Name: _____ Date: _____

Mangroves: Trees in Salt Water

Circle group

Most trees die if their roots sit in salt water. But mangroves grow well along warm coasts, where the tide rises and falls around their trunks. Mangroves have ways to cope with salt. Some block much of the salt at the roots. Others take it in and push it out through tiny parts of the leaves. White crystals can form on the leaf. Some store salt in old leaves that later drop.

The mud in a mangrove forest has very little oxygen. So the roots need a new way to breathe. Many mangroves grow roots that rise above the mud. Some look like stilts. Others look like small pencils that point up. They take in air when the tide is low.

These tangled roots do a lot of good. They slow the waves and help guard the shore from storms. They catch bits of mud and sand, and this can build up land. Young fish, crabs, and shrimp hide among the roots. So mangroves are like nurseries for sea life. Many coastal families need the fish that start life there.

Mangrove seeds are odd, too. In some kinds, the seed starts to grow while it is still on the parent tree. It becomes a long, thin seedling called a propagule. When it drops, it can float on the water for a long time. Then it sticks in the mud and takes root. So the tide helps young trees spread to new shores.

In many places, people have cleared mangroves for farms, shrimp ponds, and buildings. Now many towns work to guard the forests that are left and to plant new ones.

Questions

1. Where do mangroves grow?

_____

_____

2. What is one way mangroves cope with salt?

_____

_____

3. How do mangrove roots get air?

_____

_____

4. Why do the roots need to rise above the mud?

_____

_____

5. How do mangrove roots help guard the shore?

_____

_____

6. Why would losing mangroves hurt people on the coast?

_____

_____

Words to know

nurseries: safe places where young living things grow up

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: _____

Mangroves: Trees in Salt Water

Triangle group

Most trees die if their roots sit in salty water, but mangroves thrive along tropical coasts, where the tide rises and falls around their trunks. Mangroves have several ways of coping with salt. Some species block much of the salt at the roots, others take it in and push it out through glands on their leaves, which can leave white crystals on the surface, and a few store salt in old leaves that later drop.

The mud in a mangrove forest holds very little oxygen, so the roots need another way to breathe. Many mangroves grow roots that rise above the mud. Some of these look like stilts, and others look like small pencils pointing upward, called pneumatophores, which take in air when the tide is low.

These tangled roots do important work. They slow incoming waves and help protect the shoreline from storms and erosion. They also trap sediment, which can build up land over time. Among the roots, young fish, crabs, and shrimp find shelter, so mangroves act as nurseries for sea life, and many coastal families depend on the fish that begin life there.

Mangrove seeds are unusual as well. In some species, the seed begins to grow while it is still attached to the parent tree, forming a long, slender seedling called a propagule. When it drops, it can float on the water for a long time before it lodges in the mud and takes root, so the tide helps the young trees spread to new shores.

In many regions, mangrove forests have been cleared for farms, shrimp ponds, and buildings. Because the forests are so valuable, many communities now work to protect the ones that remain and to plant new ones.

Questions

1. Where do mangroves grow?

_____

_____

2. What is one way that mangroves cope with salt?

_____

_____

3. How do mangrove roots get the air they need?

_____

_____

4. Why do the roots need to rise above the mud?

_____

_____

5. How do mangrove roots help protect the shoreline?

_____

_____

6. Why would losing mangroves hurt people who live on the coast?

_____

_____

Words to know

tropical: from the hot, wet regions near the equator
glands: small parts of a plant or animal that release a substance
erosion: the slow wearing away of land by water or wind
sediment: bits of sand, mud and soil carried by water
nurseries: safe places where young living things grow up

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: _____

Mangroves: Trees in Salt Water

Square group

Most trees perish if their roots stand in salty water, yet mangroves flourish along tropical coasts, where the tide rises and falls around their trunks. Mangroves have evolved several strategies for coping with salt. Some species block much of the salt at the roots, others absorb it and then push it out through special glands on their leaves, which can leave white crystals on the surface, and a few store it in old leaves that eventually drop away.

The mud in a mangrove forest contains very little oxygen, so the roots must find another way to breathe. Many mangroves grow roots that rise above the mud. Some of these resemble stilts, while others look like small pencils pointing skyward and are called pneumatophores, structures that take in air whenever the tide is low.

These tangled roots perform several valuable jobs. They slow incoming waves and help protect the shoreline from storms and erosion. They also trap sediment, which can gradually build up new land. Among the roots, young fish, crabs, and shrimp find shelter, so mangroves serve as nurseries for sea life, and many coastal families depend on the fish that begin their lives there.

Mangrove seeds are unusual as well. In some species, the seed begins to grow while it is still attached to the parent tree, forming a long, slender seedling called a propagule. When it drops, it can drift on the water for a long time before it lodges in the mud and takes root, so the tide helps the young trees spread to new shores.

In many regions, mangrove forests have been cleared to make room for farms, shrimp ponds, and buildings. Because these forests are so valuable, many communities are now working to protect the ones that remain and to plant new ones.

Questions

1. Where do mangroves flourish?

_____

_____

2. What is one strategy that mangroves use to cope with salt?

_____

_____

3. How do mangrove roots obtain the air they need?

_____

_____

4. Why must the roots rise above the mud?

_____

_____

5. How do mangrove roots help protect the shoreline?

_____

_____

6. Why would the loss of mangroves harm people who live on the coast?

_____

_____

Words to know

tropical: from the hot, wet regions near the equator
glands: small parts of a plant or animal that release a substance
erosion: the slow wearing away of land by water or wind
sediment: bits of sand, mud and soil carried by water
nurseries: safe places where young living things grow up

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: Mangroves: Trees in Salt Water

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

Circle: Mangroves: Trees in Salt Water

Easier · 271 words · Flesch-Kincaid grade 2.2

1. Along warm coasts, where the tide rises and falls around them.
2. They block salt at the roots, push it out through the leaves, or store it in old leaves.
3. Some roots rise above the mud and take in air at low tide.
4. The mud has very little oxygen.
5. They slow the waves and catch mud and sand.
6. They would lose a guard against storms and the nurseries for the fish they need.

Triangle: Mangroves: Trees in Salt Water

This passage · 286 words · Flesch-Kincaid grade 7.5

1. Along tropical coasts, where the tide rises and falls around them.
2. They block salt at the roots, push it out through leaf glands, or store it in old leaves.
3. Some roots rise above the mud and take in air at low tide.
4. The mud holds very little oxygen.
5. They slow incoming waves and trap sediment.
6. They would lose protection from storms and the fish nurseries that families depend on.

Square: Mangroves: Trees in Salt Water

Harder · 298 words · Flesch-Kincaid grade 8.7

1. Along tropical coasts, where the tide rises and falls around their trunks.
2. They block salt at the roots, push it out through leaf glands, or store it in old leaves.
3. Some roots rise above the mud and take in air whenever the tide is low.
4. The mud contains very little oxygen.
5. They slow incoming waves and trap sediment.
6. They would lose protection from storms and the fish nurseries that families depend on.