

Science and Story

Suggested lesson plan for

KS1_Year 2

Aims: To help pupils recognise that science makes use of stories, and that the stories of science, like the stories of the Bible, tell us something about ourselves and can change people.

Outcomes: to recognise that just because something is presented as a 'story' does not mean that it is 'made up' or untrue; to be able to talk about a science story and to think about it in relation to one or more stories of the Bible.

A science story: the Big Bang

Begin by asking the class if they have heard the term 'big bang' and if they know what it refers. Below is a short description of the big bang as the start of the universe. How much of this 'story' gets told may depend on how many of the children already know what the big bang is:

Our universe is a big place. So big, we can't even see the edges of it and many people believe that it might not even have any edges, it just goes on and on. This very big universe is also very old – almost 14 billion years old! But where did it come from? How did it get here? Almost 14 billion years ago, it was a tiny, tiny point – so small if anyone had been there, they wouldn't be able to see it. But even though it was so small, that tiny little point contained what would become our universe. What happened was this. That tiny little point went bang! It was a *big* bang. Have you ever seen a firework go bang? Do you remember how, when the firework went bang, the sparks from it spread out and went in all directions? That's what happened with the universe. But, when a firework goes off, eventually all of the sparks fizzle out and fall back to the ground. With the universe, that didn't happen. As you might expect, it was very hot at first, and all that existed was radiation – a type of light that we can't see. But then, when things started to cool down, tiny particles started to come together and first they formed very small atoms – the things that everything is made of. But then more atoms came together and these clumps of atoms kept growing until they got so big stars and planets started to form. This is still happening, and new stars and planets are being made even now. The universe is still expanding, too, with stars and galaxies moving away from each other. We don't know exactly how long the universe will go on like this, but we do know it will be a long, long time.

After telling this story, explain that this way of thinking about the universe is still very new. Before this story, people thought about the universe very differently. For example, some scientists thought that the universe had always existed as we see it now. Only in the 1920s did the Roman Catholic priest and astronomer Georges Lemaître propose the idea of the Big Bang (he didn't call it that, others did as way of making fun of Lemaître's idea, but the term became accepted as the standard way of talking about the idea of how the universe came to be). The big bang theory was widely accepted as the best explanation for the origins of the universe when scientists began to find evidence that showed it was probably right – the cosmic radiation that is a 'leftover' from the big bang and the fact that galaxies are still moving away from each other.

Discussion: ask the children their thoughts about

1. Is it important to have a story about where the universe came from?

Why/why not?

2. Do they think that the big bang story changed the way people think about the universe?

3. Do they think that a story is a good way to tell others about something that happened or the way that things are? Does 'story' mean untrue, or do they think that there are true stories? Ask them to think about how they might tell a friend about what they did on a holiday – would it be a list of dates/times/activities, or would it be more like a story about what they did?

A religion story (Genesis 1.1–5)

In the beginning when God created the heavens and the earth, the earth was a formless void and darkness covered the face of the deep, while a wind from God swept over the face of the waters. Then God said, 'Let there be light'; and there was light. And God saw that the light was good; and God separated the light from the darkness. God called the light Day, and the darkness he called Night. And there was evening and there was morning, the first day.

Discussion: This tells the story of the universe in a different way from the big bang story. Ask the children to consider

1. Does telling the story in two different ways make one true and one not true, or do they think that the different stories might let us think about the same thing in different ways? Can they think of a way that someone who believes in God might make sense of both the big bang story and the Genesis story? (e.g. the big bang story explains how the universe came into being, but the Genesis story tells us that God was involved and is interested in the universe and how it develops)

2. For people who believe in God, why might a story that shows God involved in creating the universe be important?

Activity:

Option 1: Get the children to look at the big bang story and the Genesis creation story side by side. Ask them to identify things that seem similar in the two stories (some examples might be creation coming from something undefined; light being the first thing to come into existence) and things that are different (some examples might be in the big bang story, there is no mention of God, the Genesis story mentions water and the earth). Ask them to think about why the stories might have these similarities and differences

Option 2: Ask the children to write a factual story of something that happened to them last year (this could be something that happened in school or at home or on holiday, it can be a happy or sad thing or emotionally neutral). After they have written it, ask them to look at their story and see if they have included just facts, or did they talk about feelings, thoughts,

relationships. If they've included more than facts, ask them why the other things are important to the story.

Something to think about

People who believe in God believe that God was involved in the creation of our universe and cares about what happens to it. The story of creation in Genesis 1 is a way of expressing that belief. The story doesn't say how exactly the universe came into being when God spoke. Science can tell us about the 'how' of things. Sometimes, we express the science by means of stories, because these help us to understand and to remember the scientific facts. It's important to remember, though, that scientists are still interested in and learning about the universe, so the story of the big bang might change and have to be retold as we learn more about our amazing universe. Our understanding of God can change and develop, too, and the story of God creating is told in many different places in the Bible and in many different ways.

Activity:

Option 1(to go with option 1 above): Ask the children to look at their list of things that are the same and different between the two stories. Do they think that those lists might change if scientists discover something that adds to or changes the big bang story? (NB: obviously, without knowing what in the story might change, they can't know what on the list might change – what is important is the idea that if the story changes, its relationship to other stories/ideas will also change).

Option 2 (to go with option 2 above): Ask the children to go back to the stories they have written and to add something about what happened after the event they have described. Does having more information change the story or how somebody might understand it in any way?