

0 2

Genetic material is made of DNA.

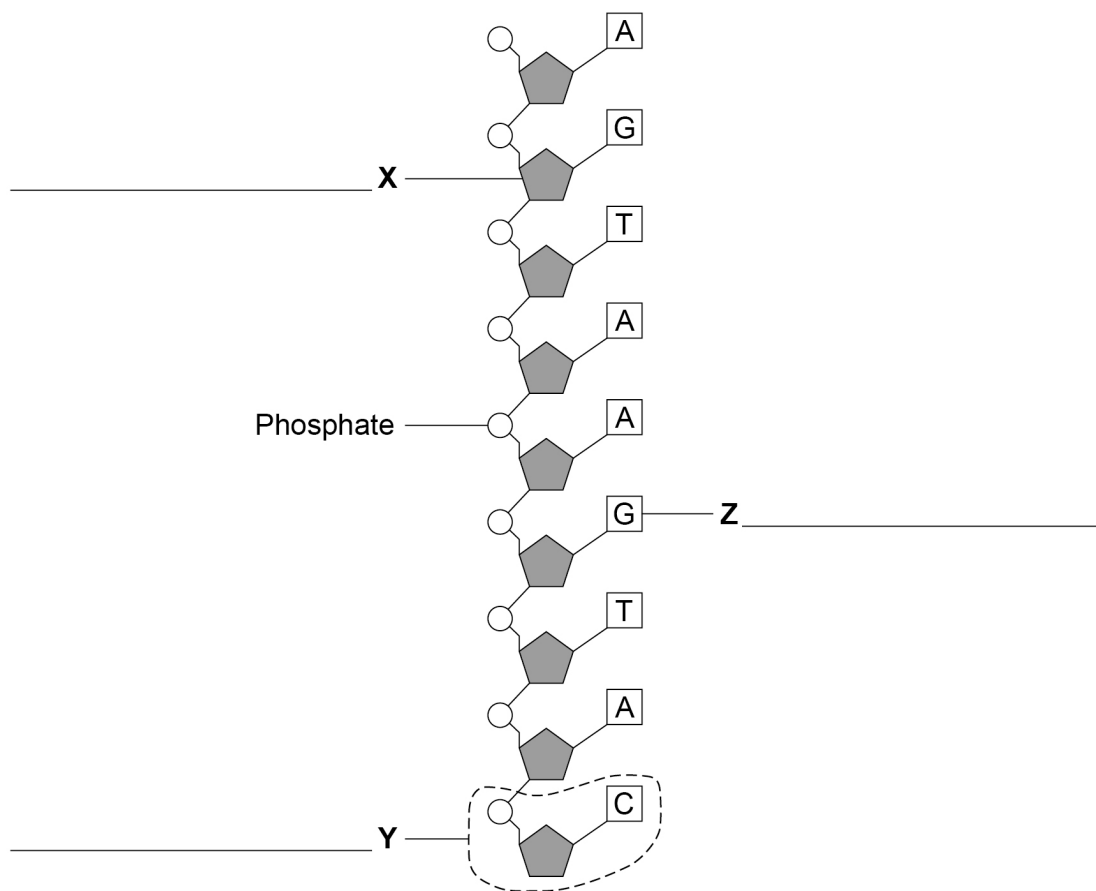
0 2 . 1

Which structures in the nucleus of a human cell contain DNA?

[1 mark]

Figure 3 shows part of one strand of a DNA molecule.

Figure 3



0 2 . 2

Label parts X, Y and Z on Figure 3.

[3 marks]

Choose answers from the box.

Base

Fatty acid

Nucleotide

Sugar

Glycerol



0 2 . 3 A complete DNA molecule is made of two strands twisted around each other.

What scientific term describes this structure?

[1 mark]

0 2 . 4 DNA codes for the production of proteins.

A protein molecule is a long chain of amino acids.

How many amino acids could be coded for by the piece of DNA shown in **Figure 3**?

[1 mark]

Tick (✓) **one** box.

2 3 9 18

0 2 . 5 Scientists have now studied the whole human genome.

Give **two** benefits of understanding the human genome.

[2 marks]

1 _____

2 _____

8

Turn over for the next question

Turn over ►



Question	Answers	Extra information	Mark	AO / Spec. Ref.
02.1	chromosome(s)	allow gene(s) / allele(s)	1	AO1 4.6.1.4 4.1.2.1
02.2	X = sugar Y = nucleotide Z = base		1 1 1	AO1 4.6.1.5
02.3	double helix		1	AO1 4.6.1.4
02.4	3		1	AO2 4.6.1.5
02.5	any two from: <ul style="list-style-type: none"> • diagnosis of inherited / genetic disorder • gene therapy or treatment of inherited disorders • understanding (human) evolution or • understanding ethnic origins (of a person) or • understanding ancestry • tracing human migration patterns 	allow descriptions or named examples allow research / understand genetic disorders allow other examples – eg identification of criminals (1) paternity determination (1)	2	AO1 4.6.1.4
Total			8	