Energy stores and transfers

Name _____ Class _____ Date _____

Energy is never used up. It is stored in different **stores** and moves between them when something happens.

KEY IDEAS

- Energy is measured in joules (J). In a closed system the total energy stays the same.
- Energy is transferred **mechanically** (work done by a force), **electrically** (work done by a current), by **heating**, and by **radiation**.
- Describe a change as: the store it leaves → how it is transferred → the store it ends up in.

Section A · Recall

Grade 4–5

1 Write down the unit of energy. [1]

2 Complete the table with the eight energy stores, and give an everyday example of each. [4]

#	Energy store	Example
1		
2		
3		
4		
5		
6		
7		
8		

3 Name **four** ways that energy can be transferred between stores. [2]

Section B · Apply

Grade 5–6

4 A ball is thrown vertically upwards. It leaves the hand with 12 J in its kinetic store. Ignore air resistance.

a Describe what happens to the energy in the kinetic store as the ball rises. [1]

b Name the store that the energy is transferred to. [1]

c How much energy is in this new store at the highest point? Explain your answer. [2]

5 Complete the energy transfer diagram for each example. [6]

a. A gas hob boils a pan of water → ☐ → ☐

b. A car brakes to a stop → ☐ → ☐

c. A catapult fires a stone → ☐ → ☐

Section C · Stretch

Grade 7+

6 A ball is dropped onto a hard floor. Explain why it never bounces back up to the height it was dropped from. [3]

Exam-style question

AQA style

7 A cyclist freewheels from rest down a hill, then brakes to a stop at the bottom.

a Describe the changes in the way energy is stored from the top of the hill until the bike stops. [4]

b State what happens to the total amount of energy. Give a reason. [2]

Total: _____ / 26

How confident am I?

	Not yet	Nearly	Got it
I can name all eight energy stores with an example	☐	☐	☐
I can describe energy changes as store → transfer → store	☐	☐	☐
I can explain why energy is conserved but some is dissipated	☐	☐	☐