

# Specific Heat Capacity

## Organise the method used to obtain results to measure Specific Heat Capacity:

- Switch the power pack to 12 V. Switch it on.
- Record the temperature every minute for 10 minutes.
- Place a heater in the larger hole in the block.
- Record the ammeter and voltmeter readings (or Joule Meter Readings)
- Put the thermometer in this hole.
- Measure and record the mass of the copper block in kg.
- Measure the temperature and switch on the



## Improvements:

Suggest ways in which you could improve these in the experiment:

Accuracy:

Precision:

Reliability:

Specific Heat Capacity can be measured using the equation .

$$\text{Energy} = \text{Specific Heat Capacity} \times \text{Temperature Rise} \times \text{Mass}$$

Rearrange this formula to find:

**Specific Heat Capacity =**

What are the units for Specific Heat Capacity?

## Calculate the following:

1. What is the specific heat capacity if the temperature rise is 5°C of a 1Kg mass with 2000J of energy?
2. What is the specific heat capacity if the temperature rise from 27°C to 45°C of a 2Kg mass with 1000J of energy?
3. What is the energy needed to increase the temperature from 55°C to 100°C of a 2Kg mass and specific heat capacity?

### Risk Assessment

Write a risk assessment for this practical including what you would do to minimise these risks.

### Plan

Without turning over (!) write a step by step plan for this experiment.

### Calculating the Specific Heat Capacity

Use the information in the table to calculate the specific heat capacities at each temperature

Energy (J)	Temperature (°C)	Specific Heat Capacity (J/Kg/°C)
1760	24	
3580	25	
5320	26	
7100	27	
8900	28	

Calculate the average Specific Heat Capacity from the table.

Average =

Describe what the specific heat capacity tells you about a substance: