

Types of Galaxies Article & Comprehension Questions

What are galaxies?

Galaxies are huge collections of stars, dust and gas. They usually contain several million to over a trillion stars and can range in size from a few thousand to several hundred thousand light-years across. There are hundreds of billions of

galaxies in the universe. Galaxies come in many different sizes, shapes and brightnesses and, like stars, are found alone, in pairs, or in larger groups called clusters. Galaxies are divided into three basic types: spirals, ellipticals and irregulars.



- 1.) What are galaxies?
- 2.) What is the range in size of a galaxy?
- 3.) Galaxies come in different _____, _____, and _____.
- 4.) What are the three types of galaxies?

What is a spiral galaxy?



Spiral galaxies get their name from the shape of their disks. In a spiral galaxy, the stars, gas and dust are gathered in spiral arms that spread outward from the galaxy's center. Spiral galaxies are categorized by how tightly wound their spiral arms are. Spiral galaxies have a lot of gas, dust and newly forming stars. Since they have a lot of hot, young stars, they are often among the brightest galaxies in the universe. About 20% of all galaxies are spirals. We live in a spiral galaxy called the Milky Way.

- 5.) Describe what a spiral galaxy looks like?
- 6.) Why are spiral galaxies amongst the brightest galaxies?
- 7.) What percentage of galaxies are spiral?

- 8.) In what galaxy do we live?
- 9.) What type of a galaxy is the Milky Way?

What is an elliptical galaxy?

Elliptical galaxies are shaped like ellipses (stretched circles). Some elliptical galaxies are more elliptical than others while some are relatively flat looking. Elliptical galaxies are made up of mostly old stars, and do not have much gas and dust. There is very little new star formation in these galaxies. Elliptical galaxies also come in many sizes. The largest galaxies we see are elliptical. However, elliptical galaxies can also be small. About 60% of all galaxies are elliptical.



- 10.) Describe what an elliptical galaxy looks like?
- 11.) How is the star formation in an elliptical galaxy different than in a spiral galaxy?
- 12.) What percentage of galaxies are elliptical galaxies?

What is an irregular galaxy?

Irregular galaxies have no particular shape. They are among the smallest galaxies and are full of gas and dust. Having a lot of gas and dust means that these galaxies have a lot of star formation going on within them. This can make them very bright. About 20% of all galaxies are irregulars.

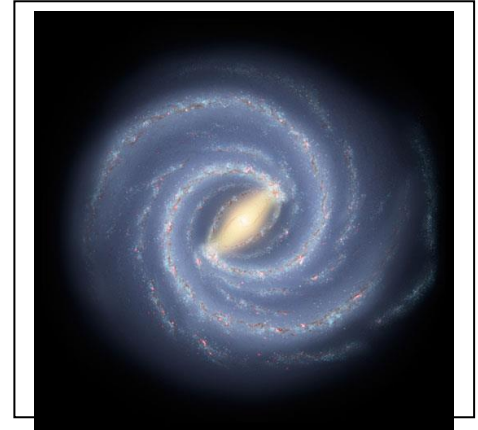


- 13.) What do irregular galaxies look like?
- 14.) Why are they so bright?
- 15.) What percentage of the galaxies in the Universe are irregular shaped galaxies?

What is the Milky Way?

The Milky Way is the galaxy in which we live. It is a spiral shaped galaxy that contains about 200 billion stars, including our Sun. It is about 100,000 light-years across and about 10,000 light-years thick. If you are at a place which has a very dark night sky, you can sometimes see the Milky Way as a thick band of stars in the sky. We live near the edge of the Milky Way.

- 16.) How many stars does the Milky Way galaxy contain?
- 17.) What star provides us with heat and energy?
- 18.) Where do we live within the Milky Way galaxy?



How many galaxies are in the universe?

Astronomers think that there are at least several billion galaxies in the universe. The exact number is not known. The estimate of how many galaxies there are in the universe is done by counting how many galaxies we can see in a small area of the sky. This number is then used to guess how many galaxies there are in the entire sky.

- 19.) Why do we not know the exact number of galaxies in the universe?

Do galaxies move?

Yes, galaxies do move. They both rotate and move through space. Galaxies rotate around their centers with the sections of the galaxy that are farther out from the galaxy's center rotating more slowly than the material closer to the center. Galaxies are also moving away from each other due to the expansion of the universe. A galaxy which is part of a group of galaxies, called a cluster, also rotates around the center of mass of the cluster.

- 20.) Describe the movement occurring amongst galaxies.