Shapes

One dimensional

- A point
- A straight line
- A vertical line
- A curved line
- A horizontal line
- An angle
- A diagonal line
- Parallel lines
Shapes

Which of these letters are described below?
D, M, C, H, F, L, Z, B

A letter with 2 horizontal line and 1 vertical line (F)
A letter with 1 curved line and no straight lines (C)
Geometrical symbols

Two dimensional shapes
- A circle
- A square
- A rectangle
- A triangle
- A semi-circle

Three dimensional shapes
- A sphere
- A hemisphere
- A cube
- A rectangular prism
- A cone
- A cylinder
- A sphere
Mathematical symbols

=  the equals sign
+  the plus sign
-  the minus line
x  the multiplication sign
/  the division sign
Π  Pi (3.14159)
>  strict inequality (greater than)
<  strict inequality (less than)
[]  brackets
    Square root
    cube root
%  percent
Shapes

The cross-section of a cylinder is circular. The longitudinal section is rectangular. The sides of cylinder are parallel. The sides of a cone are tapering.

a) What shape is the cross-section of a sphere?
b) What shape is the longitudinal section of a hemisphere?
c) What shape is the cross-section of a cube?
d) Which solid is rectangular in cross-section?
e) In longitudinal section, are the sides of a cylinder parallel or tapering?
Shapes

Now describe the shapes of these objects:

Example: A ball is spherical in shape.

- a ball
- a test-tube
- a funnel
- a flask
- a salt crystal

- an egg
- a star
- a disc
- a bell
- a kidney

This tube is shaped like the letter ‘U’. It is U-shaped.

- wing
- door
- body
- tail
- front windows
- side windows
- engines
- nose
- frame
- steps
- wheels
- tail-plane
The bottom of the flask is ........ in shape. The flask is in a ............ position. The gas jar is ............ in shape. The burner is also ............ The flame is ............ The hole at the bottom of the gas jar is ............ in shape. The top of the tripod is ............ In cross section, the tube is ..............
Properties of the materials

Ice – water – steam

Boiling point – melting point

Freezing point – point of condensation

Ice is solid. Water is liquid. Steam is gaseous. Steam and water are fluids.

A brittle materials breaks easily; eg glass, ...

A tough material does not break easily; eg steel,...

A hard material is difficult to scratch; eg glass,

A soft material is easy to scratch; eg chalk

A flexible material bends easily; eg rubber

A rigid material does not bend easily; eg concrete, ...
Properties of the materials

Why does a glass breaker break if you drop it?
Why doesn’t a polythene breaker break?
Why is butter easy to cut?
Why can a diamond cut glass?
Why do the branches of a tree bend in the wind?
Which is more flexible: a wooden ruler or a plastic ruler?
Why are the different properties of green wood (on a tree) and dry wood?
Properties of the materials

Some materials have a smooth surface; they produce little friction when they are rubbed; eg ice,

Some materials have a rough surface and they produce a lot of friction; eg sandpaper,

Materials which are soluble in water dissolve easily; eg salt

Materials which are insoluble do not dissolve; eg glass,

You can see through transparent materials, eg water

You cannot see through translucent materials but the light though them, eg dirty water

You cannot see through opaque materials and the light cannot pass through them; eg metal,
Reading

A substance may be an element, a compound or a mixture. An element, such as nitrogen or iron, cannot be broken down into simpler substances. When two or more elements combine, they form a compound.

When elements combine to form compounds, there is a chemical reaction. Some properties of the elements change during the chemical reaction. For example, the element chlorine (Cl) is a poisonous yellow gas. Sodium (Na), on the other hand, is a soft silvery-white metal which reacts violently with water. However, if these elements combine, they form sodium chloride, or salt. This is a harmless white substance.

When substances are mixed without a chemical reaction, they do not change their properties. Thus a mixture of sand and salt is yellow white in colour. It tastes both salty and gritty. If we put the mixture in water, the salt is dissolve, because it is soluble. But the sand will not dissolve.

Every substance has a melting point and boiling point. The former is the temperature at which it changes from solid to liquid. The latter is the temperature at which it changes from liquid to gas. These changes are called changes of states. Sometimes the properties of a substance change when it changes its state. For example, if the temperature of oxygen falls below -183 C, it changes from a colourless gas to a bluish liquid, which is highly magnetic.
Functions in human body

- **brain** (controls the nervous system)
- **eyes** (for seeing)
- **nose** (for smelling)
- **mouth** (for eating and speaking)
- **lungs** (for breathing, oxygenate the blood)
- **heart** (pumps the blood)
- **liver** (stores glycogen)
- **stomach** (digests protein)
- **nerves** (conduct impulses from the brain)
- **legs** (support the body)
The human body is made up of a number of different systems. Each system has a separate function, but some work together. One system is the skeleton, which serves to support the body and protect the internal organs. The respiratory system enables us to breathe and take oxygen into the blood, which moves around the body by means of the circulatory system. The digestive system enables us to take in food needed for growth. Waste matter is ejected from the body by means of the urinary system.

The endocrine system consists of various glands, such as the thyroid, sex and adrenal glands. The function of these glands is to secrete chemicals, known as hormones, into the blood. These hormones control various processes in the body, such as growth, sexual activities and digestion. The nervous system controls the other systems and enables human beings to think.

Each system is made up of organs. The lungs, for example, are part of the respiratory system. The heart is an organ in the circulatory system. The liver functions as part of the digestive system and other systems.

Every organ is composed of several kinds of tissue. Epithelial tissue, which includes the skin, forms a covering over organs. Connective tissue supports and holds together parts of the body and includes bone and cartilages. Other types of tissue include nerve tissue and blood tissue.

All tissue consists of cells. These are so small that they are measured in thousandths of a millimeter and can only be seen with a microscope. Each cell is covered with a thin membrane which surrounds a nucleus, and a jelly like substance, called cytoplasm. This in turn contains minute particles, each with its own special function.
Usual Mistakes Writing in English

Four groups
Misnomers and false friends
Common grammatical mistakes
Common spelling mistakes
Common pronunciation mistakes
Misnomers and false friends

For example, about the term of *graft* versus *host disease*.

The translation of *host* has not been correct in some romance languages, and in Spanish the term *host*, which in this context means *recipient* has been translated *huesped* which means *person staying in another house*.

Many Spanish medical students and patients have problems understanding this disease because of the terminolgy used. Taking into account that what actually happens is that *the graft reacts against the recipient*, if the disiase had been named graft versus recipient disiase, the concept would probably be more precisely conveyed.
Common Grammatical Mistakes

The biology seminar will be held in the university library in the third floor.

You cannot go in to the the radioactive room while an experiment is in progress.

The complex binds to the 5 end of a mRNA molecule.

The chairman of biology came from an university hospital.

A 22 years old man presenting ...

There was not biopsy of the tissue.

It allows to distinguish between ...

The behaviour of the labeled cells was visualized by in stu hybridisation.

Would you tell me where is the IR suite?
Common Grammatical Mistakes

Most of the times hemangiomas ...
I look forward to hear from you.
Best regards.
A Unique metastases was seen in the liver of mice treated with the monoclonal antibodies.
Multiple metastasis were seen in the brain. (prostheses, prosthesis)
An European expert on stem cells chaired the session.
The lab meeting began a hour ago.
The senior technician operates on the confocal microscope for everyone in the lab.
Tissue was sectioned on the coronal plane into 0.5 mm thich slices using a vibratome.
Common Grammatical Mistakes

The research institute personnel are very kind.

Page to the veterinarian in charge of the animal facility.

She works in the neuroradiology division.
Common Spelling Mistakes

Parallel – Paralell
Appearence – apperance
Sagittal – saggital
Dura mater – dura matter
Arrhythmia – arrhytmia
Professor – proffesor
Professional - proffesional
Occasion – ocassion
Accommodate - acommodate
Common Spelling Mistakes

- Resection – ressection
- Subtraction – substraction
- Acquisition – adquisition
- Reference – referance
- Acquire – adquiere
- Misspell – mispell
- Exceed – exxede
- Argument – arguement
- A lot – allot
Common Spelling Mistakes

Neurogenesis – neurogenisis
Confocal imaging – confocol imaging
Acceptable - aceptable
Writing a Manuscript

English is not just the global language of science; it is virtually its only language.

Science is not really science until published (written – peer reviewed – published).

As a biomedical scientist you must be able to effectively write your research in English.
Preliminary Work

When you have a subject that you want to report, first of all you need to look up references. You can refer to the Index Medicus (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed) to search for articles. Once you have found them, read them thoroughly and underline those sentences or paragraphs that you think you might quote in your article.

As mentioned earlier, our advice is not to write the paper in your own language and then translate it into English; instead, write in English directly. In order to do so, pick up, either out of these references, or out of the journal in which you want your work to be published, the article that you find closest to the type of study that you want to report.

Although you must follow the instructions of the journal to which you want to send the paper, here we use a standard form that may be adequate for most of them. In each section, we give you a few examples just to show how you can get them from other articles.