Name: _____ Date: _____

Why the Metal Slide Burns and the Grass Does Not

Circle group

On a sunny day, a metal slide can be too hot to sit on. The grass next to it feels fine. The same sun warmed both. Why do they feel so different?

The answer is how well each one moves heat. Heat flows from warm things to cooler things. Metal is a conductor. Heat moves through it fast. When you touch a hot slide, heat rushes into your skin. It hurts. Grass, wood and plastic are poor conductors. Heat moves through them slowly. Less of it reaches you.

Here is the idea in reverse. On a cold morning, a metal bench feels colder than a wood bench. Both are the same temperature. The metal pulls heat out of your hand fast. So it feels cold.

That is why pot handles are plastic or wood. The metal pot carries heat to the food. The handle keeps heat away from your fingers.

Questions

1. What is a conductor?

_____

_____

2. Which way does heat flow?

_____

_____

3. Why does a hot metal slide hurt to sit on?

_____

_____

4. Which things are poor conductors?

_____

_____

5. Why does a metal bench feel colder than a wood bench on a cold morning?

_____

_____

6. Why are pot handles plastic or wood?

_____

_____

Words to know

conductor: a material that lets heat move through it easily
temperature: how hot or cold something is
handle: the part of an object that you hold

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: _____

Why the Metal Slide Burns and the Grass Does Not

Triangle group

On a sunny afternoon, a metal slide can feel too hot to sit on. Yet the grass next to it, in the very same sun, feels fine. Both have been warmed by the same sunshine. So why do they feel so different?

The answer is how well each material moves heat. Heat always flows from something warm to something cooler. Metal is a conductor, which means heat moves through it quickly. When you touch a hot slide, heat rushes from the metal into your skin fast, and it feels painful. Grass, wood and plastic are poor conductors. Heat moves through them slowly, so less of it reaches you each second.

Here is a clue that shows the idea in reverse. On a cold morning, a metal bench feels much colder than a wooden one, even though both are at the same temperature. The metal pulls heat out of your hand quickly, and your hand tells you it is cold.

This is why pot handles are often made of plastic or wood, while the pot itself is metal. The metal carries heat to the food, and the handle keeps it away from your fingers.

Questions

1. What is a conductor?

_____

_____

2. In which direction does heat always flow?

_____

_____

3. Why does a hot metal slide feel painful to sit on?

_____

_____

4. Which materials are named as poor conductors?

_____

_____

5. Why does a metal bench feel colder than a wooden bench on a cold morning?

_____

_____

6. Why are pot handles often made of plastic or wood?

_____

_____

Words to know

conductor: a material that lets heat move through it easily
material: the stuff that something is made from
temperature: how hot or cold something is
handle: the part of an object that you hold

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: _____

Why the Metal Slide Burns and the Grass Does Not

Square group

On a sunny afternoon, a metal slide can become far too hot to sit on, even though the grass beside it, warmed by the very same sunshine, feels perfectly comfortable. Both surfaces have absorbed the same amount of sunlight, so why do they feel so different?

The answer lies in how well each material transfers heat. Heat always flows from something warm toward something cooler. Metal is a conductor, which means heat travels through it very quickly. When you touch a hot slide, heat rushes from the metal into your skin so fast that it feels painful. Grass, wood and plastic, on the other hand, are poor conductors. Heat moves through them slowly, so much less of it reaches you each second.

The same idea works in reverse, and that offers a useful clue. On a cold morning, a metal bench feels far colder than a wooden one, although both are at the same temperature. The metal draws heat out of your hand rapidly, and your hand reports that it is cold.

This is why pot handles are frequently made of plastic or wood while the pot itself is metal. The metal carries heat to the food, and the handle keeps that heat away from your fingers.

Questions

1. What does the word conductor mean in this passage?

_____

_____

2. In which direction does heat always flow?

_____

_____

3. Why does a hot metal slide feel painful when you sit on it?

_____

_____

4. Which materials does the passage name as poor conductors?

_____

_____

5. Why does a metal bench feel colder than a wooden one on a cold morning?

_____

_____

6. Why are pot handles frequently made of plastic or wood?

_____

_____

Words to know

conductor: a material that lets heat move through it easily
material: the stuff that something is made from
temperature: how hot or cold something is
handle: the part of an object that you hold

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: Why the Metal Slide Burns and the Grass Does Not

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

Circle: Why the Metal Slide Burns and the Grass Does Not

Easier · 150 words · Flesch-Kincaid grade 1.5

1. A material that moves heat through it fast.
2. From warm things to cooler things.
3. Heat moves from the metal into your skin very fast.
4. Grass, wood and plastic.
5. The metal pulls heat out of your hand faster, even if both are the same temperature.
6. Those materials move heat slowly, so the handle stays comfortable to hold.

Triangle: Why the Metal Slide Burns and the Grass Does Not

This passage · 193 words · Flesch-Kincaid grade 4.6

1. A material that moves heat through it quickly.
2. From something warm to something cooler.
3. Heat moves from the metal into your skin very fast.
4. Grass, wood and plastic.
5. The metal pulls heat out of your hand faster, even though both are the same temperature.
6. Those materials move heat slowly, so the handle stays comfortable to hold.

Square: Why the Metal Slide Burns and the Grass Does Not

Harder · 207 words · Flesch-Kincaid grade 6.9

1. A material that lets heat travel through it very quickly.
2. From something warm toward something cooler.
3. Heat moves from the metal into your skin so fast.
4. Grass, wood and plastic.
5. The metal draws heat out of your hand faster, even though both are the same temperature.
6. Those materials move heat slowly, so the handle stays comfortable to hold.