

Galaxy Snow Globe

Curriculum Link:

Understanding Earth and Space Systems - Space

Did you know that the stars you see in the night sky are several light years away, far beyond the solar system? These stars make up galaxies in space. Make your own galaxy in this mesmerizing activity!

STEM Q for You: What is a galaxy? ... *A galaxy is found in space and it is a collection of gas, dust, billions of stars, and their solar systems.*

Materials You'll Need:

- Empty mason jar and lid
- Water
- Food colouring
- Glitter
- Star confetti
- Baby oil
- Beaker (500mL)
- Duct tape or hot glue gun and glue sticks

Procedure:

Step 1

In the beaker, you are going to add 400mL of water. Next, add a few drops of food coloring to the water, with your preferred choice of colour to make your galaxy.

Step 2

Fill the empty mason jar halfway with baby oil. Add some glitter and star confetti to your snow globe.

STEM Q for You: What natural phenomenon keeps the contents of the galaxy together? ... *Gravity is the force that keeps matter with mass or energy together through the law of attraction. This is what prevents the galaxy and its contents from falling apart.*

Step 3

Fill the rest of the globe with the coloured water mixture made in the beaker. Make sure to leave enough room to close the lid. Tape or glue the lid shut to ensure that no liquid will leak out. Swirl the globe and be mesmerized by your very own galaxy!

Try this! Glue a small spaceship figure or a marble to represent a planet to the inside of the lid before closing it.

STEM Q for You: Why did the steps tell you to put oil in the snow globe before adding the water mixture? ... *Oil and water do not mix together. The food colouring will stay mixed with the water and separated from the oil. The oil will always float to the top, as it is less dense than water. Since, the two do not mix, it allows you to see cool patterns and movements when you shake the snow globe.*

The STEM Behind the Fun:

What are the four types of galaxies called? ... *They are called elliptical, spiral, barred spiral, and irregular. As you can tell, the galaxies are categorized based on their shape. The most common type of galaxy is the spiral galaxy. Around 77% of the galaxies observed by man are spiral galaxies.*

What galaxy is the Earth apart of? ... *The Earth is part of the Milky Way Galaxy. The sun and other planets of the solar system are also part of the same galaxy. Researchers have estimated that the Milky Way is made up of around 100 billion stars, every single star you see in the sky is part of the Milky Way Galaxy! The solar system makes up a very small portion of the galaxy.*

What is the Milky Way Galaxy? ... *The Milky Way Galaxy is a spiral-shaped galaxy. It has large spiral arms with a disk and a bar of billion of stars in the center. It is called the Milky Way because it appears as a milky band of light in the sky when you look at it in a dark area.*

Why are black holes found in the Milky Way? ... *A black hole is a lot of matter that is packed into a very small area. For example, when a star ten times more massive dies, it leaves a small, dense*

core behind. This results in a gravitational field so strong that not even light can escape it. There is as many as ten million to a billion black holes in the Milky Way.