

Carbon Cycle Loop

Trace carbon through a simple ecosystem.

5.12.B "predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web; and"

NAME _____

DATE _____

1 LABEL THE MODEL _____ Word bank below

Write one word-bank process in each numbered box. Match each process to the arrow that moves carbon to the next stage.

WORD BANK

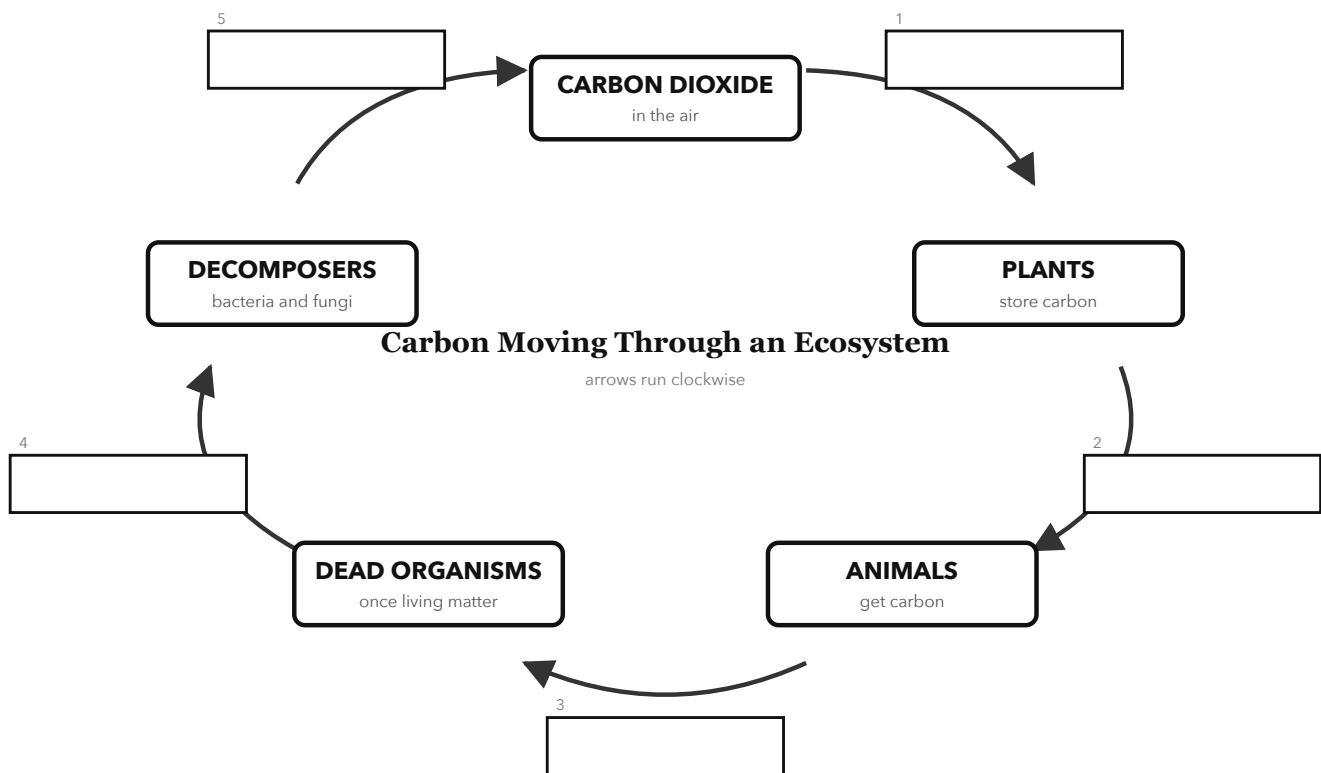
death

decomposition

eating

photosynthesis

respiration



2 RUN THE MODEL Use your finished diagram

1 Which process moves carbon from carbon dioxide to plants?

2 A disease reduces the number of plants. Which stage will receive less carbon from plants, and why?

3 If decomposers become less common, what may happen to dead organisms and carbon dioxide?

3 CHECK IT Before you turn it in

☐ I matched each process to an arrow.

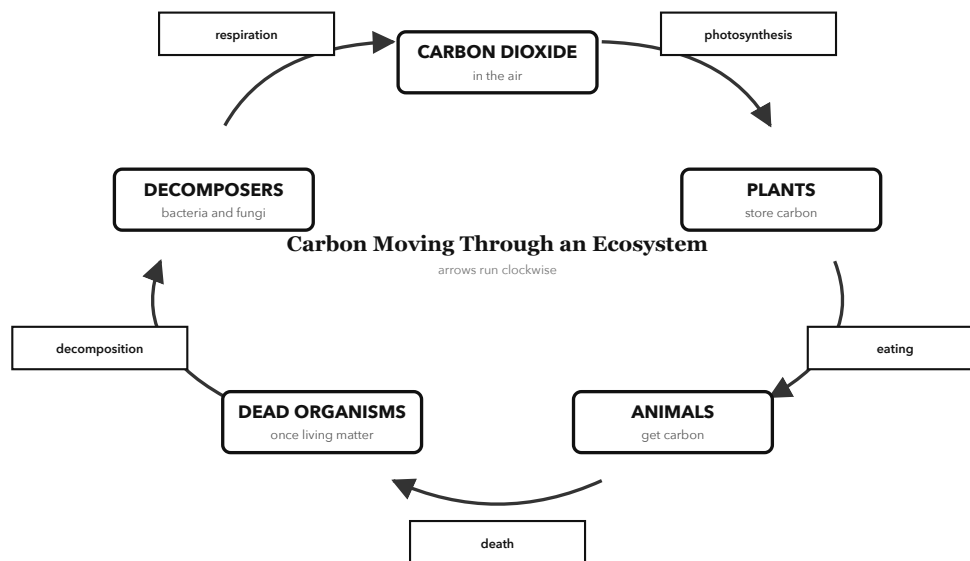
☐ I traced the loop back to carbon dioxide.

☐ I used the model to predict a change.

TEST THE MODEL

Name one way a real ecosystem is more complex than this model.

PART 1 • COMPLETED MODEL



PART 2 • RUN THE MODEL

1. **photosynthesis** (Which process moves carbon from carbon dioxide to plants?)
2. **Animals, because less plant matter is available for eating.** (A disease reduces the number of plants. Which stage will receive less carbon from plants, and why?)
3. **Dead organisms may build up, and less carbon dioxide may return to the air.** (If decomposers become less common, what may happen to dead organisms and carbon dioxide?)

TEST THE MODEL (SAMPLE ANSWERS)

- Animals may eat more than one kind of organism.
- Carbon can also move into water and rocks.

The model shows carbon cycling through a simplified ecosystem. Energy enters through sunlight and moves through food webs, but it does not cycle back in the same way as carbon.