

3 Cooling system

Start here

$^{\circ}\text{F} = ^{\circ}\text{C} \cdot 9 / 5 + 32$.
This converts Celsius to Fahrenheit.
 $^{\circ}\text{C} = (^{\circ}\text{F} - 32) \cdot 5 / 9$. This converts Fahrenheit to Celsius.

1 Try this quiz. Choose the correct answer.

What are the normal or average temperatures for these?

1 Water from a shower?	a) 60°C (140°F)	b) 80°C (176°F)
2 Food in a refrigerator?	a) 4.5°F (-15°C)	b) 40°F (4.5°C)
3 Food in a freezer?	a) 0°C (32°F)	b) -18°C (0°F)
4 Coldest air temperature ever?	a) -89°C (-128°F)	b) -20°C (-4°F)
5 Hottest air temperature ever?	a) 156°F (70°C)	b) 136°F (58°C)
6 Water in running car engine?	a) 110°C (230°F)	b) 45°C (110°F)

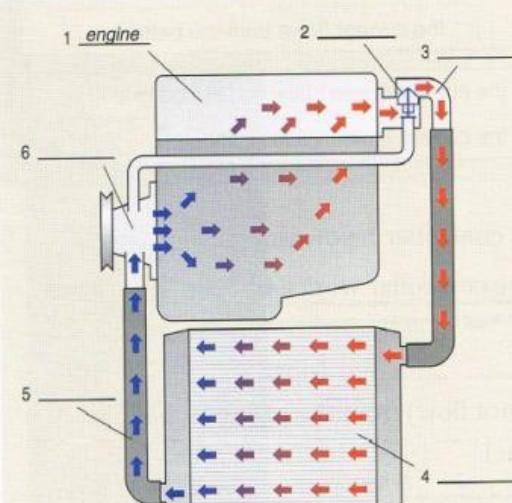
Listening

2  30 Listen and check your answers.

Reading

3 Label the diagram with the words in the box.

bottom hose engine radiator thermostat top hose water pump



Car cooling system

The engine drives the water pump and the pump pushes cool water around the engine. This cools the engine. At the same time, the water becomes hot. The water in a hot engine is normally around 110°C .

5 The hot water then passes through the thermostat. **This** controls the temperature of the engine. From the thermostat, **it** flows through the top hose into the radiator. **Here**, a fan cools the water, and the cool water sinks to the bottom of the radiator.

10 The cool water then leaves the radiator. **It** flows along the bottom hose, passes through the pump and enters the engine again.

4 Read the text. Check your answers to 3.

5 Which words in the text do these words refer to?

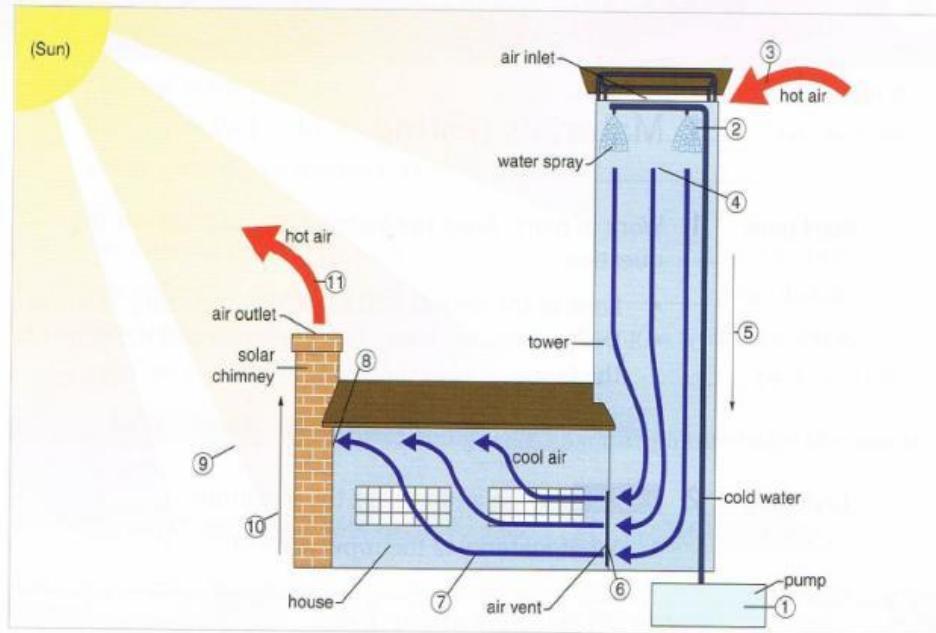
1 This (line 6)	a) hot water	b) thermostat	c) temperature
2 it (line 7)	a) engine	b) thermostat	c) water
3 Here (line 8)	a) top hose	b) radiator	c) fan
4 It (line 10)	a) water	b) radiator	c) bottom hose

Speaking

6 Make true sentences.

(1) The water pump	control(s)	the radiator to the engine.
(2) The thermostat	connect(s)	air onto the radiator.
(3) The two hoses	push(es)	the hot water from the engine.
(4) The radiator	cool(s)	water around the engine.
(5) The fan blades	flow(s)	to the bottom of the radiator.
(6) Cool water	rise(s)	the temperature of the water.
(7) Hot water	sink(s)	through the two hoses.
(8) Water	blow(s)	to the top of the engine.

Task 7 Work in groups. This is a simple way to cool a house in a hot country. How does it work? What happens at each stage (1-11)?



Writing 8 Complete this description of how the cooling system works with the verbs and prepositions in the box.

cool enter flow heat leave rise sink
around into out of through to

The pump pushes cold water through the pipe to the top of the tower (1). Here, the water leaves the pipe through small holes. It's like a cold shower. (2). Hot air enters the tower through the air inlet (3). The shower of cold water cools the air (4). The cool air then flows to the bottom of the tower (5). The cool air enters the house, (6) and then it rises (7). It enters the house and enters the solar chimney (8). The Sun heats the chimney, (9) and the hot air enters (10). The hot air finally enters the chimney through the air outlet (11).

Social English

9 31 Listen and read.

Dan is an electronics student. He also works part-time in an electronics workshop.

on Mondays = every Monday
on Monday mornings = every Monday morning

- I work in the electronics workshop every Thursday and Friday.
- When do you attend lectures?
- Every Tuesday morning.
- What do you do on Tuesday afternoons?
- I do my practical work then.

10 Work in pairs. Practise the dialogue.

11 Work in pairs. Discuss your own weekly schedule.