Energy

3. Work

CONCEPT 1

TEST YOURSELF

DOING WORK

KNOW

Q1 In which of the following examples is work being done?

A	pushing a shopping trolley	B	sitting on a chair
C	pulling back a bow (and arrow)	D	climbing up a ladder
E	leaning against a wall	F	holding up an umbrella

Q2 Will you do more work if you run 1 mile instead of walk 1 mile?

APPLY

Q3 (a) How could you measure the force it takes to push a shopping trolley?

(b) Why might the force change during the shopping visit?

Q4 Two pupils push wheelbarrows for 50 metres. Pupil A pushes a wheelbarrow with 50 kg in it. Pupil B pushes a wheelbarrow with 25 kg in it.
Which pupil will do more work as they complete the 50 metres distance?

EXTEND

Q5 Calculate the work done in the following situations.

(a) A man uses a force of 50 N to push a box 3 m along a smooth floor.

(b) A striker at a fairground uses a force of 100 N to raise a puck a height of 6 m.

Q6 A team of 8 Siberian huskies are preparing to pull a sled. Each husky can pull with a force of 50 N. They are testing new ropes over a course of 500 metres.

(a) What is the total pulling force of the husky team?

(b) They start to pull on the sled but it doesn't move. How much work does the husky team do?

(c) Eventually, the sled moves. How much work is done by the husky team to complete the course?

(d) How much work does **one** husky do to complete **3 laps** of the course?