

Animal Cells

1. Animal cells contain a number of different structures.

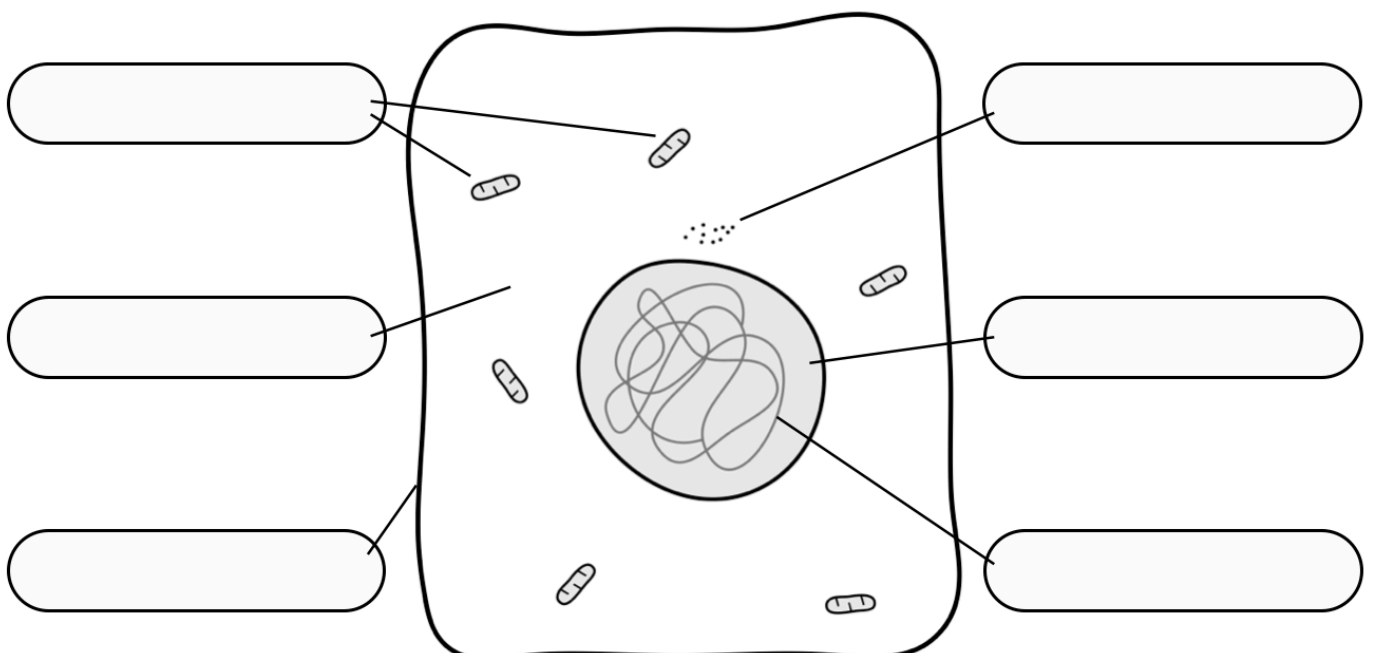
Complete the following paragraph using the words below.

proteins cytoplasm eukaryotic mitochondria nucleus molecules

Animal cells are _____. This means that their genetic material (DNA) is enclosed in a _____. The whole cell is enclosed within a cell membrane which controls which _____ can enter and leave the cell. The _____ is a watery solution where chemical reactions take place (for example the first stage of respiration). Animal cells also contain mitochondria and ribosomes. Aerobic respiration takes place in _____. Ribosomes are where _____ are synthesised.

2. Suggest why ribosomes cannot be seen with a light microscope.

3. The diagram below shows a general animal cell. Label the different structures in the cell.



4. You could be expected to compare the relative sizes of different parts of cells.

a. Use a ruler to measure the diameter of the nucleus in mm.

Diameter of nucleus = _____ mm

b. Now use a ruler to measure the length of a mitochondrion in mm.

Length of mitochondrion = _____ mm

c. How many times larger is the nucleus compared to a mitochondrion?

d. In an animal cell the diameter of the nucleus is around 10 μm .

Using your answer to question c, calculate the actual length of a mitochondrion in μm .

e. We can express the sizes of cells using standard form.

The size of the nucleus is given below. Write the size of the mitochondrion.

Size of nucleus = 1×10^{-5} m

Size of mitochondrion = m

5. Draw a line from each part of a cell to the correct function.

Nucleus

This controls the molecules that enter and leave the cell.

Cell membrane

These are where proteins are synthesised in the cell.

Cytoplasm

These are where aerobic respiration takes place in the cell.

Ribosomes

This is found in eukaryotic cells and contains the genetic material (DNA) of the cell.

Mitochondria

This is a watery solution where chemical reactions take place.