SCIENCE · HEAT AND TEMPERATURE · GRADES K–2

Hot or Cold?

Cut out ten cards and glue each one under hot or cold.

Name: _____ **Date:** _____



Glue each card under hot or cold.

Hot	Cold

✂ **Cut out the cards on the dashed lines.**

a campfire	hot cocoa	soup	ice cream	a freezer
an ice cube	an oven	a popsicle	snow	the sun

Art © Kevin Coulston

SCIENCE · HEAT AND TEMPERATURE · GRADES 1–3

What Gives Off Heat?

Color the seven things that give off heat, X the five that do not, then fill in a sentence about friction.



Name: _____ **Date:** _____

Color the 7 things that give off heat. Put an X on the 5 that do not.

the sun	an ice cube	a campfire	a snowball
a stove	a toaster	a glass of cold water	a hair dryer
your body	a book	rubbing your hands together	a frozen pea

Word bank

friction · heat · sun

1. Our biggest source of heat is the _____.

2. Rubbing your hands together makes them warm because of _____.

3. A stove gives off _____ to cook food.

Art © Kevin Coulston

SCIENCE · HEAT AND TEMPERATURE · GRADES 3–5

Which Spoon Gets Warm?

An experiment: put metal, plastic and wooden spoons in warm water and find out which carries heat best.



Name: _____ **Date:** _____

You need: a mug of hot tap water (a grown-up pours it), a metal spoon, a plastic spoon, a wooden spoon and a tiny dab of butter for each handle. **Do it:** stick a dab of butter near the top of each handle. Stand the spoons in the water and watch which butter melts first.

Spoon	My prediction: 1st, 2nd or 3rd to melt	Minutes until the butter slid	Order it melted
Metal			
Plastic			
Wood			

Which spoon carried heat the best? It is a good heat conductor.

Why do many pots have plastic or wooden handles?

Art © Kevin Coulston

SCIENCE · HEAT AND TEMPERATURE · GRADES 3–5

Keep It Cold Challenge

Wrap ice cubes in foil, cloth, newspaper and nothing, check them every 15 minutes and find the best insulator.



Name: _____ **Date:** _____

An insulator slows down heat. Wrap four same-size ice cubes: one in foil, one in a sock, one in newspaper and one in nothing. Put them on plates in the same warm spot and check every 15 minutes.

I predict the ice cube that lasts longest will be wrapped in _____

Write: solid, half melted or all water.

Time	Foil	Sock	Newspaper	Nothing
Start				
15 min				
30 min				
45 min				
60 min				

Which was the best insulator? How could you use it to keep your lunch cold?

_____

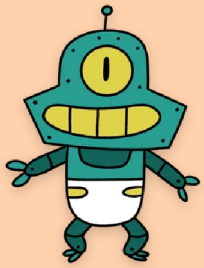
_____

Art © Kevin Coulston

SCIENCE · HEAT AND TEMPERATURE · GRADES 4–5

Conduction, Convection or Radiation?

Learn the three ways heat moves, then sort nine examples.



Name: _____ **Date:** _____

Heat moves in three ways. **Conduction:** heat moves through things that touch. **Convection:** warm air or water rises and moves around. **Radiation:** heat travels through space as rays, like sunshine.

Write each example in the right column.

- a hot air balloon rising
- warming your hands near a campfire
- warm air rising from a heater
- touching a hot pan
- an ice cube melting in your hand
- water swirling as it boils in a pot
- feeling the sun warm your face
- a heat lamp keeping chicks warm
- a spoon heating up in hot soup

Conduction	Convection	Radiation

Which way does heat get from the sun to Earth?

_____

Art © Kevin Coulston

ANSWER KEY · HEAT AND TEMPERATURE · GRADES K–2

Answer Key: Hot or Cold?

Answers for grown-ups. Some questions have more than one good answer.



Glue each card under hot or cold.

Hot	Cold
soup	ice cream
the sun	snow
a campfire	a popsicle
an oven	an ice cube
hot cocoa	a freezer

✂ Cut out the cards on the dashed lines.

a campfire	hot cocoa	soup	ice cream	a freezer
an ice cube	an oven	a popsicle	snow	the sun

Art © Kevin Coulston

ANSWER KEY · HEAT AND TEMPERATURE · GRADES 1–3

Answer Key: What Gives Off Heat?

Answers for grown-ups. Some questions have more than one good answer.



Color the 7 things that give off heat. Put an X on the 5 that do not.

the sun	~~an ice cube~~	a campfire	~~a snowball~~
a stove	a toaster	~~a glass of cold water~~	a hair dryer
your body	~~a book~~	rubbing your hands together	~~a frozen pea~~

Word bank

friction · heat · sun

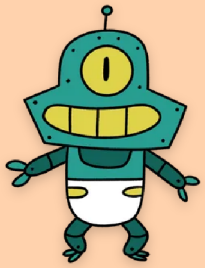
1. Our biggest source of heat is the **sun**.
2. Rubbing your hands together makes them warm because of **friction**.
3. A stove gives off **heat** to cook food.

Art © Kevin Coulston

ANSWER KEY · HEAT AND TEMPERATURE · GRADES 4–5

Answer Key: Conduction, Convection or Radiation?

Answers for grown-ups. Some questions have more than one good answer.



Heat moves in three ways. **Conduction:** heat moves through things that touch. **Convection:** warm air or water rises and moves around. **Radiation:** heat travels through space as rays, like sunshine.

Write each example in the right column.

a hot air balloon rising · warming your hands near a campfire · warm air rising from a heater · touching a hot pan · an ice cube melting in your hand · water swirling as it boils in a pot · feeling the sun warm your face · a heat lamp keeping chicks warm · a spoon heating up in hot soup

Conduction	Convection	Radiation
a spoon heating up in hot soup	warm air rising from a heater	feeling the sun warm your face
touching a hot pan	water swirling as it boils in a pot	warming your hands near a campfire
an ice cube melting in your hand	a hot air balloon rising	a heat lamp keeping chicks warm

Which way does heat get from the sun to Earth?

Art © Kevin Coulston