

Models Miss Details

Notice what a model shows and what it leaves out.

SC.3.N.3.3 "Recognize that all models are approximations of natural phenomena; as such, they do not perfectly account for all observations."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline details that tell what a model can show. Circle details that tell what a model cannot show, so you can see why models are helpful but not perfect.

Helpful, Not Perfect

- ① Scientists use models to study things that may be too large, too small, or too far away to examine easily. A model can be an object, a drawing, or a computer picture. It helps people notice important parts and share ideas. However, a model is not the real thing. It is made to show some features, not every feature.
- ② In Ms. Lee's room, a globe helps students find continents and oceans. The globe is round like Earth, but it is much smaller. Its land is painted in smooth colors. Real land has hills, forests, roads, and many changing places. The globe cannot show every tree or the weather happening in each place today, at this moment.
- ③ Students also use a flashlight and a ball to model why the Moon seems to change shape. In this model, the flashlight stands for the Sun, and the ball stands for the Moon. The ball does not have Moon rocks, craters, or the Moon's exact size and distance. Even so, moving the ball can show the lighted part that people see from Earth.

2 ANSWER WITH EVIDENCE Use the passage

1 What are models made to show, and what are they not made to show?

2 How is the classroom globe like Earth, and how is it different?

3 Name two things the globe cannot show about real places on Earth.

4 Give one way the flashlight-and-ball model is useful and one way it is not exact.

3 YOUR TURN Your own words

Name a model you could use for a natural thing. In two sentences, tell one feature it can show and one observation it cannot show.

PART 1 • READ AND MARK

Underline details that tell what a model can show. Circle details that tell what a model cannot show, so you can see why models are helpful but not perfect. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What are models made to show, and what are they not made to show?	Models are made to show some important features. They are not made to show every feature or observation.
2	How is the classroom globe like Earth, and how is it different?	The globe is round like Earth, but it is much smaller.
3	Name two things the globe cannot show about real places on Earth.	Answers include every tree and the weather happening in each place today. Other passage-based details about real land, such as hills, forests, roads, or changing places, are acceptable.
4	Give one way the flashlight-and-ball model is useful and one way it is not exact.	It can show the lighted part of the Moon that people see from Earth. It does not show Moon rocks, craters, or the Moon's exact size and distance.

PART 3 • YOUR TURN (SAMPLE ANSWER)

A clear cup of blue water could model a pond. It can show that a pond holds water, but it cannot show the pond's fish, plants, mud, or changing weather.

Accept equivalent answers that identify both a useful feature and a limitation from the passage. For Your Turn, accept any sensible model of a natural thing that states one feature the model shows and one detail or observation it leaves out.