



## Activity 3: Nebulas — Where Stars Are Born

### Introduction

A **nebula** is an **interstellar** cloud of dust and gas. Some nebulas are called “star nurseries” because that’s where stars are formed, or “born.” Our own Sun was born 4.6 billion years ago!

### Supplies (for each child)

- Clear glass jar with a lid
- Plastic spoon
- Water
- Tempera paint (at least 2 colors, blues, purples, and pinks work well)
- Glitter
- Cotton balls (about 18 per child, depending on the size of the jar)

### Get kids thinking

In this activity, kids will create a model of a nebula. A nebula looks like a big cloud of dust and gas located in **interstellar** space. They are very far away — the closest one to Earth is called the **Helix Nebula** and it is 700 **light years** away. That means even if you could travel at the speed of light, it would take you 700 years to get there!

**Ask kids:** If nebulas are so far away, how do we know what they look like? **Astronomers** use very powerful space telescopes, such as the **Hubble telescope**, to take pictures of nebulas.

Share photographs of the Helix Nebula and the Orion Nebula (see pages 17-18). If you have access to the Internet, watch this video from NASA, [Flight Through the Orion Nebula](https://www.nasa.gov/feature/flight-through-the-orion-nebula).

<https://www.smithsonianmag.com/smart-news/take-trip-through-orion-nebula-nasas-awe-some-video-1-180967825/>



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### Helix Nebula







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### Orion Nebula



On a clear night, if you look at the constellation [Orion](#), you might get a glimpse of a star nursery. Below Orion's belt (near the tip of his sword) about 1,350 light years from Earth, the nebula looks like a mudge in the sky. But that hazy smudge is Orion Nebula, which creates some of the [Milky Way's](#) newest stars.



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### Let's get started!

Have kids fill one-third of their glass jars with water. Tell kids to add a few drops of tempera paint to the jar and stir.

Then have kids add 3-6 cotton balls (depending on the size of the jar) to the water mixture in the jar, pressing down with the spoon. Next, ask kids to sprinkle in about a teaspoon of glitter.

Tell the kids to repeat steps 1-4 two more times, or until their jar is full. Screw on the lid and your nebula jar is ready to display.

The nebula jar is a colorful (and even calming) object for a child's room, plus they can proudly say to visitors, "look, I made a nebula" and then explain what that word means!



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