

Lesson 4 Galaxies and the Universe

Read pgs = 439-444

Predict three facts that will be discussed in Lesson 4 after reading the headings. Record your predictions in your Science Journal.

Main Idea

Galaxies

I found this on page _____.

I found this on page _____.

I found this on page _____.

Details

Relate the number of stars in galaxies and the universe.

Galaxy	Universe
hundreds of billions of	hundreds of billions of

Contrast scientific knowledge about dark matter.

Dark Matter	
Scientists know that...	
Scientists hypothesize that...	
Scientists don't know...	

Key **Categorize** details about types of galaxies. List at least four details about each type.

Spiral	Elliptical	Irregular
.	.	.
.	.	.
.	.	.
.	.	.

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Lesson 4 | Galaxies and the Universe (continued)

Main Idea

I found this on page _____.

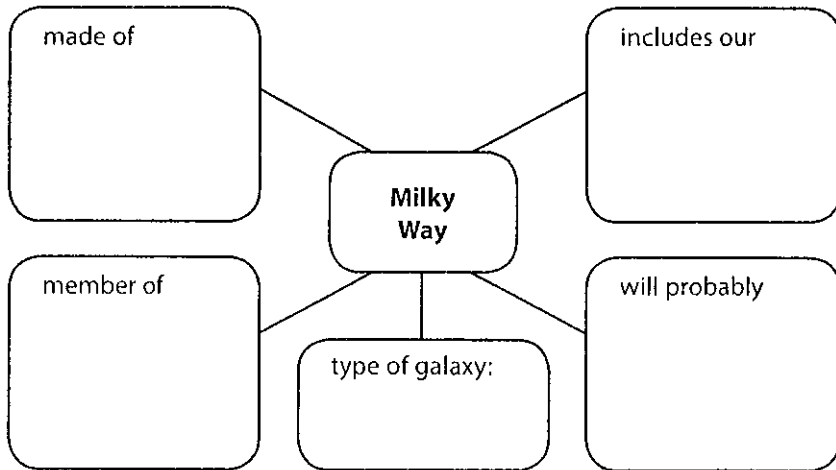
Details

Explain why scientists liken the large-scale structure of the universe to a sponge.

The Milky Way

I found this on page _____.

Characterize the Milky Way.



I found this on page _____.

Illustrate the Milky Way, and describe Earth's position in it.

Earth's position: _____

Restate the Big Bang theory.

The Big Bang Theory

I found this on page _____.

Main Idea

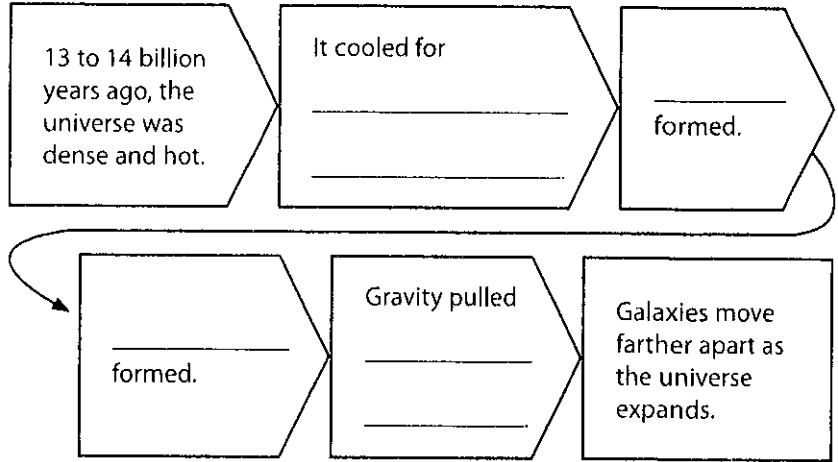
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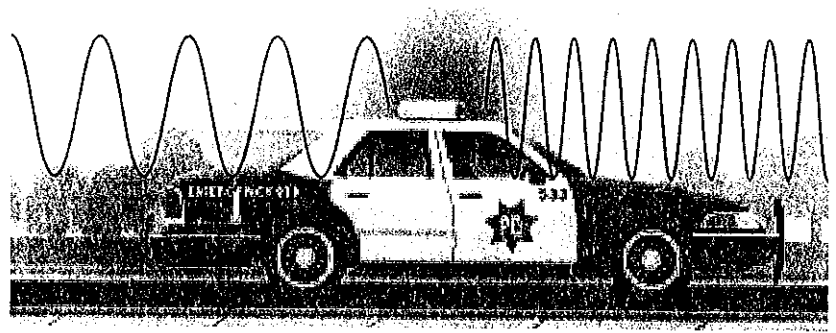
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Details

Sequence the expansion of the universe.



Differentiate sound waves in the Doppler shift.



To an observer in front of the car's motion:

To an observer behind the car:

Relate dark energy to the rate the universe is expanding.

Scientists theorize that dark energy is pushing galaxies apart because _____.

Synthesize It Predict what will happen to the Sun, the solar system, and the Milky Way in billions of years.
