Answer ALL questions.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Read the passage below. Use the information in the passage and your own knowledge to answer the questions that follow.

Moving plants

Flowering plants reproduce using different methods to transfer the pollen from plant to plant. This cross-pollination enables plants to produce offspring that show genetic variation. The transfer can be done by animals such as insects or by wind.

The reliance on animals and wind for reproduction does not end with pollination. Flowering plants also need a mechanism to disperse their fruits or the seeds they contain. This seed dispersal means that seeds producing new young plants will germinate away from the parent plant.

wings on a sycamore

(Source: © joanna wnuk/Shutterstock)

fluff on a dandelion

(Source: © Viktorija Reuta/Shutterstock)

spines on burdock

(Source: © Paulpixs/Shutterstock)

The simplest method of seed dispersal uses gravity. The seeds are within heavy fruit, which fall from the tree when they are ripe. Although some of the fruit may roll away from the parent plant, most remain close to the parent plant.

Animal dispersal is when plants rely on animals to transport their seeds to a different area. This may be because the seeds are surrounded by a brightly-coloured and sweet-tasting fruit. Examples of this are soft fruits such as raspberry and hard fruits such as apple.

Animals may also carry seeds in a different way. Many plants produce fruits or individual seeds covered in hooks or spines that attach the seeds to the animals' fur. The seeds are then carried away from the parent plant. Eventually, the seeds may fall off, or be rubbed off by the animal. Examples of plants using this form of dispersal are burdock and sea holly.

Some plants provide seed pods with a mechanism that ejects the seeds from the pod by force. All of these rely on the effect of evaporation of water in the seed pod, so this method of seed dispersal usually takes place in sunlight. Examples of plants using this form of dispersal are gorse bushes and lupins.

Wind is one of the main methods of seed dispersal. Some tall trees produce seed pods that have wings, which allow the seeds to travel long distances. Some seed pods have two wings such as the sycamore while others have one wing such as the ash.

There are also lightweight adaptations that help seeds to be blown by the wind. These include various sorts of fluff that increase the surface area of the seed, so that it can be picked up by the slightest breeze. Examples of plants using this form of dispersal are thistle and dandelion.

The last method uses water. Trees found on tropical beaches often have their seeds carried away by the sea. The seeds have woody, waterproof coverings enabling them to float in the water for long periods. Coconuts are a well-known example.