

58 - Galaxies

As you probably know, we all live in the Milky Way galaxy. But did you know there are HUNDREDS of BILLIONS of other GALAXIES in the universe? What do they look like, how were they formed and how long would it take to travel to one?

From Earth, the Milky Way galaxy looks like a swirling cloud of dust streaking across the night sky. For centuries, people thought this was the entire universe. But about a hundred years ago, astronomers discovered some objects in the sky... are actually other galaxies!

There are three major shapes of galaxies: elliptical, spiral, and irregular. Elliptical galaxies are shaped like a circle or oval -- and they tend to be the older ones. Spiral galaxies have arms extending out and rotating from their centers, which are tightly-packed bulges of stars, gas and dust. The Milky Way galaxy is a spiral galaxy. The third group of galaxies are called irregular because they don't have much of a shape at all. They're just kinda -- weird looking.

The earth and the solar system are about 26 THOUSAND light years away from the center of the Milky Way galaxy... and our galaxy itself is about 100-THOUSAND light-years from one end to the other. But that's nothing compared to the amount of distance between galaxies. Our closest neighbor, the Andromeda Galaxy, is two-and-a-half MILLION light years away! The Andromeda Galaxy is also the most distant object in the night sky that you can see without using a telescope!

What You'll Learn

1. What are galaxies made of?
2. Why would it be very difficult to travel across an entire galaxy? (Much different than in movies!)
3. What will happen when the Andromeda and Milky Way Galaxies collide?

Activities

1. Want to learn more about galaxies? [PBS](#) has some great videos and other resources for you to learn about galaxies and what makes each one unique.
2. Galaxies are always moving. You can create your own swirling galaxy in a jar by following [these](#) instructions. Make sure you get permission from an adult first!

3. You can make constellations, or groups of stars, shine on your walls! [Print](#) your own constellation cards and grab a flashlight. Next time you are outside after sunset, try to find your favorites in the night sky!

Additional Resources

In order to see galaxies, we need strong telescopes. But how does a telescope work and how big does it need to be? Check out [this](#) video from the BBC on how a telescope works! If you were to discover a galaxy, what would you name it and why? Scientists have only discovered a small percentage of what is out in space. Perhaps you will discover an amazing galaxy someday.

Kid News

Do you like loud noises? Probably not. Did you know that fish and other sea life don't like loud noises either? As humans use the oceans for more resources, the noise levels underwater are increasing. Sea life does not like these loud noises and swim away, reducing their habitat area. Read more about what can be done to make the oceans a quieter, nicer place to live [here](#).¹

¹ This activity guide is for the Who Smarted? podcast www.WhoSmarted.com