

Aims

This is a revision activity for B2 Chapter 3. Work through each task to help you revise key concepts.

Task 1: Competing for resources

Animals and plants compete for resources. Write a paragraph describing what plants and animals compete for. You need to use the key words shown in bold. You might use some of them more than once.

light **food** **water** **space** **mates** **minerals**

Describe what plants compete for.

Describe what animals compete for.

Task 2: Adaptation

Plants in the desert have a number of adaptations to enable them to survive with very little water. They need to maximise the amount of water they can take in through the roots, and minimise water loss through the leaves.

Why do you think they have a waxy layer?

Why do you think they have widespread roots?

They have spikey leaves to decrease surface area. Why do they need to decrease the surface area of the leaf?

Can you think of any other adaptations of plants that live in the desert?

Task 3: Adapting to change

Write a definition for each of the key words given below. When you write a definition, you should think about all the information you would want to know if you looked the word up in a dictionary.

You should also give an example for each definition.

Hibernation

Definition: _____

Example: _____

Migration

Definition: _____

Example: _____

Adaptation

Definition: _____

Example: Snow shoes hares have white hair. This helps them blend in with their snowy environment. They are less likely to be seen by predators.

Task 4: Variation

Read the following statements about variation. Some of the statements are false. Cross out the false statements. Then use the information to write a complete definition of variation.

- Twins are exactly the same and show no difference in characteristics.
- Variation is always caused by the surroundings.
- Variation is always inherited.
- Variation can be caused by the surroundings and through inheritance.
- Variation occurs between different species.
- Variation occurs within a species.
- Differences in characteristics are known as variation.

Task 5: Histograms

Characteristics that show continuous variation can be plotted on a histogram. You can recognise continuous variation as the measurements can be any value from one extreme to another.

Some students carried out a survey into body mass in their class. The data is continuous, and is shown in the table below.

Height (cm)	Number of people
130–134	2
135–139	4
140–144	6
145–149	8
150–154	6
155–159	4
160–164	2

Step 1

- Draw your x-axis on a piece of graph paper. The x-axis is the horizontal.
- You need to make a space on your scale for each interval (130–134 cm is an interval).
- Each interval has the same range (5 cm), so your space for each interval should be the same. Label each interval on the scale.
- Label your axis 'Height (cm)'.

Step 2

- Draw your y-axis on a piece of paper. The y-axis is vertical.
- Your scale should cover 0–10 people. You need to make sure you add markers to your scale for the number of people. You could add a marker for every 2 people.

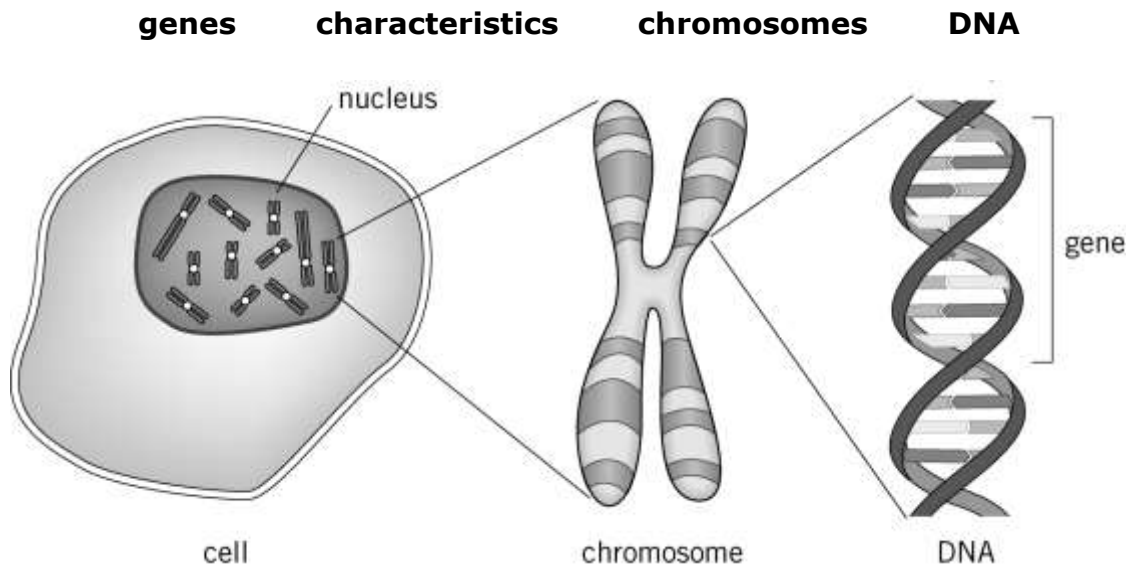
Step 3

- Draw your bars on your histogram. For each interval, use your y-axis scale to find the height. Draw a line at that height for the interval, and then vertical lines to make the bar.

Task 6: Evolution and inheritance

Inheritance

Fill in the gaps using the key words shown in bold.



You inherit characteristics from your parents through genetic material stored in the nucleus of your cells. This material is a chemical called _____ (deoxyribonucleic acid). It contains all the information needed to make an organism.

Inside the nucleus, your DNA is arranged into long strands called _____. Humans have 46 _____.

You inherit half of your _____ from your mother and half from your father. This is why you share some of your _____ with your mother and some with your father.

Each chromosome is divided into sections of DNA. The sections that hold the information to produce a characteristic are called _____.

Natural selection and evolution

Natural selection is a process. When you describe a process, you can think about the order it happens to help you structure your description. Complete the boxes in this flow chart to describe the theory of natural selection.

Describe variation.

Describe the process of 'survival of the fittest'.

Describe how genes and characteristics are passed on.

Describe how this leads to evolution.

Task 7: Extinction

There are a number of reasons why animals can become extinct or endangered, including:

- changes to the organism's environment
- destruction of habitat
- outbreak of a new disease
- introduction of new predators and competitors.

Read the information below about animals that are extinct or endangered. Write a possible reason next to each example (from the bullet points above).

Dodo

Dodos used to live on the island of Mauritius, which was an uninhabited. It had no natural predators. In the 17th century people arrived on the island, and dodos were hunted for food. Rats that came on the ships ate the dodos' eggs. In less than a century, the dodo became extinct.

Reason for extinction:

Black rhino

The black rhino is an endangered species. They are poached for their horns. Some rhino habitats have also been taken over by landless people with nowhere to live.

Reason why they are endangered:

Christmas Island Rats

Christmas Island was an uninhabited island until 1888. When people inhabited the island, rats from the people's ships also inhabited the island. The native rat population became extinct within a decade.

Reason for extinction:
