Lesson 6: Green Energy

• I can explore the thermal conductivity of materials to improve energy efficiency in buildings other systems.



Odd One Out!

Can you find which word is the one out and explain why?

Coal

Kinetic

Solar Panel



Thermal Conductivity

Can you fill in the gaps using the glossary provided?

Some things can be cool one minute, and hot the next. If you leave a ______ spoon in a saucepan when making soup, then go to pick it up...ouch! Why do you think it would be better to stir that soup with a wooden spoon?

The spoon gets ______ because of conduction - the movement of ______ from one object to another when they touch. When something is heated, the molecules in that object start to dance. The more the molecules ______, the more heat goes to their neighbour molecules.

If you roast a marshmallow on an open fire using a metal skewer, the skewer gets heat from the ______, the molecules of the metal in the fire do their dance and pass it on, until the other end of the skewer gets too hot to handle.

We measure this molecule dance and how fast it gets in **watts per metre kelvin**. This is the **unit of measurement** of thermal (heat) ______. Watts are a measure of how powerful something is, metres are a measure of length, and kelvins are a measure of temperature.

So thermal conductivity is a measure of how quickly and far something moves, because of how hot it has become. We can ______ the thermal conductive properties of a silver spoon and steel skewer by placing them in boiling water. Which do you think will get the hottest? Well, silver conducts heat better than steel - that is, the ______ dance faster and therefore the heat travels through the spoon more quickly.

conductivity	hot	metal	molecules	
compare	dance	fire	heat	

Year 6 Science



Investigation Time!

Watch the video and record your results below: https://developingexperts.com/s/missions/868

Sample letter	Description of sample	Starting temperature	Temperature reading after minutes	Temperature reading after minutes	Temperature reading after minutes
A	No foil covering				
В					
С					



Investigation Time!

Create a graph to show your results





Saving Energy in Our Homes

Improving **insulation** is one thing that will really help. It reduces the loss of heat and therefore means the house keeps warmer for longer, and the central heating will not be turned on too quickly. It keeps the heat in, whereas no insulation allows heat to escape through the walls, doors, roof, and windows. The roof is where most of the heat disappears. A thick layer of insulation in the attic makes a big difference.





A single glazed window is one with only one layer of glass between the inside and outside of the house. These account for huge energy losses. Replacing them with double or even triple glazing helps insulate buildings. The improvements will help you be more comfortable, increase the value of the home, and help the environment.

