Galaxy Shape Detective

Classify galaxy shapes and trace our place in the Milky Way.

8.9.B "categorize galaxies as spiral, elliptical, and irregular and locate Earth's solar system within the Milky Way galaxy; and"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the sentences that describe spiral, elliptical, and irregular galaxies, and label them S, E, and I. Circle the sentence that tells where Earth's solar system is located in the Milky Way.

Sorting the Galaxies

1. Galaxies are enormous groups of stars, gas, dust, and dark matter held together by gravity. Scientists sort them by their overall shape. A spiral galaxy has a bright central bulge and a flat disk with curved arms. The arms contain gas and dust, so new stars often form there. Some spirals have a bar of stars crossing the center. From different viewing angles, a spiral can look like a pinwheel or a thin, glowing line.

2. Elliptical galaxies are rounded or stretched into smooth oval shapes. They usually contain older stars and have little gas or dust for making many new stars. Their sizes range from small dwarf galaxies to giant elliptical galaxies. Irregular galaxies do not have a clear spiral or oval shape. Gravity from a nearby galaxy, a collision, or active star formation can leave them lumpy and uneven. Astronomers classify the whole galaxy, not one bright patch inside it.

3. Our solar system is in the Milky Way, a barred spiral galaxy. It is not at the galaxy's center or edge. The Sun lies in a smaller spiral feature called the Orion Spur, also called the Local Spur, between two larger arms. The solar system orbits the Milky Way's center along with billions of other stars. Because we live inside its disk, astronomers use observations of stars, gas, and motion to study the galaxy's structure.

2 ANSWER WITH EVIDENCE

Use the passage

1. A galaxy looks like a smooth oval and has little gas or dust. How should it be categorized?

2. Which galaxy category has no clear spiral or oval shape?

3. How is the Milky Way categorized?

4. Where is Earth's solar system located within the Milky Way?

3 YOUR TURN

Your own words

Write four sentences that classify three imaginary galaxies, one spiral, one elliptical, and one irregular, using a shape clue for each. In your fourth sentence, state where Earth's solar system is located within the Milky Way.

ANSWER KEY

Galaxy Shape Detective

GRADE 8 · TEKS 8.9.B

PART 1 · READ AND MARK

Underline the sentences that describe spiral, elliptical, and irregular galaxies, and label them S, E, and I. Circle the sentence that tells where Earth's solar system is located in the Milky Way. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	A galaxy looks like a smooth oval and has little gas or dust. How should it be categorized?	**elliptical galaxy**
2	Which galaxy category has no clear spiral or oval shape?	**irregular galaxy**
3	How is the Milky Way categorized?	**a barred spiral galaxy**
4	Where is Earth's solar system located within the Milky Way?	**It is in the Orion Spur, or Local Spur, between two larger spiral arms, not at the center or edge.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Galaxy A has a flat disk and curved arms, so it is a spiral galaxy. Galaxy B is smooth and oval, so it is an elliptical galaxy. Galaxy C is lumpy and has no clear shape, so it is an irregular galaxy. Earth's solar system is in the Orion Spur of the Milky Way, between larger arms.

Accept equivalent accurate descriptions of each galaxy category. For the location statement, students should identify the Milky Way as a barred spiral and place the solar system in the Orion Spur or Local Spur between larger arms.