



Heat Energy! Year 3 Science at Home

You can help! Your child is learning about heat energy and how it moves. There are fantastic examples of heat transfer happening right in your kitchen every day!

Why are we learning this? Heat in the Top End

Living in the north, we know heat better than almost anyone. The sun is our biggest source of heat energy — and understanding how heat moves helps us stay comfortable and safe. Traditional First Nations practices show deep knowledge of heat: shelters that block the sun, knowing when to collect certain foods based on the heat of the day. When your child learns about heat energy, they are connecting to everyday life in a very direct way — from why we wear hats to why we put ice in the esky.

My child will learn to:

✓ Identify heat sources

Know where heat comes from — sun, fire, electrical devices, our bodies.

✓ Understand heat transfer

Describe how heat moves from a hot object to a cooler one.

✓ Measure temperature

Use a thermometer to measure how hot or cold something is.

✓ Explain insulators and conductors

Know that some materials slow down heat transfer (insulators) and some speed it up (conductors).

Big ideas to know:

Sources of heat

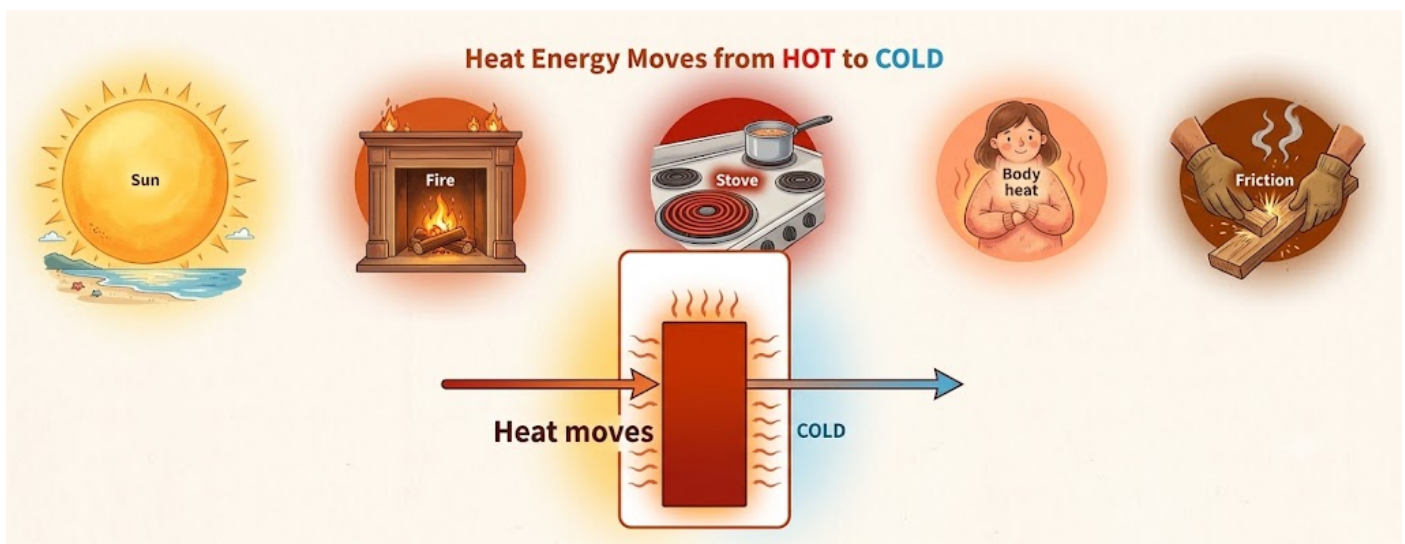
Heat energy comes from the sun, from fire, from electrical devices (stoves, heaters) and from friction (rubbing things together). The sun is our main source of heat.

Heat transfer

Heat always moves from hot to cold. When you put a cold drink in a hot room, heat from the room moves into the cold drink — that is why it gets warm.

Conductors and insulators

Metal conducts heat quickly (which is why a metal spoon in soup gets hot). Plastic, wood and fabric slow down heat transfer — they are insulators. That is why pot handles are plastic or wood!





Heat Energy! Year 3 Science at Home

Conductors and insulators of heat

Material	Conductor or insulator?	Why and example
Metal (steel, aluminium)	Good conductor	Heats up quickly — metal spoon in soup gets hot. Used in cooking pots.
Plastic	Good insulator	Slow to heat up — plastic handle on pot stays cool while metal pot gets hot.
Wood	Good insulator	Does not conduct heat well — wooden spoon safe to stir hot soup.
Fabric / cloth	Good insulator	Traps air and slows heat transfer — oven mitts, jumpers, sleeping bags.
Foam / air	Excellent insulator	Air is a great insulator — foam esky walls trap air to keep ice cold.

Think Like a Scientist — Hot or Cold?

Put an ice cube in a zip-lock bag. Time how long it takes to melt at room temperature. Then wrap another ice cube in a cloth or foam. Does it melt faster or slower?

Ask: "Why did the wrapped ice last longer? What material would make the best insulator? How could you test that?" These are real scientist questions!

You will need: (Materials)

- Ice cubes
- Zip-lock bag
- Cloth, foam and aluminium foil (for insulation test)
- Metal spoon and wooden spoon
- Timer or phone stopwatch

Things to try:

1. Hold a metal spoon and a wooden spoon in warm water — which heats up faster?
2. Touch a window in the sun vs a wall in the shade — which is warmer?
3. Put an ice cube in the sun and another in the shade — which melts first?
4. Wrap an ice cube in different materials (cloth, plastic bag, foil) and time how long each lasts
5. Ask: why does the esky keep ice frozen?

Questions to ask your child

1. Where is the heat coming from right now? (Sun, stove, your body?)
2. Which things in our home conduct heat? Which are insulators?
3. Why do we use oven mitts when we touch a hot pot?
4. Why does a metal slide in a playground get so hot in the sun but a wooden bench next to it stays cooler?

5. What happens to ice when we add heat to it? What changes?
6. Why does an esky keep ice cold? What material does that job?
7. How do people here in the north keep cool on a really hot day?

The kitchen is a perfect heat laboratory! Watching water boil, ice melt and a cold drink warm up are all real examples of heat transfer happening right in front of you.

Key words to know:

Heat energy	Energy that makes things warmer — can move from one object to another
Temperature	A measure of how hot or cold something is, measured with a thermometer
Heat transfer	When heat moves from a hot object to a cooler one
Conductor	A material that lets heat pass through it easily — like metal
Insulator	A material that slows down the movement of heat — like plastic, wood or foam
Source	Where heat comes from — the sun, fire, electrical devices
Thermometer	A tool used to measure temperature

Key words to look up

Heat energy · Temperature · Heat transfer · Conductor · Insulator · Source · Thermometer

What school will check

Your child needs to identify sources of heat energy and explain how temperature changes when heat energy is transferred between objects.

Try it at home!

Put a metal spoon and a wooden spoon in a cup of warm water. After 2 minutes, touch each handle. Which is warmer? Ask your child: why did the metal heat up more?

