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| Class | 4th | Theme | Space and technology |
| Unit | 2 | Subtheme | Big and small |
| Unit genre | Report | Oral text type | Oral report |
| Vocabulary | Tier 1 examples: gigantic, minute, bird’s-eye view, broadest, tiny, gigantic, millimetre, ragged, microscope, powerful, transparent  Tier 2 examples: magnified, to scale, diameter, minuscule, substantial, ridged, resemble  Tier 3 examples: micrometre | | |
| Lesson resources | Multimedia links | | |

Fortnightly Plan

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| Lesson 1 | Digital poster (Story mode)  Digital poster (Explore mode): Talk and discussion  Circle time talking task: Echo call  Whole-class talking task: Astounding astronomy | Lesson 3 | Digital poster (Explore mode): Talk and discussion  Group talking task (Oral report): The microscopic world |
| Lesson 2 | Digital poster (Story mode): Recap  Digital poster (Question mode)  Whole-class discussion (Oral report): Zoom in  Pair talking task: Astronomic address | Lesson 4 | Digital poster (Poem mode): ‘Elephant’ |

Lesson 1

Digital poster (Story mode)

Play either the Story mode 1 (starters) or Story mode 2 (flyers) for the class, depending on the ability level.

As students to listen to the story, ask them to identify:

* one fact you already knew
* one fact you found incredible
* one fact you would like to tell someone

**Digital poster (Explore mode): Talk and discussion**

Explain that this poster is demonstrating interesting facts about *‘size’.*

Ask students, can you remember any of the words that describe *‘size’* in the story? (*Big, bigger, small, tiny, broadest, long, huge, gigantic, minute, miniscule, substantial, scale, zoom in, magnified, zoom back, bird’s-eye view, microscope, nothing is quite as it seems/appears*)

Explore other words for size. **Big**: large, great, enormous, massive, mammoth, immense, vast, cosmic, monstrous, tremendous, gargantuan, titanic, colossal, expansive, extensive, jumbo, tremendous, whopping, herculean. **Small**: microscopic, short, slight, paltry, insignificant, minuscule

Circle time talking task: Echo call

Organise students in a circle. Start the activity by calling out the word ‘big’. The first child in the circle echoes the word, then adds a synonym. The next child then echoes that word and adds their own synonym, e.g.

**Teacher:** Big

**Child A:** Big, large

**Child B:** Large, huge

**Child C:** Huge, enormous

**Child D:** Enormous, gigantic …

Continue until all synonyms for ‘big’ have been exhausted, then repeat the activity with synonyms for ‘small’.

Whole-class talking task: Astounding astronomy

Reveal only the images of the galaxy, the solar system and the countries on the top of the poster. Explain that when we study space and the universe in science, we are studying *astronomy.* This word comes from a Greek word *astro* referring to the stars and *nomus* meaning law. We call people who study astronomy *astronomers.* Now we are going to be astronomers.

Divide the class into two groups. Each member of Group A receives a piece of paper with one of the below written on it:

* The universe
* The Milky Way
* The Orion Arm (one of the arms of the Milky Way)
* Our solar system
* The sun
* Earth
* Ireland
* Name of your county
* Name of your town

Members of Group A hold up or wear their pieces of paper so they are clearly visible and move around the room.

Each member of Group B receives a slip of paper with a *‘size’* word on it. These words are:

*Vast, immense, massive, gigantic, enormous, huge, large, small, tiny, minuscule*

Members of Group B don’t share their size words with anyone else. All students move around the classroom searching for the best match for their size word from the other group.

When students are satisfied that they have found the best match, they remain with that person. When all students are in either a pair or a group, depending on how many students are in Group B, they then reveal their size words.

Students may differ in their opinions of whether The universe is *vast* or *immense,* whether the Milky Way is *massive* or *gigantic,* etc.

Encourage a whole-class discussion of *scale* (e.g. *Ireland is massive compared to our town but minuscule compared to the universe, etc.*) Members of Group A could then order themselves from largest to smallest based on the words on their sign.

Lesson 2

Digital poster (Story mode): Recap

Play either the Story mode 1 (starters) or Story mode 2 (flyers) again. Make sure students understand all of the vocabulary.

Digital poster (Question mode)

Go to the Question mode of the poster. Play each question and discuss the answers with the students briefly.

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| Q1. | What is the name of our galaxy? |
| Q2. | How big is a flu germ? |
| Q3. | What does a hair look like under a microscope? |
| Q4. | Roughly how long would it take to walk from Killarney to Dublin and back? |
| Q5. | Arrange these items in order from smallest to biggest: drop of blood; flu germ; finger; red blood cell. |
| Q6. | Not many people have hiked the whole length of the trail that goes across the USA. Why do you think this is? |
| Q7. | Name one way in which you could be described as enormous, and one way in which you could be described as tiny. |
| Q8. | Why do you think the planet Earth isn't shown in the picture of our galaxy? |
| Q9. | Think about the facts about flu germs in the poster. Why do you think it's so important to use a tissue when you sneeze, and wash your hands afterwards? |
| Q10. | Which is the most surprising fact you learned from the poster, and why did it surprise you? |

Whole-class discussion (Oral report): Zoom in

Present the wordless picture book story *Zoom* by Istvan Banyai to the class. See <https://www.slideshare.net/zarthustra7/zoom-by-istvan-banyai-23329406> for PowerPoint slides of the picture book OR <https://www.youtube.com/watch?v=JMhUujrN4iU> for a video of the book.

Pause at Picture 3. Encourage the students to predict what the story might be about. Repeat this throughout the book as more is revealed (*now* what do you think the story might be about?)

After students have watched the whole story, ask them the following questions:

* Think about the title of this story (*Zoom*). What does that word mean? (*To look at something either in a long shot from far away or a close up, nearby; magnify/minimise; reduce an image; increase or decrease the size of an image*)
* What was the story about? (*Our universe and how size differs depending on whether you are looking from far away or close up*)
* What is unusual about this story? (*There are no words*)

You could reinforce these concepts by showing the class this zoom-out sequence of the observable universe: <https://www.youtube.com/watch?v=xiWJoILkpVc>

Scaffold the students to generate a short report about the universe and our place in it, using the picture book as a basis. Use the following questions as prompts:

* What title would we give our report? (e.g. *Our place in the universe*)
* What opening statement could we use to give an introduction to our report about our place in the universe? (e.g. *Despite what we may think, we are actually a very, very small part of the vast universe that exists*)
* Can you describe what you see in the picture book? (Aim for about three to five sentences here, e.g. *On Planet Earth there are many interesting types of animals and people. Many people live in rolling countryside or bustling cities, while others live on remote islands. A bird’s-eye view from the sky shows many people, animals, things and places on planet Earth. However, when you look at Planet Earth from space, it becomes clear just how minuscule we all are in the vast universe*)*.*

Encourage students to use the present tense, descriptive language, categorical terms and connectives (e.g. even though, whereas, however, furthermore, unlike, etc.)

Pair talking task: Astronomic address

Organise students in pairs. Have each pair create an address for the school which reflects its place in the universe, e.g.:

*Name of school*

*Address of school*

*Ireland*

*Europe*

*Planet Earth*

*Orion Arm*

*Milky Way*

*Galaxy*

*Universe*

Lesson 3

Digital poster (Explore mode): Talk and discussion

Go to the Explore mode of the poster. Focus on the ‘Small’ images on the poster. Ask students the following questions:

* How is each pair of images connected? (*The image on the right of each pair magnifies something very tiny that is not visible in the image on the right*)
* How are the images magnified? (*By using a microscope*)

Discuss the word ‘microscope’:

**Microscope** (Noun): *Scope* – root word, meaning to look/see, *micro* – something extremely small). **Microscopic** (Adjective: Something so small it can only be seen by a microscope.

Explore in a similar way the following words in their noun and adjective form: universe/universal; cosmos/cosmic; astronomy/astronomic; galaxy/galactic.

Group talking task (Oral report): The microscopic world

Organise students in groups. Scaffold each group to prepare an oral report on the topic ‘The Microscopic World’ (<https://easyscienceforkids.com/things-you-cant-see-microscopic-life/>)

Encourage students to include in their reports the following: Title, opening statement informing the listener what the report is about, a description of the microscopic world – organisms, what they are and where they are found, a concluding statement.

Groups then present their reports to another group or the rest of the class.

Lesson 4

Digital poster (Poem mode): ‘Elephant’

Go to the Poem mode of the poster. Play the poem, *Elephant* by Alan Brownjohn.

**Elephant**

By Alan Brownjohn

It is quite unfair to be

obliged to be so large, so I suppose

you could call me discontented.

Think big, they said, when

I was a little elephant; they

wanted to get me used to it.

It was kind. But it doesn’t help if,

inside, you are carefree in small ways,

fond of little amusements.

You are smaller than me, think

how conveniently near the flowers are,

how you can pat the cat by just

halfbending over. You can also

arrange teacups for dolls, play

marbles in the proper season.

I would give anything to be

able to do a tiny, airy, flitting

dance to show how very little a

thing happiness can be really.

Encourage students to speak the poem with appropriate expression. Draw students’ attention to the run-on lines and their impact on the rhythm of the poem.

Ask students the following questions:

* What do you think the poet means when he says *‘inside, you are carefree in small ways’?*
* Why can’t the elephant *‘arrange teacups for dolls’* or ‘*play marbles’* or ‘*do a tiny, flitting dance’* do you think?
* What word does the poet use which tells us how the elephant is feeling? (Discontented)
* Do you agree that he should be discontented? Why?
* What would it take to make the elephant happy do you think?
* What can the elephant do that you would like to be able to do?
* How could you console the elephant?
* Do you agree that a happiness can be a *‘very little thing’*? Give an example.
* Draw a picture of yourself beside an elephant. Think carefully about your drawing. What do you think we can learn about size from this?