

Worksheet 3: Is the heat pack a heat store?

Task 1

Prepare the experiment according to the instructions.

Apparatus and materials

insulation material



cardboard



rubber bands

metal disk



heat pack

sensor



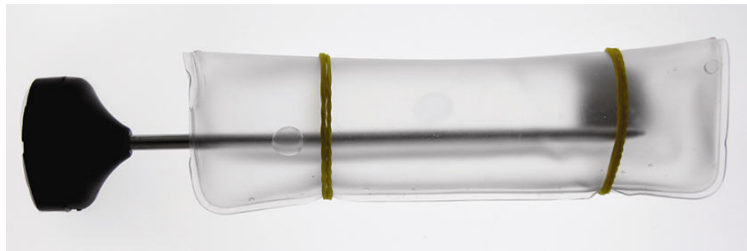
digital thermometer



watch

Conducting the experiment

- Fold the heat pack lengthwise and secure it with the rubber bands.
- Insert the probe of the thermometer into the fold of the heat pack.



- Inside the heat pack you can see a curved metal disk.
- Use your thumb to press firmly on the metal disk until you feel a “click”.



- As soon as you notice a change in the heat pack, place it on the cardboard. Watch the change that occurs in the heat pack and record the temperature change every minute.

Task 2

Measure the temperature every minute and enter the values into the table.
Between the readings of the measurements you can already start on the next tasks.

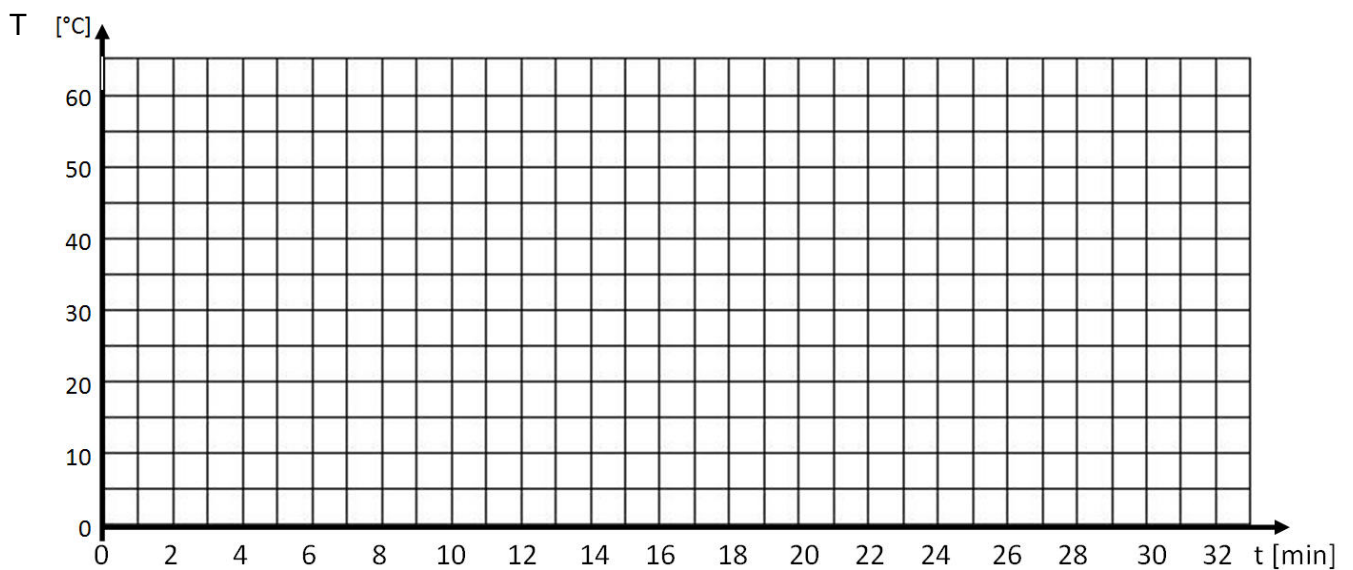
Data table: (time t – temperature T)

t [min]	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
T [°C]																
t [min]	16	17	18	19	20	21	22	23	24	25	26	27	28	29	31	32
T [°C]																

Task 3

Draw a graph using your measurements.

Graph of temperature versus time



Task 4

Fill in the gaps in the text, using the words from the list.

Wordlist

digital thermometer
metal disk
hard
decrease
five

temperature
constant
at the same time
spread
ten

liquid
white
starts
heats up
50

Observation

At first a _____ and _____ structure _____ to form next to the _____ which then continues to _____ throughout the _____.
_____ the pack _____ very quickly at the beginning. Thereafter, the _____ rise begins to slow down. After about _____ minutes, the _____ shows a maximum temperature of around _____ °C.
This temperature stays _____ for about _____ minutes. Then the temperature starts to _____ slowly.