

Timetable 14th April 2020

Reading Mission:
30 minutes

Children to read or support them to read the following text.

The Universe is everything we can touch, feel, sense, measure or detect. It includes living things, planets, stars, galaxies, dust clouds, light, and even time. Before the birth of the Universe, time, space and matter did not exist.

Most astronomers believe the Universe began in a Big Bang about 14 billion years ago. At that time, the entire Universe was inside a bubble that was thousands of times smaller than a pinhead. It was hotter and denser than anything we can imagine.

Then it suddenly exploded. The Universe that we know was born. Time, space and matter all began with the Big Bang. In a fraction of a second, the Universe grew from smaller than a single atom to bigger than a galaxy. And it kept on growing at a fantastic rate. It is still expanding today.

It's hard to know exactly why this event happened, but what we do know is that this explosive event started with a 'Big Bang' and burst of energy that was extremely hot. 1,800 trillion trillion degrees to be more precise! That is an extremely hot explosion. Within less than 1 second, the universe was born, and has been expanding and getting colder and colder by the minute.

While it's hard to understand how and why the Big Bang happened, scientists pretty much know what has been happening ever *since* the Big Bang happened. They know this through many experiments, and put all of their information together to get the best answers.

The Universe contains billions of galaxies, each containing millions or billions of stars. The space between the stars and galaxies is largely empty. The Universe is incredibly huge. It would take a modern jet fighter more than a million years to reach the nearest star to the Sun. Travelling at the speed of light (300,000 km per second), it would take 100,000 years to cross our Milky Way galaxy alone.

No one knows the exact size of the Universe, because we cannot see the edge – if there is one. All we do know is that the visible Universe is at least 93 billion light years across. (A light year is the distance light travels in one year – about 9 trillion km.)

The Big Bang is still continuing to this day, which causes to expand the universe every minute. Even as you read this. How wonderful is that!

After they can answer these questions. These can be verbal answers or they could be written down or typed. Children could even draw their responses. Suggested answers are in italics.

When do most astronomers think the universe began?

14 billion years ago.

Why does Big Bang use capital letters?

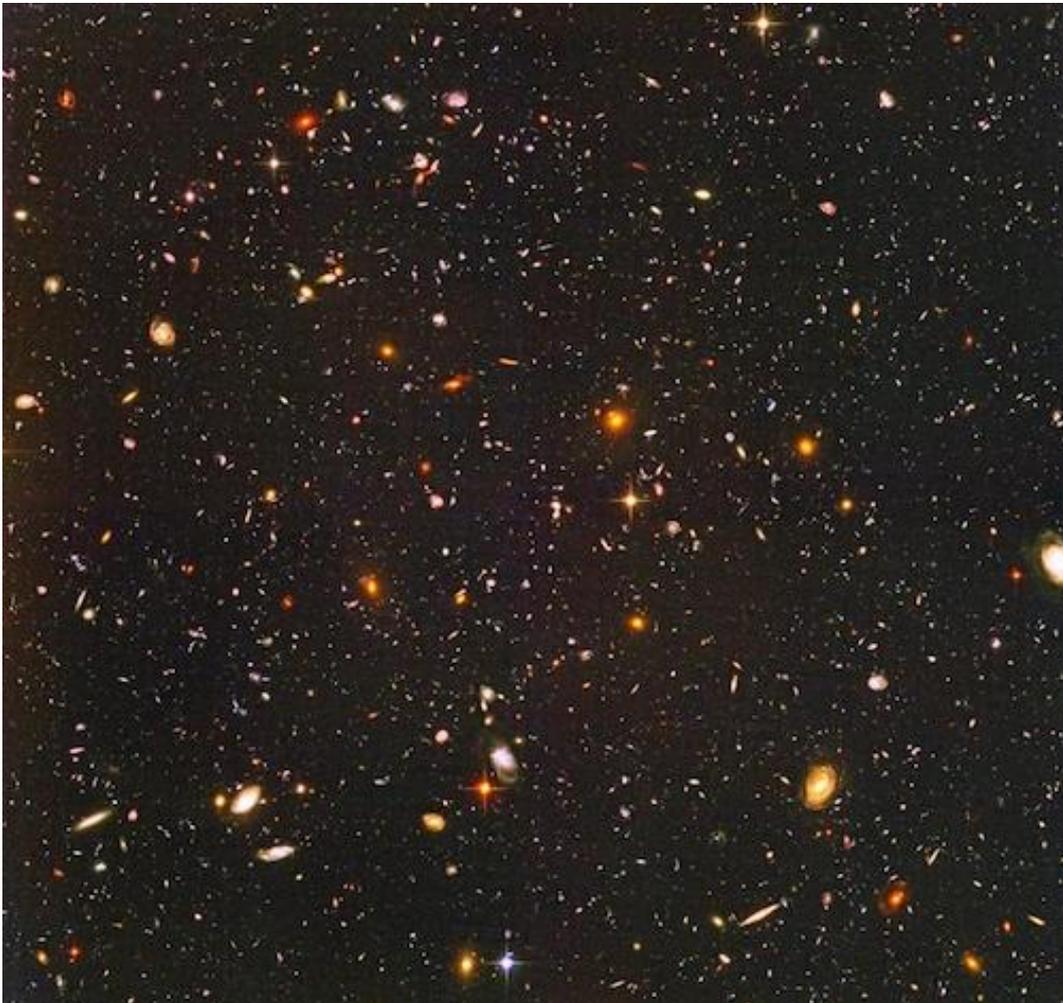
	<p><i>Because it is a proper noun/the name of the event.</i></p> <p>Is this a fiction or non-fiction text? How do you know?</p> <p><i>Non fiction, it is telling us facts about how things were in the past.</i></p> <p>Look at the first sentence, "Most astronomers believe...". Is it fact or opinion that the Big Bang happened? How do you know?</p> <p><i>Opinion, based on evidence. E.g. "They put all the information together to get the best answers."</i></p> <p>Why is it difficult to know what happened to create the Universe?</p> <p><i>Nobody was there to see it.</i></p> <p>What was there before the birth of the Universe?</p> <p><i>We don't know for sure, but probably nothing,</i></p> <p>How long would it take a jet fighter to reach the star nearest our sun?</p> <p><i>More than a million years.</i></p> <p>The Universe is bigger than humans can think about very easily. Imagine you are the first scientist to come up with this theory. Can you summarise it so that other people might understand?</p> <p><i>Appropriate summary of the above information, e.g. Before the Universe there was nothing, but a huge amount of energy exploded and started spread everything that exists out, creating space and all the things inside it.</i></p>
<p>Writing Mission: 30 minutes</p>	<p>This week you are going to plan and write a science fiction story (often called sci-fi). You might know many sci-fi stories yourself – Star Trek, Star Wars, many of the Marvel movies, Wall-E, Doctor Who, E.T., Jurassic Park, Lilo and Stitch... the list goes on.</p> <p>Usually sci-fi stories have one or more of the following:</p> <ul style="list-style-type: none"> • Robots • Aliens • Technology that can do crazy things (teleport people, spaceships, bring dinosaurs back to life) • Time travel • Strange planets or other worlds (including strange and different versions of our world!) <p>Today we are going to decide what you want your story to be about. Tomorrow you will plan it. Then you will write it! On Friday you will read your work to someone else as the reading task.</p> <p>Your story could involve any of the ideas above. If you are stuck, you could base your story in our world but change one thing, e.g. everyone has to wear hats but the hero loses his, or instead of planes everybody uses hot air balloons to get around. How would that change things?</p> <p>If you are really stuck, there are some sci-fi story starters at the end of the timetable!</p>

	<p>Jot down what stories you might like to write. Even if you really like one it can help to think of some others and write them down too. You might be able to use more than one idea in your story! When you have done that, you can choose your favourite and think about it overnight, ready to plan tomorrow.</p>
<p>Maths Mission: 30 minutes</p>	<p>Today you are going to practise times tables! You could:</p> <ul style="list-style-type: none"> • Play hit the button https://www.topmarks.co.uk/maths-games/hit-the-button • Practise at the maths factor (click “Take the check now”) https://www.themathsfactor.com/ • Write out your times tables and test yourself or have a family member test you • Draw a times tables grid (12 cm by 12 cm) and colour in boxes belonging to that times table to find patterns.
<p>Topic Mission: Day 1</p>	<p>This week you are going to create some space artwork. There are lots of options for this!</p> <p>You could:</p> <ul style="list-style-type: none"> • Use chalk on black paper to create planets • Paint an alien landscape • Design and label your own detailed spaceship <p>I am going to describe how I would create a starscape. Find some pictures below that I could use for inspiration.</p> <p>Firstly, I would need a range of coloured pencils and some blank paper. A3 paper would be most impressive when finished, but would take the longest time to complete properly and so A4 may be more appropriate, or A5 if you wanted a shorter piece.</p> <p>The main skill we will be focusing on is patience. Patience (as I have told the children many times this year!) is key to all artwork – if you lose patience at some point, no matter how close to the end, your work will end up messy.</p> <p>Just like paints, coloured pencils can be blended together. Much as we learned with painting, black is VERY black and artists tend not to use it very often. In fact, space is one of the few times that using black can be appropriate – but not across the whole picture, as you can see below. Layer dark blues, purples and very dark reds with little bits of black to find some good “space-y” combinations of colour. Today’s mission is to practise mixing these colours and find what works. Don’t forget to write down what you did to make the colours so that you remember them!</p>



Galaxy NGC 4414. Galaxies are a group of stars – between a few hundred million and several hundred trillion stars each.

The picture below has no stars – every single one of these is a galaxy.





An enhanced image of galaxy clusters

Our galaxy, the Milky Way, seen from Earth (when there are no street lights to get in the way of our view)



The Orion Nebula. Nebulas are clouds of dust and gases in space.



The Carina Nebula. This is a diffuse nebula, which means it is spread out. Some nebula have clearer edges, like the Crab Nebula.

Story starters:

- 1) After a harrowing journey, Commander Lork took her first footsteps on the unknown planet. What lay before her looked like nothing that she had ever seen on Earth: a landscape of purple mountains, toxic gas that radiated from every surface and, right under her boots, footprints - large, seven-toed footprints...
- 2) The horrified astronaut could hear his quickened breathing echoing loudly in his helmet. He could scarcely believe that he was face to face with an extra-terrestrial being. The horror of the Martian's appearance had shaken him to the core; he stood stock-still, incapable of movement.
- 3) After endless months of searching and excavation, Doctor Xenon made an amazing discovery. He held up the mysterious object – would his find finally prove the existence of life elsewhere in the Solar System?
- 4) With a blinding flash of light, Professor Scriffle found himself being transported through time to a futuristic land that defied all belief. He felt a bizarre mixture of panic and pride. His Transferotron 4000 had finally proved all his doubters wrong: time travel was indeed possible.
- 5) The emergency alarms rang loudly around the spacecraft. The crew looked out of the shuttle window to see an unidentified object approaching them at warp speed. There was no time to change direction and impact was imminent...