

# Ice-melt test guide

Step-by-step instructions for the ice cube melting experiment, testing how different surfaces absorb and reflect heat.

## Materials (per group)

- Ice cubes (use the same size and same tray)
- White card/foam
- Black card/foam
- Aluminium foil
- Small mirrors/mirrored tiles
- Shallow plastic trays or plates (to catch meltwater)
- Stopwatch or timer

## Setup and procedure

### 1. Prepare your first test surface

- Place one material (black card, white card, foil, or mirror) on a clear plastic tray or shallow plate

### 2. Position under the light source

- Set the tray around 20–30 cm below the LED lamp or in direct sunlight if testing outdoors

### 3. Add the ice cube

- Place a single ice cube in the centre of the surface

### 4. Start timing

- Begin the stopwatch as soon as the ice is placed on the surface

### 5. Observe and record – Note the time when:

- Melting first begins
- A 1 cm puddle forms
- The ice cube has completely melted
- *(Optional: Take photos at intervals for visual evidence)*

### 6. Repeat for each material

- Test all remaining surfaces one at a time, keeping the light distance, timing, and cube size consistent

### 7. Record and compare results

- Use your notes to identify which surface caused the fastest and slowest melting

**Controlled variables:**

- Use as close to identical ice cubes (same size, same tray)
- Keep lamp distance (20cm) the same for every test
- Ensure each test runs under similar conditions

Expected result

The **ice cubes on the black card will melt faster** because darker surfaces absorb more radiant energy, while reflective or lighter surfaces stay cooler and slow the melting process.