Carbon on the Move

Follow carbon and energy through living things.

7.5 "Construct an explanation of how the cycling of matter between abiotic and biotic parts of ecosystems demonstrates the flow of energy and the conservation of matter, including the carbon, nitrogen, and water cycles."

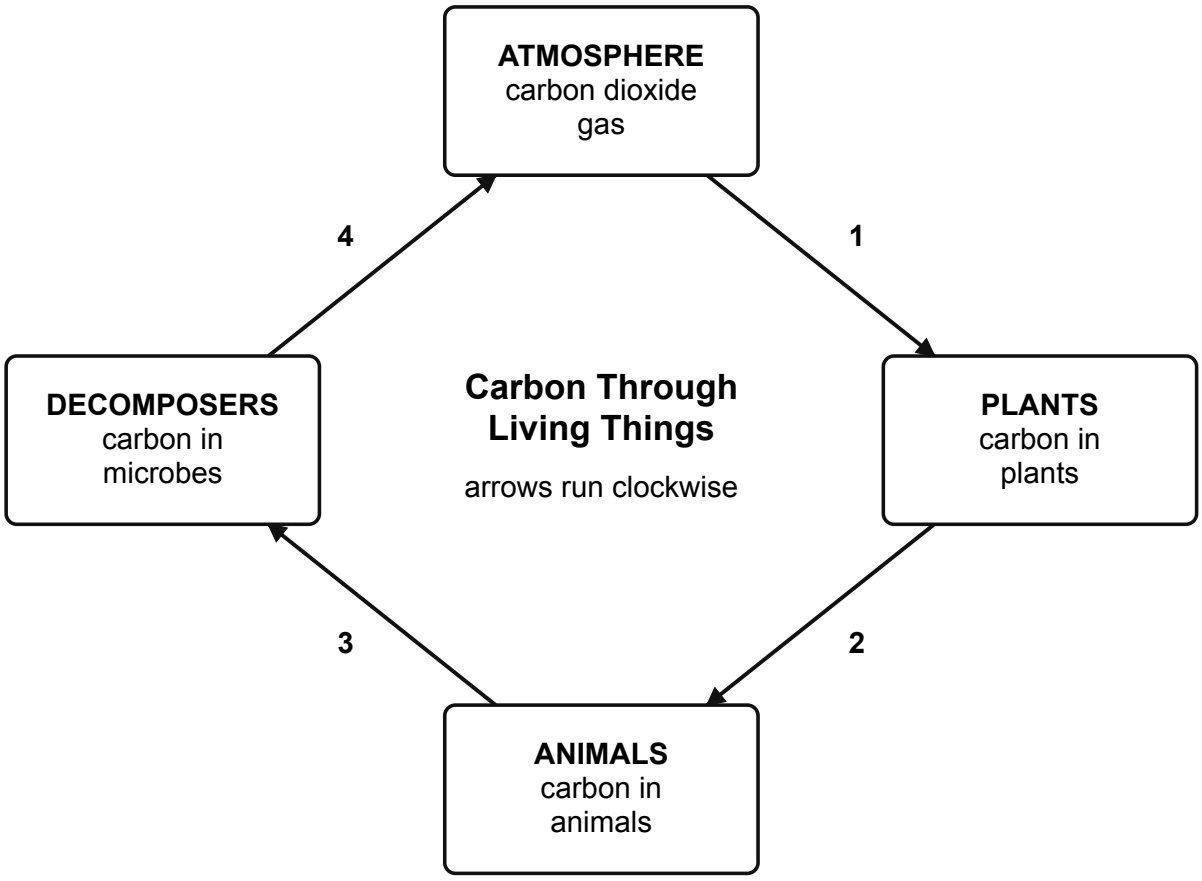
NAME _____ DATE _____

1 LABEL THE MODEL

Word bank below

Write one word-bank process in each numbered arrow box. Follow the arrows from air back to air.

WORD BANK Cellular respiration | Decomposition | Eating | Photosynthesis



Arrow numbers match the response boxes on the next student section.

Label the arrows

Use the word bank to write the process for each numbered arrow.

Arrow 1	Arrow 2

Arrow 3	Arrow 4

2 RUN THE MODEL

Use your finished diagram

1. Which process moves carbon from air into plants?

2. When an animal eats a plant, what happens to the plant's carbon and stored food energy?

3. Does carbon vanish when an animal dies? Use two arrows to explain.

3 CHECK IT

Before you turn it in

- [ ] I used each process once.
- [ ] I traced carbon around the loop.
- [ ] I explained where energy goes.

TEST THE MODEL

What path can carbon take that this model does not show?

ANSWER KEY

Carbon on the Move

GRADE 7 · 7.5

PART 1 · COMPLETED MODEL

ARROW	FROM	TO	PROCESS
1	ATMOSPHERE carbon dioxide gas	PLANTS carbon in plants	Photosynthesis
2	PLANTS carbon in plants	ANIMALS carbon in animals	Eating
3	ANIMALS carbon in animals	DECOMPOSERS carbon in microbes	Decomposition
4	DECOMPOSERS carbon in microbes	ATMOSPHERE carbon dioxide gas	Cellular respiration

PART 2 · RUN THE MODEL

1. **Photosynthesis.** (Which process moves carbon from air into plants?)
2. **Both move to the animal. The animal uses the energy, and some eventually leaves as heat.** (When an animal eats a plant, what happens to the plant's carbon and stored food energy?)
3. **No. Decomposition moves carbon into decomposers. Cellular respiration returns it to the air.** (Does carbon vanish when an animal dies? Use two arrows to explain.)

TEST THE MODEL (SAMPLE ANSWERS)

- Carbon can move from the air into ocean water.
- Carbon can move from dead plants into soil.

Boxes 1 through 4 follow the order of the processes array. The model traces carbon, but it does not show all carbon stores or the energy that leaves as heat.