

How Heat Travels

Have you ever burned the roof of your mouth on hot pizza? Or burned your feet from walking barefoot across hot asphalt or beach sand on a hot summer day? Have you ever wondered why you get sunburn? These examples all have something in common; heat! Heat moves and it moves from warmer matter to cooler matter. But how does heat move from warmer matter to cooler matter? Heat moves in three different ways: by conduction, convection, and radiation. As you read the descriptions, try to think about every day situations that involve the different types of transfer.

Conduction

Imagine you just came in from a cold winter walk. Your older brother helps you make a cup of soup. You get a spoon and put it in the bowl of hot soup. The phone rings and it's your friend. You talk for a minute and then go back to eat your soup. Wow! The handle of the metal spoon got really hot! How did this happen? The metal spoon became hot because the spoon is in direct contact with the soup. As the heat from the soup comes in contact with the bottom of the spoon it moves up to the cooler end, all along the entire spoon up to the top. The heat moves through the spoon because the spoon is colder than the soup and because the spoon is in direct contact with the hotter soup. This type of heat transfer is known as conduction. In order for heat to move by conduction, two things with different temperatures must be touching. Transfer of heat by conduction usually happens in solids such as this metal spoon.

