

4 How does it work?

Gadgets

- 1 What James Bond movies do you know? Do you remember any of the gadgets? What special features do James Bond's watches have? What do they enable him to do?
- 2 Read the text. Does it mention any of the features you thought of?

James Bond's watches have a lot of useful features. First of all, they have a button that turns on a very bright blue light. This is useful for seeing in the dark. Secondly, they have a laser beam. This enables you to cut holes in walls to get away from people you don't like. The third feature is useful if you want to blow up a building. It's a detonator, so it enables you to leave before you set off an explosion. But the best feature is the hook. It's attached to a very thin strong wire and it's for lifting you up off the floor. First you fire the hook at the ceiling. Then you press another button and the wire pulls you up. James Bond's watches always have one other feature too. You can use them to tell the time.



- 3 Work with a partner. Ask and answer these questions.
 - 1 What does the blue light enable you to do?
 - 2 What can the laser beam do?
 - 3 When is the third feature useful?
 - 4 Which is the best feature and how does it work?
 - 5 What do all James Bond's watches enable you to do?

- 4 Here are some more of James Bond's gadgets. Work with a partner and discuss these questions.



- 5 Match the gadgets to the descriptions.

- 1 This ring contains a tiny camera. It enables James to take photographs without anybody knowing.
- 2 This credit card is useful when it's time to pay the bill. But it's also for opening locked doors. It has a lock pick hidden inside.
- 3 These look like sunglasses, but really they are X-ray glasses. They enable James to see through people's clothes. They are useful when he wants to see if people have guns in their pockets.
- 4 You shouldn't clean your teeth with this toothpaste. It's a tube of plastic explosive and it enables James to create explosions.
- 5 This electronic razor is also a bug detector and it's very useful when James doesn't want people listening to his conversations. It enables him to find listening devices in his hotel rooms.
- 6 This isn't a normal hairbrush. It's a transmitter. It enables James to send messages in Morse code.
- 7 This lighter is really just a lighter. Some friends gave it to James as a present for being the best man at their wedding.

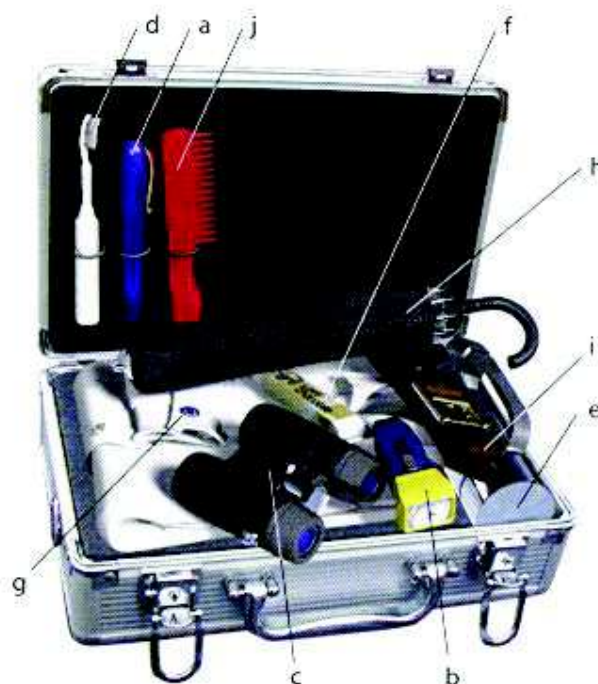
can, for, and enable

This is more than just a ring. You **can** take photographs with it. (It's possible.)
 It's **for** taking photographs. (This is the purpose.)
 It **enables** James to take photos without anybody knowing. (It makes it possible.)

- 6 Suggest endings for these sentences.
 - 1 The lock pick enables ...
 - 2 These are special glasses. You can ...
 - 3 The plastic explosive is for ...
 - 4 This isn't a normal razor. You can ...
 - 5 The hairbrush is for ...
 - 6 The lighter enables ...
- 7 Work with a partner. Look at the pictures in 4 again. Ask and answer questions.
 - A What's this device for?
 - B It's for ...-ing
 - A What can you do with this device?
 - B It enables you to ...

- 8 Here's another secret agent's kit. Match the words in the list to the items in the case.

- | | |
|-----------------|----------------|
| 1 belt | 6 shirt button |
| 2 binoculars | 7 torch |
| 3 chocolate bar | 8 umbrella |
| 4 comb | 9 vacuum flask |
| 5 pen | 10 toothbrush |



- 9 Work with a partner.

- A - look at the information below.
- B - look at file 14 on page 105.

A

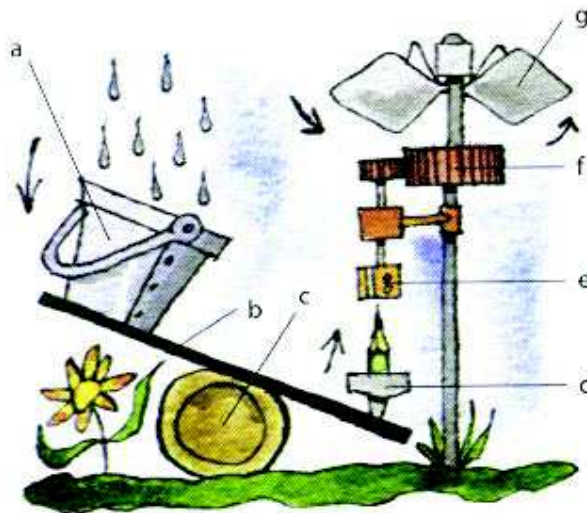
You are a secret agent. Here are some things you need to do. Ask your partner about the items in the bag above. Find out which ones can help you. You need to:

- 1 climb down a 40 m high wall
- 2 make a guard fall asleep
- 3 open a locked door
- 4 check a room for listening devices
- 5 make a telephone call
- 6 photograph some documents
- 7 cut a hole in the wall and escape
- 8 blow up the building
- 9 see if a beautiful woman / handsome man has a gun in her / his pocket
- 10 offer her / him a drink.

Cause and effect

- 1 What's this device for and how does it work? Label the parts with words from the list. Then listen and check your answers.

sharpener blades wood gear
pencil holder pivot bucket



- 2 Listen again and complete the sentences.

- How do you it work?
- You a pencil in the holder.
- it rains, the bucket with water.
- The wood is a, so you down on one end, the other end
- A pencil sharpener. When the pencil rises, it inside.
- And the wind the at the top
- They the gear and it the sharpener spin round.

Saying how things work

We can use *if* and *when* to say how one action causes another.

When it rains, the bucket fills up with water.

If you press down on one end, the other end rises.

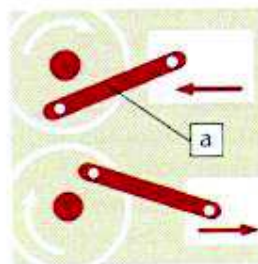
Make can mean cause, or force something to happen.

The wind *makes* the blades rotate. How do you *make* this work?

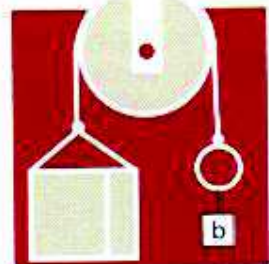
- 3 Look at some more devices and match each one to the correct instruction.

- Pull down on the ring.
- Rotate the cam clockwise.
- Increase the weight of the load on the left.
- Turn the cog on the right anti-clockwise*.
- Move the rod back and forth.
- Open the lid.
- Cut the string.
- Connect the wires to the battery.

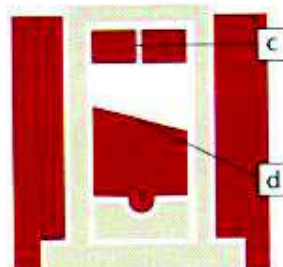
anti-clockwise **BrE** – counter-clockwise **AmE**



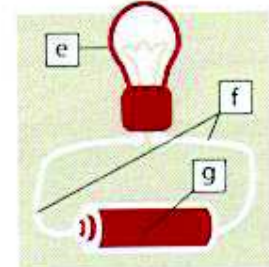
A crank



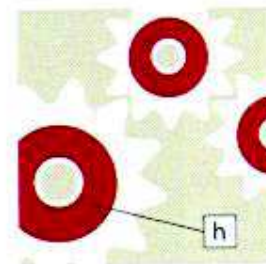
A pulley



A guillotine



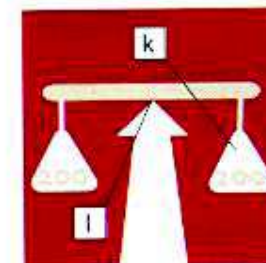
An electric circuit



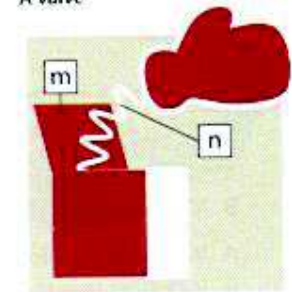
A gear



A valve



A lever



A boxing glove toy

4 Find these components in the pictures in 3.

ring	cam	cog	rod	lid
string	battery	spring	pivot	pipe
bulb	blade	load	wires	

5 What happens when you follow the instructions in 3?

Example

When you pull down on the ring, the load rises.

Which instructions can you reverse, and what happens if you do?

Example

If you let go of the ring, the load falls.

6 Work with a partner. Take turns asking and explaining how the devices work.

Example

A How do you make the wheel turn round?

B You have to move the rod back and forth.

7 Work in small teams. Design a machine to do one of these things.

- 1 Squeeze some toothpaste on to a toothbrush
- 2 Stick a stamp on an envelope
- 3 Screw a light bulb into its socket
- 4 Turn off an alarm clock
- 5 Crush and recycle an empty drink can

Try to include as many devices from 3 as you can. Draw a diagram of the machine and prepare to explain how it works.

8 Take turns showing your machines to the class. Which team's machine:

- 1 has the most components?
- 2 works best?
- 3 is the most unusual?

Checking and controlling

1 Look at the words **check** and **control** below. What words would you use in these situations in your language?



This switch **controls** the light. (Turns it on and off)



The thermostat **controls** the temperature. (Stops it getting too hot or cold)



The security guard will **check** your ID. (Inspect it)



Can you **check** the air in my tyres? (Make sure they are OK)

2 Complete the rule with **check** or **control**.

check and control

Use to talk about managing something, so it works correctly.

Use to talk about looking at something carefully to make sure it's correct, safe, or in good condition, etc.

3 Complete these sentences with **check** or **control**.

- 1 These knobs the volume.
- 2 the door's locked before you leave.
- 3 Can you the list to make sure we've got everything?
- 4 We can send people to the moon, and spaceships to Mars, but we still can't the weather.
- 5 They'll your passport at immigration control.
- 6 It's difficult to the vehicle when it's going round bends at high speeds.
- 7 You should the pressure of your tyres before you go on a long trip.
- 8 We the whole process from this room. We can shut everything down in seconds if we have to.