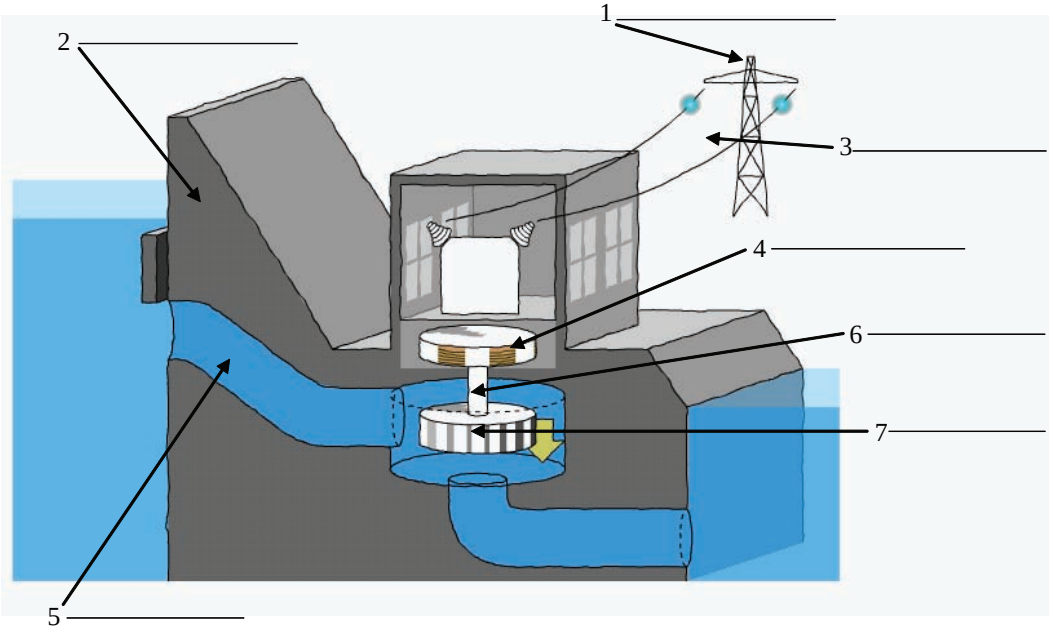
HYDRO POWER

Worksheet

Exercise 1

Write the labels in the correct place on the diagram.



pylon
generator
dam
cable
channel
turbine
shaft

Exercise 2

Read about hydro power and draw four simple diagrams to illustrate each stage of the process (1–4).

1. Rainwater builds up in a reservoir behind a dam.	2. The water is released through a channel in the dam and falls onto a turbine, causing it to turn.
3. The turbine is connected to a shaft, which, as it turns, drives a generator.	4. The generator produces electricity, which is sent via pylons and cables to homes around the country.

Exercise 3

Complete the gaps, using the present simple or present simple passive form of the verbs in the box.

produce	flow	connect	drive	send	turn	build up

The energy in flowing water can be harnessed to produce electricity. Rainwater _____ (1) down hills and into a river. It then _____ (2) in a reservoir behind a dam. The water is released through a channel in the dam and falls on to a turbine, causing it to turn. The turbine _____ (3) to a shaft, which, as it _____ (4), _____ (5) a generator. The generator _____ (6) electricity. Electricity _____ (7) via pylons and cables to homes around the country.

HYDRO POWER

Objectives

Science
Students learn how hydro power is produced by using rainwater from a reservoir to drive a turbine.

Language
Skills: Speaking, listening, reading and writing
Grammar: Present simple tense, present simple passive
Vocabulary: Nouns: *pylon, generator, dam, cable, channel, turbine, shaft, reservoir, electricity, energy*
Verbs: *build up, release, connect, drive, produce, flow, harness*

Activities

Activities	***Language skills***
Students say what they know about how hydro power is produced	Speaking; vocabulary; present simple tense
They label a diagram of a hydro power station	Vocabulary
They talk in pairs about the diagram	Speaking; vocabulary; present simple tense
They read about hydro power and draw diagrams to illustrate the process	Reading; vocabulary
They watch the animation and check whether their diagrams were correct	Listening; reading; vocabulary
They complete the gaps in a text	Reading; writing; vocabulary; present simple tense; present simple passive
(Groups only:) They give an oral commentary on the animation	Speaking; vocabulary; present simple tense; present simple passive

Procedure

With the whole class
(Typical situation: whole class watching the presentation and animation on an interactive whiteboard or projector.)

1 *[Slide 1]* Introduce the topic. Ask the class what they know about hydro power and how it is produced, but do not go into detail. Introduce some of the key words (see above). Then get students to do exercise 1 on the worksheet in pairs: they label the diagram. When students have finished, check answers with the whole class. (See answer key.)

2 In their pairs, ask students to look at the diagram and say how they think hydro power is produced. Monitor and help.

3 Students work individually and do exercise 2 on the worksheet: they read about hydro power and draw four simple diagrams to illustrate each stage of the process. (Tell students that the diagrams can be very simple sketches.) Monitor and help, encouraging students to talk about their diagrams.

4 Students compare their diagrams in pairs or groups. If the diagrams are different, encourage them to explain the diagrams to each other using the texts.

5 *[Slides 2 and 3]* Play the animation. Tell the students to listen and watch, and check whether their diagrams were correct.

6 Grammar focus (optional – see below).

7 *[Slide 4]* Tell students not to look at exercise 2 while they do the next exercise. Students work individually and do exercise 3 on the worksheet: they complete the gaps. Students check their answers in pairs. (See answer key.) Briefly go through the answers with the whole class, or play the animation once more so students can check their answers.

With groups (one group studies hydro power and then presents it to the class)

(Typical situation: students arranged in groups around computers eg in a language lab)

1 *[Slide 1]* Students work in their group and do exercise 1 on the worksheet: they label the diagram. When students have finished, they can use the answer key to check their work.

2 In their group, ask students to look at the diagram and say how they think hydro power is produced.

3 Students work individually or in pairs and do exercise 2 on the worksheet: they read about hydro power and draw four simple diagrams to illustrate each stage of the process. (Tell students that the diagrams can be very simple sketches.)

4 Students compare their diagrams in their group. If the diagrams are different, encourage them to explain the diagrams to each other using the text.

5 *[Slides 2 and 3]* Students play the animation and check whether their diagrams were correct.

6 Grammar focus (optional – see below).

7 *[Slide 4]* Tell students not to look at exercise 2 while they do the next exercise. Students work individually and do exercise 3 on the worksheet: they complete the gaps. Students check their answers in pairs (see answer key) or play the animation once more.

8 *[Slide 5]* The group gets ready to give an oral commentary on the animation. They can rehearse once or twice if they wish. Play the animation without sound; students give the commentary.

Grammar focus (optional): present simple passive

1 Focus on the first part of sentence 2 from exercise 2: *The water is released through a channel in the dam.* Write the short sentence on the board or ask students to highlight it on their worksheet. Underline the passive verb form *is released.* Ask students to identify whether this verb form describes an active process or a passive process. Is the phrase describing what the subject (the water) does, or what happens to the subject?

2 Explain to the students that scientific processes are often expressed using the present simple passive, because the most important thing is the event and not who or what carried it out. Now ask students to find other examples of the present simple passive in the text for exercise 2 (*is connected, is sent*).

3 Write the structure of the present simple passive on the board: *am/are/is* + past participle.

4 If you wish, give students further grammar exercises practising the present simple passive to describe processes.

Hydro power

Worksheet answer key

Exercise 1

1. pylon
2. dam
3. cable
4. generator
5. channel
6. shaft
7. turbine

Exercise 3

1. flows
2. builds up
3. is connected
4. turns
5. drives
6. produces
7. is sent