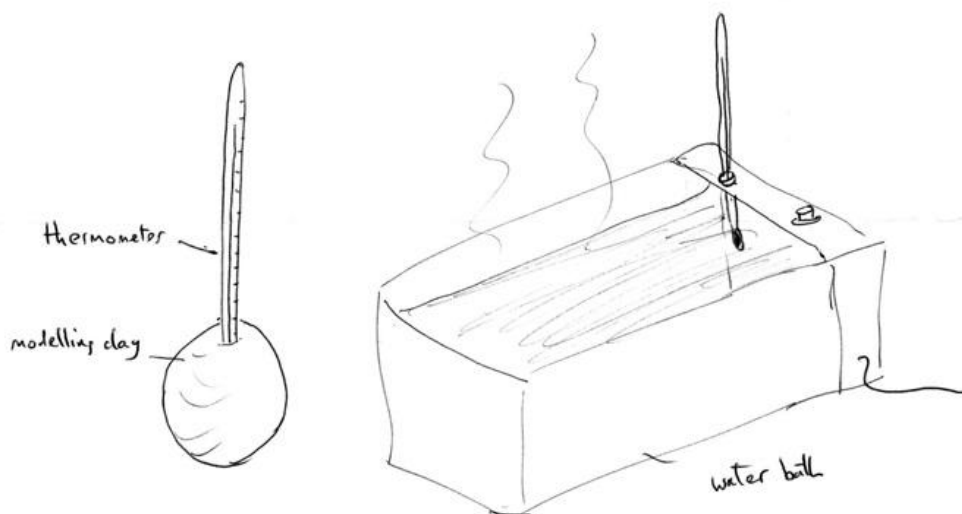


Heat conduction

A block of modelling clay will gradually warm up if it is placed in a container of hot water. Your task is to find out how the rate at which it heats up depends on the temperature of the hot water.



Instructions

1. Mould some modelling clay into a spherical shape.
2. Using a wooden rod, make a hole in the modelling clay into which a thermometer can be placed; the bulb of the thermometer should be at the centre of the sphere.
3. Mould the clay tightly around the thermometer so that no water can enter.
4. Place the modelling clay in a bath of hot water and record its temperature at regular intervals of time.
5. Repeat the experiment with a water bath at a different temperature.

In this experiment, you must decide:

- how you will make it a fair test;
- how many different water-bath temperatures you will investigate;
- the time intervals at which you will record the temperature, and the number of these measurements;
- how to present your results.

Questions after the investigation

1. What were you trying to find out in this investigation?
2. In your investigation, which was the independent variable? Which was the dependent variable?
3. During the experiment, it is important that the temperature of the hot water remains constant. Explain why this is so.
4. In your investigation, which variables did you control to ensure that the test was fair?
5. You can draw a conclusion from an experiment in which you use water baths at just two different temperatures. Explain why it is better to use more than two.