Name: _____ Date: _____

How the Wood Frog Freezes and Thaws

Circle group

In winter, many frogs bury themselves in mud at the bottom of a pond. The mud stays unfrozen. The wood frog does something stranger. It stays on land and lets itself freeze.

In fall, a wood frog crawls under leaves in the forest. When the weather gets cold, ice forms around its body. Soon the frog is stiff and hard. Its heart stops. It does not breathe. It looks like a frozen frog.

But the frog is fine. Before the freeze, its body makes a lot of sugar. The sugar fills its cells. It keeps the insides of the cells from turning to ice. Ice forms only outside the cells.

The frog may stay frozen for days or weeks. Then, on a warm spring day, the ice melts. The frog's heart beats again. It breathes. Soon it hops off to find a pond and a mate.

Questions

1. Where do many frogs spend the winter?

_____

_____

2. Where does a wood frog spend the winter?

_____

_____

3. What happens to its heart when it freezes?

_____

_____

4. How does the sugar protect the frog?

_____

_____

5. What does the frog do in spring?

_____

_____

6. Why is the frog not harmed by freezing?

_____

_____

Words to know

cells: the tiny building blocks that make up a living thing
stiff: hard and not easy to bend
mate: a partner that an animal has young with

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: _____

How the Wood Frog Freezes and Thaws

Triangle group

When winter comes, many frogs bury themselves in mud at the bottom of a pond, where it stays unfrozen. The wood frog does something stranger. It stays on land and lets itself freeze.

In the fall, a wood frog crawls under fallen leaves in the forest. As the weather gets colder, ice slowly forms in the spaces around its body. Soon the frog is stiff and hard. Its heart stops beating, and it does not breathe. To a person, it looks like a frozen frog.

But the frog is not harmed. Its body makes a lot of sugar before the freeze begins, and the sugar fills its cells. This keeps the insides of the cells from turning to ice, which could damage them. Ice forms only in the spaces outside the cells.

The frog may stay frozen for days or weeks. Then, on a warm spring day, the ice melts. The frog's heart starts to beat again, and it begins to breathe. Before long, it hops off to find a pond and a mate.

Each part of this is part of the frog's survival plan. Few animals can freeze in winter and wake up as well as the wood frog.

Questions

1. Where do many frogs spend the winter?

_____

_____

2. Where does a wood frog spend the winter?

_____

_____

3. What happens to a wood frog's heart when it freezes?

_____

_____

4. How does the sugar protect the frog?

_____

_____

5. What does the frog do when spring comes?

_____

_____

6. Why does the writer say the frog's body is not harmed by freezing?

_____

_____

Words to know

cells: the tiny building blocks that make up a living thing
stiff: hard and not easy to bend
survival: staying alive
mate: a partner that an animal has young with

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: _____

How the Wood Frog Freezes and Thaws

Square group

When winter arrives, many frogs bury themselves in the mud at the bottom of a pond, where the water remains unfrozen. The wood frog, however, follows a far stranger strategy. It remains on land and permits itself to freeze solid.

In the fall, a wood frog crawls beneath the fallen leaves of the forest floor. As the weather grows colder, ice gradually forms in the spaces surrounding its body. Before long the frog is rigid, its heart has stopped beating and it no longer breathes. To a casual observer, it appears to be nothing more than a frozen frog.

Yet the frog is not harmed. Before the freeze begins, its body produces a large amount of sugar, which fills its cells and prevents their insides from turning to ice, a change that could damage them. Ice forms only in the spaces outside the cells.

The frog may remain frozen for days or even weeks. Then, on a warm spring day, the ice melts, its heart resumes beating and it begins to breathe again. Soon it hops away to find a pond and a mate. Few animals can freeze through the winter and wake as successfully as the wood frog.

Questions

1. Where do many frogs spend the winter?

_____

_____

2. Where does a wood frog spend the winter?

_____

_____

3. What happens to a wood frog's heart when it freezes?

_____

_____

4. How does the sugar protect the frog?

_____

_____

5. What does the frog do when spring arrives?

_____

_____

6. Why is the frog not harmed by the freeze?

_____

_____

Words to know

cells: the tiny building blocks that make up a living thing
mate: a partner that an animal has young with

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: How the Wood Frog Freezes and Thaws

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

Circle: How the Wood Frog Freezes and Thaws

Easier · 146 words · Flesch-Kincaid grade 1.2

1. In mud at the bottom of a pond.
2. On land, under leaves in the forest.
3. It stops, and the frog does not breathe.
4. It fills the cells and keeps their insides from turning to ice.
5. It thaws, wakes up and hops off to find a pond and a mate.
6. The sugar protects its cells, and it wakes up again in spring.

Triangle: How the Wood Frog Freezes and Thaws

This passage · 200 words · Flesch-Kincaid grade 3.1

1. Buried in mud at the bottom of a pond.
2. On land, under fallen leaves in the forest.
3. It stops beating, and the frog does not breathe.
4. It fills the cells and keeps their insides from turning to ice, which could damage them.
5. It thaws, its heart starts again, and it hops off to find a pond and a mate.
6. The sugar protects its cells, and the frog wakes up again in spring.

Square: How the Wood Frog Freezes and Thaws

Harder · 199 words · Flesch-Kincaid grade 6

1. Buried in mud at the bottom of a pond.
2. On land, beneath the fallen leaves of the forest floor.
3. It stops beating, and the frog no longer breathes.
4. It fills the cells and prevents their insides from turning to ice, which could damage them.
5. Its ice melts, its heart beats again, and it hops away to find a pond and a mate.
6. The sugar protects its cells, and the frog wakes up again in spring.