

Lesson 4: Heat Energy



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Discovery Education Video

[Thinking about Heat, Energy, and Temperature: An Introduction](#)

This clip introduces heat, energy, and temperature. Some key terms and concepts are introduced.

2

What is Heat?

Heat is a form of energy that we can feel.



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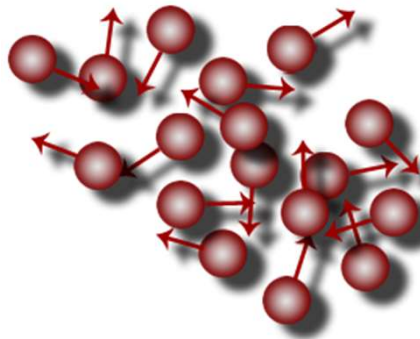


Heat is the transfer of thermal energy.

Thermal energy is the movement of molecules that make up an object or substance.

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The faster the molecules move, the more thermal energy they are able to generate.



As molecules move they rub against one another. This creates friction which raises the temperature of the molecules.

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The measure of thermal energy in an object or substance is called temperature.

Temperature is most commonly measured using the Fahrenheit and Celsius scales. The Kelvin scale is also used by scientists – particularly for measurement of very low temperatures.



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Discovery Education Video
Measuring Temperature

Temperature is the measurement of energy or heat of matter.

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Heat energy always moves from a warmer object to a cooler object.

An object does not have to feel “hot” to be able to transfer heat.



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Heat energy can move, or transfer, between objects in three ways:



Conduction –
Heat transfer between two objects that are touching



Radiation –
Heat transfer through air or space by electromagnetic waves



Convection –
Heat transfer by a current of water or air

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Discovery Education Video [The Movement of Heat](#)

Heat energy can be transferred in three ways: conduction, convection, and radiation.

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Discovery Education Video Heat and Temperature

Humans have always been feverish about temperature. But why? Learn how varying temperatures affect matter and see how pressure affects temperature. Find out why we need precise measurements of heat and why the Fahrenheit, Celsius, and Kelvin scales are so different. Produced by Discovery Channel School.



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Heat Energy: Key Questions

1. What is heat energy? How is heat energy different from light and sound energy?
2. What are the three methods that heat moves or transfers? Give an example of each.
3. Why does heat always transfer from a warmer object to a cooler object?

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