

Recording your results

1 Complete this table of your results.

Substance(s) undergoing change	What are the surroundings?	Temperature of surroundings at start (°C)	Temperature of surroundings at end (°C)	Overall temperature change of the surroundings – Increase or decrease?
① copper sulfate + zinc	water	25°C	35	increase (exothermic)
② citric acid + sodium hydrogen carbonate	water	25°C	18	decrease (endothermic)
③ ice melting	water	25°C	8	decrease (endothermic)

Considering your results/Conclusions

2 a Which changes were example of chemical reactions and which were physical changes?

chemical reactions: ① and ②

physical changes: ③

b Explain how you arrived at your answer for part a.

1 and 2 involves a new substance formation
irreversible

3 → no new substance formed, can easily be reversed.

3 a Which changes were exothermic and which were endothermic?

exothermic: ①

endothermic: ②, ③

b Explain how you arrived at your answer for part a.

①, energy is transferred to the surrounding
causing the temperature of the surrounding to increase.

②, ③ Absorb energy from the surroundings, causing the temperature of the surrounding to decrease.