Numbers

Short numbers

Numbers ending *–teen* and *–ty* are easy to confuse. Notice how the stress changes:
15 fif**teen** 50 **fif**ty 18 eigh**teen** 80 **eigh**ty

Large numbers

In English we generally use commas (,) to separate the figures in long numbers:
1,000,000 (or 1 m) = a/one million
1,000,000,000 (or 1 b) = a/one billion (a thousand million)
1,000,000,000,000 = a/one trillion (a million million)
In American English, you can pronounce round numbers like 1,800 and 2,100 in two ways:
One thousand eight hundred or *Eighteen hundred*
Two thousand one hundred or *Twenty-one hundred*
In British English we generally say *and* before the tens in large numbers. This should be left out in American English:
365 *Three hundred* ***and*** *sixty-five* (BE); *Three hundred sixty-five* (AE)

Long numbers

In telephone numbers and other long numbers like account numbers or credit card numbers, we pronounce the figures individually, and grouped in threes or fours:
215 577 9025 – *Two one five, five seven seven, nine oh two five*
In British English you can say *double* to repeat a number: 622 *six double two*
In American English, pronounce the numbers separately: 622 *six, two, two*

Decimals

Write decimal points as a *point* (.), not a comma (,): 3.5
After the point, say numbers separately: 1.257 *one point two five seven*
Before the point, say numbers together: 25.25 *twenty-five point two five*
0 is pronounced *oh* or *zero* after the point:
1.04 *one point oh four* or *one point zero four*
0 is pronounced *zero* or *nought* before the point or we don't pronounce it at all:
0.6 *nought point six* or *zero point six* or *point six*

Fractions

Notice how we say these fractions:

½ a half	⅕ a fifth	⅚ five-sixths
⅓ a third	⅔ two-thirds	⅞ seven-eighths
¼ a quarter	⅗ three-fifths	11/42 eleven over forty-two

We sometimes use fractions when we say large numbers: 2,500,000 Two and a half million

Years

Say years before 2000 in two parts: 1934 *Nineteen thirty-four*
After 2000, say the number in two parts or with two thousand: 2001 *Twenty oh one* or *Two thousand (and) one*

Dates

In British English we say *the* and *of* but we do not write them:
26th May 2009 = ***the*** *twenty-sixth* **of** *May, two thousand (and) nine*
In American English, dates are written with the months first:
06/07/2009 = *June (the) seventh, two thousand (and) nine*

Money

We write the currency before the number, but we say it after the number.
$ 500,000 *Five hundred thousand dollars* € 50 *Fifty euros*
We say smaller units of currency after the number: $ 1.25 *One dollar twenty-five cents*

Numbers and mathematics

It is said that mathematics is the base of all other sciences, and that arithmetic, the science of numbers, is the base of mathematics. Numbers consist of whole numbers (integers) which are formed by the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 and many combinations of them. For example, 247 is a number formed by three digits. Parts of numbers smaller than 1 are sometimes expressed in terms of fractions, but in scientific usage they are given as decimals. This is because it is easier to perform the various mathematical operations if decimals are used instead of fractions. The main operations are: to add, subtract, multiply and divide; to square, cube or raise to any other power; to take a square, cube or other root and to find a ratio or proportion between pairs of numbers or a series of numbers. Thus, the decimal system, or ten-scale system, is used for scientific purposes throughout the world, even in countries whose national systems of weights and measurements are based upon other scales. The other scale in general use nowadays is the binary system, in which numbers are expressed by combinations of only two digits, 0 and 1. Thus, in the binary scale, 2 is expressed as 010, 3 is given as 011, 4 is represented as 100, etc. This scale is perfectly adapted to the "off-on" pulses of electricity, so it is widely used in electronic computers.

UNKNOWN WORDS

science n. /'saiəns/ - the study of the nature and behaviour of natural things and the knowledge that we obtain about them (NAUKA)
integer n. /'intidʒə/ - any rational number that can be expressed as the sum or difference of a finite number of units, being a member of the set … –2, –1, 0, 1, 2… (CEO BROJ, INTIDŽER)
digit n. /'didʒit/ (also called: **figure**) - any of the ten Arabic numerals from 0 to 9 (CIFRA)
in terms of – by means of; with reference to; regarding (POMOĆU, U VIDU, U OBLIKU)
fraction n. /'frækʃən/ - a ratio of two expressions or numbers other than zero (RAZLOMAK)
usage n. /ˈjuːsɪdʒ/ - the act or a manner of using; use; employment (UPOTREBA)
perform v. /pəˈfɔːm/ - to carry out or do (an action) (OBAVLJATI, VRŠITI)
instead of (prep.) - in place of, as an alternative to (UMESTO)
add v. /æd/ - to combine (two or more numbers or quantities) by addition (SABIRATI)
subtract v. /səbˈtrækt/ - to calculate the difference between (two numbers or quantities) (ODUZIMATI)
multiply v. /ˈmʌltɪˌplaɪ/ - to combine (two numbers) by multiplication (MNOŽITI)
divide v. /dɪˈvaɪd/ - to calculate the quotient of two numbers by division (DELITI)
square v. /'skweə/ - to raise (a number or quantity) to the second power (DIĆI NA KVADRAT)
cube v. /'kju:b/ - to raise (a number or quantity) to the third power (DIĆI NA KUB)
raise to a power – STEPENOVATI BROJ
power n. /'pauə/ - the value of a number raised to some exponent (STEPEN BROJA)
take a root – KORENOVATI BROJ
root n. /'ru:t/ - a number or quantity that when multiplied by itself a certain number of times equals a given number or quantity (KOREN)
ratio n. /ˈreɪʃɪˌəʊ/ - a measure of the relative size of two classes expressible as a proportion (PROPORCIJA, ODNOS)
thus *sentence connector* /'ðʌs/ - therefore (STOGA, OTUD, ZATO)
weight n. /weɪt/ - a measure of the heaviness of an object (TEŽINA)
measurement n. /ˈmɛʒəmənt/ - 1. the act or process of measuring (MERENJE)
2. an amount or size determined by measuring (MERA)
nowadays adv. /ˈnaʊəˌdeɪz/ - in these days; at the present time (DANAS, OVIH DANA)
etc. (&c) - abbreviation for **etcetera** /et'setrə/ - and so on, and the rest (ITD.)

A) Answer the questions:
1. Which branch of mathematics deals with numbers?
2. What are integers?
3. Can fractions be expressed in terms of decimals?
4. Which forms of numbers are used more in science, decimals or fractions? Why?
5. What are main arithmetical operations?
6. Which scale systems are mentioned in the text?
7. Where is the ten-scale system used?
8. How are numbers expressed in the binary system?

B) Complete the table.

NOUN	ADJECTIVE
science	
	mathematical
arithmetic	
	electronic
digit	
	basic
proportion	

VERB	NOUN
add	
	division
subtract	
	multiplication
express	
	operation
perform	

C) Write these numbers:

1) Three trillion _____
2) Seven eighths _____
3) Half a billion _____
4) Nineteen sixty six _____
5) Five hundred dollars _____
6) Two thirds _____
7) Thirty five and a half thousand _____
8) Two and a quarter million _____
9) Two thousand and twelve _____
10) Six euros and nine cents _____

D) Write these large numbers in figures:

a) seven thousand, two hundred and fifty: _____
b) twelve thousand, eight hundred and thirty-six: _____
c) one hundred and forty-five thousand: _____
d) three hundred and eight thousand, two hundred: _____
e) nine hundred and seventy-six thousand, one hundred and four: _____

E) Write the following fractions and decimals:

a) one and a quarter: _____
b) thirteen over fifty-four: _____
c) one point nine five six: _____
d) seven and a half: _____
e) nought point nine six five: _____
f) four eighths: _____
g) two point three two: _____
h) point three oh four: _____
i) two sevenths: _____
j) forty-five over seventy: _____

F) Practice saying these numbers:

1 632 409	500 000	10,471,987	29,360	1,805	1,750,000
17^{th}	29^{th}	91^{st}	678^{th}	982^{nd}	$1,853^{rd}$
1.842	180.5	500,001	96.33	8 033	601 202
5,785	4/9	7,921	1/2	6/7	3/4
7/68	1/3	2/5	9/6	4/17	3.53
2.67	7.86	45.89	78.54	28/31	16/100

Calculations

Use these words and phrases to complete the chart:

minus	take away	times	plus	divided by	multiplied by

Formal	Less formal
3 + 2 = 5	
Three ..... two equals / is five.	Three and two are five.
6 – 2 = 4	
Six ..... two equals / is four.	Six ..... two leaves four. Two from six leaves four.
3 x 5 = 15	
Three ..... five equals / is fifteen.	Three ..... five is fifteen. Three fives are fifteen.
8 ÷ 2 = 4	$^{8}/_{2}$
Eight ..... two equals / is four. Eight over two.	Two into eight is / makes four.

A) Read out these problems and solve them:
a) Multiply 98.4 by 5 and divide the answer by 12: _____
b) Add 33.5 to 26.35 and subtract 45.8 from the answer: _____
c) Divide 40.5 by 5, and multiply the answer by 8: _____
d) Add 235.08 to 51.73, and subtract the answer from 326.2: _____
e) Subtract 54.93 from 85.01. Add 2.27. Subtract the answer from 61.9: _____
f) Add 15.15 and 30.1, subtract that from 90, multiply it by 2 and divide that by 5: _____

B) Say the equations.

13.13 + 60.17 = 73.3	7 017 - 4 004 = 3 013	20.08 · 3 = 60.24
40.01 - 20.02 = 19.99	5 : 2.5 = 2	16.55 - 14 = 2.55
18.18 : 9 = 2.02	13.3 · 3 = 39.9	15 : 5 = 3
70 · 4 = 280	16 + 2.125 = 18.125	14.14 + 3.03 = 17.17

C) A magician's trick: Think of a number and write it down. Multiply it by 2 and add 2. Multiply the result by 3 and add 3. Take away the original number and then subtract 9 from the result. Divide by 5 and you should be back to the original number.

Dimensions

Complete the table.

Dimensions		
Noun	**Adjective**	**Questions**
length	long	How long is it? What's the length?
	wide / broad	
	high	
depth		
weight	heavy	What's the weight? How heavy is it? How much does it weigh?

A) What is *Aquarius*? Who lives on *Aquarius* and for how long? Would you like to live there?

Aquarius is an underwater laboratory. It is made of steel and it can withstand pressures at ocean depths up to 36 metres. It is currently located in the Florida Keys National Marine Sanctuary at a depth of 19 metres. That is about four metres off the ocean floor.

It consists of a cylinder which is nearly three metres in diameter and attached to a base plate, so it stays at the bottom of the ocean. The laboratory weighs 73 tons and the base plate weighs 103 tons. Although it's only 13 metres long, six metres wide, and five metres high, six scientists and technicians can live in *Aquarius* for ten days, or even a month, and study underwater life. It has all the comforts of home: six bunk beds, a shower and toilet, hot water, a kitchen with a microwave and refrigerator, air conditioning, and computers with wireless connections.

UNKNOWN WORDS

steel n. /'sti:l/ - any of various alloys based on iron containing carbon (usually 0.1–1.7 per cent) and often small quantities of other elements such as phosphorus, sulphur, manganese, chromium, and nickel (ČELIK)
withstand v. /wɪðˈstænd/ - to stand up to forcefully; resist (IZDRŽATI)
current adj. /ˈkʌrənt/ - of the immediate present (TRENUTNI)
diameter n. /daɪˈæmɪtə/ - a straight line connecting the centre of a geometric figure, esp a circle or sphere, with two points on the perimeter or surface (PREČNIK)
attach v. /əˈtætʃ/ - to join, fasten, or connect (DODATI, PRIKAČITI)
plate n. /pleɪt/ - a flat piece of metal, especially on machinery or a building (PLOČA)
although conj. /ɔːlˈðəʊ/ - despite the fact that; even though (IAKO, MADA)
bunk bed n. /bʌŋk bed/ - one of a pair of beds constructed one above the other (KREVET NA SPRAT)

A side view of the Aquarius, before it was lowered into the ocean

Complete this chart.

Aquarius laboratory	
Length	
Width	
Height	
Weight	
Cylinder diameter	
Base plate weight	
Current depth	
Maximum depth of operations	

B) Think of different ways to ask these questions about the dimensions.
E.g. What's the length of Aquarius? – How long is Aquarius?
1. width of Aquarius? – _____
2. height of Aquarius? – _____
3. weight of Aquarius? – _____
4. diameter of the cylinder? – _____
5. current depth of Aquarius? – _____
6. maximum depth of operations? - _____
Work with a partner. Ask and answer all the questions.

Measurements and conversions

Length

Imperial to metric		Metric to imperial	
1 inch (in) (")	25.4 millimetres	1 millimetres (mm)	0.039 inches
1 foot (ft) (')	30.48 centimetres	1 centimetres (cm)	0.394 inches
1 yard (y)	91.44 centimetres	1 metre (m)	39.37 inches
1 mile (m)	1,609 metres	1 kilometre (km)	0.621 miles

12 inches = 1 foot 3 feet = 1 yard 1,760 yards = 1 mile

Weight

Imperial to metric		Metric to imperial	
1 ounce (oz)	28.35 grams	1 gram (g)	0.035 ounces (oz)
1 pound (lb)	453.6 grams	1 kilogram (kg)	2.204 pounds (lb)
1 stone (s)	6.35 kilograms	1 tonne (t)	1.102 US tons (t)
1 UK ton (t)	1.016 tonnes	1 tonne (t)	0.9842 UK tons
1 US ton (t)	0.9072 tonnes		

16 ounces = 1 pound 14 pounds = 1 stone
US weights: 100 pounds = 1 hundredweight (cwt) 20 hundredweight = 1 ton

Speed

Imperial to metric		Metric to imperial	
1 mile per hour (mph)	1.6 kilometres per hour (km/h)	1 kilometre per hour (km/h)	0.621 miles per hour (mph)

Volume

Imperial to metric		Metric to imperial	
1 UK pint	0.57 litres (L)	1 cc	0.002 US pints
1 US pint	0.47 litres (L)	1 litre (L)	2.11 US pints
1 UK gallon (gal)	4.546 litres (L)	1 cubic metre (m^3)	35.31 ft^3
1 US gallon (gal)	3.785 litres (L)		

Area

Imperial to metric		Metric to imperial	
1 square inch (in^2)	6.45 cm^2	1 cm^2	0.155 square inches
1 square foot (ft^2)	929 cm^2	1 m^2	10.76 square feet
1 square yard (yd^2)	0.836 m^2	1 km^2	0.386 square miles
1 acre	4,046.86 m^2		

Power

To convert horsepower to kilowatts: multiply horsepower by 0.745.
To convert kilowatts to horsepower: multiply kilowatts by 1.341.

Temperature

To convert Celsius to Fahrenheit: multiply by 9, divide by 5 and add 32.
To convert Fahrenheit to Celsius: subtract 32, multiply by 5 and divide by 9.

Measuring the world

Back in the eighteenth century, French scientists wanted to create an ideal system of measurement. To ensure that measurement units would remain the same from place to place, they looked for constants in nature to form the basis of a new system. At that time they believed the circumference of the earth never changes, so they based the unit of length on the earth's polar quadrant. The distance from the equator to the poles was calculated and divided by ten million. That measurement became the metre, the foundation of the metric system.

Multiples of ten are core to the metric system. A thousand metres is a kilometre and on a descending scale, a tenth of a metre is a decimetre, a hundredth is a centimetre, and a thousandth is a millimetre. The litre was defined as a volume equal to a cubic decimetre and weights were also derived from natural constants. One kilogram was the mass of one litre of water at its melting point. So a thousand litres of water at zero degrees Celsius weighs 1,000 kg, or one metric tonne.

The International System of Units is the modern form of the metric system and its units of measurement are used in science and business around the world. The USA, however, is a significant exception. Non-metric (imperial) measurements that date back historically to connections with Britain are still widely used. So the weather forecast tells you the temperature in degrees Fahrenheit and people generally think in terms of old measurements like ounces and yards.

In the UK, metric measurement now dominates, but there are still areas of life where people use old imperial measurements. So someone might describe their height in terms of feet and inches, or their weight in terms of stones and pounds. They might talk about the fuel consumption of their cars in terms of miles per gallon, and in British pubs, people still buy their beer in pints.

UNKNOWN WORDS

measure v. /ˈmɛʒə/ **-** to discover the quality, value, or effect of something (MERITI)
ensure v. /ɛnˈʃʊə/ - to make certain or sure; guarantee (OSIGURATI, OBEZBEDITI)
unit n. /ˈjuːnɪt/ (*also called*: unit of measurement) - a fixed standard quantity, length, or weight that is used for measuring things (MERNA JEDINICA)
circumference n. /səˈkʌmfərəns/ - the length of a closed geometric curve (OBIM)
quadrant n. /ˈkwɒdrənt/ - a quarter of the circumference of a circle (KVADRANT)
calculate v. /kælkjʊˌleɪt/ - to solve by a mathematical procedure; compute (IZRAČUNATI)
foundation n. /faʊnˈdeɪʃən/ - the base on which something stands (OSNOVA)
multiple n. ˈ/mʌltɪpᵊl/ - the product of a given number and any other one (PROIZVOD)
core n. /kɔː/ - the central or most essential part of something (OSNOVA, SUŠTINA)
descend v. /dɪˈsɛnd/ - come down or go down (SIĆI, SPUSTITI SE)
volume n. /ˈvɒljuːm/ - the magnitude of the three-dimensional space enclosed within or occupied by an object, geometric solid, etc (Symbol: *V*) (ZAPREMINA)
degree n. /dɪ'griː/ **-** a unit of temperature on a specified scale (Symbol: °) (STEPEN)
melting point n. - the temperature at which a solid turns into a liquid (TAČKA TOPLJENJA)
exception n. /ɪkˈsɛpʃən/ - anything excluded from a general rule, principle, etc (IZUZETAK)

weather forecast n. /ˈwɛðə ˈfɔːˌkɑːst/ - a statement saying what the weather will be like the next day or the next few days (VREMENSKA PROGNOZA)
fuel consumption n. /fjʊəl kənˈsʌmpʃᵊn/ - the rate at which an engine uses fuel, expressed in units such as miles per gallon or liters per kilometer (POTROŠNJA GORIVA)

A) Answer the questions.
1. What fraction of the earth's polar quadrant is a metre?
2. What number do you have to multiply a metre by to get a kilometre?
3. What number do you have to divide a metre by to get a decimetre?
4. In which country was the metric system developed: the USA, France, or Greece?
5. How did people decide how long a metre should be?
6. How big is a decimetre: 1/10 of a metre or 10 metres?
7. What's another definition of the volume of a cubic decimetre?
8. How much does a litre of water weigh? And how much do a thousand litres of water weigh?
9. Which countries don't use the metric system of measurements?

B) Match these non-metric measurements to their metric equivalents.

a) 1 inch	1) 1.6 km
b) 1 pound	2) 28 g
c) 1 ounce	3) 25.4 mm
d) 1 yard	4) 3.79 L
e) 1 gallon	5) 454 g
f) 1 foot	6) 30.48 cm
g) 1 mile	7) 0.57 L
h) 1 pint	8) 0.91 m

C) Match the metric measurement on the left with the equivalent imperial measurement on the right.

a) 1 metric tonne	1) 1 mile
b)11.7 L/100 km	2) 100 mph
c) 1.6 kilometres	3) 3.94 inches
d) 56.8 centilitres	4) 2,205 lb
e) 3.05 metres	5) 10 feet
f) 74.6 kW	6) 0 °Fahrenheit
g) 160 km/h	7) 20 mpg
h) 100 mm	8) 100 hp
i) - 17.8 °Celsius	9) 1 ounce
j) 28 gm	10) 1 British pint

D) Read these statements. Circle T (true) or F (false).
1. A metric pound (500 g) is heavier than a US pound. T / F
2. 150 km/h is slower than 100 mph. T / F
3. An inch is shorter than a centimetre. T / F
4. Water boils at 212 and freezes at 32 F. T / F
5. A pint of beer is more than half a litre of beer. T / F
6. A US gallon is approximately 10 litres. T / F
7. It will take you longer to run 100 metres than 100 yards. T / F
8. 16 ounces of gold is more expensive than 100 grams of gold. T / F

E) Measurements quizz
1 Which is longer: a centimetre or an inch?
2 Which is shorter: a metre or a yard?
3 Which is taller: a 200-metre building or a 200-foot building?
4 Which is faster: 100 kilometre an hour or 100 miles an hour?
5 Which is hotter: 100 degrees Celsius or 100 degrees Fahrenheit?
6 Which is colder: 0 degrees Celsius or 0 degrees Fahrenheit?
7 Which is heavier: a kilogram or a pound?
8 Which is lighter: a gram or an ounce?
9 Which holds more water: a one-litre bottle or a one-pint bottle?
10 Which is heavier: a two-tonne truck or a two-ton truck?

F) Match these abbreviations to the correct measurements in the quiz: °Celsius; km; in; yd; L; oz; cm; gal; m; mph; °Fahrenheit; lb; ft.

Shapes and Materials

A) Complete the table using words from the list.

semi-circle sphere triangular oval
cylindrical square rectangular cube

The shape	The description
It's a circle.	It's circular. / It's round.
It's a square.	It's .....[1] .
It's a triangle.	It's .....[2] .
It's a .....[3] .	It's semi-circular.
It's a rectangle.	It's .....[4] .
It's an .....[5] .	It's oval.
It's a .....[6] .	It's spherical.
It's a .....[7] .	It's cubic.
It's a cylinder.	It's .....[8] .

B) What are these things made of?
Find sixteen materials in the puzzle.
Read across →, down ↓, and diagonally ↗ ↘.

C) Brainstorm things that can be made of these materials.
steel, leather, rubber, fibreglass, nylon, gold, cardboard, wool, ceramic, wood, plastic, polystyrene (BrE) = styrofoam (AmE), glass, wax, paper, polythene, foam rubber, cotton, aluminium (BrE) = aluminum (AmE)

D) Which materials are
1) transparent
2) absorbent
3) flexible
4) impermeable
5) porous
6) natural
7) good electrical conductors
8) good heat insulators

UNKNOWN WORDS
transparent adj. /trænsˈpærənt/ - the ability to see through a substance (PROVIDAN)
impermeable adj. /ɪmˈpɜːmɪəbᵊl/ - not allowing fluid to pass through (NEPROPUSTLJIV, NEPROMOČIV)
porous adj. /ˈpɔːrəs/ - permeable to water, air, or other fluids (POROZAN, PROPUSTLJIV)
conductor n. /kənˈdʌktə/ - a substance that heat or electricity can pass through (PROVODNIK)
insulator n. /ˈɪnsjʊˌleɪtə/ - a nonconductor of electricity, heat, or sound (IZOLATOR)

E) What kinds of materials do they use to make body implants, like artificial hips and knees?
A: So what are you looking for? Something strong but flexible at the same time, I guess?
B: Yes, they can't be brittle.
A: They mustn't break under stress.
B: Exactly.
A: Do you use steel? That's strong.

B: You can make body implants from steel, but there's a big problem.
A: It's not resistant to corrosion?
B: That's right. Even stainless steel will corrode over time. We need something durable.
A: What about nickel? Nickel doesn't corrode.
B: Yes, and it's ductile too.
A: What does ductile mean?
B: You can bend it lots of times and it doesn't break. But the problem with nickel is it's too soft. We can make alloys with it though, like nickel cobalt molybdenum.
A: So you combine it with harder materials?
B: Yes, we do the same with titanium. Titanium is harder than nickel, but very expensive.
A: So titanium in alloys too?
B: That's right.

UNKNOWN WORDS
brittle adj. /'britᵊl/ - easily cracked, snapped, or broken; fragile (KRT, LOMLJIV)
stress n. /strɛs/ - force or a system of forces producing deformation or strain (NAPREZANJE)
stainless steel n. /steɪnləs stiːl/ - a metal made from steel and chromium which does not rust (NERĐAJUĆI ČELIK)
durable adj. /ˈdjʊərəbᵊl/ - long-lasting; enduring (IZDRŽLJIV)
ductile adj. /'dʌktail/ - able to be drawn out into wire (RASTEGLJIV, ELASTIČAN)
bend v. /bɛnd/ - to form a curve, as by pushing or pulling (SAVITI, SAVIJATI)
alloy n. /'æloi; ə'loi/ - a mixture of two or more metals (LEGURA)
artificial adj. /ˌɑːtɪˈfɪʃəl/ - produced by humankind; not occurring naturally (VEŠTAČKI)

Make notes in the table.

	Advantages	Disadvantages
Steel		
Nickel		
Titanium		

F) Match these adjectives to their meanings.

1) artificial	a) not hard or firm
2) soft	b) able to last a long time
3) ductile	c) weakened or destroyed by chemical reaction
4) durable	d) easily broken, cracks easily
5) brittle	e) not natural, made by people
6) corroded	f) flexible, can bend repeatedly without breaking

Motion

Motion is the continuing change of place or position. The first attempts to understand the motion of bodies on earth were made by the ancient Greek philosophers but Galileo was the first to crystallise the ideas into a single theory. But he was concerned with an abstract system which he analysed in an abstract world using algebra. Unlike Galileo, Sir Isaac Newton studied a more concrete world and was interested in kinetics, as he took mass and force into consideration as well as velocity and acceleration. Newton's laws are applied to physical objects on or around the earth. Newton formulated three laws of motion which describe the relationship between force and motion.

The first law states that: In the absence of a force, a body at rest will remain at rest and a body in motion will continue in motion in a straight line at constant speed.

The second law of motion states: When a force acts on a body, it will be accelerated in the direction of the force with the acceleration proportional to the magnitude of the force.

The third law of motion states: When a body exerts a force on another body the second body exerts a force on the first body of the same magnitude but in the opposite direction.

UNKNOWN WORDS
motion n. /ˈməʊʃən/ - the process of continual change in the physical position of an object (KRETANJE)
continuing adj. /kənˈtɪnjʊɪŋ/ - not ended; ongoing (STALNI, NEPREKIDNI)

attempt n. /əˈtɛmpt/ - an endeavour to achieve something; effort (POKUŠAJ)
ancient adj. /ˈeɪnʃənt/ - dating from very long ago, of the far past (STARI, DREVNI)
crystallise v. /ˈkrɪstəˌlaɪz/ - to give a definite form to (an idea) (KRISTALISATI)
unlike prep. /ʌnˈlaɪk/ - not like; not typical of (ZA RAZLIKU OD)
Sir n. /sɜː/ - a title of honour placed before the name of a knight or baronet (TITULA SER)
concrete adj. /ˈkɒnkriːt/ - characteristic of things capable of being perceived by the senses, as opposed to abstractions (KONKRETAN)
mass n. /'mæs/ - a physical quantity expressing the amount of matter in a body ***(m)*** (MASA)
force n. /fɔːs/ - a dynamic influence that changes a body from a state of rest to one of motion or changes its rate of motion ***(F)*** (SILA)
take into consideration *phrase* - consider (UZETI U RAZMATRANJE, UZETI U OBZIR)
velocity n. /vɪˈlɒsɪtɪ/ - a measure of the rate of motion of a body expressed as the rate of change of its position in a particular direction with time. It is measured in metres per second, miles per hour, etc ***(u, v, w) (BRZINA)***
acceleration n. /ækˌsɛləˈreɪʃən/ - the rate of change of velocity ***(a) (UBRZANJE)***
as well as - in addition to (KAO I)
kinetics n. /kɪˈnɛtɪks, kaɪˈnɛtɪks/ - the branch of mechanics, including both dynamics and kinematics, concerned with the study of bodies in motion (KINETIKA)
law n. /lɔː/ - a general principle, formula, or rule describing a phenomenon in mathematics, science, philosophy, etc (ZAKON)
state v. /steɪt/ - to articulate in words (FORMULISATI)
at rest - not moving; still (U STANJU MIROVANJA)
remain v. /rɪˈmeɪn/ - to continue to be (OSTATI, ZADRŽATI)
act v. /ækt/ - carry out an action (DELOVATI)
direction n. /dɪˈrekʃᵊn, daɪˈrekʃᵊn/ - the line along which a person or thing moves (SMER)
magnitude n. /ˈmægnɪˌtjuːd/ - relative size or extent (INTENZITET, JAČINA)
exert v. /ɪgˈzɜːt/ - to use (influence, authority, etc) forcefully (DELOVATI, VRŠITI)
opposite adj. /ˈɒpəzɪt/ - facing or going in contrary directions (SUPROTAN)

A) Find words or phrases in the text which mean the same as the following:

a) unending _____
b) comprehend _____
c) very old _____
d) to be interested in something _____
e) increase in speed _____
f) expressed clearly and exactly _____
g) carry on _____
h) unvarying _____
i) intensity _____
j) contrary _____

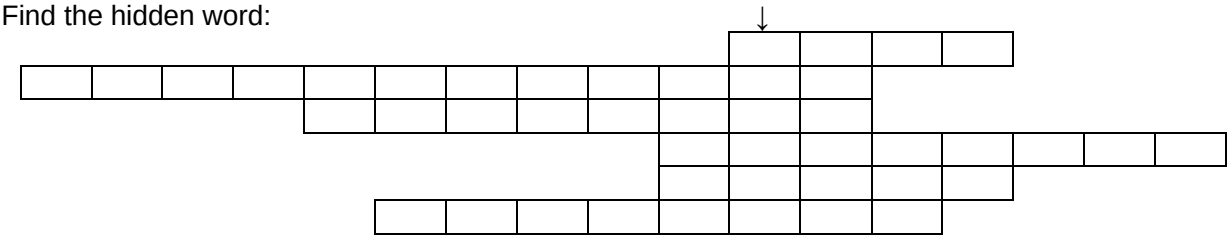
B) True or false? Correct the false ones.

1. There are four laws of motion. T / F
2. The laws of motion were formulated by Albert Einstein. T / F
3. The Newton's laws concern relations between force, motion, acceleration and mass. T / F
4. These laws form the basis of classical mechanics. T / F
5. The first law states that a body remains at rest, and a body in motion continues to move at constant speed along a straight line, unless there is a resultant force acting upon the body. T / F
6. Newton's second law states that acceleration of a body is directly proportional to the resultant force and inversely proportional to the mass of the body. T / F
7. Newton's third law states that for every action there is an equal and opposite reaction. T / F

C) Answer the questions:

1. Define motion.
2. What is the symbol and unit of mass / force / velocity / acceleration?
3. What's the other name for the first Newton's law?
4. Express the second Newton's law in symbols.
5. What's the other name for the third Newton's law?

D) Find the hidden word:



ACROSS →

1. A physical quantity expressing the amount of matter in a body (n)
2. The rate of change of velocity over time (n)
3. The rate of change of a body's position in a particular direction with time (It is measured in metres per second, miles per hour, etc) (n)
4. The branch of mechanics concerned with the study of bodies in motion (n)
5. Any influence that causes a free body to undergo a change in speed, direction, or shape (n)
6. The length of the shortest line segment joining two points (n)

E) Fill in the text by using only one word per gap.

inertia	unless	mathematically	laws	Thus	direction	mechanics	equal	between

Newton's laws of motion

The three _____ proposed by Sir Isaac Newton concern relations _____ force, motion, acceleration, mass, and inertia. These laws form the basis of classical _____ and were elemental in solidifying the concepts of force, mass, and inertia.

Newton's first law states that a body at rest will remain at rest, and a body in motion will remain in motion with a constant velocity, _____ acted upon by a force. This law is also called the law of _____.

Newton's second law states that a force acting on a body is _____ to the acceleration of that body times its mass. Expressed _____, $F = ma$, where F is the force in Newtons, m is the mass of the body in kilograms, and a is the acceleration in meters per second per second.

Newton's third law states that for every action there is an equal and opposite reaction. _____ , if one body exerts a force F on a second body, the first body also undergoes a force of the same strength but in the opposite _____.

F) Supply the correct prepositions (*in, about, of, with*) in the following text.

Speed and velocity are commonly given the same meaning. _____ physics, speed and velocity have definite separate meanings. The speed _____ an object indicates how fast it is moving, that is, the distance the object will travel _____ a given time. It tells us nothing, however, _____ the direction _____ which the object is moving.

The quantity _____ physics which combines the speed _____ a body _____ the direction _____ which it moves is called velocity. Velocity is defined as the rate _____ displacement, that is, the rate _____ motion _____ a particular direction.

G) Put the following words in appropriate column according to the pronunciation of *-ed*.

moved, placed, attempted, concerned, interested, used, formulated, stated, changed, exerted, positioned, acted, crystallised, analysed, studied, applied, described, remained, continued, accelerated, formed, directed, fixed, angled

/t/	/d/	/id/

H) Complete the table related to SI units:

Unit	Symbol	Quantity	Symbol
	m	length	*l*
kilogram	kg		m
second	s	time	
	K	temperature	T
	mol	amount of matter	n
liter		volume	V
m/s	-		*V*
m/s^2	-	acceleration	
newton	N ($kg \cdot m/s^2$)		F
	J (N·m)	energy	E
ampere		current	

Electric current

Ever since Volta first produced a source of steady continuous current, men of science have been forming theories on this subject. For some time they could see no real difference between the newly-discovered phenomenon and the former understanding of static charge. Then the famous French scientist, Ampere, (after whom the unit of current was named) determined the difference between the current and the static charges. In addition to this, Ampere gave the current direction: he supposed it to flow from the positive pole of the source round the circuit and back again to the negative pole. The flow of current is now known to be in the direction opposite to what he thought.

The current which flows along wires consists of moving electrons. In other words, the flow of moving electrons is one form of the electric current. We consider the electron to be a minute particle having an electric charge. We also know that charge to be negative. As these minute particles travel along a wire, that wire is said to carry an electric current.

In addition to travelling through solids the electric current can flow through liquids as well, and even through gases. In both cases it produces some most important effects to meet industrial requirements. Some liquids, such as melted metals, conduct current without any change to themselves. Others, called electrolytes, change greatly when the current passes through them.

When the electrons flow in one direction only, the current is said to be D.C., that is, direct current. The simplest source of power for direct current is a battery. It pushes the electrons in the same direction all the time (i.e. from the negative charged terminal to the positively charged terminal).

The letters A.C. stand for alternating current. The current under consideration is known to flow first in one direction and then in the opposite one. The A.C. used for power and lighting purposes is assumed to go through 50 cycles in one second.

UNKNOWN WORDS

(electric) current n. /ˈkʌrənt/ - a flow of electric charge through a conductor. It is measured in amperes (STRUJA)
source n. /sɔːs/ - the place from which something originates (IZVOR)
steady adj. /ˈstɛdɪ/ - continuous (STALNI, NEPREKIDNI)
phenomenon n. /fɪˈnɒmɪnən/ - anything that can be perceived as an occurrence (POJAVA)
former adj. /ˈfɔːmə/ - belonging to or occurring in an earlier time (PRETHODNI)
charge n. /tʃɑːdʒ/ - amount of electricity stored in a battery (NABOJ, ELEKTRICITET)
determine v. /dɪˈtɜːmɪn/ - to ascertain or conclude (ODREDITI, ODLUČITI)
in addition to - besides; as well as (OSIM, PORED)
suppose v. /səˈpəʊz/ - to presume to be true without certain knowledge (PRETPOSTAVITI)
flow v. /fləʊ/ - to move or progress freely as if in a stream (PROTICATI, TEĆI)
circuit n. /ˈsɜːkɪt/ - a complete path through which an electric current can flow (STRUJNO KOLO)
wire n. /waɪə/ - a flexible metallic conductor used to carry electric current in a circuit (ŽICA)
minute adj. /maɪˈnjuːt/ - very small; diminutive; tiny (MALENI, SIĆUŠNI)

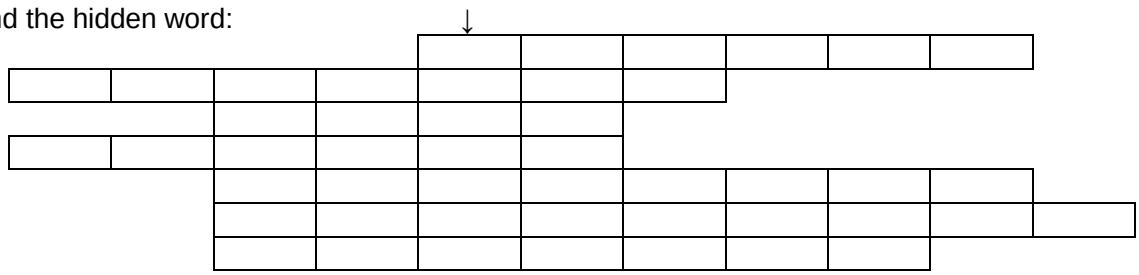
particle n. /ˈpɑːtɪkᵊl/ - a body with finite mass that can be treated as having negligible size, and internal structure (ČESTICA)
as conj. /æz/ - since; seeing that (S OBZIROM DA, BUDUĆI DA, POŠTO)
through prep. /θruː/ - starting at one side and coming out at the other side of (KROZ)
requirement n. /rɪˈkwaɪəmənt/ - a thing desired or needed (ZAHTEV, POTREBA)
melt v. /mɛlt/ - to become liquid as a result of the action of heat (TOPITI)
conduct v. /ˈkɒndʌkt/ - to transmit (heat, electricity, etc) (PROVODITI)
electrolyte n. /ɪˈlɛktrəʊˌlaɪt/ - a solution that conducts electricity (ELEKTROLIT)
direct current n. - a continuous electric current flowing in one direction only (***DC, dc)*** (JEDNOSMERNA STRUJA)
battery n. /ˈbætərɪ/ - two or more primary cells connected together to provide a source of electric current (BATERIJA)
i.e. /aɪiː/ (abbreviation for ***id est***) - that is, that is to say; in other words (TJ.)
terminal n. /ˈtɜːmɪnᵊl/ - a point at which current enters or leaves an electrical device, such as a battery or a circuit (POL)
alternating current n. /ˈɔːltəˌneɪtɪŋ ˈ**kʌrənt**/ - a continuous electric current that periodically reverses direction (***AC, ac)*** (NAIZMENIČNA STRUJA)
power n. /ˈpaʊə/ - the rate at which electrical energy is fed into or taken from a device or system (NAPAJANJE)
lighting n. /ˈlaɪtɪŋ/ - the act or quality of illumination (OSVETLJENJE)
purpose n. /ˈpɜːpəs/ - the reason for which anything is done, created, or exists (SVRHA)
assume v. /əˈsjuːm/ - suppose (PRETPOSTAVITI)
cycle n. /ˈsaɪkᵊl/ - a completed series of events that follows or is followed by another series of similar events occurring in the same sequence (CIKLUS, KRUG)
ampere n. /ˈæmpɛə/ - the SI unit used to measure electric current (AMPER)

A) Find words or phrases in the text which mean the same as the following:
1) unchanging _____
2) discovered and defined _____
3) presumed _____
4) very small _____
5) needs _____
6) molten _____
7) represent _____
8) which is being considered _____

B) Answer the questions.
1. Is there any difference between the electric current and static charge?
2. Who was the first to make a source of steady electric current?
3. Who distinguished the electric current from static charge?
4. Was Ampere right when he determined the direction of the current?
5. Define electron.
6. Can the electric current flow through gases?
7. What does DC stand for?
8. What kind of current is direct current?
9. What does AC stand for?
10. What's the direction of the alternating current?

C) True or false?
1. Direct current is the unidirectional flow of electric charge. T / F
2. Direct current is produced by sources such as batteries, thermocouples, solar cells, etc. T / F
3. In alternating current the movement of electric charge periodically reverses direction. T / F
4. AC is the form in which electric power is delivered to companies and residences. T / F
5. Electric current is the same as static charge. T / F
6. The unit of electric current is an ampere. T / F
7. The unit of electric potential is a watt. T / F
8. A volt is the unit of power. T / F
9. Current can flow through solids, liquids and gases. T / F

D) Find the hidden word:



ACROSS →

1. (n.) amount of electricity stored in a battery
2. (n.) a complete path through which an electric current can flow
3. (n.) a flexible metallic conductor used to carry electric current in a circuit
4. (n.) the SI unit used to measure electric current
5. (n.) a stable elementary particle present in all atoms
6. (n.) a substance, body, or system that conducts electricity, heat, etc
7. (n.) two or more primary cells connected together to provide a source of electric current

EMAIL

A) What an email is

An email is an electronic message sent from one computer to another that can also include attachments: documents, pictures, sounds and even computer programs.
Although it's much faster and easier to use than the post, snail mail, the two have many things in common: you send an email to a mail server (an electronic post office) where it is stored in a mailbox, which holds incoming mail until the recipient downloads it. Users are given an email address and a password by an Internet Service Provider (ISP).

A typical email address has three parts.

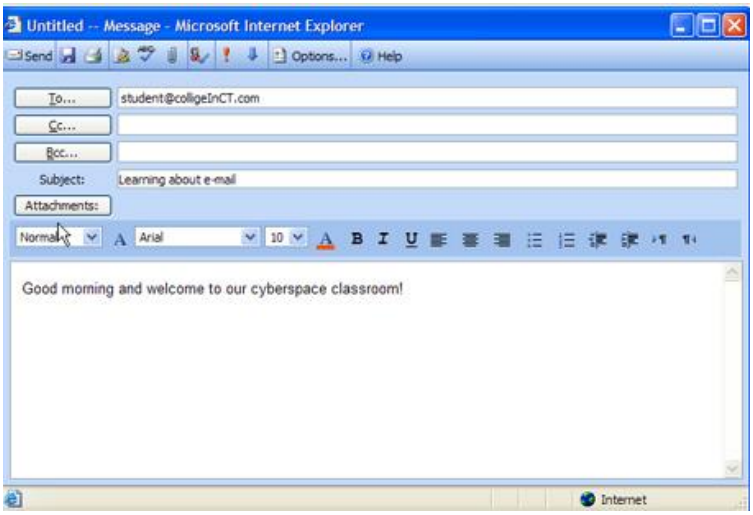
jsmith@hotmail.com

Username
A person's name or nickname

the @ sign means 'at'

the domain name or network address: the mail server where the account is located. The final part of it, the top-level domain, adds information about it, e.g. .com=company, .org=non profit institution, .co.uk=a company in the UK, .es=Espana, etc.

B) Anatomy of an email



Emails usually have two main parts.

1. The header generally includes these:
TO (name and address of the recipient),
CC (carbon copy sent to another addressee),
BCC (blank/blind carbon copy),
SUBJECT (topic of the message).

2. The body (the message itself).
Some email programs also include a signature, with added information about the sender, at the end of the message.

You can make your message look more expressive or attractive by using smileys (also called emoticons): little pictures either made with characters from the keyboard such as :-) for happy, :-o surprised, :-(sad, etc. or downloaded images and animations.

C) Spam

Spam, or junk mail, is the name given to unwanted messages, mainly commercial advertising. Some companies, spammers, use it extensively because it's cheaper than other types of advertising: you and your Internet Service Provider pay for it.

D) Mailing lists and newsgroups

A mailing list is a basic type of discussion group that uses email to communicate. The messages are distributed to all the subscribers, i.e. everyone who belongs to the list.
Newsgroups are similar. The main difference is that the message is not sent to someone's mail server but to a bulletin board where everybody can read and answer the message.

Unknown words

attachment n. /əˈtætʃmənt/ – an extra document that is added to another document (PRILOG, DODATAK)
snail mail n. – the conventional postal system, as opposed to electronic mail (KLASIČAN POŠTANSKI SISTEM)

recipient n. /rɪˈsɪpɪənt/ - a person who receives something (PRIMALAC)
header n. /ˈhɛdə/ - in word processing, a line or lines of text, typically consisting of the topic, date, page number, etc., printed at the top of each page of a document (ZAGLAVLJE)
addressee n. /ˌædrɛˈsiː/ - a person to whom a letter, parcel, etc, is addressed (PRIMALAC)
signature n. /ˈsɪgnɪtʃə/ - the name of a person or a mark or sign representing the name (POTPIS)
spam n. /spæm/ – unsolicited electronic mail or text messages sent in this way (NEŽELJENA PORUKA, SPAM)
advertising n. /ˈædvəˌtaɪzɪŋ/- the promotion of goods or services for sale through impersonal media, such as radio or television (REKLAMIRANJE)
extensive adj. /ɪkˈstɛnsɪv/ - having a large extent, area, scope, degree, etc (PUNO, U VELIKOJ MERI)
subscriber n. /səbˈskraibər/ –
1. a person who pays to receive a product or service, for example a magazine or website (PRETPLATNIK)
2. a person who agrees to receive information regularly from a website or internet channel
bulletin board n. – a computing system that enables users to send and receive messages of general interest (OGLASNA TABLA)

1) Find words in A and B that match these definitions.
1. a file that has been included as part of an email message _____
2. conventional mail delivered very slowly in contrast with email _____
3. symbols used to express emotions in an email _____
4. the part of the email address that identifies the user of the service _____
5. the computer that provides you with mail service _____
6. a facility that allows users to send and receive messages via the Internet _____
7. the part of the email where you write the information about the address and subject _____
8. the part of the email address that identifies the server _____
9. the place where your Internet Service Provider stores new email for you _____

2) Look at the main parts of an email message in B. Where would you write the information below? What additional information do the TLDs (top-level domains) of the addresses give you?
1. peterswinburn@jazzfree.com _____
2. Eleanor Richardson
   Manager _____
3. maryjones@arrakis.es; susanwilt@hotmail.co.uk _____
4. Plane tickets _____
5. Peter,
   I've already booked the plane tickets to attend the Managers' Conference. Mary is joining us.
   Best wishes _____

3) A manager is giving his colleagues some advice on how to prevent spam. Complete the sentences with the words in the box.

mailing list	spam	email address	newsgroups	spammers

1. Never ever reply to a _____ email or click on a link within the mail – this will lead to more junk email being sent to you. Unsubscribing only confirms you do actually exist, so they've hit the jackpot.
2. Don't let your email address be displayed anywhere on the Internet, including _____, chat rooms or any websites.
3. Never forward a spam to other people - _____ might be able to track their addresses too, and you could end up losing friends!
4. Send your emails on a strictly 'need to know' basis; don't include everyone on a _____ unless it is really necessary.
5. Treat your _____ like your phone number – don't give it out randomly. Try to use a different one when shopping online.

4) Look at the paragraph below. Each paragraph is a part of a formal email. Put them in the correct order.

a. Thank you for your order of 24 April for 100 rotary actuators.
b. Regards Daniel Davis
c. Dear Mr. Brown,
d. I'd appreciate if you could check their size on the attachment. Please confirm by email if this is correct before we make up your order.
e. Thank you for your custom.

_____, _____, _____, _____, _____.

5) Match the following words and abbreviations used in an email with their meaning:

1. attachment	a. contains emails you are working on but are not yet ready to be sent
2. cc	b. shows that an email is important and should be read immediately
3. fwd	c. allows you to send an email you have received to someone else
4. bcc	d. means ''copy this email to''
5. drafts	e. is a document that you add and send with an email
6. high priority	f. means to copy an email to someone so that other people you're sending the email to do not know you're sending this copy

_____, _____, _____, _____, _____, _____.

6) Guess the meaning of the following abbreviations that are often used in less formal emails.

1. ie _____
2. asap _____
3. attn. _____
4. rgds _____
5. 2L8 _____
6. AFAIK _____
7. IOW _____
8. TIA _____
9. B4N _____
10. pls _____
11. btw _____
12. at the mo _____
13. thx/tks _____
14. CU _____
15. CUL _____
16. OTOH _____
17. FYI _____
18. FAQs _____

7) Some people use text message abbreviations in their emails so they can be really brief. Match these abbreviations to their meanings.

1) 4	a) today
2) U	b) your/you're
3) R	c) for
4) 2DAY	d) you
5) 2MORO	e) no one
6) XLNT	f) are
7) NO1	g) tomorrow
8) ur	h) excellent

_____, _____, _____, _____, _____, _____, _____, _____.

8) It's probably a bad idea to use abbreviations like this in case they confuse your readers, but can you work out what they mean?

A: Happy bday 2 U _____
B: THNQ _____
A: WAN2 celebr8? _____
B: I cant 2nite _____
A: Y not? RUOK? _____
B: Every1 is working L8 _____
A: OIC. Is NE1 looking at U? _____
B: No. NO1. _____

A: Get outta there B4 any1 CS U leave_____
B: OK _____
A: GR8 C U L8R _____

9) Complete these emails using the phrases in the list.

Please could you	Looking forward to	Do you want me to
Please get back to me	Yours sincerely	I'm attaching
Please confirm	Thank you for	We are sorry about
We would be happy to	I'm afraid that	Sorry

Anton
1) _____ an Excel file with the data you wanted. 2) _____ some of the figures are not up-to-date.
3) _____ if you have any questions.
regards
Luigi

Dear Mr Franklin,
4) _____ the problems you had with our last shipment of electric motors. We are sending you another shipment today. 5) _____ return the units you have? We will credit your account with the transportation costs.
6) _____
David Wilkinson

Hello Carlos
7) _____ I haven't got back to you sooner, but I was in Singapore last week.
You said in your email that you have a problem opening the last file I sent you. I think it could be a problem with the version you're using. We've just upgraded to the latest version (v.10.5).
8) _____ convert it to v9.0 and resend it?
Barry

Dear Ms Angelova
9) _____ your interest in our company.
10) _____show you our facilities and discuss how we would set up and monitor the tests.
11) _____ the time and date of your visit so that we can arrange a car to pick you up from the airport.
12) _____ meeting you.
Kind regards
Roger Harris

10) Look at the list of phrases in bold that are often used in emails and say whether they:

a) offer help
b) ask people to do things
c) introduce good or bad news
d) thank people
e) refer to future contact
f) refer to an attachment

1) **I'm sorry, (but)** we can't ... _____
2) **Looking forward to** meet**ing** you. _____
3) **(Please) Could you** let me know as soon as possible? _____
4) **Thx** a lot. _____
5) **I'm pleased to tell you** that we can give you a 3% discount. _____
6) **We would be pleased to** produce these parts for you. _____
7) **I'd appreciate it if you could** send ... _____
8) **Thanks for** getting back to me so quickly. _____
9) **I am attaching** the figures you asked for. _____
10) **I'm afraid (that)** we don't have any ... _____
11) **We would be happy to** send you a sample. _____
12) **We look forward to** work**ing** together with you. _____
13) **Can you** sign the contract and send it back to me? _____
14) **Thank you for** letting us know about ... _____

11) Complete the guidelines on how you should use e-mail.

signature	attachment	receiver/recipient
high priority option	subject line	cc field

Getting the basics right!

1. Make sure you have the _____'s e-mail address correct. It's easy to send an e-mail to the wrong person!
2. Use the _____ only if someone else needs to be kept informed or to take action.
3. Include the following information in your _____ : your name, job title, company name and address, telephone number.
4. Ensure the _____ clearly describes what the e-mail is about and is free of errors.
5. If you need to send an _____, first check with the receiver that the format (Word, etc.) and file size are appropriate.
6. Only use the _____ (importance option) if your e-mail requires quick action, or if others need to receive information from you urgently.

12) Complete the guidelines below with these words and phrases.

graphics	repetition	subject	paragraphs	sentences	length	italics	linking

Best practice – being clear and concise

1. Keep your e-mail as short as possible to keep scrolling to a minimum. Your message is then more likely to be read.
2. Keep your _____ short and simple (15-20 words maximum).
3. Use short _____ (e.g. four to six sentences), with generous spacing in between.
4. Limit your line _____ to about 65-70 characters.
5. Where possible, use active verb forms to make it clear who needs to do what.
6. Use _____ words like *however* or *and* to organize your ideas.
7. Avoid unnecessary _____ .
8. Use clear _____ lines – you don't want the receiver to think your mail is spam.
9. Use bold type or _____ to emphasize important points.
10. Avoid sending large _____ or images.

13) Use the following words to fill in the blanks in the email below.

inform	out	arrange	contact	require	convenient	addition	enquire

To: Jane Bass
From: Simon Pilgrim
Subject: Product Enquiry

Dear Ms Bass

I'm writing to (1) _____ about your range of less exclusive products.
Our company has diversified and, in (2) _____ to the professional equipment we have previously purchased, we now (3) _____ products for the hobby golfer.
Could we (4) _____ a meeting to see one of your sales reps who can (5) _____ us about your products? The week of 15 May would be (6) _____ for us.
As I will be (7) _____ of the office from 2 to 11 May, please (8) _____ my assistant, Jean Meyer directly.

Best regards
Simon Pilgrim

14) Choose the best expression to finish the email:

is carried out free of charge	we are pleased to enclose	for all orders exceeding	
we have a wide range of	subject to availability	are also available	In reply to

Dear Mr Stewart

a) _____ your email of 9th April, b) _____ a detailed quotation for the models of telephones specified. Besides those models that were on display at the International Telecommunications Fair, c) _____ other designs, as illustrated in our catalogue, also enclosed.
All our equipment is of a high standard and comes with a five-year guarantee. A range of accessories d) _____. Installation e) _____ by any one of our two thousand service centres located throughout Europe.
Furthermore, we are able to offer a 5% discount f) _____ £2,000.
All models can be supplied, g) _____, 3 months from the date on which we receive your firm order. Our cif prices are for sea/land transport only; if you require the goods to be sent by air freight, this will be charged at extra cost.
We look forward to receiving your order.

Yours sincerely
J. Müller
Export Manager

15) Choose the best expression to finish the email:

you are aware	to take advantage of this opportunity	is opening up
in exchange for	are seeking	your company could benefit
give this proposal your kind consideration		

Dear Sir or Madam

We are manufacturers of telephone answering machines and a) _____ a European manufacturer of compatible products with a view to entering into a commercial partnership.
We would like to offer our services as commercial agents for your products in the United States, b) _____ your representation of our products on the European market. Please find enclosed a brochure describing our company.
As we are sure c) _____, the US market offers excellent potential for your type of product, and we feel confident that you will appreciate how much d) _____ from such a partnership. As for ourselves, we have reason to believe that the market e) _____ in Europe for our products and consider that the best way f) _____ is to achieve a commercial presence via a European company.

We hope you will g) _____, and look forward to your reply.

Yours truly
Mr T. Southampton
Export Manager

16) Match the pairs.

1. dot	a) j
2. lower-case j	b) @
3. backslash	c) .
4. colon	d) :
5. forward slash (or slash)	e) _
6. upper-case j	f) \
7. at	g) /
8. hyphen (or dash)	h) J
9. underscore	i) -

The World Wide Web

A) What the Web is

The World Wide Web, Web or WWW is a network of documents that works in a hypertext environment, i.e. using text that contains links, hyperlinks to other documents.
The files, web pages, are stored in computers, which act as servers. Your computer, the client, uses a web browser, a special program to access and download them. The web pages are organized in websites, groups of pages located on the Web, maintained by a webmaster, the manager of a website.
The Web enables you to post and access all sorts of interactive multimedia information and has become a real information highway.

B) How to surf the Web

To surf or navigate the Web, access and retrieve web pages or websites, you need a computer with an Internet connection and a web browser. After you have launched it, you must type the website address or URL (Uniform Resource Locator), which may look like this:

http://www.cup.org/education/sample.htm

http://	indicates the type of protocol that the server and browser will use to communicate. Here it is Hypertext Transfer Protocol.
www.	shows that it is a source on the World Wide Web.
cup.org	is the domain name of the web server that hosts the website.
education	is the path, the place where web page is located.
sample.htm	is the filename or name of a single web page.

The different parts are separated by full stops (.) and forward slashes (/). When we say a URL, we say dot (.) and slash (/).

To find interesting sites you can use search engines, where the website information is compiled by spiders, computer-robot programs that collect information from sites by using keywords, or through web indexes, subject directories that are selected by people and organized into hierarchical subject categories. Some web portals – websites that offer all types of services, e.g. email, forums, search engines, etc. – are also good starting points.
The most relevant website addresses can be stored in your computer using the bookmarks or favourites function in your browser.
Websites usually have a beginning page or home page. From this starting point you can navigate by clicking your mouse on hyperlinks in texts or images.

C) What can you do on the Web

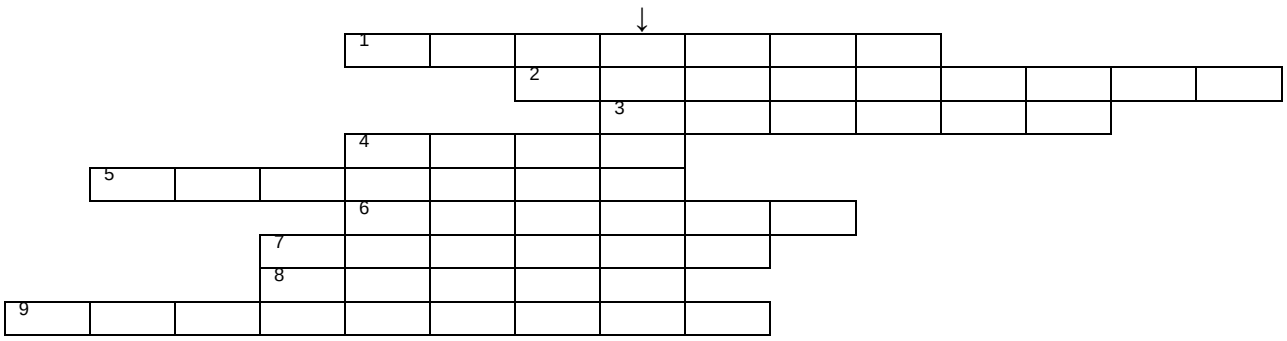
The Web is an open door to a universe of multimedia resources that people use in many different ways. Here are just a few:
'In my weblog, on electronic journal I maintain on the Web, you can read and post opinions in chronological order. In my role as a blogger, the manager of a blog, I can promote this new type of discussion.'
'E-learning, education via the Web, is a great opportunity for people like me who haven't got time to attend classes.'
'Online shopping, i.e. cybershopping or e-commerce, saves you time and gives you the comfort of buying from your personal computer. The goods are then sent to you, so it's very easy.'

Unknown words
i.e. /aɪ iː/ abbreviation for Latin *id est* - that is to say (TO JEST, TJ.)
browser n. /ˈbraʊzə/- a piece of computer software that you use to search for information on the internet (PRETRAŽIVAČ)

the information highway = the internet
retrieve v. /rɪˈtriːv/ - to recover or make newly available (stored information) from a computer system (PREUZETI, POVRATITI PODATAK)
launch v. /lɔːntʃ/ - to start off or set in motion (POKRENUTI)
search engine v. – a service provided on the internet enabling users to search for item of interest (PRETRAŽIVAČ)
compile v. /kəmˈpaɪl/ - to create a set of machine instructions from a high-level programming language, using a compiler (SASTAVITI)

A) Solve the clues and complete the puzzle with the words from the text.
1. The WWW is also called the information _____.
2. A link in a web page.
3. A website that offers a variety of services.
4. The first page of a website is the _____ page.
5. A person who keeps a blog.
6. The manager of a web page is its web _____.
7. An animal closely linked to the Web.
8. Another word for directory.
9. Another word for bookmark.

The hidden word is _____, text with links.



B) Complete these instructions about how to navigate with the words from the box.

client	web page	surf	web browser
search engine	web server	website	URL

1. Start up your computer and connect to the Internet.
2. Open your _____.
3. Type the _____ to access a website.
4. Your web browser sends the request to the correct _____.
5. The server looks for the document and sends it to the _____ computer.
6. Your web browser displays the selected _____ on the screen.
7. From the home page of the _____ you can _____ to other pages by clicking on hyperlinks.
8. If you want to find more websites, use a _____.

C) What are the main parts of this URL? How would you say the URL?

http: //www.cambridgeesol.org/exams/cpe.htm

a _____ b _____ c _____ d _____ e _____

Hardware components

A) Parts of a computer

A computer is an electronic machine which can accept data in a certain form, process the data, and give the results of the processing in a specified format as information.

A typical computer consists of two parts: hardware and software. Hardware is any electronic or mechanical part of the computer system that you can see or touch. Software is a set of instructions, called a program, which tells a computer what to do.

There are three basic hardware sections.

1. The central processing unit (CPU) is the heart of the computer, a microprocessor chip which processes data and coordinates the activities of all other units.
2. The main memory holds the instructions and data which are being processed by the CPU. It has two main sections: RAM (random access memory) and ROM (read only memory).
3. Peripherals are the physical units attached to the computer. They include:

a) input devices, which let us enter data and commands (e.g. the keyboard and the mouse),
b) output devices, which let us extract the results (e.g. the monitor and the printer), and
c) storage devices, which are used to store data permanently (e.g. hard drives, DVD drives and flash drives).

At the back of a computer there are ports into which we can plug external devices (e.g. a scanner, a modem, a digital camera, etc.). They allow communication between the computer and the devices.

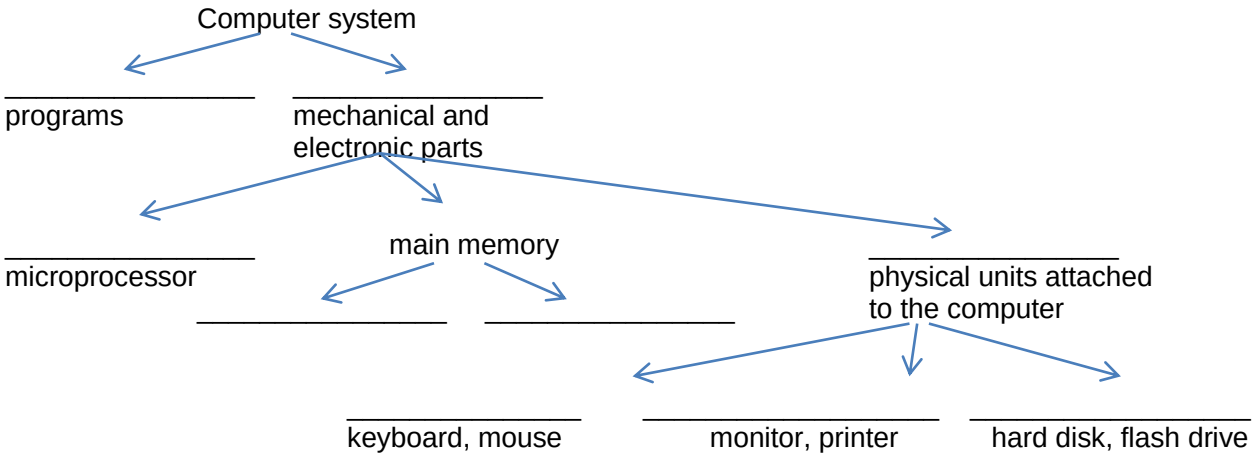
B) Functions of a PC: input, processing, output, storage

Input: We enter data with a keyboard, a webcam, etc.
Processing: The data is manipulated according to program instructions.
Storage: We keep data and programs in memory systems where they are available for processing.
Output: We can see the result on the screen or in printed form.

Unknown words

accept v. /əkˈsɛpt/ – to receive, take, or hold (PRIHVATITI, PRIMITI)
process v. /prəˈsɛs/ - to perform mathematical and logicač operations on data according to programmed instructions in order to obtain the required information (OBRADITI)
specify v. /ˈspɛsɪˌfaɪ/ – to refer to or state specifically (ODREDITI, NAVESTI)
central processing unit, CPU /siː piː juː/ - the part of a computer that performs logical and arithmetical operations on the data as specified in the instructions (PROCESOR)
peripherals n. /pəˈrɪfərəls/ – devices that can be attached to computers (PERIFERIJSKI UREĐAJI)
storage devices – a piece of computer equipment on which data and instructions can be stored, usually in binary form (TRAJNA MEMORIJA, SKLADIŠNA MEMORIJA)
permanent adj. /ˈpɜːmənənt/ - existing for an indefinite period (TRAJAN)
manipulate v. /məˈnɪpjʊˌleɪt/ - to handle or use in a process or action (OBRADITI)

1) Label the diagram with the correct terms.



2) Match the terms (1-9) with their definitions (a-i).

1. software	a) the nerve center of the computer
2. peripherals	b) physical parts that make up a computer system
3. main memory	c) programs which can be used on a particular computer system
4. hard drive (hard disk)	d) the information which is presented on the computer
5. hardware	e) results produced by a computer
6. input	f) input devices attached to the CPU
7. ports	g) section that holds programs and data while they are executed
8. output	h) magnetic device used to store information
9. CPU	i) sockets into which an external device may be connected

Programming

A) Programming languages

Programming is the process of writing a program using a computer language. A program is a set of instructions which a computer uses to do a specific task (e.g. a solution to a maths problem).

The only language a PC can directly execute is machine code, which consists of 1s and 0s (binary code). This language is difficult to write, so we use symbolic languages that are easier to understand. For example, assembly languages use abbreviations such as ADD, SUB, MPY to represent instructions. The program is then translated into machine code by a piece of software called an assembler.

Machine code and assembly languages are called low-level languages because they are closer to the hardware.

High-level languages, however, are closer to human languages; they use forms resembling English, which makes programming easier. The program is translated into machine code by software called a compiler. Some examples are:

- FORTRAN was developed by IBM in 1954 and is still used for scientific and mathematical applications.
- COBOL (**Co**mmon **B**usiness **O**riented **L**anguage) was developed in 1959 and is mainly used for business applications.
- BASIC was developed in the 1960s and was widely used in microcomputer programming because it was easy to learn. Visual BASIC is a modern version of the old BASIC language, used to build graphical elements such as buttons and windows in Windows programs.
- PASCAL was created in 1971. It is used in universities to teach the fundamentals of programming.
- C was developed in the 1980s at AT&T. It is used to write system software, graphics and commercial programs. C++ is a version of C which incorporates object-oriented programming: the programmer concentrates on particular things (a piece of text, a graphic or a table, etc.) and gives each object functions which can be altered without changing the entire program. For example, to add a new graphics format, the programmer needs to rework just the graphics object. This makes programs easier to modify.
- Java was designed by Sun in 1995 to run on the Web. Java applets provide animation and interactive features on web pages.

Programs written in high-level languages must be translated into machine code by a compiler or an interpreter. A compiler translates the source code into object code – that is, it converts the entire program into machine code in one go. On the other hand, an interpreter translates the source code line by line as the program is running.

It is important not to confuse programming languages with markup languages, used to create Web documents. Markup language use instructions, known as markup tags, to format and link text files. Some examples include:

- HTML, which allows us to describe how information will be displayed on web pages.
- XML, which stands for **Ex**tensible **M**arkup **L**anguage. While HTML uses pre-defined tags, XML enables us to define our own tags; it is not limited by a fixed set of tags.
- VoiceXML, which makes Web content accessible via voice and phone. VoiceXML is used to create voice applications that run on the phone, whereas HTML is used to create visual applications (for example, web pages).

B) Steps in writing a program

To write a program, software developers usually follow these steps.

- First they try to understand the problem and define the purpose of the program.
- They design a flowchart, a diagram which shows the successive logical steps of the program.
- Next they write the instructions in a high-level language (Pascal, C, etc.). This is called coding. The program is then compiled.
- When the program is written, they test it: they run the program to see if it works and use special tools to detect bugs, or errors. Any errors are corrected until it runs smoothly. This is called debugging, or bug fixing.
- Finally, software companies write a detailed description of how the program works, called program documentation. They also have a maintenance program. They get reports from users about any errors found in the program. After it has been improved, it is published as an updated version.

Unknown words

execute v. /ˈɛksɪˌkjuːt/ - to carry out; complete; perform; do (IZVRŠITI)

abbreviation n. /əˌbriːvɪˈeɪʃən/ - a shortened form of a word or phrase used in place of the whole (AKRONIM, SKRAĆENICA)

high-level language – a computer programming language that resembles natural language or mathematical notation and is designed to reflect the requirements of a problem; examples include Ada, BASIC, C, COBOL, FORTRAN, Pascal (VIŠI PROGRAMSKI JEZIK)

alter v. /ˈɔːltə/ - to make or become different in some respect; change (PROMENITI)

applet n. /ˈæplɪt/ - a computer program that runs within a page on the internet (APLET)

markup tag - (in a computer language such as HTML) an electronic code describing how a specific portion of text is to be processed (OZNAKA, TEG)

flowchart n. /floʊˌʧɑrt/ - a diagram showing steps in a sequence of operations, as in manufacturing or in a computer program (ALGORITAM)

bug n. /bʌg/ - a mistake in a computer program (GREŠKA)

debug v. /diːˈbʌg/ - to look for the faults in a computer program and correct them (OTKLONITI GREŠKE)

1) Answer the questions.

1. Do computers understand human languages?

_____

2. What is the function of an assembler?

_____

3. Why did software developers design high-level languages?

_____

4. Which language is used to teach programming techniques?

_____

5. What is the difference between a compiler and an interpreter?

_____

6. Why are HTML and VoiceXML called markup languages?

_____

2) Match the terms with their definitions.

1. programming	a. basic language which consists of binary codes
2. machine code	b. programming language such as C, Java or Visual BASIC
3. assembly language	c. writing computer programs
4. high-level language	d. low-level language translated into machine code by an assembler
5. Java applet	e. software which converts a source program into machine code
6. compiler	f. language used to create and format documents for the Web
7. markup language	g. small self-contained program written in Java

1 _____, 2 _____, 3 _____, 4 _____, 5 _____, 6 _____, 7 _____.

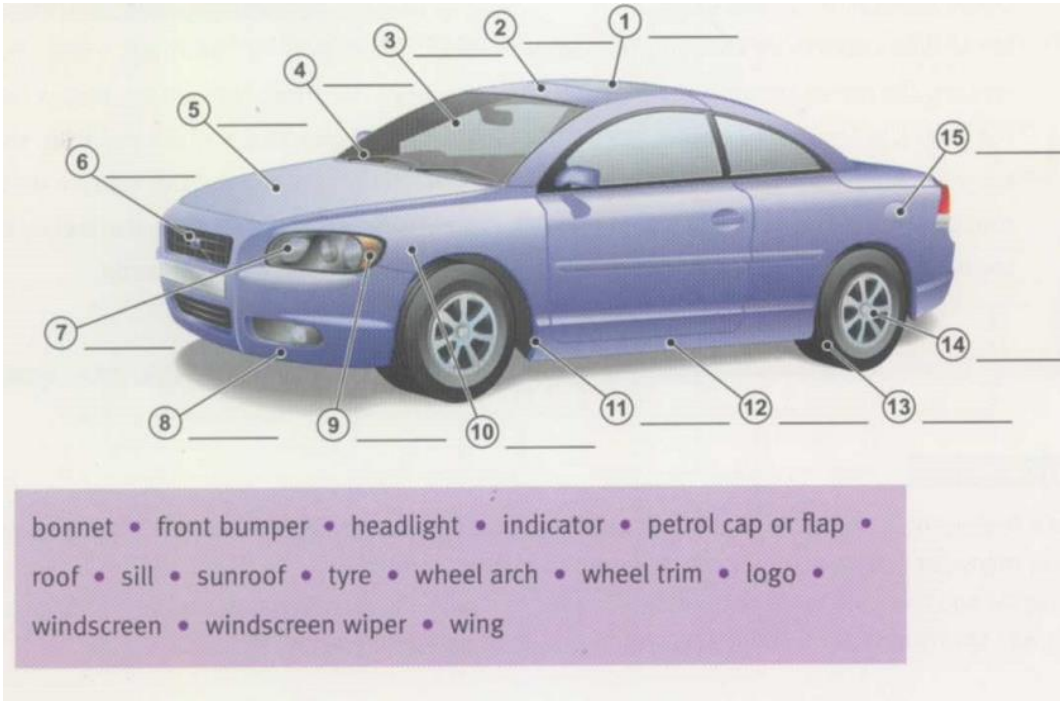
3) Put these programming steps into the correct order (from 1 to 6).
_____ Document and maintain the program
_____ Test the program and detect bugs
_____ Make flowchart
_____ Write code and compile
_____ Analyze the problem
_____ Debug and correct it if necessary

The exterior of a car

bonnet n. /ˈbɒnɪt/ - the metal cover over the engine at the front (AmE **hood**) (HAUBA, POKLOPAC MOTORA)
bumper n. /ˈbʌmpə/ - a horizontal metal bar attached to the front or rear end of a car, lorry, etc, to protect against damage from impact (BRANIK)
headlight n. /ˈhɛdˌlaɪt/ *(*or **headlamp) -** a powerful light attached to the front of a motor vehicle (PREDNJE SVETLO)
indicator n. /ˈɪndɪˌkeɪtə/ - the flashing light that tells you when the car is going to turn left or right (AmE **turn signal**) (MIGAVAC, POKAZIVAČ PRAVCA)
petrol cap (**petrol flap**) n. /ˈpɛtrəl kæp/ - a small cover that goes over the hole in a vehicle into which you put petrol (POKLOPAC REZERVOARA ZA GORIVO)
sill n. /sɪl/ - the lower horizontal member of a window or door frame (PRAG, SAJTNA)
sunroof n. /ˈsʌnˌruːf/ - a panel in the roof of a car that opens to let sunshine and air enter the car (ŠIBER)
tyre n. /ˈtaɪə/ - a thick piece of rubber which is fitted onto the wheels of vehicles such as cars, buses, and bicycles (AmE **tire**) (PNEUMATIK)
wheel arch n. /wil ɑrtʃ/ - the semicircular part positioned above the wheel of a vehicle (BLATOBRAN)
wheel trim n. /trɪm/ - metallic decorative trim over or around the wheels of a motor vehicle (FELNA)
windscreen n. /ˈwɪndˌskriːn/ - the glass window at the front through which the driver looks (AmE **windshield**) (VETROBRANSKO STAKLO, ŠOFERŠAJBNA)
windscreen wiper n. - a device that wipes rain from a vehicle's windscreen (AmE **windshield wiper) (BRISAČ)**
wing n. /wɪŋ/ - a part of a car on the outside which is over one of the wheels (AmE **fender**) (KRILO)

A) Label the parts of the car.

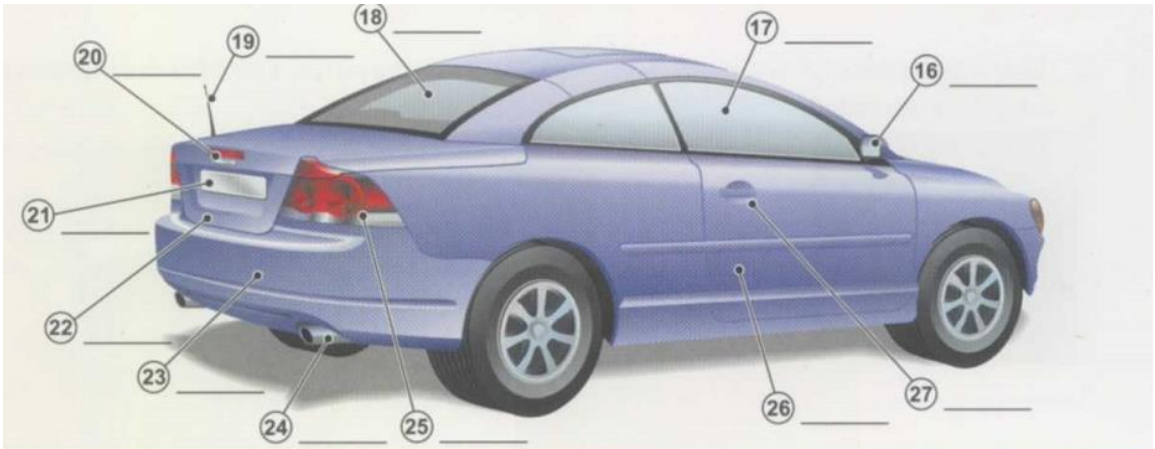
1 _____	6 _____	11 _____
2 _____	7 _____	12 _____
3 _____	8 _____	13 _____
4 _____	9 _____	14 _____
5 _____	10 _____	15 _____



aerial n. /ˈɛərɪəl/ - a device that receives television or radio signals and is usually attached to a radio, television, car, or building (AmE **antenna**) (ANTENA)
badge n. /bædʒ/ - a mark worn to signify membership, employment, achievement, etc (ZNAK)
boot n. /buːt/ - a covered space at the back or front, in which you carry things such as luggage and shopping (AmE trunk) (GEPEK, PRTLJAŽNIK)
door handle n. /dɔː ˈhændᵊl/ - the handle that you turn to open a door (RUČICA NA VRATIMA)
exhaust pipe n. /ɪgzɔst paɪp/ - the pipe that carries the gas out of the engine of a vehicle (AUSPUH, IZDUVNA CEV)
number plate n. - a sign on the front and back of a vehicle that shows its registration number (AmE **license plate**) (TABLICA)
rear window n. /rɪə ˈwɪndəʊ/ - the window at the back of a motor vehicle (ZADNJE STAKLO)
rear bumper n. /rɪə ˈbʌmpə/ - the bar at the back of a vehicle which protects it if it bumps into something (ZADNJI BRANIK)

Label the parts of the car.

16 _____ 20 _____ 24 _____
17 _____ 21 _____ 25 _____
18 _____ 22 _____ 26 _____
19 _____ 23 _____ 27 _____



aerial • badge • boot • door •
door handle • exhaust pipe •
number plate • rear bumper •
rear window • wing mirror •
side window • rear light

British English	American English
aerial	antenna
bonnet	hood
boot	trunk
indicator	turn signal
number plate	license plate
petrol cap or flap	gas tank lid
tyre	tire
windscreen	windshield
wing	fender

B) Complete the sentences with words from exercise A.
1. You open the _____ to look at the engine.
2. The _____ absorb small impacts in an accident.
3. Don't forget to retract the _____ before using the car wash.
4. Can you put my suitcases in the _____, please?
5. When it starts raining, you need to switch on the _____.
6. What model is that? – I don't know. I can't see _____ from here.
7. It is important to inflate the _____ to the correct pressure for better fuel consumption.
8. The Mercedes star is a well-known _____.
9. Open the _____ and let some sun and fresh air into the car.
10. I wish all drivers would use their _____ when they want to turn right or left!

C) Match words from the two boxes to find the exterior car parts.

1. head _____	6. petrol _____	a. wipers _____	f. cap _____
2. rear _____	7. windscreen _____	b. lights _____	g. mirror _____
3. exhaust _____	8. wing _____	c. plate _____	h. handle _____
4. wheel _____	9. door _____	d. trim _____	i. lights _____
5. front _____	10. number _____	e. bumper _____	j. pipe _____

Built to order

Almost every car is produced to the customer's specific requirements – a built-to-order car

As soon as a car is ordered and a delivery date agreed, weekly and daily production schedules are created and sent to outside suppliers and the company's own pre-assembly stations. This is to make sure that all the necessary components arrive on time.

First of all, a small data carrier is attached to the floor pan in the body shop. This data carrier contains all the customer's specifications and communicates wirelessly with control units along the production line. In the body shop the floor pan, wheel arches, side panels, and roof are welded together by robots to make the frame of the car. The add-on parts – the doors, boot lid, and bonnet – are then mounted to make the body-in-white.

The finished body shell then goes into the paint shop where the data carrier determines the colour. In final assembly, the interior and exterior parts (for example, the front and rear bumpers, headlights, windscreen, and other windows) are fitted. After quality control and a final check, the finished car can be released. It is now ready for delivery to its new owner.

Unknown words

built to order - a production approach where products are not built until a confirmed order for products is received (IZRADA PO NARUDŽBINI)

requirement n. /rɪˈkwaɪəmənt/ - a thing desired or needed (ZAHTEV)

delivery n. /dɪˈlɪvərɪ/ - the act of delivering or distributing goods, mail, etc (ISPORUKA)

schedule n. /ˈʃɛdjuːl, US ˈskɛdʒʊəl/ - a plan of procedure for a project (PLAN, RASPORED)

supplier n. /səˈplaɪər/ - a person, company, or organization that sells or supplies something such as goods or equipment to customers (DOBAVLJAČ)

assembly n. /əˈsɛmblɪ/ - a group of mating components before or after fitting together (SKLOP, SKLAPANJE, MONTAŽA)

data carrier n. /ˈdeɪtə ˈkærɪə/ - any medium on which data can be recorded (NOSAČ PODATAKA)

production line - an arrangement of machines in a factory where the products pass from machine to machine until they are finished (PROIZVODNA LINIJA)

floor pan – a solid bottom, found in some types of automobiles, that adds rigidity to the structure and serves as the base for the seats (POD, PATOS)

add-on n. /ˈædˌɑn/ - an extra piece of equipment that can be added to a larger one which you already own in order to improve its performance or its usefulness (DODATNI DEO)

lid n. /lɪd/ - the top of a container which can be removed when you want to open the container (POKLOPAC)

mount v. /maʊnt/ - to fix onto a setting or support (MONTIRATI)

body-in-white (BIW) – the stage in the automobile manufacturing in which a car body's components have been joined together, using one or combination of different techniques: welding, clinching, bonding, laser brazing etc. BIW is termed before painting and before the motor, chassis sub-assembly, or trim (glass, door locks/handles, seats, upholstery, electronics, etc) have been assembled in the frame structure

shell n. /ʃɛl/ - the basic structure of a vehicle (ŠKOLJKA, KAROSERIJA)

determine v. /dɪˈtɜːmɪn/ - to reach a decision about after thought (ODREDITI, UTVRDITI)

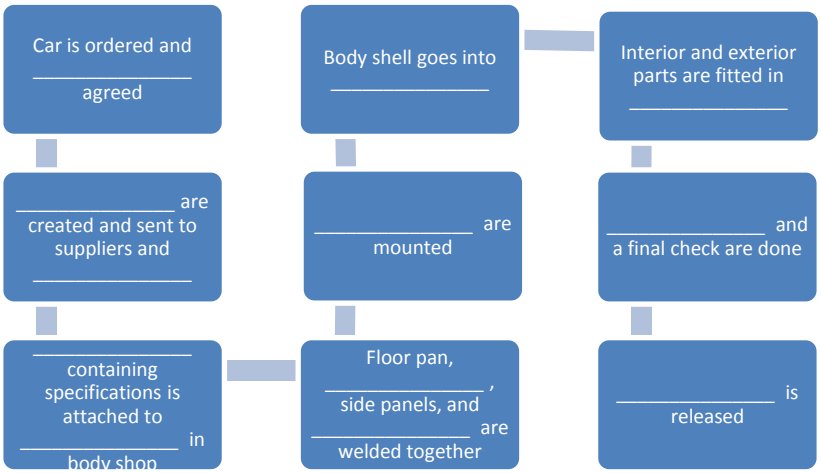
release v. /rɪˈliːs/ - to issue (a record, film, book, etc) for sale or circulation (PUSTITI, OSLOBODITI)

D) Answer the questions:

1. What kind of a production approach is a built to order?
2. Are all cars manufactured to the client's specific demands?
3. Are production plans made on a weekly or daily basis?

4. Who are weekly and daily production schedules sent to? Why?
5. What's the first step in making a built-to-order car?
6. What does a data carrier hold?
7. How does it communicate with control units along the production line?
8. What is a production line?
9. What machines are used to make the frame of a car?
10. List some add-on parts of a car.
11. What's the body-in-white?
12. What parts of a car are fitted in final assembly?
13. When is the finished car ready for delivery to its owner?

E) Complete the diagram.



F) Complete the sentences with the passive form of the verb in brackets.
1. This model _____ (produce) in the new factory in Poland.
2. German cars _____ (sell) all over the worlds.
3. The orders _____ (can/place) by fax or online.
4. The cars _____ (assemble) by robots.
5. Spare parts _____ (can/buy) from your local dealer.
6. The interiors _____ (design) by computers.
7. Tyres _____ (should/replace) before they wear down completely.

G) Put these steps for changing a tyre in the right order.
a. Remove the old tyre from under the vehicle and lower the vehicle.
b. Take the spare tyre out of the boot and make sure it is in good condition.
c. Check again to make sure the wheel nuts are tight.
d. Remove the tyre and put it under the vehicle, next to the jack.
e. Put the vehicle into gear (manual transmission) or park (automatic).
f. Use a jack to raise the vehicle.
g. Fit the spare tyre and tighten the wheel nuts.
h. Find two rocks or large pieces of wood and put them in front of and behind the opposite wheel.
i. Loosen the wheel nuts slightly.
j. Loosen the wheel nuts more and remove them.

Now listen to **TRACK 12** to check your answers.

H) A manufacturer phones a supplier to complain about some headlights. Put the manufacturer's lines (a-i) into the right place to complete the dialogue. What is the problem exactly? What do you think the cause of the problem could be?

Manufacturer

a) I'm afraid there is. In our tests there's been a much higher failure rate than is allowed in the contract.
b) Fine, thanks. Listen, Alex, I'm calling about the headlights we received from you last week.
c) It's around 5 per cent. And as you know, it should be under 1 per cent.
d) That's really good of you, Alex. I'll be in my office until about 4 p.m. After that you can reach me on my mobile.
e) Hi, Alex. It's Chris Fraser here from Rover.
f) Thanks, Alex. Speak to you later.
g) Yes. It's 0044 795 434 5381.
h) Sure. It's A348.
i) Yes, that's right.

Supplier

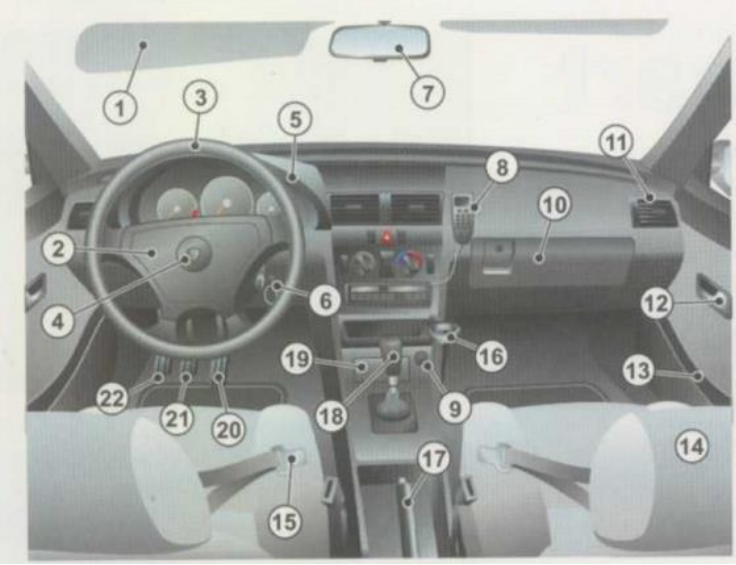
1) Halla Systems. Alex Newman speaking. → **e**
2) Ah, hi Chris. How's it going? ←
3) Uh huh. Is there a problem with the headlights? ◯
4) Oh dear. I'm sorry to hear that. Can you tell me what the failure rate is exactly? ◯
5) You're right, that's completely unacceptable. Could you just give me the consignment number, please? ◯
6) Got you. OK Chris, this is what I'm going to do. I'll look into the problem straight away and will get back to you as soon as I can. ◯
7) OK. I think I've got you mobile number, but can you give it to me again just in case? ◯
8) Let me just read that back to you. 0044 795 434 5381 – is that right? ◯
9) Great. OK Chris, like I said, I'll call you as soon as I know something. Bye now. ◯

Now listen to **TRACK 13** to check your answers.

I) Find phrases in the dialogue which mean the same as the phrases below.
1) How are you?
2) The reason I'm calling ...
3) Can I have it again ...
4) Can I just repeat that?
5) You can contact me later on ...
6) I'll ring you when I have more information.
7) We'll be in touch later.

The interior of a car

A) Label the parts of a car interior and write Serbian equivalent translation.



accelerator • air vent • airbag • ashtray • brake pedal • car seat (headrest) • cigarette lighter • clutch pedal • cup holder • dashboard • door handle • door tray • gearstick • glove compartment • handbrake • hands-free telephone • horn • ignition • rear-view mirror • seat belt • steering wheel • sun visor

1 _____ 8 _____ 15 _____
2 _____ 9 _____ 16 _____
3 _____ 10 _____ 17 _____
4 _____ 11 _____ 18 _____
5 _____ 12 _____ 19 _____
6 _____ 13 _____ 20 _____
7 _____ 14 _____ 21 _____
22 _____

British English	American English
accelerator	gas pedal
gearstick	gear shift / stick shift
glove compartment	glove box

B) Label the sentences with words from exercise A.

1. It's so practical to have a _____ near the steering wheel. I can take a drink whenever I want.
2. In a car with manual transmission, you need to press the _____ when you want to change gear.
3. There's usually a cosmetic mirror on the passenger's _____.
4. I have a leather _____. It's not so cold for my hands in the winter and it gives you a good grip.
5. It's against the law to phone while driving so I've ordered a car with a _____.
6. Could you have a look in the road atlas? It's in the _____.
7. I don't need a _____ as I don't smoke and I don't want anyone to smoke in my car.
8. Could you close the _____? I'm getting draught.

C) Match the numbers with the names of the instruments.

coolant temperature gauge _____
driver information system _____
engine oil temperature gauge _____
hazard warning/indicator lights _____
fuel gauge _____
rev counter _____
speedometer _____
voltmeter _____

D) Look at the picture in exercise C. Which instrument:

1) shows you how fast the car is travelling? _____
2) warns you if the engine lubrication system gets too hot? _____
3) shows that you are indicating to turn left or right? _____
4) shows you how often the engine is turning over? _____
5) shows you how much petrol you have in the tank? _____
6) indicates the voltage of the car's electrical system? _____

E) Complete the following dialogue between a driving instructor (I) and a learner (L) taking a first driving lesson.

rear-view	ignition	pedals	headlights	seat belt

I: OK, so you're sitting in the car. What do you do now?
L: Well, I start the car. No, wait! I check behind me first before I drive away.
I: You've forgotten something.
L: Of course, I fasten my _____ first.
I: Even before you fasten your seat belt there are things you need to do. First of all, are you sitting comfortably?
L: Not really. The seat is a bit too far from the _____.
I: So you need to adjust the seat, right? Use the two levers there to adjust the position and the height. You can also adjust the steering wheel. So now you're sitting comfortably. What should you check now?
L: That the _____ mirror is in the right position. And the side mirror.
I: Quite right. What next?
L: Well, if it's dark, I need to switch on the _____.
I: Good. Finally, before you put the key into the _____, what should you do?
L: Now I fasten my seat belt.

Now listen to **Track 14** to check your answers.

F) You work for a company that manufactures car parts. You receive the email below from a French customer. Complete the email with words from the box.

appreciate	attachment	forward	possible	sending	unfortunately	writing

From: Perry, Yves<yperry@sr.g.fr>
To: frieda.benn@dashpan.co.uk
Subject: order no. 7H325K

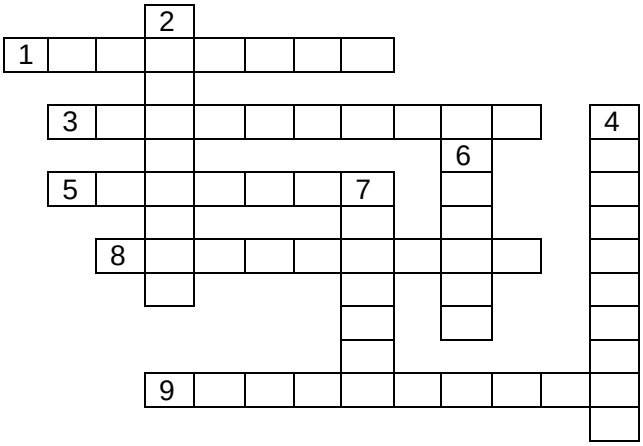
Dear Ms Benn

I'm _____ to you because of a problem with the delivery which we received from you last week. The order was for 1 000 dashboard panels.
_____ 50 of the boxes that arrived were empty. Can you send us the missing items as soon as _____? We would also _____ it if you could look into the problem to make sure this does not happen again. I'm _____ you a scan of the delivery note as an _____.

I look _____ to hearing from you soon.

Best regards
Yves Perry

G) Complete the puzzle. The answers are all words from this unit.



Across

1 You put your cigarette here when it's finished.
3 The instruments are on this.
5 This is the middle pedal in a car.
8 This stops the sun from shining into your eyes.
9 You use this to change gear.

Down

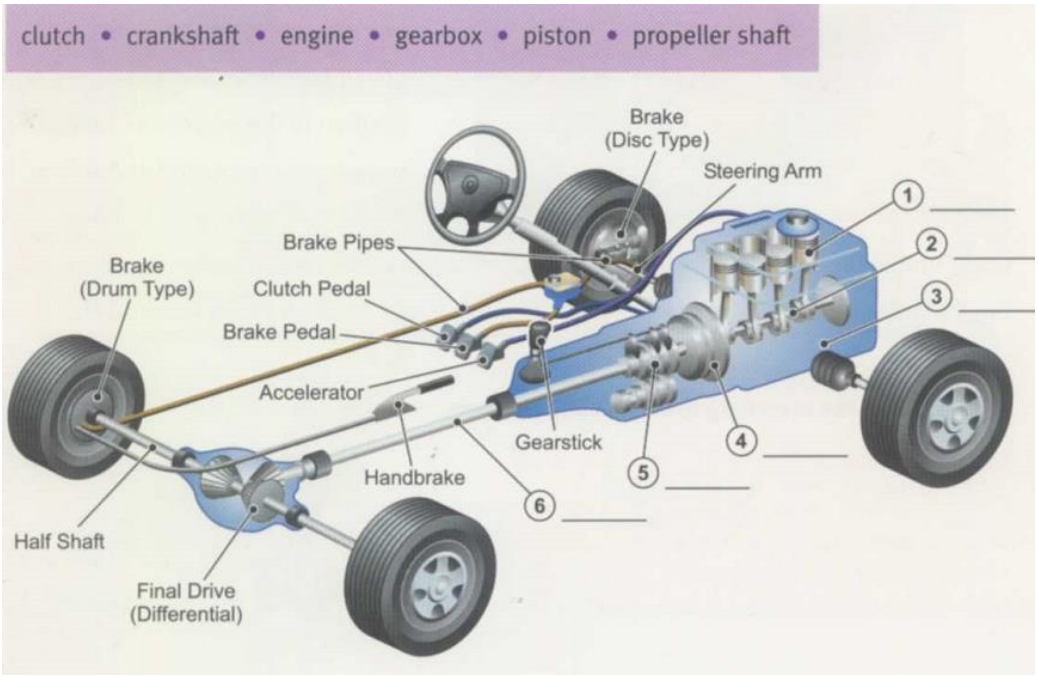
2 This protects your head and neck in an accident.
4 You operate this when you park your car to stop it from moving.
6 You can put your maps and documents in the ... *compartment*.
7 You look in the *rear-view* ... to check the traffic behind you.

Under the bonnet

clutch n. /klʌtʃ/ - the pedal that you press before you change gear (KVAČILO)
crankshaft n. /ˈkræŋkˌʃæft/ - the main shaft of an internal combustion engine (KOLENASTO VRATILO)
engine n. /ˈɛndʒɪn/ - the part of a vehicle that produces the power which makes the vehicle move (MOTOR)
gearbox n. /ˈgɪəˌbɒks/ - the system of gears in a vehicle (AmE **transmission**) (MENJAČ)
piston n. /ˈpɪstən/ - a disc or cylindrical part that slides to and fro in a hollow cylinder (KLIP)
propeller shaft n. - a shaft that transmits power from an engine to a propeller (OSOVINA ELISE)

A) Label the diagram with words from the box and translate the words in Serbian.

1 _____ 3 _____ 5 _____
2 _____ 4 _____ 6 _____



B) Look at this extract from a tour of a car factory. Complete the text with words from the box. First look at the explanation of some words:

combustion n. /kəmˈbʌstʃən/ - the process of burning (SAGOREVANJE)
torque n. /tɔːk/ - a force that causes something to spin around a central point such as an axle (OBRTNI MOMENT)
sparkplug n. /ˈspɑːkˌplʌg/ (also **sparkplug**, **sparking plug**) - a device in the engine of a motor vehicle, which produces electric sparks to make the petrol burn (SVEĆICA)
ignite v. /ɪgˈnaɪt/ - burn or cause to burn (ZAPALITI)
generate v. /ˈdʒɛnəˌreɪt/ - to produce or create (PROIZVESTI)
rear-wheel drive n. - a layout in motor vehicles which places the engine at the front and the driven wheels at the rear (POGON NA ZADNJE TOČKOVE)
four-wheel drive n. - a system used in motor vehicles in which all four wheels are connected to the source of power (POGON NA ČETIRI TOČKA)
axle n. /ˈæksəl/ - a bar or shaft on which a wheel, pair of wheels, or other rotating member revolves (OSOVINA)

clutch	combustion	crankshaft	cylinders	distribution
piston	spark plug	torque	fuel	

Now we come to the engine. The principle of the internal _____ engine has not changed in the last 100 years. The engine takes in _____ and air which is compressed in a combustion chamber. Then this mixture is ignited by a _____ to produce an explosion, which moves the _____ in the cylinder. The up and down motion of the piston in the cylinder is converted into rotational motion by the _____. The rotational force generated by the engine is known as _____. The size of the engine determines the power. The more _____ there are, the more powerful the engine. This power is transmitted through the _____, the gearbox, the propeller shaft (in rear-wheel and four-wheel drive), and the axles to the wheels. The position of the engine can vary, but generally speaking it is mounted at the front. In some sports cars, the engine is mounted at the rear (e.g. Porsche) or in the middle (e.g. Ferrari or Lamborghini) because of weight _____.

Now listen to **Track 15** to check your answers.

C) Find words in exercise B to complete the table. Use your dictionary if necessary.

Verb	Noun	Adjective
to _____	power	_____
to _____	_____	combustible
to _____	ignition	_____
to _____	_____	explosive
to _____	rotation	_____
to _____	transmission	_____

D) Now complete the sentences with the correct form of word from the table.

1. In an engine, linear motion is converted into _____ motion by the crankshaft.
2. The power of the engine is _____ through the clutch and the gearbox.
3. The spark plug _____ the air/fuel mixture and sets off an _____.
4. A 6-cylinder engine is more _____ than a 4-cylinder engine.
5. Fuel and air is compressed in the _____ chamber.

E) Match seven questions from customers with the answers given by a technical support hotline employee.

Questions:
1) Where's the windscreen washer container?
2) Do I have to wear protective clothing when I work on the battery?
3) Do I have to change the coolant in the cooling system?
4) How do I check how much brake fluid I have?
5) Do I have to go to a service station to change my brake fluid?
6) How often do I need to check the oil level?
7) Do I need to do anything with the battery?

Answers:
a) You look at the level in the reservoir.
b) The cooling system is filled once at the factory and never has to be changed.
c) Oil consumption can be up to 1.0 l/1000km so the engine oil level must be checked at regular intervals. It is a good idea to check the oil level every time you put fuel in the car.
d) Under normal conditions you don't have to do anything with the battery except check the electrolyte level occasionally.
e) You needn't go to a service station for a brake fluid change, but make sure the person who does it is competent and has the necessary tools.
f) It's the plastic rectangular container next to the power steering reservoir.
g) Battery acid is highly corrosive so you mustn't work on the battery without wearing eye protection and gloves.
Now listen to **Tracks 16-22** to check your answers.

F) Listen to **Track 23**. A potential customer is visiting the stand of a major car manufacturer at an international car show. Listen to the dialogue and put these key features in the order in which they are mentioned.

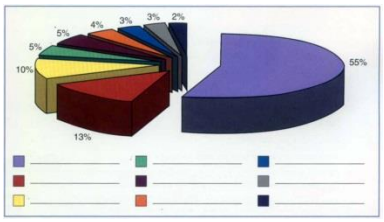
___ a) low fuel consumption
___ b) design
___ c) top speed
___ d) six-speed automatic gearbox as standard
___ e) optional extras included in the price
___ f) acceleration from 0-60 in 6 seconds
___ g) increased power of the engine

G) Now listen again and note down what these numbers refer to.
1) 4.2 _____
2) 330 _____
3) 155 _____
4) W12 and V6 _____
5) 16.1 _____
6) 23 _____
7) 54,000 _____
8) 18 _____

H) Match the two parts to make sentences from the dialogue (listen again if necessary).

1) we have increased the power	a) an effect on fuel consumption.
2) a six-speed automatic gearbox	b) with a 3.7 and a 4.2-litre petrol engine.
3) We're launching the model	c) is a six-disc CD unit with nine speakers ...
4) That naturally has	d) by 20 bhp to 330 bhp.
5) included in the price	e) then just call or email me.
6) If you have any other questions,	f) comes as standard.

Materials used in manufacturing a car



The average car is made up of a large number of different materials, as this pie chart here shows. Steel makes up by far the single largest percentage of materials, accounting for 55% of the car materials by weight. Then comes iron, with 13%. Plastics make up 10% of the car, although this percentage is naturally increasing all the time as car makers try to make vehicles lighter.

Aluminium accounts for 5% of the materials, although some cars contain much more. Some manufacturers are switching from steel to aluminium to save weight, because aluminium's so light. And new alloys mean that aluminium is now about as rigid as steel. Another advantage is that it's corrosion-resistant. It's going to be interesting to see if the popularity of aluminium continues to increase in the future.

Returning to my chart, you can see that rubber accounts for about 5% of the weight, and fluids and lubricants make up 4%. Zinc, lead and copper together account for 3%, and glass makes up 2%. All the other materials, including things like fabrics and ceramics, make up the final 3% together.

Unknown words
average adj. /ˈævərɪdʒ, ˈævrɪdʒ/ - the typical or normal amount, quality, degree, etc (PROSEČNI, SREDNJI)
chart n. /tʃɑːt/ - a sheet giving graphical or diagrammatical information (GRAFIKON, DIJAGRAM)
pie chart – a circle divided into sections to show the relative proportions of a set of things (STRUKTURNI KRUG, „PITA")
account for – consist of (SASTOJATI SE)

iron n. /'aiən/ - a malleable ductile silvery-white ferromagnetic metallic element widely used for structural and engineering purposes. Symbol: Fe (GVOŽĐE)
increase v. /ɪnˈkriːs/ - to make or become greater in size, degree, frequency, etc (UVEĆATI)
vehicle n. /'viːikᵊl/ - a device or structure for transporting persons or things (VOZILO)
light adj. /laɪt/ - not great in weight, amount, or intensity (LAK, LAGAN)
alloy n. /'æloi; ə'loi/ - a mixture of two or more metals (LEGURA)
rigid adj. /ˈrɪdʒɪd/ - not bending; physically inflexible or stiff (KRUT)
advantage n. /ədˈvɑːntɪdʒ/ - superior or more favourable position (PREDNOST)
lubricant n. /ˈluːbrɪkənt/ - a lubricating substance, such as oil (MAZIVO, ULJE)
fabric n. /'fæbrik/ - any cloth made from yarn or fibres by weaving, knitting, etc (TKANINA)

I) Which materials are most used in manufacturing a car? Listen to the presentation by a car manufacturer and put them in the right order (**Track 26).**

iron	rubber	aluminium	steel	glass
zinc, lead and copper	plastics	fluids and lubricants	other	

1st _____
2nd _____
3rd _____
4th _____
5th _____
6th _____
7th _____
8th _____
9th _____

J) Complete the sentences about materials and their properties with words from the box. First read the explanation of some words:

shatter v. /ˈʃætə/ - to break or be broken into many small pieces (RAZBITI, RASPRSNUTI)
shatterproof adj. /ʃætərˌpruːf/ - made to resist shattering (NEPROBOJAN)
flammable adj. /ˈflæməbᵊl/ - liable to catch fire; inflammable (ZAPALJIV)
malleable adj. /'mæliəbᵊl/ - able to be shaped under pressure without breaking (KOVAN, KOVLJIV)

shatterproof	light	durable	elastic	natural
rigid	flammable	malleable	heat-resistant	corrosion-resistant

1. Wood is very often used in interiors because it looks _____ and warm.
2. Aluminium and magnesium are important for car makers because they are _____ and therefore good for weight-saving.
3. Safety regulations require that the foam used in car seats shouldn't be _____.
4. Rubber should be able to withstand great temperature differences while staying _____. In other words, it shouldn't become brittle.
5. Windscreens are made of a special _____ glass to protect drivers in accidents.
6. Fabrics used in cars need to be _____ and not look old too quickly.
7. Steel is used for load-bearing parts because it is _____.
8. Sheet metal is used for large car parts because it is _____ and dent-resistant.
9. Ceramic, which is _____, is used in the catalytic converter because of the very high temperatures.
10. Aluminium is ideal for bumpers and other body parts because it is _____.

Safe driving on highways

Traffic in city and suburban areas is usually congested. When you get out on the open road, driving looks easy and carefree. But it is of interest to note that three times the number of fatal accidents take place on rural highways compared to urban districts.

Driving on the open road presents a number of serious problems. Of course, the chief reasons why there are more accidents on rural highways are that there is far more mileage on these roads than on city streets and that speeds are far greater. It is a fact, not too surprising, that more major accidents take place on straight roads than on those that are winding or hilly. The immediate explanation is that there are far more miles of straight roads than winding or hilly ones. It has also been found that straight road seems to demand less attention and results in drivers being less alert. Today, road engineers are doing everything they can to reduce the number of curves and decrease the grade over hills. However, in order to break the monotony of long, uniform stretches of the road, some are now building distractions of various types into the new highways.

A large number of the accidents that take place on rural highways are rear-end and head-end collisions. There is a tendency for drivers to follow the car in front too closely. Most traffic regulations recommend that you allow a minimum following distance of one car length for every ten miles per hour of speed.

Naturally, when the weather is bad and the roads are slippery from rain, snow or ice, one should allow a greater following distance. Some traffic authorities recommend that the following distance should be two or more car lengths for each ten miles of speed. If you follow this rule, you may find other cars passing you and getting between you and the car ahead. Some of these drivers are the ones that are so frequently involved in rear-end collisions.

Unknown words

highway n. /'hai,wei/ - a public road that all may use (PUT, DRUM)
suburban adj. /sə'bɜ:bᵊn/ - of, relating to, situated in, or inhabiting a suburb (PERIFERNI, PRIGRADSKI)
area n. /'eəriə/ - region; district (OBLAST, REGION, OKRUG)
congested adj. /kən'dʒestid/ - crowded to excess; overfull (ZAGUŠEN, ZAKRČEN)
fatal accident n. /'feitᵊl 'æksidənt/ - an accident that causes someone to die (SAOBRAĆAJNA NEZGODA SA SMRTNIM ISHODOM)
rural adj. /'ruərəl/ - of, relating to, or characteristic of the country or country life (SEOSKI)
urban adj. /'ɜ:bᵊn/ - of, relating to, or constituting a city or town (GRADSKI)
district n. /ˈdɪstrɪkt/ - region; area (OBLAST, REGION, OKRUG)
mileage n. (=**milage**) /ˈmaɪlɪdʒ/ - a distance expressed in miles (PREĐENA KILOMETRAŽA)
major adj. /ˈmeɪdʒə/ - very serious or significant (OZBILJAN, TEŽAK)
winding adj. /ˈwaɪndɪŋ/ - a curving course or movement (KRIVUDAV, PUN KRIVINA)
hilly adj. /ˈhɪli/ - characterized by hills (BRDOVIT, NA UZVIŠENJU)
immediate adj. /ɪˈmiːdɪət/ - without delay; direct in effect (DIREKTAN, NEPOSREDAN)
alert adj. /əˈlɜːt/ - vigilantly attentive (OPREZAN, PAŽLJIV)
curve n. /kɜːv/ - a smooth, gradually bending line (KRIVINA)
decrease v. /dɪˈkriːs/ - to diminish in size, number, strength, etc (SMANJITI)
grade n. /greɪd/ - inclination (NAGIB)
uniform adj. /ˈjuːnɪˌfɔːm/ - identical; alike or like (IDENTIČAN, SLIČAN)
stretch n. /strɛtʃ/ - a length or area of road, water, or land (DEONICA PUTA)
distraction n. /dɪˈstrækʃən/ - something that serves as a diversion or entertainment (ODVRAĆANJE, DISTRAKCIJA)
rear-end n. /ˌrɪərˈɛnd/ - the rear part (ZADNJI DEO)
collision n. /kəˈlɪʒən/ - a violent impact of moving objects; crash (SUDAR)
slippery adj. /ˈslɪpərɪ/ - causing objects to slip (KLIZAV)
ahead adv. /əˈhɛd/ - in the front (ISPRED)

A) Match the terms and definitions.

1. hit-and-run accident	A) an accident wherein a vehicle crashes into the vehicle in front of it
2. road departure	B) an accident that results in physical damage or hurt
3. congestion (girdlock)	C) a person who is injured or killed in an accident
4. chain collision	D) a traffic collision where the front ends of vehicles hit each other
5. side collision	E) a violent impact of moving objects; crash
6. head-on collision	F) an accident that causes someone to die
7. rollover	G) a vehicle crash where the side of one or more vehicles is impacted
8. injury accident	H) a type of vehicle accident in which a vehicle tips over onto its side or roof
9. casualty	I) the act of causing a traffic accident and failing to stop and identify oneself afterwards
10. collision	J) the state of being overcrowded with traffic
11. fatal accident	K) a road traffic accident involving several vehicles
12. rear-end collision	L) a type of single-vehicle collision that occurs when a vehicle leaves the roadway

_____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____.

B) Match the synonyms:

1. collision	a. freeway
2. jam	b. ring road
3. casualties	c. circle
4. highway	d. turnpike
5. pavement	e. curve
6. transport	f. congestion
7. carriageway	g. victims
8. expressway	h. crash
9. bend	i. transportation
10. toll road	j. footpath
11. bypass	k. road
12. rotary	l. roadway

C) Complete the chart with the appropriate word:

NOUN	VERB
congestion	_____
_____	drive
explanation	_____
_____	reduce
decrease	_____
_____	distract
collision	_____
_____	regulate
recommendation	_____

NOUN	ADJECTIVE
suburb	_____
_____	carefree
seriousness	_____
_____	surprising
problem	_____
_____	distant
hill	_____
_____	long
monotony	_____

D) Fill in the text by using only one word per gap.

prohibitory	informative	obeying	warn	injured	conditions

Millions of people are killed or _____ in traffic accidents each year. Drivers and pedestrians can reduce the number of accidents by watching and _____ traffic control signs, signals, and pavement markings.

Traffic control devices are often used to inform the driver of various _____ on the roads. These can be divided into categories. Regulatory devices may be either _____ (no entry, speed limit, no waiting) or mandatory (stop, keep, right, yield). Warning devices are used to _____ the drivers of hazardous conditions, unusual traffic movements, or special local

conditions (children playing, junctions, slippery road). A final group is that of _____ devices giving route and other information (destinations, parking and service areas, information offices).

E) Write the comparative or the superlative form of the adjective in brackets.

Bicycle is _____ (good) solution for urban travel. Although the car is _____ (fast), _____ (comfortable), and _____ (reliable) than the bicycle, it is _____ (expensive) and _____ (difficult) to drive in heavy traffic, and _____ (inconvenient) to park. Bicycle is _____ (cheap) mode of transport. It is also _____ (suitable) and _____ (enjoyable) means of recreation, as well as _____ (convenient) means of transportation for short distances.

F) Answer the questions.

1. Is traffic in large cities congested?
2. What does driving look like on open roads?
3. Which roads demand more attention?
4. Are there more fatal accidents on city streets or on open roads?
5. Why are there more accidents on straight roads than on winding or hilly roads?
6. Do road engineers try to reduce the number of curves and gradient of hilly roads?
7. What kinds of accidents are there?
8. What following distance do traffic authorities recommend for: a) good weather, b) bad weather?
9. How many kilometers are there in a mile?

G) True or false?

1. Traffic in urban areas is never congested. T / F
2. Driving on the open road looks easy and carefree. T / F
3. There are more fatal accidents on urban highways than on rural highways. T / F
4. More major accidents take place on straight roads than on winding or hilly ones. T / F
5. Road engineers increase the number of curves on new highways. T / F
6. Generally speaking, drivers do not tend to follow the car in front too closely. T / F
7. A minimum following distance should be one car length for every 10mph. T / F
8. If the weather is bad, drivers should make a shorter following distance. T / F

GRAMMAR CORNER
PASSIVE VOICE

Passive voice is formed as follows:

Appropriate tense of BE + Past Participle of main verb		
	ACTIVE	**PASSIVE**
	(to) do	(to) be done
Present Simple:	He does it.	It is done.
Present Continuous:	He is doing it.	It is being done.
Past Simple:	He did it.	It was done.
Past Continuous:	He was doing it.	It was being done.
Present Perfect:	He has done it.	It has been done.
Past Perfect:	He had done it.	It had been done.
Future Simple:	He will do it.	It will be done.
GOING TO:	He is going to do it.	It is going to be done.
MODAL VERBS:	He can/may/must do it.	It can/may/must be done.

1. The passive voice is used when the main interest is in the verb activity and the person doing the action is unknown, unimportant or understood: ⇒ Excursions **are organized** to nearby beauty spots.

2. If the agent responsible for the action is necessary to make the meaning clear, it follows the verb with ***by***: Excursions **are organized by** travel agencies.

3. The only continuous tenses commonly found in the passive voice are the Present and Past Continuous:
Present Continuous tense
Active: The police **are searching** every car for smuggled drugs.
Passive: Every car **is being searched** for smuggled drugs.
Past Continuous tense
Active: The police **were searching** every car for smuggled drugs.
Passive: Every car **was being searched** for smuggled drugs.

4. The infinitive in the passive voice
Passive forms:

Present infinitive	Perfect infinitive
(to) BE + past participle	(to) HAVE BEEN + past participle

Active		Passive
We can **do** it today.	→	It can **be done** today.
They must **try** it tomorrow.	→	It must **be tried** tomorrow.
They could **have done** it yesterday.	→	It could **have been done** yesterday.
They must **have tried** it last week.	→	It must **have been tried** last week.

5. Sentences beginning "They say" or "People say" are often expressed in the passive form:
Active: They say (or People say) that he is very talented.
Passive: 1. It **is said** that he is very talented.
2. He **is said** to be very talented.
Other verbs which can take this passive construction are: **think, feel, expect, know, believe, understand, consider, find, report, suppose:**
Everybody knows that this young man is very clever.
It **is known** that this young man is very clever.
This young man **is known** to be very clever.

If the idea refers to an earlier state or action, then the perfect infinitive is used:
He **is known to have improved** the computer system.
With some verbs (**say, think, understand, believe, feel, report, presume**) the passive form is possible with **there** as a ‘’preparatory subject’’:

There are thought to be hundreds of volcanoes in the world. (=It is thought that there are hundreds of volcanoes in the world.)
There was said to be a misunderstanding between the manager and the employers. (=It was said that there was a misunderstanding between the manager and the employers.)

PARTICIPLES

There are six participle forms:

	Active	**Passive**
Present	taking	being taken
Past	taken	taken
Perfect	having taken	having been taken

Participles are used:

1. In **verb forms**:

a) the Present Participle in the continuous tenses: ⇒ *he is **sitting,** they were **running***

b) the Past Participle in the perfect tenses and passive voice: ⇒ *he has **left,** it was **broken***

2. As **adjectives** referring to a temporary or permanent condition or quality (Present Participle) or a resulting situation (Past Participle):

a) attributively, i.e. before a noun:
*It was an **exciting** film.*
*The **excited** children cheered and applauded*.

b) predicatively, i.e. as part of the predicate:
*The film was very **exciting**.*
*The children at the circus were very **excited***.

c) with another element:
*He's very **good-looking**.*
*A model should be **well-dressed***.

3. To **shorten relative clauses and clauses of time**:
Present Continuous (active)
*The boy **who was standing** there is my brother.*
*The boy **standing** there is my brother*.
Present Simple (passive)
*The film **that is being shown** at the Odeon is a hit.*
*The film **being shown** at the Odeon is a hit.*
Past Perfect or Simple Past (previous action)
***After he had made** a few phone calls, he started surfing on his computer.*
***Having made** a few phone calls, he started surfing on his computer*.

4. In the "**absolute participle**" construction, i.e. a participial clause in which the participle does not refer to the subject of the main clause but has its own subject:
***The holidays being over**, we must get back to our studies.*
***Our homework done**, we decided to have a snack*.

5. In the HAVE + object + PAST PARTICIPLE construction:
*Brenda **had her skirt cleaned** last weekend.*

GERUNDS

The gerund may have four forms:

	Active	**Passive**
Present	taking	being taken
Perfect	having taken	having been taken

The gerund can be used:

1. as the subject of a sentence:
Swimming is a good exercise.
Sunbathing can be sometimes dangerous.

2. as the object of a sentence:
   I enjoy **swimming**.
   Did you finish your **reading**?

3. after phrasal verbs:
   He **gave up** smoking.

4. after ***go*** with verbs denoting physical activity:
   I'm **going jogging / sailing / fishing**.
5. after prepositions:
   I apologize **for being** late.
   She succeeded **in passing** all her exams.

6. after the expressions:

can't stand, can't help, it's no use, it's no good, be used to, be accustomed to, be fed up with, there is no point in, look forward to, feel like, there is no, there was no, can't bear

7. with the possessive adjective or object form of a personal pronoun:
   I don't mind **his / him using** my dictionary.

8. after the adjectives **busy** and **worth**:
   He is **busy making** telephone calls.
   Is the film **worth seeing**?

9. for actions that are prohibited:
   No parking **No smoking** **Talking** is not allowed.

10. after **do the** referring to jobs:
    Who **does the cooking** in your house?

INFINITIVES

The infinitive has six forms:

	Active	**Passive**
Present Simple	(to) take	(to) be taken
Present Continuous	(to) be taking	/
Perfect Simple	(to) have taken	(to) have been taken
Perfect Continuous	(to) have been taking	/

The infinitive can be used:
1. as the subject of a sentence:
   To explain *would simply be a waste of time.*
   To be invited *there is a great honour*.

2. as the object of a sentence:
   She hoped ***to come****.*
   He wanted ***to be informed*** *in time*.

The infinitive with TO

An infinitive appears with TO:
1. after certain verbs, adjectives and question words:
   They didn't ***intend to come****.*
   She was ***glad to see*** *you.*
   I didn't know ***what to do***.

2. after ordinal numbers, and also after ***the last*** and ***the next***:
   He was ***the first to come****.*
   I was ***the last person to see him***.

3. after certain adjectives used with ***too*** or ***enough***:
   *She is **too tired to go**.*
   *He is **smart enough to pass***.

4. after certain verbs followed by a noun or a pronoun object:
   *I **told the boy to leave**.*
   *He **wants me to go***.

5. in the construction ***for + object + infinitive***:
   *It's hard **for me to understand** this question.*

6. to express purpose:
   *He gets up early **to (in order to, so as to)** be on time.*
   *He walked faster **in order not to** (**so as not to**) be late.*

7. after some forms of **be** when referring to an arrangement or command:
   *There **is to be** a meeting at ten.*
   *The conference **was to begin** immediately.*
   *You **are to wait**. That is an order*.

8. after **be + about to** when expressing the near future:
   *The fireworks **are about to explode**.*

<u>The infinitive without TO (bare infinitive)</u>

Bare infinitive is used:

1. after modals:
   *The students **can speak** English fluently.*
   *Why **couldn't** you **do** it alone?*
   *He **may get** a job.*
   *Do you think she **might be** ill?*
   ***Must** you **go** now?*
   ***Shall** I **bring** your coat?*
   *You **should drive** more carefully.*
   *It **would be** very kind of you.*
   *He **needn't go** to the chemist's now.*
   *How **dare** he **come** here again?*

2. after verbs denoting physical perceptions (see, hear, feel, notice, watch)
   *Did you **see** them **leave** the room?*
   *I **heard** him **say** that.*
   *He suddenly **felt** her mother's arm **tremble**.*
   *Have you **noticed** anybody **stop** over there?*
   ***Watch** that child **jump**!*

3. after verbs **let** and **make**:
   *She won't **let** us **go** downtown.*
   *He **made** us **do** it.*

*Note: The verbs ***make*** and ***let*** take *to infinitive* in the passive.

They made us go.	*We were made to go.*
She let them stay.	*They were let to stay*.

4. after **would rather, had better, had sooner**:
   *I **would rather have** some tea. = I'**d rather have** some tea.*
   *We **had better buy** some bread. = We'**d better buy** some bread.*
   *I **had sooner die** than do it. = I'**d sooner die** than do it.*

PERFECT INFINITIVE

The perfect infinitive indicates that the activity it denotes preceded the action expressed by the finite verb of the sentence:

*I am very pleased **to have met** you.*
*I am sorry **not to have been** at your party.*
*I believe it **to have been** a mistake.*
*He seemed **to have understood** the problem and difficulties.*
*He is said **to have been** with friends when he was taken ill.*
*He was said **to have been rewarded** for his discoveries.*

The construction ***defective verb + infinitive perfect*** expresses an unrealised past activity or indicates a supposition referring to the past.

*Be careful, you **could have hurt** yourself!*
*She **could have asked** me.*
*You **ought to have written** this essay last week.*
*The grass is very wet; it **must have been raining** last night.*
*She left late; she **may not have caught** the 9 o'clock bus.*
*She **might have needed** help there.*

CONDITIONAL SENTENCES

TYPE 1 conditionals are called real conditions because they describe something that may be true, the result of possible circumstances.

if + subject + Simple Present Tense, subject + will (can/may/must/imperative/Simple Present tense) + infinitive

*If it **snows**, I**'ll wear** my boots.*

- When the condition (**if** clause) seems less likely, or you want to be more polite, **should** can be used:

*If it **should** snow, I'll wear my boots.*

- If is frequently omitted:

***Should it snow**, I'll wear my boots.*

- Clauses beginning with **unless** (**if...not**) are a kind of conditional. **Unless** is stronger than **if...not**, almost a kind of threat. Notice that the main clause is often in the negative:

*I won't write **unless** you write first.*

TYPE 2 conditionals are called potential conditions because they describe something that is possible, but not probable, the result of unlikely circumstances.

if + subject + Simple Past tense..., subject + **would (should, could, might)** + infinitive...

*If I **had** more time, I **would stay** and **finish** the exercises.*

TYPE 3 conditionals are called unreal conditions because they describe something that never happened, the result of circumstances that never existed.

if + subject + Past Perfect tense ..., subject + **would (should, could, might)** + Perfect Infinitive...

*If he **had** only **tried**, he **would have succeeded.***

- In a literary style, **if** can be omitted from the condition: Had + subject + Past Participle...

Had he only tried, he would have succeeded.
Had they known, they never would have made such a mistake.

- Conditionals can be introduced with other conjunctions besides if: **even if, on (the) condition that, provided that, providing that, suppose, supposing**:

***Even if** we had hurried, we wouldn't have been on time.*

SUBJUNCTIVE - Wishful thinking about present, past and future

Subjunctive is used in clauses expressing imaginary situations or wishes – what we sometimes call wishful thinking. It is used after **wish, I'd rather (=would rather), I'd sooner (=would sooner), if, if only, as if, as though, supposing, suppose, it's (high) time, it's about time.**

Simple Past Tense for present time:

*I wish I **knew** him better.* (But I don't).
*Supposing we **agreed**! What would happen then?*
*I'd rather he **left** now.*
*It's high time we **got back** to work!*

Past Perfect Tense for past time:

*I wish I **had known** him better.* (But I didn't).
*If only he **had spoken** to me!* (But he didn't.)
*They acted as if they **had done** something wrong*.

would + infinitive for future time:

*I wish you **would come** on time.* (But you probably won't.)
*If only the rain **would stop**!*

REPORTED SPEECH

When we report what someone else said, we can do it in three ways:

1. We can repeat the exact words using inverted commas (" ", or ' '):
   She said: "I am very interested in working for IBM."
   He said: 'We buy and sell shares in the open market.'

2. We can use a reporting verb in the present or future tense. In this case there is **no change of tense** in the words reported (there is only the necessary change of pronoun)
   She says that she is very interested in working for IBM.
   He says that they buy and sell shares in the open market.

3. We can use a reporting verb in the past tense and change the tense. When the reporting verb is in a past tense, all the verbs in direct speech are changed to their corresponding past form. There may also be non-verb changes (tomorrow – the next day, etc.):
   She said that she was very interested in working for IBM.
   He said that they bought and sold shares in the open market.

REPORTED COMMANDS AND REQUESTS

Reported command comprises:

MAIN CLAUSE	+	OBJECT PRONOUN	+	infinitive with TO
↓		↓		↓
He asked		them		to accept his offer.

REPORTED STATEMENTS

Reported statement comprises:

MAIN CLAUSE	+	SUBORDINATE clause
↓		↓
He says		that he has to pay extra for phone calls.

When reporting statements tense changes when we use reporting verb in the past tense:

Present Simple Tense	→	Past Simple Tense
"I work for IBM."		She said that she worked for IBM.

Present Continuous Tense ”I am working for IBM.”	→	Past Continuous Tense She said that she was working for IBM.
Past Simple Tense ”I worked for IBM.”	→	Past Perfect Tense She said that she had worked for IBM.
Past Continuous Tense ”I was working for IBM.”	→	Past Perfect Continuous Tense She said that she had been working for IBM.
Present Perfect Tense ”I have worked for IBM.”	→	Past Perfect Tense She said that she had worked for IBM.
Future Simple Tense ”I will fork for IMB”.	→	Future in the Past She said that she would work for IBM.
May/Can ”I may work for IBM.” ”I can work for IBM.”	→	Might/Could She said that she might work for IBM. She said that she could work for IBM.

Conditional I → Conditional II
”If I work for IBM, I will be soon promoted.”
She said that if she worked for IBM, she would be soon promoted.

Conditional II → Conditional III
”If I worked for IBM, I would be soon promoted.” →
She said that if she had worked for IBM, she would have been soon promoted.

We do not change The Past Perfect.
”I had never been to Sweden before.” → She said that she had never been to Sweden before.

We do not change Conditional III.
”If you had been late once again, you would have lost your job.” →
The director told me that if I had been late once again, I would have lost my job.

Unreal past tenses (subjunctives) after **wish**, **would rather**, **would sooner** and **it is time** do not change:
‘We wish we didn’t have to take exams,’ said the children. → The children said they wished they didn’t have to take exams.
‘It’s time we began planning our holidays,’ he said. → He said that it was time they began planning their holidays.

REPORTED QUESTIONS

Reported question comprises:

MAIN CLAUSE + question word or IF/WHETHER + SUBORDINATE CLAUSE

They asked me	when	I would know my decision.
I asked her	if/whether	she was feeling tired.

There are two types of direct questions: **wh**-questions and **yes/no** questions:

In reported wh-questions, we use the wh-question word, i.e. **who, where, which, why, when, what, how, how much**, etc. but the interrogative form of the verb changes to the affirmative form. The question mark (?) is therefore omitted in indirect questions.

‘’When will the meeting start?’’ → She wanted to know when the meeting would start.

‘’Where is she going?’’ → He asked us where she was going.
‘’How old are you?’’ → They asked her how old she was.
‘’What have you got in the bag?’’ → We asked them what they had got in the bag.

If there is no question word, i.e. in yes/no questions, **if** or **whether** must be used (**if** is the more usual):
‘’Is anyone there?’’ he asked. → He asked if/whether anyone was there.
‘’Do you know Bill?’’ → He asked if/whether I knew Bill.
‘’Did you see the accident?’’ the policeman asked. → The policeman asked if/whether I had seen the accident.
‘’Have you met our General Manager?’’ → She asked me if I had met their General Manager.

Whether is neater if the question contains a conditional clause as otherwise there would be two **ifs**:
If you get the job will you move to York? Bill asked. → Bill asked whether, if I got the job, I’d move to York.

COMPARISON OF ADJECTIVES

Regular comparison

Positive	Comparative	Superlative
high	higher	(the) highest
big	bigger	(the) biggest
early	earlier	(the) earliest
efficient	more efficient	(the) most efficient
reliable	more reliable	(the) most reliable

Irregular comparison

Positive	Comparative	Superlative
good	better	(the) best
bad	worse	(the) worst
little	less	(the) least
much/many	more	(the) most
far	farther/further	(the) farthest/furthest

CAUSATIVE HAVE

Have/get something done = have/get + object + Past Participle.
Causative HAVE is used to talk about services that you arrange to be done for you.

Notice the difference in meaning between these three sentences.

1. I repaired my bicycle. = I repaired it myself.
2. My bicycle was repaired. = Someone repaired it. We are not interested who.
3. I had my bicycle repaired. = I arranged/paid for someone to repair it for me.

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