

GCSE Biology

Worksheet: DNA structure

TIME 10 min	TOTAL 11 marks	CALCULATOR Allowed	DIFFICULTY Easy, Medium
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Topics: DNA structure

NAME	CLASS	DATE
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- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Answer all questions in the spaces provided.
- In all calculations, show clearly how you work out your answer.
- The marks for questions are shown in brackets.

0 1

DNA is a polymer.

0 1 . 1

What are the repeating units that make up DNA called?

Tick (✓) **one** box.

Amino acids

☐

Fatty acids

☐

Glucose molecules

☐

Nucleotides

☐

[1 mark]

0 1 . 2

What does each of these repeating units contain?

Tick (✓) **one** box.

A phosphate group and an enzyme

☐

A sugar, a phosphate group and one of four bases

☐

An amino acid and a base

☐

Glucose and a fatty acid

☐

[1 mark]

0 1 . 3

Give the letters of the four bases found in DNA.

.....

.....

[1 mark]

0 1 . 4

How many bases code for one amino acid?

.....

.....

.....

.....

[1 mark]

0 1 . 5

What makes up the long strands of a DNA molecule?

.....

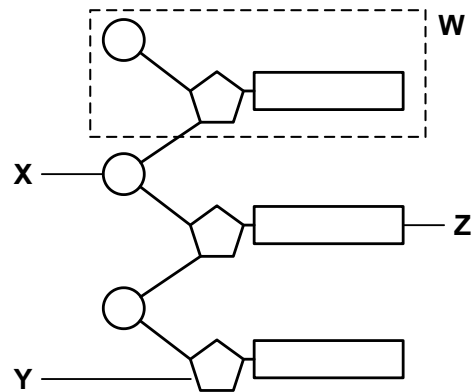
.....

[1 mark]

0 2

Figure 1 shows part of one strand of a DNA molecule.

Figure 1



0 2 . 1

Name the parts labelled X, Y and Z in Figure 1.

.....

.....

.....

.....

.....

.....

[3 marks]

0 2 . 2

What is the unit inside the dashed box labelled W called?

.....

.....

.....

.....
[1 mark]

0 2 . 3

Describe how the nucleotides are joined together to make one strand of DNA.

.....

.....

.....

.....

[2 marks]



END OF QUESTIONS

Original practice questions written to match the specification. Not produced by, affiliated with or endorsed by AQA.

Mark scheme

GCSE Biology · Worksheet: DNA structure · 11 marks

Question 1 (5 marks)

01.1 [1 mark]

Correct: Nucleotides

01.2 [1 mark]

Correct: A sugar, a phosphate group and one of four bases

01.3 [1 mark]

Answer: A, C, G and T

- A, C, G, T (all four) (1)

Notes: Allow adenine, cytosine, guanine, thymine. Do not accept U.

01.4 [1 mark]

Answer: 3

- 3 / three (1)
-

01.5 [1 mark]

Answer: Alternating sugar and phosphate sections

- alternating sugar and phosphate (sections / groups) (1)
-

Question 2 (6 marks)

02.1 [3 marks]

Answer: X: phosphate (group); Y: sugar; Z: base

- X: phosphate (1)
- Y: sugar (1)
- Z: base (1)

Notes: Allow deoxyribose for sugar. Allow a named base (A, C, G or T) for base.

02.2 [1 mark]

Answer: A nucleotide

- nucleotide (1)

02.3 [2 marks]

Answer: The sugar of one nucleotide is joined to the phosphate of the next, forming an alternating sugar–phosphate strand with a base attached to each sugar

- sugar of one nucleotide joins to the phosphate of the next / alternating sugar and phosphate (1)
 - a base is attached to each sugar (1)
-