

# Material World: Heat Investigation

## Inquiry Question:

How do materials change when heated and cooled?

## Learning Intention:

To recognise that a change of state can be caused by adding or removing heat.

## Success Criteria:

- measure and record temperature over time and compare temperatures using a graph
- record the length of time taken to melt ice in the sun and in the shade
- make observations during the experiment using words and diagrams
- write an explanation about what occurred and why



Our group members:

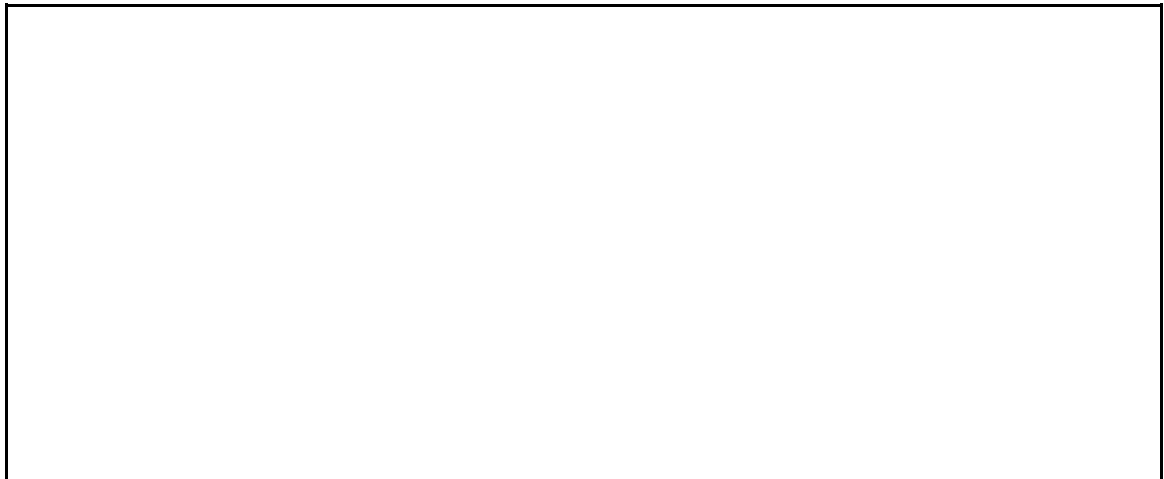
Temperature Taker:	Experiment Timer:
Observation Maker:	Group Leader and Reporter:

1. Use a thermometer to measure the temperature of the playground asphalt in the sun and in the shade before, during and after the experiment.

Equipment Needed: thermometer

Temperature recording:	playground asphalt in the sun	playground asphalt in the shade
Before the experiment		
During the experiment		
After the experiment		

Graph the results to compare the temperatures of the two areas over time



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## 2. Investigate the impact heat from the sun has on ice cubes

**Equipment Needed:** sharpie, 2x zip lock bags, 2x ice cubes, timer

- Write your group name on the top of the zip lock bag
- Place two ice cubes in separate zip lock bags
- Put one zip lock bag on the playground asphalt in the sun and the other on the playground asphalt in the shade.
- Describe the location you have chosen

	In the sun	In the shade
Location of the experiment:		

- Use a timer to record how long both ice cube take to melt in the zip lock bag (elapsed time)

	In the sun	In the shade
Time taken to melt the ice cubes:		

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3. Make observations about the experiment using words and diagrams.

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4. Lead the group through the experiment process making sure everyone in the group is on task and provide help to group members when needed.

What did your group do well?	What didn't work well? What would you change next time?

5. Using the Talking Chips Kagan Structure, lead your group through a discussion about the results and observations made during the experiment.
6. Write an explanation about what occurred in the experiment and why you and your group think this.