

Builders of a Pond

Trace how structures work together in a changing stream system.

8.5.F “analyze and explain the complementary relationship between the structure and function of objects, organisms, and systems; and”

NAME _____ DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline three structures in the passage, circle the function each one supports, and draw a line connecting each structure to its function.

A Beaver Changes a Stream

- ① At the edge of a stream, a beaver uses its body as a set of working structures. Its broad, flat tail helps it steer and balance in water. Webbed hind feet push against water, while sharp front teeth cut wood. These structures help the animal gather branches and move through its habitat. The beaver's actions can also change the stream around it. As it carries mud and branches, its forepaws hold and place materials with control.
- ② The branches, mud, and stones form a dam across part of the stream. A dam's packed layers slow flowing water because the materials block and redirect its path. Water collects upstream, creating a pond. The pond is not just a result, it becomes part of a system. Deeper water can protect a beaver lodge entrance from some land predators, and the pond supports aquatic plants, insects, fish, and other organisms. These living things use the water and habitat in different ways.
- ③ Heavy rain or a broken section can let water rush through a dam. Beavers often respond by adding more branches and mud where water moves fastest. This repair shows a complementary relationship: the dam's arrangement controls water flow, and the beaver's body structures allow it to maintain that arrangement. If the dam fails for a long time, pond depth may drop. Then the lodge, aquatic habitat, and food sources can change as well.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 How do a beaver's front teeth and hind feet have different structures that support different jobs?

2 Explain how the packed layers of a dam cause a pond to form.

3 Why can pond depth affect both a beaver lodge and other organisms in the system?

4 When water rushes through a broken dam, how do beavers respond, and how does their response help the system?

3 YOUR TURN _____ Your own words

Choose a school, home, or outdoor system. Complete the table with three components, showing how each component's structure and function supports another component.

COMPONENT	STRUCTURE	FUNCTION	SUPPORT FOR ANOTHER COMPONENT

PART 1 • READ AND MARK

Underline three structures in the passage, circle the function each one supports, and draw a line connecting each structure to its function. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How do a beaver's front teeth and hind feet have different structures that support different jobs?	Sharp front teeth cut wood, while webbed hind feet push against water to help the beaver move.
2	Explain how the packed layers of a dam cause a pond to form.	The packed branches, mud, and stones block and redirect flowing water, so water collects upstream and forms a pond.
3	Why can pond depth affect both a beaver lodge and other organisms in the system?	Deeper water can help protect a lodge entrance from land predators, and the pond provides habitat and water for plants, insects, fish, and other organisms.
4	When water rushes through a broken dam, how do beavers respond, and how does their response help the system?	Beavers add branches and mud where water moves fastest. Their repair helps restore the dam's control of water flow and helps maintain the pond system.

PART 3 • YOUR TURN (SAMPLE ANSWER)

COMPONENT	STRUCTURE	FUNCTION	SUPPORT FOR ANOTHER COMPONENT
Brake lever	A rigid metal lever pivots on a hinge.	It pulls the brake cable when squeezed.	The cable carries the pulling force to the brake arms.
Brake cable	A flexible steel cable runs inside a protective housing.	It transfers force around the bicycle frame.	The brake arms receive the force and move inward.
Brake pads	Rough rubber pads sit on the ends of the brake arms.	They press against the wheel rim and create friction.	The wheel slows, allowing the rider to stop.

Accept answers that accurately connect a component's physical structure to its function and explain a specific effect on another component. For the open task, components may come from any plausible system if the relationships are scientifically sound.