

Our Cosmic Address

Model how the Solar System fits into larger space structures.

S6E1.b "Develop a model to represent the position of the solar system in the Milky Way galaxy and in the known universe."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Circle the five space levels in the location path from the Solar System to the observable universe. Number them 1 through 5 from smallest to largest, then underline the sentence that explains why a model cannot show true sizes.

A Location in Space

- ① Earth is one planet in the Solar System, which includes the Sun, eight planets, dwarf planets, moons, and many smaller objects. The Solar System lies far from the center of the Milky Way, a large spiral galaxy. The Sun is in a minor spiral feature called the Orion Spur. A position model must show that the Solar System is inside the Milky Way, not beside it. At this scale, planets are too small to draw at their true sizes.
- ② The Milky Way is not alone. It belongs to the Local Group, a collection of dozens of galaxies, including the Andromeda Galaxy. The Local Group is part of the much larger Laniakea Supercluster. Galaxies and galaxy groups are spread through this supercluster. For a classroom model, use nested shapes or boxes. Put each larger structure around the smaller one, and label every level. This method shows membership, even when the real distances and sizes cannot fit on paper.
- ③ Beyond superclusters is the observable universe, the part of the universe whose light has had time to reach Earth. It contains enormous numbers of galaxies arranged in groups, clusters, and long filaments. A model of this level should not suggest that the Solar System is at the universe's center. Instead, it should show a location path: Solar System inside Milky Way, inside Local Group, inside Laniakea Supercluster, inside the observable universe. A scale note can explain that each step is vastly larger than the one before it.

2 ANSWER WITH EVIDENCE Use the passage

1 Write the five-level location path for the Solar System, from smallest to largest.

2 A model shows the Solar System outside the Milky Way. What change would make the model accurate?

3 In a nested-shape model, which level should surround the Milky Way? Which level should surround the Local Group?

4 Why should a classroom position model include a scale note?

3 YOUR TURN Your own words

In the box, create a nested-shape model of our cosmic address. Include and label all five levels, place the Solar System away from the Milky Way's center, and add one sentence explaining how size changes across the model.

PART 1 • READ AND MARK

Circle the five space levels in the location path from the Solar System to the observable universe. Number them 1 through 5 from smallest to largest, then underline the sentence that explains why a model cannot show true sizes. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Write the five-level location path for the Solar System, from smallest to largest.	Solar System, Milky Way, Local Group, Laniakea Supercluster, observable universe.
2	A model shows the Solar System outside the Milky Way. What change would make the model accurate?	Place the Solar System inside the Milky Way.
3	In a nested-shape model, which level should surround the Milky Way? Which level should surround the Local Group?	The Local Group should surround the Milky Way. The Laniakea Supercluster should surround the Local Group.
4	Why should a classroom position model include a scale note?	The real distances and sizes cannot fit on paper, and each larger level is vastly bigger than the level before it.

PART 3 • YOUR TURN (SAMPLE ANSWER)

An outer shape labeled Observable Universe contains Laniakea Supercluster, which contains Local Group, which contains Milky Way. A small Solar System label is placed away from the center of the Milky Way shape. Scale note: Each larger level is vastly bigger than the level inside it.

Accept nested boxes, circles, or other clearly nested shapes if all five levels are in the correct order. The Solar System must be shown inside the Milky Way, and the scale note must explain that the levels differ greatly in size or distance.