

Assessment and Discussion Questions:

Estuaries and their Ecosystems.

The following student study questions are intended for students from 4th to 6th grade.

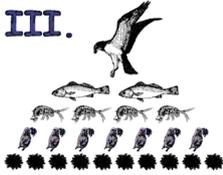
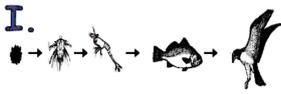
Note to the teacher:

1. These questions are intended to stimulate classroom discussion/debate and as a resource for assessment following lessons and activities.

2. Before attempting these study questions, students should be familiar with the following key words and concepts:

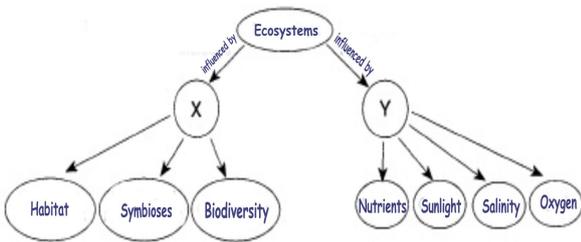
Dissolved oxygen
Ecosystem
Energy Pyramid
Estuary
Energy Flow
Invertebrate
Life Cycles
Mud flat
Nutrient
Physical parameter
Plankton
Salt water
Tides





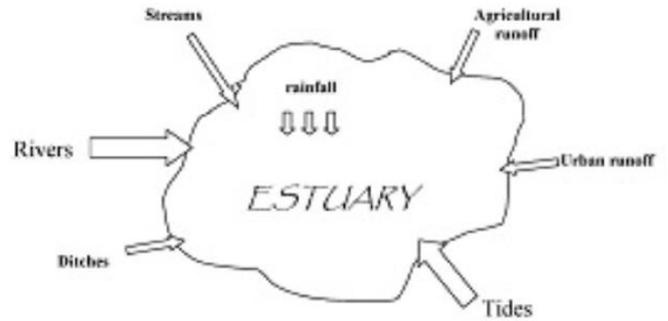
1. Which of the illustrations above best represents an *ecosystem*?

- A. I
- B. II
- C. III
- D. IV



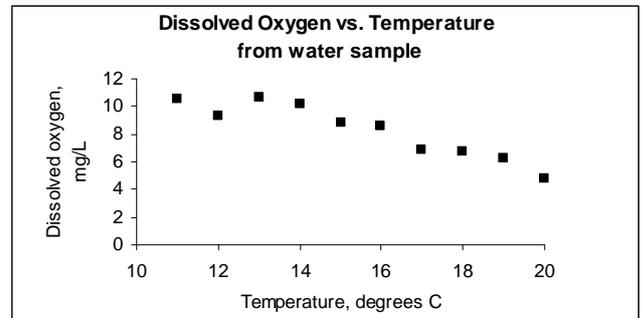
2. In the diagram above, *Y* best represents ...

- A. interactions of living things in an ecosystem.
- B. physical parameters in an estuary ecosystem.
- C. human influences on an estuary ecosystem.



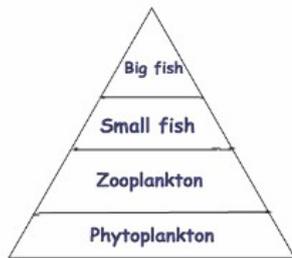
3. Water is brought to an estuary from a variety of sources. Which of the following is responsible for increasing the salinity in the estuary?

- A. Rivers
- B. Streams
- C. Urban runoff
- D. Tides



4. Oxygen is important for estuary ecosystems. From the data collected during an experiment with a water sample, what happened to oxygen levels as the temperature was increased?

- A. Oxygen levels increased.
- B. Oxygen levels decreased.
- C. Oxygen levels stayed the same.



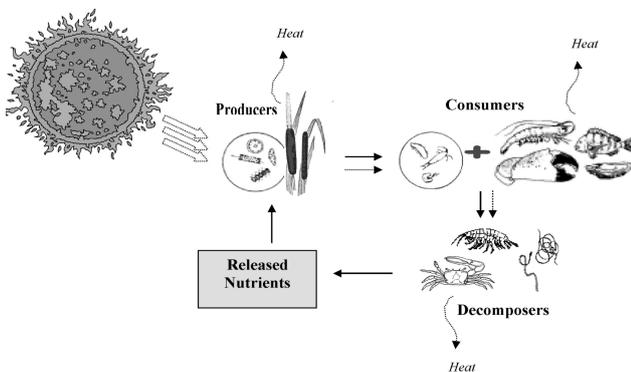
5. The energy pyramid above represents energy flow in an estuary. According to the illustration, what group of organisms feeds directly on zooplankton?

- A. Phytoplankton
- B. Small fish
- C. Big fish



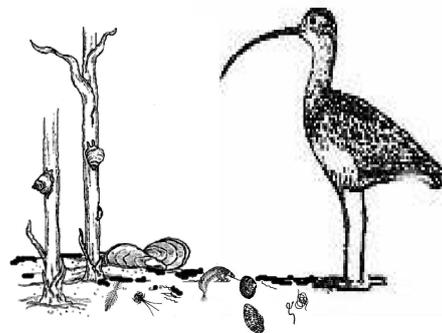
7. The pictures show stages in the life cycle of a blue crab. What would be the correct sequence for the development of the crab?

- A. Q,S,R,T
- B. R,T,Q,S
- C. S,R,Q,T
- D. T,S,R,Q



6. The illustration above represents heat flow and nutrients in an estuary ecosystem. According to this illustration, what happens to the nutrients?

- A. They are recycled .”
- B. They are lost to the environment.



8. Many shore birds feed on the mud flats of estuaries. When would be the best time for the birds to catch stranded fish and invertebrates?

- A. When the tide has come in and flooded the marsh.
- B. When the tide has gone back out to sea exposing the mud flats.

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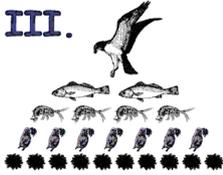
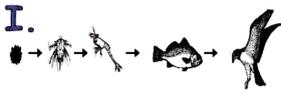
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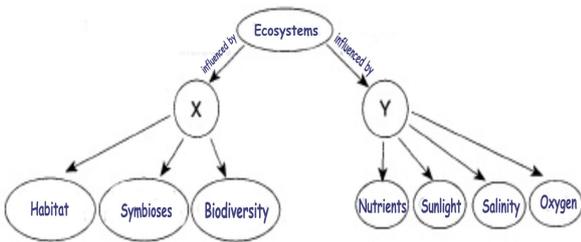
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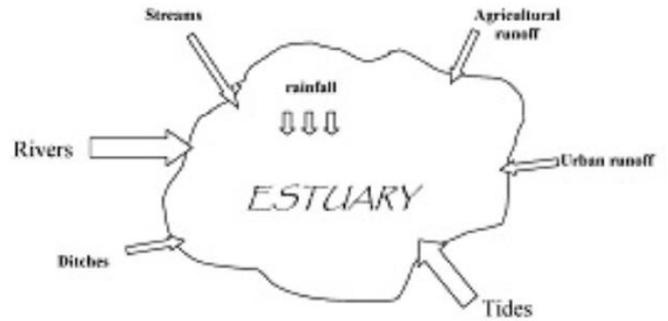
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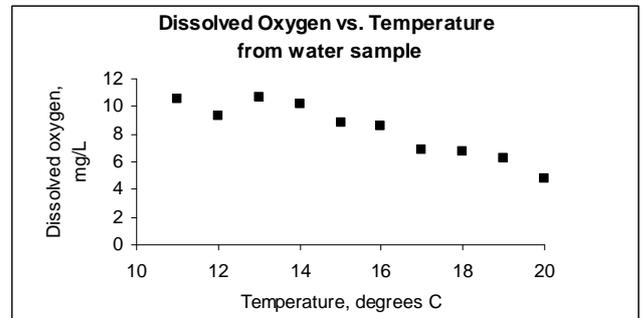
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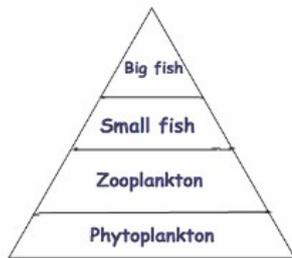
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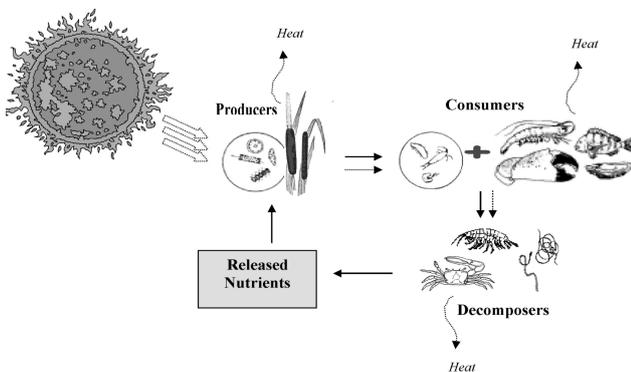
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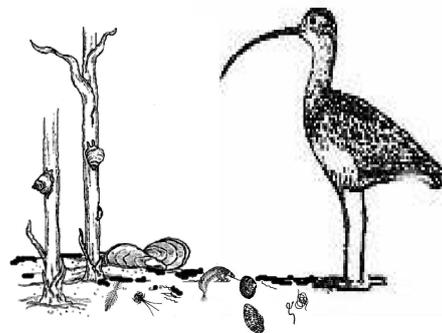
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