

# Technical English

# 1A

Workbook



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## 1

## Check-up

## 1 Basics

1 Use the words in the box to complete the dialogues.

what's    where    what    I'm    is    are    I'm

- 1 A: Hi, \_\_\_\_\_ Kaito.  
 B: Hello, my name \_\_\_\_\_ Pedro.  
 A: Nice to meet you.
- 2 A: Hello. \_\_\_\_\_ are you from?  
 B: I'm from Japan. \_\_\_\_\_ is your name, please?  
 A: I'm Hans. Pleased to meet you.
- 3 A: Good to meet you, Svetlana. \_\_\_\_\_ you from Poland?  
 B: No, \_\_\_\_\_ from Russia. \_\_\_\_\_ your name?  
 A: I'm Danielle.

2 Use the words in the pool to complete the orders.

- 1 Stand \_\_\_\_\_.  
 2 Write \_\_\_\_\_.  
 3 Turn \_\_\_\_\_.  
 4 Close \_\_\_\_\_.  
 5 Sit \_\_\_\_\_.  
 6 Raise \_\_\_\_\_.  
 7 Come \_\_\_\_\_.

right  
 down    your name  
 your book    in  
 up  
 your hand

3 Write the words in the correct columns.

adapter    antenna    bolts    cable    chisel    nuts    plug    saw    screwdriver  
 screws    spanner    washers

Tools	Electricals	Fixings
_____	<i>adapter</i>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

## 2 Letters and numbers

- 1  02 Listen and correct the five mistakes on the business card.



- 2  03 Listen and complete the form.

Surname:	J _____
First name:	_____
Company:	_____
Email address:	_____

- 3 Match items 1–10 with the right words. Then match items 11–20.

- |        |                           |
|--------|---------------------------|
| 1 gal  | a) amp                    |
| 2 €    | b) angle/degree           |
| 3 kg   | c) Celsius                |
| 4 A    | d) euro                   |
| 5 in   | e) foot                   |
| 6 ft   | f) gallon 1               |
| 7 km   | g) gram                   |
| 8 °    | h) inch                   |
| 9 g    | i) kilogram               |
| 10 C   | j) kilometre              |
| 11 +   | k) kilometres per hour    |
| 12 m   | l) kilowatt               |
| 13 kW  | m) litre                  |
| 14 V   | n) metre                  |
| 15 kph | o) negative               |
| 16 rpm | p) positive 11            |
| 17 W   | q) pound                  |
| 18 L   | r) revolutions per minute |
| 19 £   | s) volt                   |
| 20 –   | t) watt                   |

4  04 Mr Martin is buying a car. Listen and write down the facts about the car.

- 1 Kilometres: 120 000 km
- 2 Engine temperature: \_\_\_\_\_ ° Celsius
- 3 Petrol tank: \_\_\_\_\_ litres
- 4 Engine speed: up to \_\_\_\_\_ rpm
- 5 Top speed: \_\_\_\_\_ kph
- 6 Price: \_\_\_\_\_ euros

### 3 Dates and times

1 Write the words for these ordinal numbers.

- |      |               |      |       |
|------|---------------|------|-------|
| 4th  | <i>fourth</i> | 5th  | _____ |
| 12th | _____         | 29th | _____ |
| 23rd | _____         | 8th  | _____ |
| 7th  | _____         | 31st | _____ |
| 30th | _____         | 6th  | _____ |
| 22nd | _____         | 20th | _____ |

2 Complete the puzzles.

- 1 Jan 31 Fri → Feb 8

*January the thirty-first is a Friday, so February the eighth is a Saturday.*

- 2 Mar 29 Wed → Apr 2
- \_\_\_\_\_

- 3 May 29 Tue → June 3
- \_\_\_\_\_

- 4 July 30 Thur → Aug 4
- \_\_\_\_\_

- 5 Sept 28 Mon → Oct 7
- \_\_\_\_\_

- 6 Nov 27 Thur → Dec 6
- \_\_\_\_\_

3 Use the words in the box to complete the dialogue.

that's is it's then what when's it's

A: \_\_\_\_\_ the meeting?

B: \_\_\_\_\_ on Monday.

A: \_\_\_\_\_ that Monday 12th?

B: Yes. \_\_\_\_\_ right.

A: Do you know \_\_\_\_\_ time?

B: \_\_\_\_\_ at 10 o'clock.

A: OK. See you \_\_\_\_\_. Bye.

B: Bye.

## 4 Word list

NOUNS	NOUNS	ORDINAL NUMBERS	VERBS
adapter	amp	first	listen
antenna	angle	second	lower
bolt	Celsius	third	pick up
cable	degree	fourth	put down
chisel	euro	fifth	raise
nut	foot	sixth	read
plug	gallon	seventh	say
saw	gram	eighth	sit
screw	inch	ninth	stand
screwdriver	kilogram	tenth	start
spanner	kilometre	eleventh	stop
washer	kilometres per hour	twelfth	write
counter	kilowatt	thirteenth	<b>ADVERBS</b>
flight	litre	twentieth	closed
model	metre	thirtieth	down
platform	pound	<b>PHRASES</b>	in
first name	revolutions per minute	Excuse me	left
surname	volt	Hello	off
initial(s)	watt	Good to meet you	on
	<b>ADJECTIVES</b>	Nice to meet you	open
	negative	Pleased to meet you	out
	positive		right
			up

1 Make up answers to these questions. Use words from column 2 of the Word list.

- How heavy is it? *425 grams*    *22 kilograms*
- How hot is it? \_\_\_\_\_
- How long is it? \_\_\_\_\_
- How far is it to Dubai? \_\_\_\_\_
- How fast is the car travelling? \_\_\_\_\_
- How fast is the engine turning? \_\_\_\_\_
- How much petrol is in the tank? \_\_\_\_\_
- What's the price of the car? \_\_\_\_\_
- How do you write 225 V in words?  
\_\_\_\_\_

## 2

## Parts (1)

## 1 Naming

1 Write sentences for the pictures.

Parts	Vehicles
axle deck nose number plate tail wheel	boat motorbike mountain bike plane racing car rocket



*That's the wheel of a racing car.*



2 Use the words in the box to correct the sentences.

bolts nails nuts screw screwdriver spanner staple washers

1 *That isn't a hammer. That's a screwdriver.*



2 *Those aren't screws. Those are nails.*



3 *This \_\_\_\_\_ a chisel. This \_\_\_\_\_.*



4 \_\_\_\_\_ washers. These \_\_\_\_\_.



5 \_\_\_\_\_ a nail. This \_\_\_\_\_.



6 \_\_\_\_\_ nuts. These \_\_\_\_\_.



7 \_\_\_\_\_ a staple. That's \_\_\_\_\_.



8 \_\_\_\_\_ nuts. Those \_\_\_\_\_.



## 2 Assembling

1 How do you change a car wheel? You need:



a **jack**, to raise and lower the car

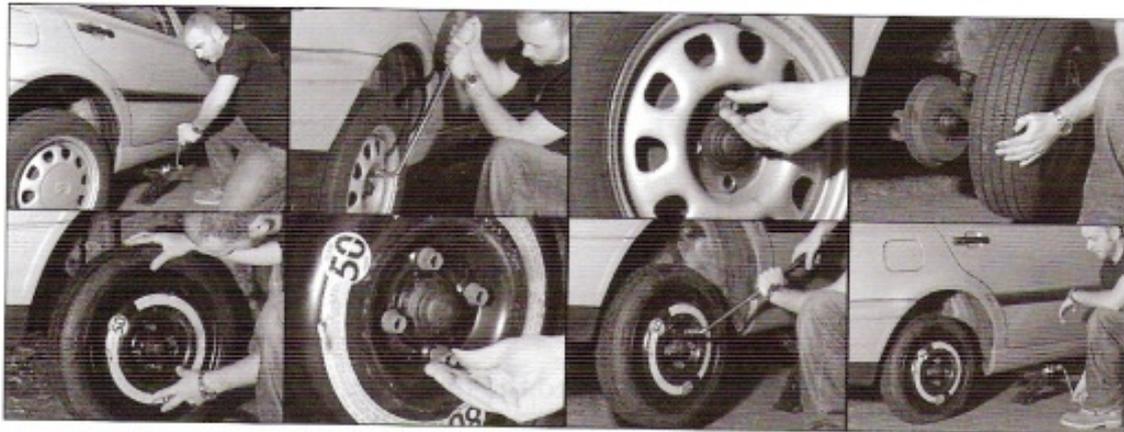


a **box spanner**, for the nuts



a **spare wheel**

Complete the instructions for the pictures, using the verbs from the box.



loosen lower put on raise take off tighten

- 1 \_\_\_\_\_ the car with the jack.
- 2 \_\_\_\_\_ all the nuts with the box spanner.
- 3 \_\_\_\_\_ all the nuts.
- 4 \_\_\_\_\_ the wheel \_\_\_\_\_ the axle.
- 5 \_\_\_\_\_ the spare wheel \_\_\_\_\_ the axle.
- 6 \_\_\_\_\_ all the nuts.
- 7 \_\_\_\_\_ all the nuts with the box spanner.
- 8 \_\_\_\_\_ the car.

2 Write the dialogue lines in the right order.

30 mil. How many nails do you need? Shopkeeper: \_\_\_\_\_

30 mil, please.

Customer: \_\_\_\_\_

Hello.

Shopkeeper: \_\_\_\_\_

I need 80, please.

Customer: \_\_\_\_\_

Some nails. What size do you need? Shopkeeper: \_\_\_\_\_

Hello. I need some nails, please. Customer: \_\_\_\_\_

### 3 Ordering

- 1  05 Listen to the two phone messages. Correct the mistakes in the names and numbers.

1 Name: Vladislav Sczetin	Phone number: 00 48 920 4516
2 Name: Abdel Mohamed Mabruk	Phone number: 00 20 537 1490

- 2  06 Listen to the two phone messages. Complete the message forms.

1

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Caller: \_\_\_\_\_  
 Phone number: \_\_\_\_\_

2

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Caller: \_\_\_\_\_  
 Phone number: \_\_\_\_\_

- 3  07 Listen to the dialogue. A customer is ordering skateboard parts on the phone. Complete the order form.



SKATEBOARDERS				ORDER			
Surname: _____							
Address: _____							
Postcode: _____							
Tel: _____							
Item (circle)	Colour (circle)			Size (circle)			Quantity (write)
Helmet	red	yellow	blue	large	medium	small	_____
Deck	red	yellow	blue	large	medium	small	_____
Pad	red	yellow	blue	large	medium	small	_____

## 4 Word list

NOUNS	NOUNS	VERBS	ADJECTIVES
axle	bolt	assemble	large
deck	hammer	loosen	medium
helmet	lever	pull	small
nose	nail	push	red
pad	nut	put	yellow
plate	screw	take	blue
tail	screwdriver	tighten	
truck	spanner	use	
wheel	staple		
	washer		

- 1 Spelling: there are eight words in the Word list with double letters. Write them here.

*wheel*, \_\_\_\_\_  
\_\_\_\_\_

- 2 Vocabulary groups: write the words in column 2 on the correct line.

Tools: *hammer*, \_\_\_\_\_

Things: *bolt*, \_\_\_\_\_

- 3 Complete the instructions for skateboarding with words from the box.

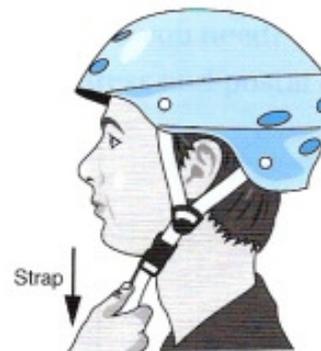
loosen push put take tighten

### Before skateboarding

- \_\_\_\_\_ on the helmet.  
\_\_\_\_\_ it down onto your head.  
\_\_\_\_\_ the helmet strap.  
\_\_\_\_\_ on the pads.  
\_\_\_\_\_ the pads.

### After skateboarding

- \_\_\_\_\_ the pads and \_\_\_\_\_ them off.  
\_\_\_\_\_ the helmet strap and \_\_\_\_\_ off the helmet.



## A

## Review

## Section 1

## 1 Complete the dialogues.

I'm he's that's is do I'm are

- 1 A: \_\_\_\_\_ you Maria?  
B: No, \_\_\_\_\_ Sonia. \_\_\_\_\_ Maria.
- 2 A: What \_\_\_\_\_ you do, Toni?  
B: \_\_\_\_\_ a builder.
- 3 A: \_\_\_\_\_ Carlos a builder?  
B: No, \_\_\_\_\_ an electrician.

## 2 Check the information in Students' Book page 9. Write the dates in column 2.

A person writes ...	What is the date?
 1 Claire Paris, 1/2/11	February 1st 2011
 2 Vicky Chicago, 3/9/11	_____
 3 Yuki Tokyo, 11/01/22	_____
 4 Matt Seattle, 11/12/11	_____
 5 Director, ISO Geneva, 2011.07.08	_____
 6 Peter Berlin, 9/10/11	_____

## 3 Work out the sequence of days and dates. Write the missing ones.

- 1 Monday, May the first
- 2 Thursday, May the fourth
- 3 Sunday, May the seventh
- 4 \_\_\_\_\_
- 5 Saturday, May the \_\_\_\_\_
- 6 \_\_\_\_\_
- 7 Friday, May the \_\_\_\_\_
- 8 \_\_\_\_\_

## Section 2

### 1 Jumbled letters. Write the plural words.

- |   |         |               |   |             |               |
|---|---------|---------------|---|-------------|---------------|
| 1 | lotsb   | <i>bolts</i>  | 5 | ilsan       | <i>n_____</i> |
| 2 | hessraw | <i>w_____</i> | 6 | lesax       | <i>a_____</i> |
| 3 | wressc  | <i>s_____</i> | 7 | eatsksarbod | <i>s_____</i> |
| 4 | tuns    | <i>n_____</i> |   |             |               |

### 2 Write two more dialogues, like the example. Use the words from the box.

A: What's this tool called?

B: It's a *spanner*.

A: Is it for *nails*?

B: No. It's for *nuts*.

hammer screws nuts spanner screwdriver nails

A: What's this tool called?

B: It's \_\_\_\_\_

A: Is \_\_\_\_\_

B: \_\_\_\_\_

A: \_\_\_\_\_

B: \_\_\_\_\_

A: \_\_\_\_\_

B: \_\_\_\_\_

### 3 Complete the dialogue with the questions.

What's your phone number?

What's your email address?

What's your name?

What size cards do you need?

How many do you need?

What's your address and postal code?

When do you want them?

A: Hello. I need to order some business cards.

B: *How many* \_\_\_\_\_

A: 200, please.

B: \_\_\_\_\_

A: 85 millimetres by 55 millimetres.

B: \_\_\_\_\_

A: Stevens, with a V. Initials HC.

B: \_\_\_\_\_

A: 14 Hayfield Road, Bristol. BR7 4JK

B: \_\_\_\_\_

A: 0117 893462.

B: \_\_\_\_\_

A: It's [harry.stevens@ojs.com](mailto:harry.stevens@ojs.com)

B: \_\_\_\_\_

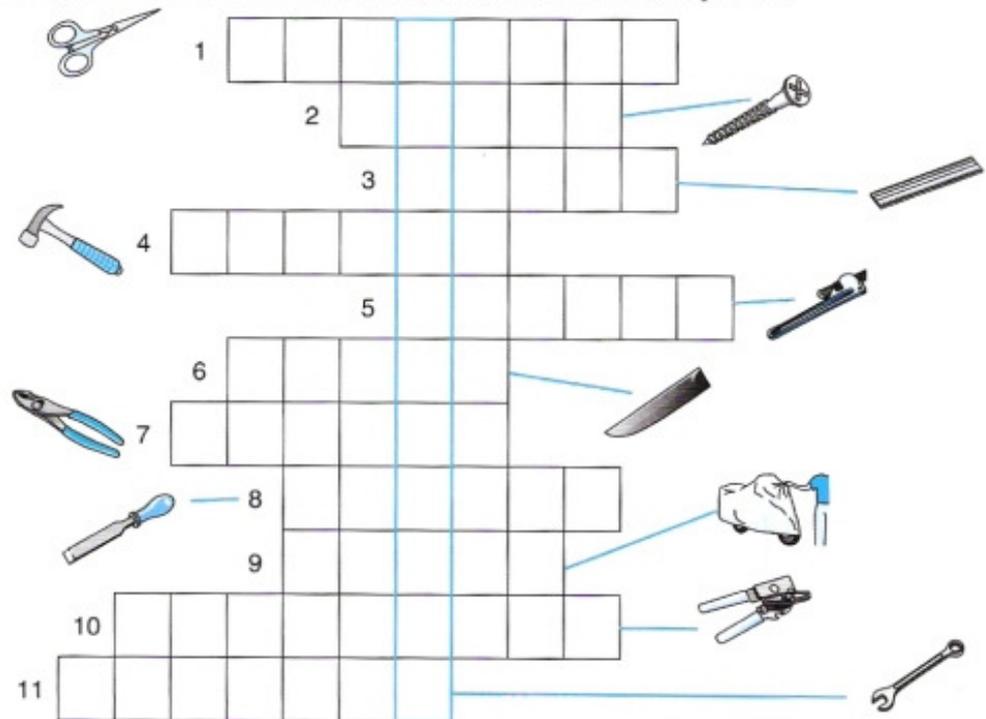
A: Friday, please.

## 3

## Parts (2)

## 1 Tools

1 Complete the crossword. Find a twelfth word in the puzzle.



2 Write the answers to the puzzles. Use each item once.

hammer pair of pliers pair of scissors saw screwdriver spanner

- 1 It has a handle, a shaft and a head. It turns screws. It is a *screwdriver*.
- 2 It has a shaft and a head. It drives in nails. It is a \_\_\_\_\_.
- 3 It has two handles and two blades. It cuts paper. It is a \_\_\_\_\_.
- 4 It has a shaft and jaws, but no blades. It tightens nuts. It is a \_\_\_\_\_.
- 5 It has two handles, jaws and blades. It cuts wire. It is a \_\_\_\_\_.
- 6 It has a handle and a blade. It cuts wood. It is a \_\_\_\_\_.

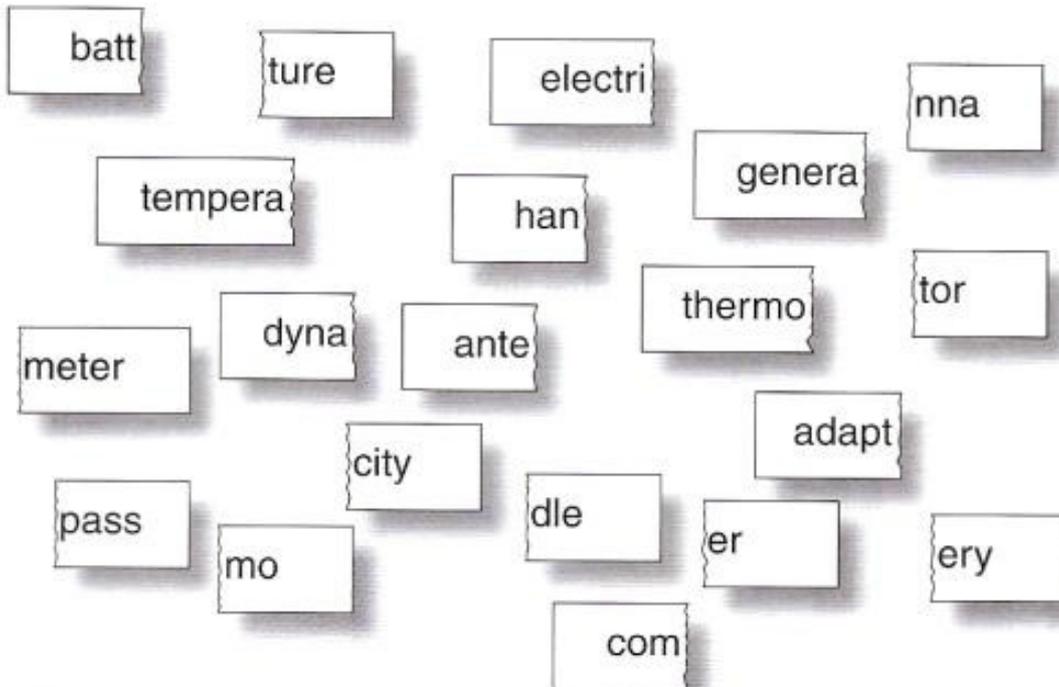
3 Use the words in the box to complete the dialogues.

do does don't doesn't have has

- |  |   |
|--|---|
| <p>1 A: _____ Carlos need a spanner?<br/>B: No, he _____.<br/>A: _____ he need a pair of pliers?<br/>B: Yes, he _____.<br/>A: Does he _____ a saw?<br/>B: Yes, he _____ two.</p> | <p>2 A: _____ you have a hammer?<br/>B: No, I _____.<br/>A: _____ you need a hammer?<br/>B: Yes, I _____.<br/>A: I don't _____ one. Go and ask Pedro. He _____ one in his tool box.</p> |
|--|---|

## 2 Functions

1 Match the word halves and write the words next to the explanations.



- 1 This makes electricity. *generator*
- 2 This shows North. \_\_\_\_\_
- 3 This stores electricity. \_\_\_\_\_
- 4 An AC \_\_\_\_\_ changes AC to DC.
- 5 This receives radio signals. \_\_\_\_\_
- 6 A solar panel changes sunlight into \_\_\_\_\_.
- 7 You can measure \_\_\_\_\_ in Fahrenheit or Celsius.
- 8 You turn this round with your hand. \_\_\_\_\_
- 9 This measures temperature. \_\_\_\_\_
- 10 This turns and makes electricity. \_\_\_\_\_

2 Use the verbs from the box to complete the text.

charge shine charges turn listen turns produces

Are you going on holiday? This 3-in-1 torch, radio and battery charger is for you.

When you (1) \_\_\_\_\_ the handle, it (2) \_\_\_\_\_ the dynamo. This (3) \_\_\_\_\_ the battery. You can then (4) \_\_\_\_\_ the torch, or (5) \_\_\_\_\_ to the radio.

For example, five minutes at 120 rpm (6) \_\_\_\_\_ enough power to listen to the radio for twenty minutes. You can also turn the handle to (7) \_\_\_\_\_ your mobile phone.

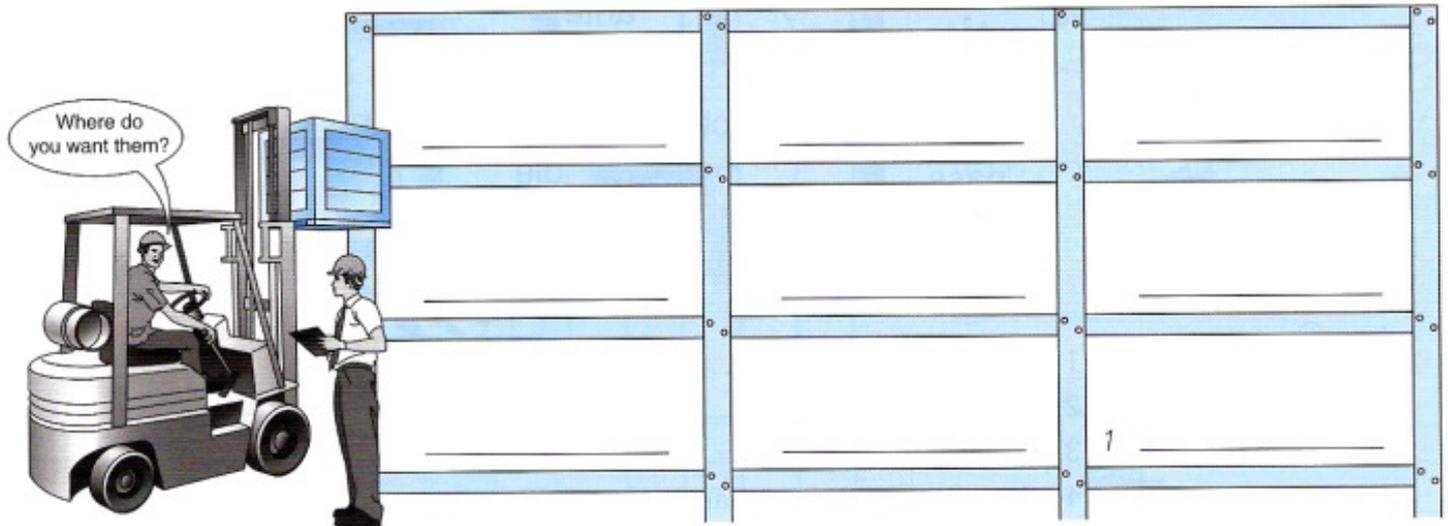


### 3 Locations

1 08 Listen to the dialogue in the factory. Where does the driver put the boxes?

- |              |              |               |
|--------------|--------------|---------------|
| 1 speakers   | 2 keyboards  | 3 DVD players |
| 4 scanners   | 5 headphones | 6 amplifiers  |
| 7 mouse pads | 8 adapters   | 9 printers    |

- 1 Listen and write the product number on the right shelf.
- 2 Write all the product names on the right shelves.
- 3 Look at the shelves. What order are the products in?



2 09 Listen to a dialogue on a boat. Where do the people put the things? Write the number of the location (1-12) next to the word on the right.

1	2	3
4	5	6
7	8	9
10	11	12

- multi-tool
- pliers
- radio
- wrench
- batteries
- torch
- scissors 12

## 4 Word list

NOUNS (tools)	NOUNS (electricity)	VERBS	ADJECTIVES
blade	alarm	change	external
boat	battery	charge	internal
bottle opener	clock	connect	plastic
building site	dynamo	cut	<b>PHRASES</b>
can opener	electricity supply	drive in	at the bottom
compass	generator	grip	at the top
cover	mains electricity	measure	in the centre
handle	radio	produce	in the middle
head	solar panel	receive	on the left
jaws	solar power	shine	on the right
key tool	torch	turn	above
metal	<b>NOUNS (computer)</b>		below
multi-tool	computer		to the left of
pick	computer station		to the right of
pliers	cursor		
ruler	DVD drive		
scissors	keyboard		
shaft	mouse		
string	printer		
survival tool	scanner		
thermometer	screen		
wire	speaker		
wrench			

1 Match each noun in column 1 with a phrase in column 2.

- |                |                        |
|----------------|------------------------|
| 1 Chisels      | a) loosen screws.      |
| 2 Hammers      | b) tighten nuts.       |
| 3 Pliers       | c) cut wood.           |
| 4 Rulers       | d) drive in nails.     |
| 5 Saws         | e) cut metal.          |
| 6 Scissors     | f) grip wire.          |
| 7 Screwdrivers | g) measure everything. |
| 8 Wrenches     | h) cut paper.          |

## 4

## Movement

## 1 Directions

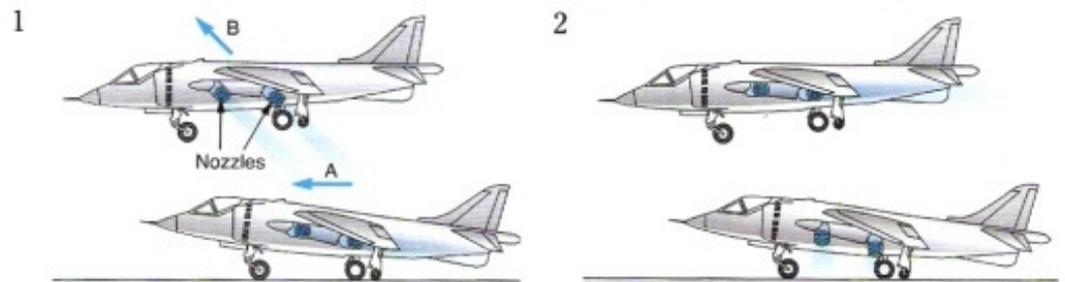
1 Look at the pictures of the jump jet.

1 Which picture shows a vertical take-off? (Picture \_\_\_\_\_)

2 Which picture shows a short take-off? (Picture \_\_\_\_\_)

3 Which directions can you see? Write the letters from the pictures (A–D) here.

vertically up \_\_\_\_\_ horizontal \_\_\_\_\_ diagonally up \_\_\_\_\_



2 Which directions can the jump jet fly? Complete the text with words from the box.

forwards   sideways   straight down   straight up   to the right   up and down

The jump jet can fly like a helicopter or fly like a passenger plane. The jump jet has one engine and four nozzles. The four nozzles can point straight down. Then the jet engine lifts the plane (1) \_\_\_\_\_ into the air. In the air, the four nozzles can rotate and point backwards. This pushes the plane (2) \_\_\_\_\_. Then the plane can fly at about 1165 kph. Like a passenger plane, it can turn to the left or turn (3) \_\_\_\_\_. It can fly diagonally (4) \_\_\_\_\_. It can also fly backwards and (5) \_\_\_\_\_, a little. How does it land? It stops in the air and flies (6) \_\_\_\_\_.

3 Read about the movements of the human leg. Complete the text with words from the box.

angles   ankle   degrees   directions   hip   knee   move   pivots   rotate   sideways



The leg has three (1) *pivots*, the hip, the knee and the ankle. The ankle can move in three (2) \_\_\_\_\_. At the (3) \_\_\_\_\_, the foot can move up and down about 50 (4) \_\_\_\_\_. It can (5) \_\_\_\_\_ from side to side about 50 degrees, and it can (6) \_\_\_\_\_ about 15 degrees. The (7) \_\_\_\_\_ can move in the same directions, but with different (8) \_\_\_\_\_. The (9) \_\_\_\_\_ can only move in one direction. At the knee, the lower leg can only move up and down. It cannot move (10) \_\_\_\_\_ or rotate.

## 2 Instructions

1  10 Write the full forms. Then listen and check.

- 1 30 kph *thirty kilometres per hour*
- 2 500 rpm \_\_\_\_\_
- 3 15 m/s \_\_\_\_\_
- 4 65 mph \_\_\_\_\_
- 5 8 km/s \_\_\_\_\_

2  11 Listen and write the speeds. Use the short forms from question 1.

- 1 Sound travels at \_\_\_\_\_.
- 2 The engine of a Formula 1 car turns at about \_\_\_\_\_.
- 3 The moon truck Apollo 16 Rover travels at \_\_\_\_\_.
- 4 A solar-powered car can travel at \_\_\_\_\_.
- 5 A person on skis can go downhill at \_\_\_\_\_.
- 6 A person on a snowboard can go downhill at \_\_\_\_\_.
- 7 The maximum speed of a train in France is \_\_\_\_\_.
- 8 The fastest sailing ship sails at \_\_\_\_\_.
- 9 A Blackbird jet flies at \_\_\_\_\_.

3  12 Listen to the dialogue. Are all the parts for the radio-controlled truck in the box? Listen and tick the things on the list.

Instruction manual

Transmitter

Truck

Antenna for transmitter

Antenna for truck

2 9V batteries



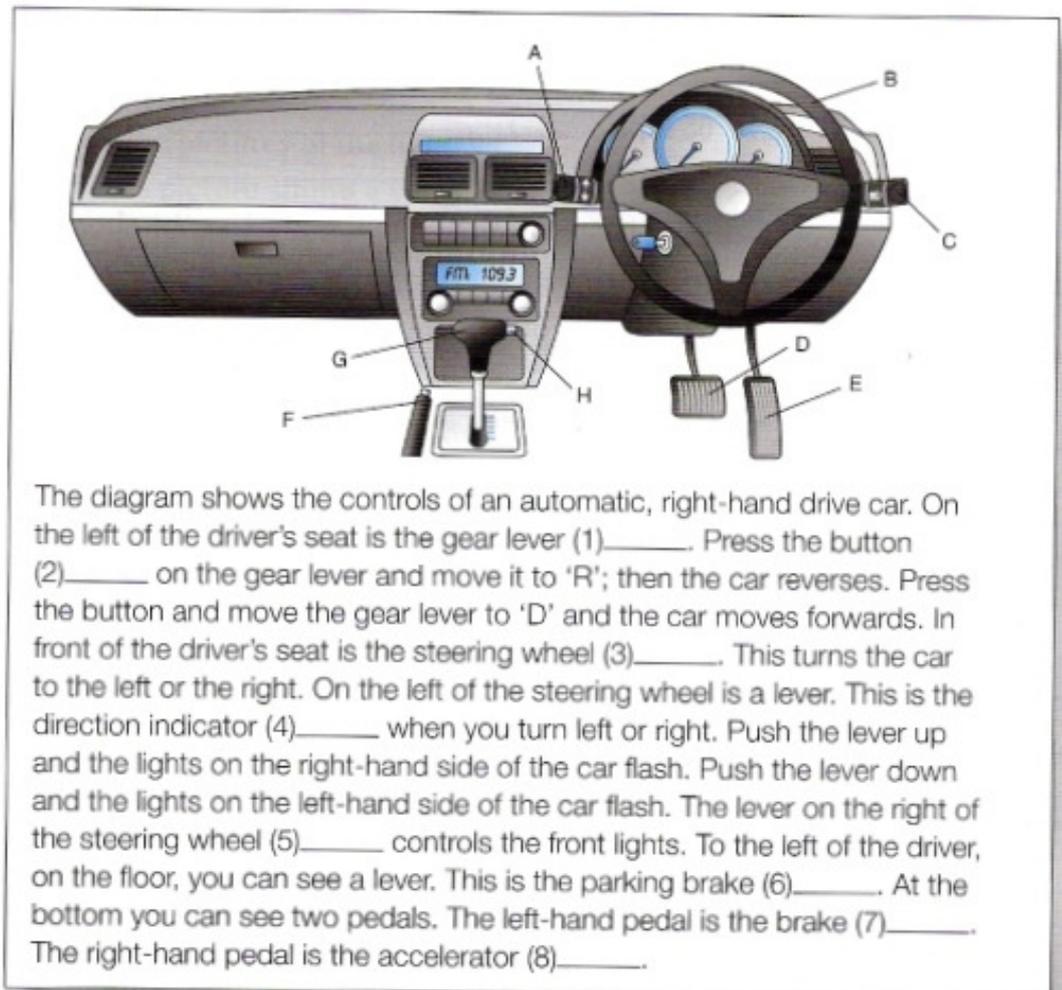
4 Use the words from the box to complete the text about the truck.

control moves press receives sends turns use

The transmitter (1) \_\_\_\_\_ radio signals to the receiver in the truck. An antenna on the truck (2) \_\_\_\_\_ signals from the transmitter. The truck and the transmitter (3) \_\_\_\_\_ electricity from batteries. Six buttons (4) \_\_\_\_\_ the speed and direction: forwards, backwards, forward and left, forward and right, backwards and left, backwards and right. There are two electric motors. One motor (5) \_\_\_\_\_ the wheels to the left or right. The other motor drives the back wheels forwards or backwards. (6) \_\_\_\_\_ the control button 'Forwards'. The motor turns the shaft and the shaft turns the axle. The truck (7) \_\_\_\_\_ forward.

### 3 Actions

- 1 Read the instruction manual. Write the letters (A–H) from the diagram next to the names of the controls.



- 2 Write instructions for driving a car. Write full sentences from these notes. Use *when* and *you*, and add *the* and punctuation.

1 pull gear lever to 'R' → car reverses

*When you pull the gear lever to 'R', the car reverses.*

2 pull gear lever to 'D' → car moves forwards

\_\_\_\_\_

3 press accelerator → car goes faster

\_\_\_\_\_

4 press brake pedal a little → car goes slower

\_\_\_\_\_

5 turn steering wheel to the right → car turns right

\_\_\_\_\_

6 turn steering wheel to the left → car turns left

\_\_\_\_\_

7 press brake pedal → car stops

\_\_\_\_\_

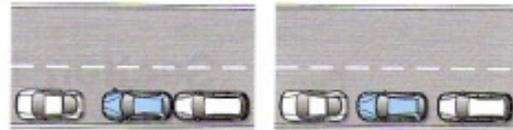
- 3 Put the instructions for parking a car in the correct order. Complete the instructions with the following words: *forwards*, *left*, *right*.

Order: \_\_\_\_\_

A Drive \_\_\_\_\_ a little and turn the steering wheel to the \_\_\_\_\_.



B Reverse a little more and turn the steering wheel to the \_\_\_\_\_.  
Stop.



C Drive \_\_\_\_\_ slowly. Stop.

D Reverse and turn the steering wheel to the \_\_\_\_\_.

## 4 Word list

NOUNS (tools)	NOUNS (electricity)	VERBS	ADJECTIVES
accelerator	parking brake	accelerate	backwards
angle	pedal	ascend	down
antenna	pivot	control	forwards
brake	plane	descend	sideways
direction	revolution	dock	up
elbow	robot	park	to the left
forearm	roll	press	to the right
handle	shoulder	pull	<b>PHRASES</b>
helicopter	slider	push	horizontal axis
joystick	speed	reverse	vertical axis
kilometre	steering wheel	rotate	
lever	switch	slide	
metre	tilt	slow down	
mile	wrist	turn round	

1 Find nine nouns for driving a car. Write them here.

*accelerator* \_\_\_\_\_  
\_\_\_\_\_

2 Find opposites in columns 3 and 4 for the following words and write them here.

accelerate \_\_\_\_\_

ascend \_\_\_\_\_

pull \_\_\_\_\_

forwards \_\_\_\_\_

up \_\_\_\_\_

to the left \_\_\_\_\_

3 Find seven verbs for flying a helicopter. Write them here.

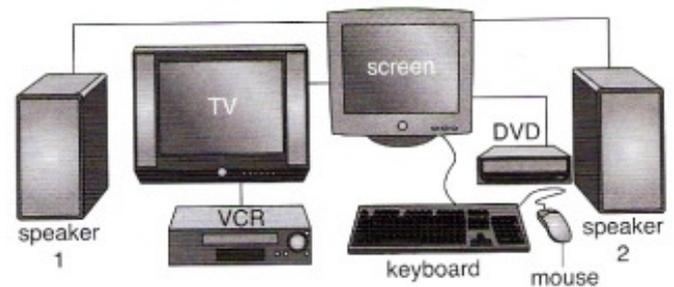
*Helicopters can accelerate.* \_\_\_\_\_  
\_\_\_\_\_

## B

## Review

## Section 1

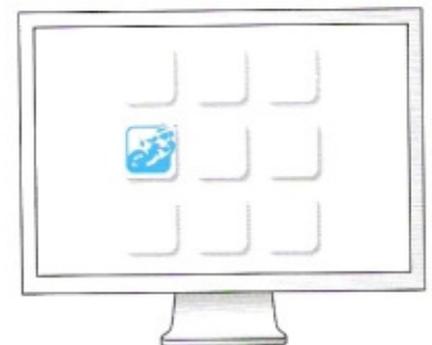
- 1 Look at the diagram of the work station. Tick the true statements. Correct the false ones.



- 1 The screen is in the centre. ✓
  - 2 The keyboard is in the centre, ~~above~~ the screen. *below*
  - 3 The TV is to the right of the screen.
  - 4 The VCR is on the left, below the TV.
  - 5 Speaker 1 is on the right.
  - 6 Speaker 2 is on the left.
  - 7 The mouse is at the top, to the left of the keyboard.
  - 8 The DVD drive is below the mouse, to the left of the screen.
- 2 Where are the programmes on the screen? Make sentences with the words in the box.

bikes cars football the news boats science skateboards space planes

- 1 *Football is at the top, on the left.*
- 2 *Planes are at the top, in the centre.*
- 3 \_\_\_\_\_
- 4 *Bikes are on the middle line, \_\_\_\_\_*
- 5 \_\_\_\_\_
- 6 \_\_\_\_\_
- 7 \_\_\_\_\_
- 8 \_\_\_\_\_
- 9 \_\_\_\_\_



- 3 Write the singular form of the words in the box. If a word has no singular form, write 'a pair of ...'.

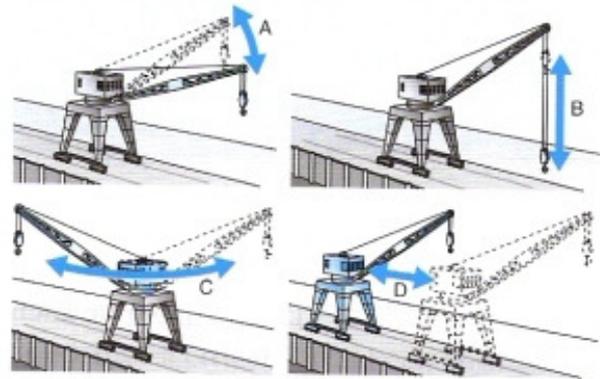
batteries hammers overalls pincers pliers scissors spanners wrenches

- 1 Singular form: *battery* \_\_\_\_\_
- 2 No singular form: *a pair of overalls* \_\_\_\_\_

## Section 2

- 1 Find letters in the diagram (A-D) for each sentence. Use the phrases from the box to complete the sentences.

descend up and down  
forwards and backwards  
rotate diagonal or horizontal



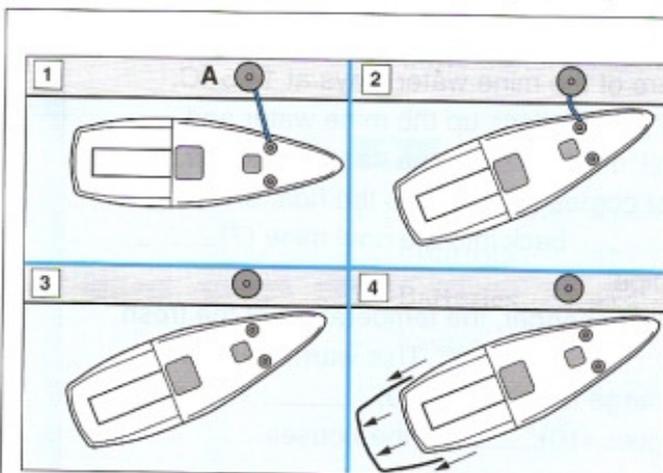
- 1 ( ) The crane can move \_\_\_\_\_ on its wheels.
- 2 ( ) The top part of the crane can \_\_\_\_\_ through 360°.
- 3 ( ) The arm of the crane can ascend and \_\_\_\_\_ through 90°. It can be in a vertical, \_\_\_\_\_ position.
- 4 ( ) The hook below the end of the arm can go \_\_\_\_\_.

- 2 Use the words in the box to complete these questions and answers. Then match the questions with their answers.

is are do does can can't put need press goes receives

- 1 \_\_\_\_\_ you find the user manual? a) No, there \_\_\_\_\_ only one.
- 2 How \_\_\_\_\_ the truck work? b) You \_\_\_\_\_ it in the transmitter.
- 3 Where \_\_\_\_\_ I put the battery? c) No, I \_\_\_\_\_ find it.
- 4 Where \_\_\_\_\_ the antenna go? d) Yes, we \_\_\_\_\_ it for the truck.
- 5 How \_\_\_\_\_ I steer the truck? e) It \_\_\_\_\_ on top of the truck.
- 6 \_\_\_\_\_ there two batteries in the box? f) It \_\_\_\_\_ signals from the transmitter.
- 7 \_\_\_\_\_ we need a second battery? g) You \_\_\_\_\_ one of the control buttons.

- 3 Read the instructions (A-D) for steering a boat backwards. Put them in the correct order. Then complete the instructions with the following words: *forwards, left, centre, backwards*.



- 1 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_
- A Turn the steering wheel to the \_\_\_\_\_ position. Pull the lever \_\_\_\_\_; this puts the engine into reverse. Reverse slowly.
- B Turn the steering wheel to the left. Push the engine lever forwards; this moves the boat slowly \_\_\_\_\_ and to the \_\_\_\_\_.
- C Pull the engine lever to the \_\_\_\_\_ position. Loosen the rope. Take off the rope from Point A.
- D Start the engine. Tie the rope on the \_\_\_\_\_ of the boat to Point A.

## 5

## Flow

## 1 Heating system

1 Draw a line from each word to its opposite.

sink above bottom out of cold cool enter outlet push

hot inlet leave heat pull rise top below into

2 Rewrite the sentences. Change the words in *italics*. Use words with opposite meanings from question 1.

1 A solar panel *heats* water. A fridge ... → *A fridge cools water.*

2 *Hot* water *rises* to the *top* of a water tank. →

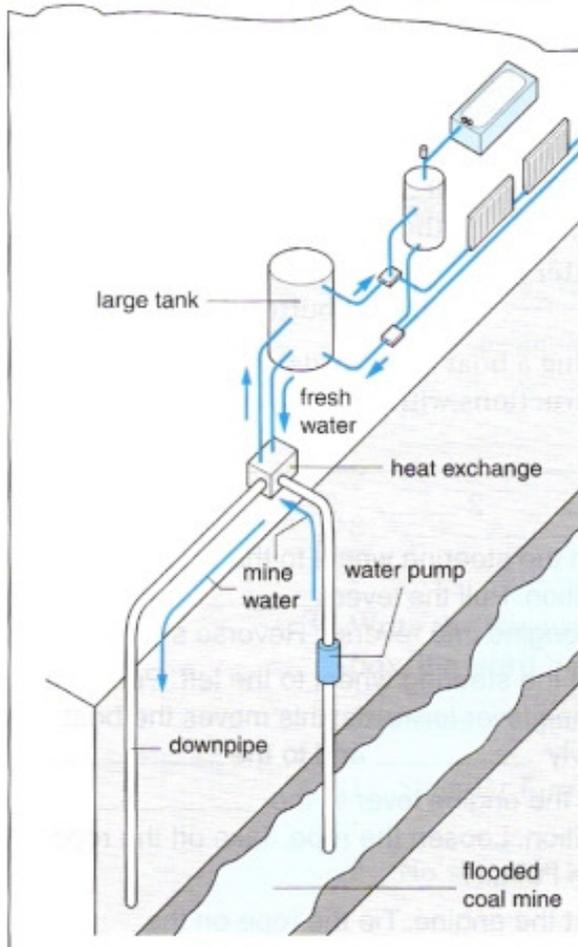
3 The *inlet* pipe for *cold* water is *below* the pump. →

4 Water *enters* the tank through the *inlet* pipe. →

5 *Push* the shower head *into* the pipe. →

3 Look at the diagram. Warm water comes up from underground and heats water for the houses. Use the verbs and prepositions in the box to complete the description of the heating system.

flow leave push rise above  
below into through to out of



In this system, there are houses (1) a flooded coal mine. At 170 metres (2) \_\_\_\_\_ ground, the temperature of the mine water stays at 14.5 °C. The water pump brings up the mine water and (3) \_\_\_\_\_ it (4) \_\_\_\_\_ the heat exchange. The mine water comes (5) \_\_\_\_\_ the heat exchange and (6) \_\_\_\_\_ back into the coal mine (7) \_\_\_\_\_ the downpipe.

In the heat exchanger, the temperature of the fresh water (8) \_\_\_\_\_ to 55 °C. This warm water then flows to a large tank. Then it (9) \_\_\_\_\_ the large tank and goes (10) \_\_\_\_\_ the houses.

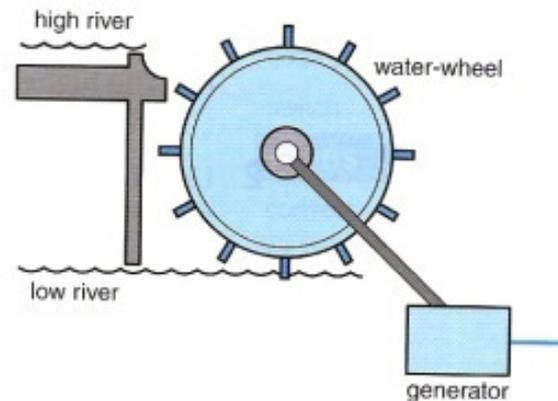
## 2 Electrical circuit

### 1 Match the words in the box to sentences 1–7.

battery cable controller lamp solar panel electrical current switch

- shines a light when the switch is on: *lamp*
- converts the sun's energy into an electrical current: \_\_\_\_\_
- stores electricity: \_\_\_\_\_
- When a \_\_\_\_\_ is closed, the electrical current can flow.
- DC is a type of \_\_\_\_\_.
- Electricity passes through the \_\_\_\_\_ to the lamp or the battery.
- carries the electrical current: \_\_\_\_\_

- 2  13 Look at the diagram for a water-wheel and a generator which supplies current to a workshop next to the river. Complete the sentences with the present simple. Then listen and check your answers.



- If the river is high, and the workshop is open, *the current flows from the generator into the workshop.* (current / flow / generator / workshop)
  - If the river is high, and the workshop is closed, \_\_\_\_\_  
\_\_\_\_\_. (current / flow / generator / batteries)
  - If the river is low, and the workshop is open, \_\_\_\_\_  
\_\_\_\_\_. (current / flow / batteries / workshop)
  - If the river is low, and the workshop is closed, \_\_\_\_\_  
\_\_\_\_\_. (current / not / flow)
  - If the batteries are full, \_\_\_\_\_  
\_\_\_\_\_. (current / not / flow / generator / batteries)
  - If the batteries are empty, \_\_\_\_\_  
\_\_\_\_\_. (current / not / flow / batteries / workshop)
- 3  14 Listen to the dialogue. Circle the correct specifications for the items.
- Solar panels a) 4 × 16 W                      b) 40 × 60 W                      c) 4 × 60 W
  - Controller a) 1 × 3 A                              b) 1 × 5 A                              c) 1 × 15 A
  - Batteries a) 4 × 12 V, 50 Ah                      b) 4 × 12 V, 100 Ah                      c) 4 × 15 V, 150 Ah
  - Lamps a) 6 × 20 V, 8 W                      b) 16 × 12 V, 18 W                      c) 6 × 12 V, 8 W
  - Cable a) 2.5 mm, 30 amps                      b) 6 mm, 53 amps                      c) 16 mm, 100 amps  
(12 metres)

### 3 Cooling system

1 Complete these sentences for a world weather forecast. Write the temperatures as words.

- The night-time temperature in Helsinki will be *minus two degrees Fahrenheit*.  
(-2 °F)
- The day-time temperature in Mexico City will be *twenty-one degrees Celsius*.  
(21 °C)
- The day-time temperature in Los Angeles will be \_\_\_\_\_.  
(75 °F)
- The coldest night-time temperature in Moscow will be \_\_\_\_\_.  
(-8 °C)
- The day-time temperature in Tunis will be \_\_\_\_\_.  
(24 °C)
- The highest day-time temperature in Karachi will be \_\_\_\_\_.  
(33 °C)

2 Use the words in the box to answer the questions with short answers. Use some of the words twice.

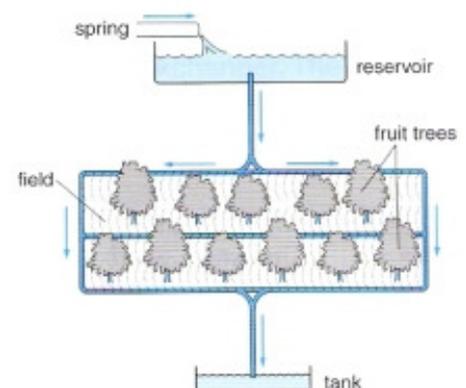
cool water engine fan hot water thermostat two hoses water pump

- What pushes cool water round the engine? *The water pump*
- What connects the radiator to the engine? \_\_\_\_\_
- What controls the temperature of the engine? \_\_\_\_\_
- What flows from the engine to the radiator? \_\_\_\_\_
- What blows air through the radiator? \_\_\_\_\_
- What sinks to the bottom of the radiator? \_\_\_\_\_
- What cools the water in the radiator? \_\_\_\_\_
- What passes along the bottom hose and back to the engine?  
\_\_\_\_\_
- What drives the water pump? \_\_\_\_\_

3 Look at the diagram for a watering system. Complete the sentences with the words in the box. Put the verbs into the present simple.

around at the top at the bottom from into out of through

- From the spring, water (flow) *flows* to a reservoir *at the top* of the hill.
- \_\_\_\_\_ the reservoir, water (pass) \_\_\_\_\_ a pipe to the field.
- The pipe (go) \_\_\_\_\_ a field of fruit trees.
- Water (leave) \_\_\_\_\_ the pipe \_\_\_\_\_ small holes.
- The water then (flow) \_\_\_\_\_ the fruit trees.
- A little water (flow) \_\_\_\_\_ the bottom of the field.
- This water (enter) \_\_\_\_\_ a tank \_\_\_\_\_ of the hill.



## 4 Word list

HEATING AND COOLING		PREPOSITIONS OF MOVEMENT	ELECTRICAL
NOUNS	VERBS		NOUNS
engine	blow	around	battery
fan	connect	into	cable
hose	control	out of	conductor
inlet	cool	through	controller
radiator	drive	to	electrical circuit
shower head	enter		electrical current
solar panel	flow		energy
thermostat	go		lamp
valve	heat		solar panel
water pipe	leave		switch
water pump	move		<b>VERBS</b>
water tank	pass		convert
	push		flow
	rise		shine
	sink		short-circuit

1 Complete the sentences with verbs from column 2.

- 1 Cold water \_\_\_\_\_ the system through the inlet.
- 2 Water \_\_\_\_\_ into the tank through a pipe.
- 3 The sun \_\_\_\_\_ the water in the solar panel.
- 4 Hot water \_\_\_\_\_ to the top of the tank.
- 5 Cold water \_\_\_\_\_ to the bottom of the tank.
- 6 Hot water \_\_\_\_\_ the system through the shower head.

2 Match the sentence halves.

- |                           |                                   |
|---------------------------|-----------------------------------|
| 1 The water pump pushes   | a) the temperature of the water.  |
| 2 The thermostat controls | b) air through the radiator.      |
| 3 The two hoses connect   | c) the hot water from the engine. |
| 4 The fan blows           | d) water around the engine.       |
| 5 The radiator cools      | e) the radiator to the engine.    |

## 6

## Materials

## 1 Materials testing

1 Make sentences about the materials with 'can ..., but ... can't', or 'can ... and ... can'.

1 (bend / metal / wood) *You can bend metal, but you can't bend wood.*

2 (heat / air / water) *You can heat air and you can heat water.*

3 (melt / plastic / wood)

4 (scratch / glass / metal)

5 (stretch / nylon / glass)

6 (break / glass / wood)

7 (cut / wood / metal)

8 (compress / air / glass)

2 A lecturer is showing a DVD of a test. Complete the description. Use the present continuous.



Hello. Now we can watch the DVD of a car crash. Here they (1) *are testing* (test) the material for the seatbelt. The human dummy (2) \_\_\_\_\_ (sit) in the test car. This dummy weighs 90 kilos. Here the technician (3) \_\_\_\_\_ (tighten) the nylon seatbelt around the dummy. Now the technician (4) \_\_\_\_\_ (start) the engine of the radio-controlled car.

Look at the crash in slo-mo (= slow motion). The car (5) \_\_\_\_\_ (run) into the concrete block at 40 kph. The body of the dummy (6) \_\_\_\_\_ (stretch) the nylon seatbelt. And see, the dummy (7) \_\_\_\_\_ (touch) the airbag. Look carefully. (8) \_\_\_\_\_ the dummy's face \_\_\_\_\_ (strike) the front window? No, it isn't. There is no contact with the front window.

3 Write questions and answers for the pictures.



1 A: *Are you pushing the handles?*

B: *No, I'm rowing.*

2 A:

B:

3 A:

B:

4 A:

B:

5 A:

B:

6 A:

B:

## 2 Properties

- 1 Find the names of 14 materials in the puzzle and circle them. The words go vertically from top to bottom, and sideways from left to right. No words go diagonally.

B	A	J	L	O	Y	C	O	M	P	O	S	I	T	E
P	L	A	S	T	I	C	E	T	O	Z	P	R	A	K
L	U	R	T	I	B	K	Y	L	L	B	O	J	L	I
O	M	A	L	J	M	O	Q	A	Y	U	L	S	D	A
F	I	B	R	E	G	L	A	S	S	I	Y	T	I	Y
B	N	S	D	R	A	R	X	P	T	B	C	N	A	O
T	I	T	A	N	I	U	M	D	Y	F	A	H	M	I
J	U	E	K	Y	L	B	N	T	R	I	R	V	O	Z
A	M	E	B	L	C	B	F	G	E	A	B	H	N	I
J	R	L	K	O	Q	E	S	V	N	U	O	Z	D	W
Y	Z	C	O	N	C	R	E	T	E	X	N	B	G	Y
H	I	R	J	T	K	U	L	C	E	R	A	M	I	C
S	V	N	X	P	G	R	A	P	H	I	T	E	Q	W
I	Y	B	T	L	E	K	O	E	U	J	E	C	D	I

- 2 Underline the two correct adjectives for each material.

- 1 A ceramic cup is flexible/heat-resistant and hard/soft.
- 2 A concrete floor is rigid/flexible and brittle/tough.
- 3 A rubber tyre is rigid/flexible and weak/strong.
- 4 A fibreglass window frame is heat-resistant/soft and rigid/flexible.
- 5 A nylon rope is rigid/flexible and strong/weak.
- 6 The graphite in the middle of a pencil is light/heavy and hard/soft.
- 7 A polycarbonate road sign is rigid/flexible and strong/weak.
- 8 A polystyrene coffee cup is brittle/tough and heavy/light.

- 3 Design a plane. Choose one material for each part of the plane.

- 1 (nose cone / plastic / aluminium)  
*The nose cone is made of aluminium.*
- 2 (wheels / fibreglass / aluminium alloy)  
\_\_\_\_\_
- 3 (tyres / ceramic / rubber composite)  
\_\_\_\_\_
- 4 (frame / composite / polystyrene)  
\_\_\_\_\_
- 5 (inside / fibreglass / rubber composite)  
\_\_\_\_\_
- 6 (seats / plastic / ceramic)  
\_\_\_\_\_
- 7 (engine / fibreglass / aluminium alloy)  
\_\_\_\_\_
- 8 (wings / aluminium alloy / plastic)  
\_\_\_\_\_



## 3 Buying

- 1  15 Listen and complete the order form. A customer is buying equipment on the phone.

<b>THE CLIMBING SHOP</b>	
ORDER FORM	
Date: <i>23/03/08</i>	<b>Helmet</b> (polycarbonate / fibreglass) (L / M / S)
Product name: _____	
Product no: _____	<b>Rope</b> (nylon / nylon + rubber composite) (50 m / 75 m / 100 m)
Quantity: _____	
Colour: _____	<b>Jacket</b> (cotton / polyester) (XL / L / M / S)
Size: _____	
Material: _____	<b>Backpack</b> (nylon / polyester) (XL / L / M / S)
Price: _____	

- 2  16 Listen and correct the email addresses.

- 1 jclark@eyeway.co.uk → \_\_\_\_\_
- 2 alex2@antigm.ac.uk → \_\_\_\_\_
- 3 s.hagen@renault.fra → \_\_\_\_\_

- 3  17 Listen and write the website addresses.

- 1 News: \_\_\_\_\_
- 2 Live radio: \_\_\_\_\_
- 3 Radio-controlled toys: \_\_\_\_\_

- 4 A customer is phoning a sports shop. Write questions for the answers.

- 1 Q: *What's your surname, please?*  
A: It's Badrawi.
- 2 Q: \_\_\_\_\_  
A: B-A-D-R-A-W-I.
- 3 Q: \_\_\_\_\_  
A: 01273 497 633.
- 4 Q: \_\_\_\_\_  
A: Ali dot badrawi at atlas dot com.
- 5 Q: \_\_\_\_\_  
A: Yes. A-L-I dot badrawi at atlas, that's A-T-L-A-S dot com.
- 6 Q: \_\_\_\_\_  
A: I need three helmets.
- 7 Q: \_\_\_\_\_  
A: I'd like white ones, please.
- 8 Q: \_\_\_\_\_  
A: I want to pay in euros, please.

## 4 Word list

NOUNS (Materials)	NOUNS (Car parts, other)	VERBS	ADJECTIVES
alloy	backpack	bend	brittle
aluminium	cone	break	corrosion-resistant
ceramic	engine	burn	flexible
composite	frame	climb	hard
concrete	helmet	coat	heat-resistant
cromoly	jacket	compress	heavy
diamond	piston	corrode	light
fibreglass	radiator	drop	rigid
graphite	rope	heat	soft
nylon	spoiler	hold	strong
plastic	tyre	melt	tough
polycarbonate	vehicle	row	weak
polyester	wheel	run	<b>PHRASES FOR EMAILS</b>
polystyrene	wing	scratch	
rubber		stretch	
steel		strike	
titanium		touch	
			dash
			dot
			forward slash
			hyphen
			underscore

1 Memory test. What is a racing car made of? Write the materials from column 1.

- The nose cone *is made of fibreglass.*
- The wheels *are made of* \_\_\_\_\_  
\_\_\_\_\_.
- The frame \_\_\_\_\_.
- The tyres \_\_\_\_\_.
- The radiator \_\_\_\_\_.
- The engine \_\_\_\_\_.
- The pistons are coated with \_\_\_\_\_.
- The wings are made of \_\_\_\_\_ and  
\_\_\_\_\_.

2 Write the opposites of the adjectives from the list in column 4.

- Nylon isn't weak. It's *strong.*
- Polystyrene isn't tough. It's \_\_\_\_\_.
- Graphite isn't hard. It's \_\_\_\_\_.
- Rubber isn't rigid. It's \_\_\_\_\_.
- Aluminium isn't heavy. It's \_\_\_\_\_.

## C

## Review

## Section 1

1 Use the words from the box to complete the phone dialogues.

about are here here how I'm OK thanks that this

- |   |  |
|---|--|
| <p>1 A: Hello?<br/>B: Hello. Is (1)_____ Paulo?<br/>A: Yes.<br/>B: It's Sven (2)_____.<br/>A: Oh, hi, Sven.<br/>B: Hi. How (3)_____ things?<br/>A: Great, (4)_____. How are you?<br/>B: I'm (5)_____.</p> | <p>2 A: Hello. Mona Hall (6)_____.<br/>B: Oh, hi, Mona. (7)_____ is Ingrid.<br/>A: Hi, Ingrid.<br/>B: Hi. (8)_____ are you?<br/>A: Very well. How (9)_____ you?<br/>B: (10)_____ fine, thanks.</p> |
|---|--|

2 Write the -ing forms of the verbs on the correct line.

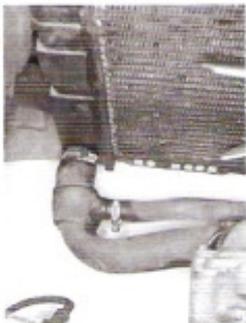
bend climb cut dive drive drop grip heat hold  
leave move pull push rise run sit strike swim

- 1 Add -ing: bending, \_\_\_\_\_  
\_\_\_\_\_
- 2 Double the last letter and add -ing: cutting, \_\_\_\_\_  
\_\_\_\_\_
- 3 Drop the -e and add -ing: diving, \_\_\_\_\_  
\_\_\_\_\_

3 Complete the dialogue about the engine's cooling system. Put the verbs into the present continuous. One verb is used twice.

blow drop go push rise run work

- A: Is everything OK?  
B: No. The engine's cooling system *isn't working*. The temperature of the water \_\_\_\_\_.
- A: \_\_\_\_\_ the fan \_\_\_\_\_ air through the radiator?  
B: Yes, the fan is fine.
- A: \_\_\_\_\_ the pump \_\_\_\_\_ water round the engine?  
B: Yes, the pump is working.
- A: Look! That clip on the bottom hose is loose. Water \_\_\_\_\_ out of the hose. So the cold water \_\_\_\_\_ not \_\_\_\_\_ back to the engine. Tighten the clip.  
B: \_\_\_\_\_ the water \_\_\_\_\_ out of the hose now?  
A: No. Check the temperature.  
B: Ah! The temperature \_\_\_\_\_. Good!



## Section 2

1 Match phrases from the table to make sentences.

warm ice cubes	sink
pull a rubber band	burn
strike a ceramic cup very hard	break
heat water to 100 °Celsius	stretch
cool water	melt
heat pieces of wood	boil

*If you warm ice cubes, they melt.*

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2 Read the text and complete the table below.



This sailboard is made from light, strong and flexible materials. The board is strong but light. It is made of polystyrene, coated with fibreglass. The mast is strong and flexible. It is made of polycarbonate. The mast and the boom support the sail. The boom is rigid and strong. It is made of aluminium, coated with rubber. The sail is light but strong. It is made of a mixture of nylon and polyester. Fixed to the end of the boom is a strong rope. It is made of nylon. The rigid daggerboard and fin are made of polycarbonate. There is a pivot at the foot of the mast. This is strong and flexible. It is made of rubber.

Part	Material	Properties
board	<i>polystyrene, fibreglass</i>	<i>strong, light</i>
mast		
boom		
sail		
rope		
daggerboard		
fin		
pivot		