayons that are in the classroom. Children can decide on the colours they want to combine. Give each child a small silicon cupcake case or use silicon ice cube trays so that they can put a few stubs into a case/section. Either put in a microwave until melted or put in 160 degree oven for about 10 minutes. Leave to cool until set hard and then try using in your art work.

Air cleaners: Trees!

Leelo is fascinated by the trees in Molly's garden, considering them to be very precious. This is a great opportunity to make children more aware of the importance of trees to our environment, as well as to appreciate their beauty.

Use the Woodland Trust website to find resources and activities to cover all areas of the curriculum (linked in to key stages).

Simple Photosynthesis

A simple experiment to show how leaves produce oxygen can be done in the classroom.

Put a large, freshly picked green leaf in a container and cover with warm water. (It may be good to do this in pairs or small groups). Leave in the sun/light for 2-3 hours. After this time look carefully at the leaf (a magnifying glass may help) and you should see little oxygen bubbles on the surface of the leaf.

See the Star in the Jar Education Pack for the following Science space-related activities:

Space facts, Relative size, Light









Geography

Climate Change

Climate describes the weather in a region over a very long period- several decades. Nasa's Climate Kids website provides some very good simple videos to illustrate the importance of, and answer questions about climate change that are appropriate for upper KS1/ lower KS2 pupils.

The following activities relate to the current National Curriculum programmes of study for Primary Geography:

What's the Weather?

Looking at seasonal and daily weather patterns is part of the National Curriculum. Why not encourage children to keep simple daily records of weather.

Older children can build up a data base of information that is more detailed e.g. measure the temperature and rainfall.

Data can be displayed in chart/graphs and then analysed.

Teachers (and then pupils themselves) can ask questions:

How many days did the temperature rise above ... degrees?

Which was the wettest day?

Be a weather presenter

Children can identify different types of weather – e.g. sunny, cloudy, rain, fog, snow etc., and design their own weather symbols. These can be attached to a map of the UK while a child gives a weather forecast. This could be videoed by another child camera operator to show to the rest of the class.









Impact of weather

Provide children with photographs from magazines, books, calendars etc., of different landscapes – for example deserts, polar regions, forests, flooded areas, farmland. Ask them to describe what the landscape looks like (its features) and then ask them about the how the weather makes the landscape. How does the weather affect the homes people live in? And the jobs they do?

Mapping it out - Important Trees

Provide a range of maps for the children to investigate.

Can they find how woods and forests are shown on their maps. If you have Ordnance Survey maps of the area local to your school, can the children identify any local wooded areas?

Making maps can be adapted to the age group of the children but they could all have a go at making a map of their local area to show where there are trees. This could lead to a discussion about whether more trees should be planted?









History

'One small step for man, one giant leap for mankind!'

In 2019 the 50th anniversary of the moon landings was celebrated. This is a significant historical event to be investigated.

There are lots of good resources available to share with children:

www.bbc.co.uk/newsround Apollo 11 moon landing

www.keystagehistory.co.uk moon landing

Diversity in Space

It is easier to find information, books and footage about white, male scientists and astronauts. <u>A Mighty Girl website</u> is a great source of information and great books about diverse women in space.

How transport has changed

An opportunity to make a time line marked over centuries, with pictures of important developments in transport; from riding animals, wheeled carriages, and bicycles, through to steam, jet, and rocket powered transport.

This could also provide the opportunity to discuss the impact of continued fossil fuelled transport on the planet with older children.

See the Star in the Jar Education Pack for the following History space-related activities:

Find out about scientists such as Copernicus, Galileo, and why their ideas were so important.

The history of astronomical instruments: sundials, astrolabes, astronomical clocks, telescopes.









Art & Design

Planet Art

This is an opportunity to explore lots of different mediums to create planets with different surfaces.

Provide circles of paper of different sizes, types and colours.

Children can experiment with:



Different types of mark makers in paint



- Rubbing different surfaces to create textures using wax crayons
- Paint blowing to create 'bubble prints'



Marbling



Using different scrapers – knives, forks, sticks, combs to create patterns/texture in thick paint



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Gluing on objects (planet circles should be thick card) - e.g. sticks, leaves, rice, pasta etc. and painting over

Display the children's finished planets on a black background (maybe spattered with white paint to make stars) and create a class galaxy.









Make an Alien or Spaceship from Recycled Materials

Children love to make models using recycled materials. Why not design and create your own spaceships and aliens using recycled materials (e.g. boxes, loo roll centres, washed foil etc.)

To stimulate ideas the Nasa website has a range of good ideas under the Craft Activities, including some helpful guidance to building your own spacecraft.

There are also lots of ideas for crafting activities using empty plastic bottles here.

Using recycled materials to create art more generally:

The Tate Gallery website has an area that provides excellent support for the art curriculum – the work of artists Sheela Gowda, Theaster Gates, Robert Rauchenberg and Sir Anthony Caro is explored and used to stimulate children's creative ideas. There is guidance on helping children to create 2D and 3D works of art and also a gallery of children's creations to inspire!

Telescopes and Starscopes

Use cardboard tubes to make and decorate simple telescopes- different sized tubes can be used to create extending scopes.

(For KS2 there are many simple instructions for making working lense telescopes online, e.g. on the National Geographic website).

Homemade telescopes can be made into Starscopes:

You will need an elastic band, and a circle of black paper larger than the end of the tube of your telescope. Make a pattern of holes in the centre of the black paper, using the pointed end of a pen or pencil. Fix on to the end of the telescope with a rubber band. Shine a torch through the other end to show your very own constellation pattern.









Useful Links

Stars and Space:

- <u>Simplified Constellation Legends http://www.tcoe.org/scicon/</u> <u>instructionalguide/constellations.pdf</u>
- <u>BBC Stargazing Live KS1 lesson plans http://downloads.bbc.co.uk/tv/guides/</u>
 <u>BBC Stargazing Live 2012 Lesson plans KS1.pdf</u>
- <u>CBeebies Stargazing a wonderful child friendly resource with stargazing</u> <u>maps, facts and tips, songs and games https://www.bbc.co.uk/cbeebies/</u> <u>shows/stargazing</u>
- <u>BBC Bitesize EYFS / KS1 Geography: Go Jetters Environment, weather and climatehttps://www.bbc.co.uk/teach/class-clips-video/eyfs-ks1-geography-go-jetters-environment-weather-and-climate/zfb3scw</u>
- NASA images of the earth from space https://explorer1.jpl.nasa.gov/ galleries/earth-from-space/
- <u>Solar System song full of accessible facts https://www.youtube.com/</u> watch?v=BZ-qLUIj_A0

Our Environment:

- National Geographic: talking to your kids about climate change https://www. nationalgeographic.com/family/talking-to-your-kids-about-climate-change/
- NASA climate Kids information https://climatekids.nasa.gov/climate-changemeaning/
- National Geographic Kids: what is climate change https://www.natgeokids. com/uk/discover/geography/general-geography/what-is-climate-change/
- <u>Woodland Trust: why do we need trees https://www.woodlandtrust.org.uk/</u> <u>blog/2017/12/why-do-we-need-trees/</u>
- <u>Royal Parks: why trees are important https://www.royalparks.org.uk/parks/</u> <u>the-regents-park/things-to-see-and-do/gardens-and-landscapes/tree-map/why-</u> <u>trees-are-important</u>









- <u>https://www.bbc.co.uk/teach/terrific-scientific/KS2/zjnmf4j (KS2)</u>
- <u>CBeebies Our Little World game https://www.bbc.co.uk/cbeebies/games/tee-and-mo-our-little-world-game</u>
- <u>CBeebies Tee and Mo's Help Our Little World song https://www.bbc.co.uk/</u> <u>cbeebies/watch/tee-and-moo-help-our-little-world-song</u>
- <u>BBC Bitesize: What should I do with my rubbish? https://www.bbc.co.uk/</u> <u>bitesize/clips/z8s87hv</u>



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