Name: _____ Date: _____

The Water That Is Neither Fresh Nor Salty

Circle group

Where a river runs into the sea, two kinds of water meet. The river brings fresh water. The ocean brings salt water. The place where they mix is called an estuary. The water there is brackish, which means it is partly salty.

An estuary is always changing. Twice a day, the tide pushes salt water up the river. Then the tide drops, and the river pushes the water back to the sea. Fresh water is lighter than salt water. So the fresh water often floats on top of a wedge of salt water.

This changing mix is hard for many animals. An ocean fish or snail may not be able to stand fresh water. A river fish may not like the salt. But some animals are built for it. Oysters, crabs and certain fish can handle the changes.

Estuaries are also rich places for wildlife. Rivers bring food from the land. Tiny plants grow fast in the shallow, sunny water. Young fish and shrimp hide in marsh grasses where big hunters cannot easily reach them. Many fish that are caught later in the open sea spent their first weeks in an estuary.

The grasses help in another way. Their roots hold the mud in place and slow the water. Dirt can settle out of the flow.

Questions

1. What is an estuary?

_____

_____

2. What does brackish mean?

_____

_____

3. Why does fresh water float on salt water?

_____

_____

4. Which two animals can handle the changing saltiness?

_____

_____

5. Why do young fish and shrimp hide in marsh grasses?

_____

_____

6. Why might an ocean fish have trouble in an estuary?

_____

_____

Words to know

estuary: the place where a river meets the sea
brackish: partly salty, a mix of fresh and sea water
wedge: a shape that is thick at one end and thin at the other
marsh: wet, soft land with grasses growing in it

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

The Water That Is Neither Fresh Nor Salty

Triangle group

Where a river runs into the sea, two kinds of water meet. The river brings fresh water, and the ocean brings salt water. The place where they mix is called an estuary, and the water there is brackish, which means it is partly salty.

An estuary never stays the same for long. Twice a day, the tide pushes salt water upstream. Then the tide drops and the river pushes the water back toward the sea. Because fresh water is lighter than salt water, the two often form layers, with the fresh water floating on top of a wedge of salt water beneath.

This changing mixture is difficult for many living things. A fish or snail that is used to the open ocean may not be able to stand fresh water, and a river fish may suffer in the salt. But some animals are built for it. Oysters, crabs and certain fish can handle the swings in saltiness.

Estuaries are also among the richest places for wildlife. Rivers carry nutrients down from the land, and tiny plants grow quickly in the shallow, sunny water. Young fish and shrimp hide among marsh grasses where larger hunters cannot easily reach them. Many fish that are caught later in the open sea spent their early weeks in an estuary.

The grasses help in another way. Their roots hold the mud in place and slow the water, which lets mud and dirt settle out of the flow.

Questions

1. What is an estuary?

_____

_____

2. What does brackish mean?

_____

_____

3. Why does fresh water float on top of salt water?

_____

_____

4. Which two animals can handle the changing saltiness of an estuary?

_____

_____

5. Why do young fish and shrimp hide in marsh grasses?

_____

_____

6. Why might an ocean fish have trouble living in an estuary?

_____

_____

Words to know

estuary: the place where a river meets the sea
brackish: partly salty, a mix of fresh and sea water
upstream: toward the place a river begins
wedge: a shape that is thick at one end and thin at the other
marsh: wet, soft land with grasses growing in it

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

The Water That Is Neither Fresh Nor Salty

Square group

Where a river empties into the sea, two very different kinds of water meet. The river delivers fresh water, while the ocean supplies salt water. The region where they mingle is called an estuary, and the water found there is brackish, which means it is only partly salty.

An estuary is never the same for long. Twice a day, the rising tide pushes salt water upstream. Then the tide falls and the river pushes the water back toward the sea. Because fresh water is lighter than salt water, the two frequently form layers, with the fresh water floating on top of a wedge of salt water beneath it.

This constantly changing mixture is difficult for many living things. A fish or snail that is accustomed to the open ocean may be unable to tolerate fresh water, and a river fish may suffer in the salt. Some animals, however, are built for exactly these conditions. Oysters, crabs and certain fish can handle the swings in saltiness.

Estuaries are also among the richest habitats for wildlife. Rivers carry nutrients down from the land, and tiny plants flourish in the shallow, sunny water. Young fish and shrimp hide among marsh grasses, where larger hunters cannot easily reach them. Many fish that are later caught in the open sea spent their earliest weeks in an estuary.

The grasses provide another benefit. Their roots hold the mud firmly in place and slow the water, which allows mud and dirt to settle out of the flow.

Questions

1. What is an estuary?

_____

_____

2. What does the word brackish mean?

_____

_____

3. Why does fresh water float on top of salt water?

_____

_____

4. Which two animals can handle the swings in saltiness in an estuary?

_____

_____

5. Why do young fish and shrimp hide among marsh grasses?

_____

_____

6. Why might a fish from the open ocean struggle in an estuary?

_____

_____

Words to know

estuary: the place where a river meets the sea
brackish: partly salty, a mix of fresh and sea water
upstream: toward the place a river begins
wedge: a shape that is thick at one end and thin at the other
marsh: wet, soft land with grasses growing in it

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: The Water That Is Neither Fresh Nor Salty

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: The Water That Is Neither Fresh Nor Salty

Easier · 216 words · Flesch-Kincaid grade 3.8

1. The place where a river meets the sea and the waters mix.
2. Partly salty.
3. Fresh water is lighter than salt water.
4. Oysters and crabs, or certain fish.
5. Big hunters cannot easily reach them there.
6. It may not be able to stand the fresh water that is mixed in.

Triangle: The Water That Is Neither Fresh Nor Salty

This passage · 242 words · Flesch-Kincaid grade 6.1

1. The place where a river meets the sea and fresh and salt water mix.
2. Partly salty.
3. Fresh water is lighter than salt water.
4. Oysters and crabs, or certain fish.
5. Larger hunters cannot easily reach them there.
6. It may not be able to stand the fresh water that is mixed in.

Square: The Water That Is Neither Fresh Nor Salty

Harder · 250 words · Flesch-Kincaid grade 7.6

1. The region where a river empties into the sea and the two kinds of water mingle.
2. Only partly salty.
3. Fresh water is lighter than salt water.
4. Oysters and crabs, or certain fish.
5. Larger hunters cannot easily reach them there.
6. It may be unable to tolerate the fresh water that is mixed in.