Name: _____ Date: _____

The Milky Sap Behind Rubber Bands

Circle group

A rubber band seems plain. But its story starts in a tree. Natural rubber comes from the rubber tree. The tree is native to the rainforests of South America. Today it is also grown on farms in tropical Asia and Africa.

Under the bark is a net of tiny tubes. They hold a thick white liquid called latex. Workers collect it by tapping. Early in the morning, a tapper shaves a thin slice of bark in a slanting line. The latex drips along the cut into a small cup on the trunk. A skilled tapper cuts deep enough to reach the tubes but not hurt the tree. So the same tree can be tapped for many years.

Raw latex has tiny rubber bits floating in water. Workers add a mild acid. The bits clump into a soft solid. It is pressed into sheets and dried. Then it goes to factories.

Early rubber had a problem. It got sticky in heat and stiff in cold. In the 1800s, inventors heated rubber with sulfur. That made it tougher and steadier. This is called vulcanizing. Now rubber could be used for tires, boots, hoses and rubber bands.

Questions

1. What is latex?

_____

_____

2. How does a tapper collect latex?

_____

_____

3. What do workers add to make the rubber bits clump?

_____

_____

4. What problem did early rubber have?

_____

_____

5. Why must a tapper not cut too deep?

_____

_____

6. Why did vulcanizing make rubber more useful?

_____

_____

Words to know

latex: the milky liquid inside a rubber tree
tapping: collecting sap from a tree by making a shallow cut
tropical: from the hot, rainy parts of the world near the equator

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 Milky Sap Behind Rubber Bands

Triangle group

A rubber band seems like an ordinary object, but its story begins in a tree. Natural rubber comes from the rubber tree, which is native to the rainforests of South America and is now grown on farms across tropical Asia and Africa.

Under the bark of this tree is a network of tiny tubes holding a thick white liquid called latex. Workers collect it by a method called tapping. Early in the morning, a tapper shaves a very thin slice of bark in a slanting line. Latex slowly drips along the cut into a small cup tied to the trunk. A skilled tapper cuts just deep enough to reach the tubes without harming the tree, so the same trunk can be tapped again and again for many years.

Raw latex is full of tiny rubber particles floating in water. Workers add a mild acid, which makes the particles clump together into a soft solid. This is pressed into sheets and dried, then shipped to factories.

Early rubber had a problem. It turned sticky in heat and stiff in cold. In the 1800s, inventors found that heating rubber with sulfur made it tougher and more stable. This process is called vulcanizing. It made rubber practical for tires, boots, hoses and, of course, rubber bands.

Questions

1. What is latex?

_____

_____

2. How does a tapper collect latex?

_____

_____

3. What do workers add to make rubber particles clump together?

_____

_____

4. What problem did early rubber have?

_____

_____

5. Why must a tapper be careful not to cut too deep?

_____

_____

6. Why did vulcanizing make rubber more useful?

_____

_____

Words to know

latex: the milky liquid inside a rubber tree
tapping: collecting sap from a tree by making a shallow cut
particles: very small bits of something
stable: steady and not likely to change
tropical: from the hot, rainy parts of the world near the equator

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 Milky Sap Behind Rubber Bands

Square group

A rubber band appears to be a thoroughly ordinary object, but its story begins in a tree. Natural rubber is harvested from the rubber tree, which is native to the rainforests of South America and is now cultivated on farms throughout tropical Asia and Africa.

Beneath the bark of this tree lies a network of minute tubes containing a thick white liquid called latex. Workers gather it through a method known as tapping. Early in the morning, a tapper shaves a very thin slice of bark in a slanting line. Latex slowly drips along the cut into a small cup fastened to the trunk. A skilled tapper cuts just deep enough to reach the tubes without damaging the tree, so the same trunk can be tapped repeatedly for many years.

Raw latex consists of tiny rubber particles suspended in water. Workers add a mild acid, which causes the particles to clump together into a soft solid. This is pressed into sheets and dried, then shipped to factories.

Early rubber suffered from a serious flaw. It turned sticky in heat and brittle in cold. In the 1800s, inventors discovered that heating rubber with sulfur made it tougher and far more stable. This process is called vulcanizing. It rendered rubber practical for tires, boots, hoses and, naturally, rubber bands.

Questions

1. What is latex?

_____

_____

2. How does a tapper gather latex?

_____

_____

3. What do workers add to make rubber particles clump together?

_____

_____

4. What flaw did early rubber have?

_____

_____

5. Why must a tapper take care not to cut too deep?

_____

_____

6. Why did vulcanizing make rubber more practical?

_____

_____

Words to know

latex: the milky liquid inside a rubber tree
tapping: collecting sap from a tree by making a shallow cut
particles: very small bits of something
stable: steady and not likely to change
tropical: from the hot, rainy parts of the world near the equator

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 Milky Sap Behind Rubber Bands

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

Circle: The Milky Sap Behind Rubber Bands

Easier · 194 words · Flesch-Kincaid grade 3.6

1. A thick white liquid found under the bark of a rubber tree.
2. By shaving a thin slice of bark so the latex drips into a cup.
3. A mild acid.
4. It got sticky in heat and stiff in cold.
5. A deep cut could hurt the tree, and a healthy tree can be tapped for many years.
6. It made rubber tougher and steadier, so it could be used for things like tires and boots.

Triangle: The Milky Sap Behind Rubber Bands

This passage · 213 words · Flesch-Kincaid grade 6.6

1. A thick white liquid that is found under the bark of a rubber tree.
2. By shaving a thin slice of bark so the latex drips into a cup.
3. A mild acid.
4. It turned sticky in heat and stiff in cold.
5. A deep cut could harm the tree, and a healthy tree can be tapped for many years.
6. It made the rubber tougher and steadier, so it could be used for things like tires and boots.

Square: The Milky Sap Behind Rubber Bands

Harder · 217 words · Flesch-Kincaid grade 7.9

1. A thick white liquid contained beneath the bark of a rubber tree.
2. By shaving a thin slice of bark so the latex drips into a cup.
3. A mild acid.
4. It turned sticky in heat and brittle in cold.
5. A deep cut could damage the tree, and a healthy tree can be tapped for many years.
6. It made the rubber tougher and more stable, so it could be used for items like tires and boots.