

# Autumn 2

## Year 11 B14 Variation and evolution

### Aiming for Grade 6 (Triple)

### Extended Homework Assignment

Name: \_\_\_\_\_

Set: \_\_\_\_\_

### Instructions

A printed copy should be handed into your teacher.

The knowledge required to complete this assignment will be supported in class in lessons of the half term.



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## TRIPLE - B14 Variation and evolution – Aiming for Grade 6

### Aims

The aim of this homework is to help you revise the main topics in Chapter 14, Variation and evolution.

### Learning outcomes

After completing this activity, you should be able to:

- state some examples of genetic and environmental variation
- describe the mechanisms involved in natural selection and selective breeding
- describe the mechanisms involved in genetic engineering
- describe the different types of cloning.

### Task

There are three activities to choose from. Each activity will help you to revise different material from Chapter B14, *Variation and evolution*. Choose **two of the three** activities to complete. Try to choose the activities that will help you revise the material that you are least confident with.

#### Activity 1 – Natural selection and selective breeding

You will be completing comic strips to show the stages in natural selection and selective breeding, using giraffes and cows as examples.

#### Activity 2 – Genetic engineering

You will be drawing a flowchart to show how genetic engineering works and giving some examples.

#### Activity 3 – Cloning

You will be looking at the different types of cloning and drawing a visual summary to show how cloning works.

### Activities:

#### 1 Natural selection and selective breeding

- a** On one side of the paper write the title “Natural selection”. Fold a sheet of A4 paper into quarters.

Write the stages involved in natural selection. You can use giraffes as an example or decide on one of your own. Draw pictures to go with each stage. You can use your own notes and the internet to help you

- b** On the other side of the paper write the title “Selective breeding”.

Write the stages involved in selective breeding. You can use selective breeding in racehorses as an example or use one of your own. Draw pictures to go with each stage. You can use your own notes and the internet to help you.

#### 2 Genetic engineering

- a** Draw a flowchart to show the process of genetic engineering.

You can use your own notes and the internet to help you. You must include the following words: enzyme, gene, genetic material, vector.

- b** One example of a use of genetic engineering is to transfer drought resistant genes into crop plants. Can you think of any other examples of genetic engineering that would be useful?

### 3 Cloning

- a Draw a visual summary on the subject of cloning on A4 paper. You can use your own notes and the internet to help you

In your visual summary, you will need to include three headings – “plant cloning”, “animal cloning”, and “adult cell cloning” which include the following:

- 1 Plant cloning – describe two ways of creating plant clones.
- 2 Animal cloning – describe what a clone is and describe the process of creating a clone. You can do this in a flowchart with diagrams.
- 3 Adult cell cloning – describe the process of creating a clone in this way. You can do this using a flowchart with diagrams.