Name: _____

Transferring Heat Energy through Conduction

Hello, young explorers! Have you ever wondered how heat travels from one object to another? Well, get ready to embark on an exciting journey to discover the secrets of conduction, one of the magical ways heat moves! Today, we will learn about conduction and how it transfers heat energy. So, put on your thinking caps, and let's dive right in!

What is Heat?

Heat is a type of energy that makes things warm. Remember, **energy** is the ability to do work. It can come from different sources, such as the sun, a stove, or even your own body. Have you ever felt the warmth of a cozy blanket or the heat from a hot cup of cocoa? That's all because of heat!

What is conduction?

Conduction is one way heat can travel from one object to another. Imagine you have a metal spoon and you put it in a hot bowl of soup. After a while, the handle of the spoon also becomes hot. This is conduction in action!

What Happens during Conduction?

When two objects touch each other, heat can move from the warmer object to the cooler object. In our spoon and soup example, the heat from the hot soup moved through the metal spoon and made the handle warm. When you grabbed the spoon, heat from the spoon traveled to your hand.

Conductors and Insulators:

Not all materials conduct heat the same way. Some materials are good conductors, which means they allow heat to flow through them easily. Examples of good conductors are metal, such as the spoon we talked about earlier, and water.

On the other hand, some materials are insulators. Insulators don't allow heat to pass through them easily. They keep the heat trapped inside. Examples of insulators are wood, plastic, and air. That's why you might see oven mitts made of thick, insulating material to protect your hands from the heat.

Real-Life Examples of Conduction:

Conduction happens all around us! Let's explore some examples. When you touch a warm cookie, the heat transfers from the cookie to your hand through conduction. When you hold a cold glass of water, the heat from your hand transfers to the glass, making it feel less cold.

Hooray! You're now experts on conduction and how it transfers heat! We learned that conduction is the way heat travels from one object to another when they touch each other. We also discovered that some materials are good conductors, while others are insulators.

Next time you enjoy a warm cup of cocoa remember that it's all thanks to conduction! Keep exploring and learning about the amazing world of science, friends! Remember to always stay curious and keep asking questions. Who knows what other exciting secrets the world has in store for you? Happy exploring!

Let's Explore

1. Fold some tin foil into a strip about an inch wide and 10 inches long.
2. Clip the ends of the tin foil to a thick book. Your reading book should work.
3. Slide the books back so that the tin foil is as tight as you can get it.
4. Place 6 chocolate chips on the tin foil evenly spaced.
5. Place the tea candle under one side of the tin foil.
6. Get your stopwatch ready.
7. When you have set up the experiment by following the steps, raise your hand and I will come and light the candle. Once lit, do NOT touch the tin foil, chocolate chips, or the candle.
8. As soon as the candle catches on fire, start the timer.
9. Record your data in the table below. Record the time as soon as you see the chocolate chip begin to melt. Record your data below.

Chip	Time
First Chip	
Second Chip	
Third Chip	
Fourth Chip	
Fifth Chip	
Sixth Chip	

8. Describe how the heat got to each chocolate chip? _____

_____

_____

9. Write three other examples of conduction.

a. _____

b. _____

c. _____

Remember that this type of heat energy transfer is called **conduction**.