

Puddle Clues Model

Use a model to explain evaporation and notice what it leaves out.

4.1.e “developing and using models develop and/or use models to explain natural phenomena identify limitations of models”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each part of Maya's model and circle each detail the model cannot show, so you can see both what a model explains and what it leaves out.

Maya Models a Puddle

- ① After a rainstorm, a puddle on the playground became smaller during a warm, sunny day. Maya wanted to explain where the water went. She made a model on paper. A blue oval stood for the puddle. Short arrows pointed up from the oval to show water changing into water vapor and moving into the air. A yellow circle showed the Sun warming the puddle.
- ② Maya's model helped her explain evaporation, but it was not a real puddle. The blue oval could not show the puddle's depth or its exact amount of water. The arrows did not show how fast water vapor moved. The model also left out wind, shade, and air temperature, which can change how quickly a puddle dries. Models simplify a natural event so people can study one idea.
- ③ To test her idea, Maya watched two puddles after another rain. One puddle was in direct sunlight, and one was under a tree. She used her model to predict that the sunny puddle would dry first because it received more warming. Her model could explain a likely pattern, but Maya still needed observations to find out what really happened. A model is useful evidence, not proof by itself.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What natural event does Maya's model explain?

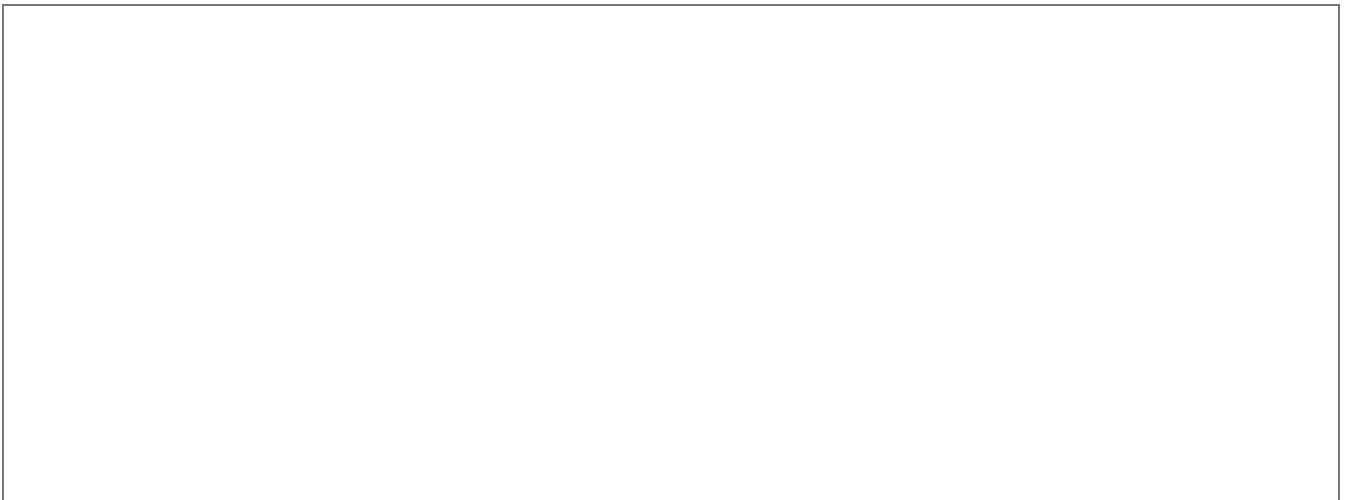
2 What did the blue oval, upward arrows, and yellow circle stand for in Maya's model?

3 Name two things Maya's model could not show.

4 What did Maya predict, and why did she still need observations?

3 YOUR TURN _____ Your own words

Draw a labeled model that explains an ice cube melting under a lamp. Use arrows, then write two sentences: explain what your model shows and name one thing your model does not show.



PART 1 • READ AND MARK

Underline each part of Maya's model and circle each detail the model cannot show, so you can see both what a model explains and what it leaves out. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What natural event does Maya's model explain?	The model explains a puddle becoming smaller as water evaporates into water vapor.
2	What did the blue oval, upward arrows, and yellow circle stand for in Maya's model?	The blue oval stood for the puddle, the arrows showed water vapor moving into the air, and the yellow circle showed the Sun warming the puddle.
3	Name two things Maya's model could not show.	Answers include the puddle's depth, its exact amount of water, how fast water vapor moved, wind, shade, or air temperature.
4	What did Maya predict, and why did she still need observations?	She predicted that the puddle in direct sunlight would dry first because it received more warming. She needed observations to find out what actually happened because a model is not proof by itself.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Drawing includes an ice cube on a plate, arrows from a lamp to the ice cube, and liquid water around the ice cube. The arrows show that heat from the lamp makes the ice cube melt into liquid water. My model does not show the exact temperature or how fast the ice melts.

Accept models that use labels and arrows to show heat causing an ice cube to melt into liquid water. The written limitation must name information the model leaves out, such as exact temperature, time, or melting speed.