

## Chapter 9

1. A seed contains an embryo (1)\_\_\_\_\_ and an (2)\_\_\_\_\_ shoot and their food store. These are surrounded by a protective seed (3)\_\_\_\_\_.
2. Different types of food are found in the food store of seeds. The presence of starch can be demonstrated using (4)\_\_\_\_\_ solution. If positive, the result is a (5)\_\_\_\_\_ colour. The presence of glucose can be demonstrated using a (6)\_\_\_\_\_ strip. If positive, the result is a (7)\_\_\_\_\_ colour. The presence of protein can be demonstrated using an (8)\_\_\_\_\_ strip. If positive, the result is a (9)\_\_\_\_\_ colour.
3. During (10)\_\_\_\_\_, an embryo plant uses the reserves of food in the seed to grow into a plant with green leaves.
4. Seeds need water, (11)\_\_\_\_\_ and a suitable (12)\_\_\_\_\_ (e.g. 20°C) to germinate.
5. A plant's life (13)\_\_\_\_\_ is the series of changes that it passes through from a certain stage in its development (e.g. germinating seed) until it reaches the same stage in the next (14)\_\_\_\_\_.

6. Seeds which remain inactive even when given the conditions needed to germinate, are described as being (15)\_\_\_\_\_. One type of dormancy can be broken by exposing the seeds to (16)\_\_\_\_\_ temperature (e.g. 4°C) for a few months. Under natural conditions this form of dormancy is of (17)\_\_\_\_\_ to the plant because germination of the seeds is delayed until (18)\_\_\_\_\_ when the warmer soil temperature encourages growth.
7. During photosynthesis, green plants use (19)\_\_\_\_\_ energy to produce food needed for growth. Embryo plants inside germinating seeds cannot (20) \_\_\_\_\_ and need to use the seed's food reserves for growth. Therefore germinating seeds show an overall (21)\_\_\_\_\_ in mass. Photosynthesising seedlings are able to produce the food they need for growth and therefore show an overall (22)\_\_\_\_\_ in mass.
8. To sow seeds means to put them in a place which provides the conditions needed for germination. Seeds need to be (23)\_\_\_\_\_ out during sowing to prevent overcrowding of seedlings following germination. Large seeds are sown individually by (24)\_\_\_\_\_; fine seeds are mixed with silver (25)\_\_\_\_\_ before sowing.
9. Seeds that have been enclosed in a ball of clay are said to have been (26)\_\_\_\_\_. The pellets make the seeds smooth and easy to space out during planting. A pellet is made up of layers which may contain useful chemicals such as (27)\_\_\_\_\_ and/or nutrients. Pelleted seeds take (28)\_\_\_\_\_ to germinate than unpelleted seeds.

10. To pre-germinate (chit) a seed means to make it start to germinate before it has been planted. In some seed this can be done by (29)\_\_\_\_\_ them. Seeds with hard coats can be made to germinate more quickly by (30)\_\_\_\_\_ them open or 'nicking' their seed coats with a knife before sowing.

advantage Albusix blue-black Clinistix coat cycle  
dormant embryo gain generation germination  
green hand iodine light longer loss low oxygen  
pelleted pesticides photosynthesise pre-soaking  
purple root sand slitting spaced spring  
temperature

-----Word Bank-----

## Chapter 9

1. A seed contains an embryo root and an embryo shoot and their food store. These are surrounded by a protective seed coat.
2. Different types of food are found in the food store of seeds. The presence of starch can be demonstrated using iodine solution. If positive, the result is a blue-black colour. The presence of glucose can be demonstrated using a Clinistix strip. If positive, the result is a purple colour. The presence of protein can be demonstrated using an Albustix strip. If positive, the result is a green colour.
3. During germination, an embryo plant uses the reserves of food in the seed to grow into a plant with green leaves.
4. Seeds need water, oxygen and a suitable temperature (e.g. 20°C) to germinate.
5. A plant's life cycle is the series of changes that it passes through from a certain stage in its development (e.g. germinating seed) until it reaches the same stage in the next generation.
6. Seeds which remain inactive even when given the conditions needed to germinate are described as being dormant. One type of dormancy can be broken by exposing the seeds to low temperature (e.g. 4°C) for a few months. Under natural conditions this form of dormancy is of advantage to the plant because germination of the seeds is delayed until spring when the warmer soil temperature encourages growth.
7. During photosynthesis, green plants use light energy to produce food needed for growth. Embryo plants inside germinating seeds cannot photosynthesise and need to use the seed's food reserves for growth. Therefore, germinating seeds show an overall loss in mass. Photosynthesising seedlings are able to produce the food they need for growth and therefore show an overall gain in mass.
8. To sow seeds means to put them in a place which provides the conditions needed for germination. Seeds need to be spaced out during sowing to prevent overcrowding of seedlings following germination. Large seeds are sown individually by hand; fine seeds are mixed with silver sand before sowing.

9. Seeds that have been enclosed in a ball of clay are said to have been pelleted. The pellets make the seeds smooth and easy to space out during planting. A pellet is made up of layers which may contain useful chemicals such as pesticides and/or nutrients. Pelleted seeds take longer to germinate than unpelleted seeds.
10. To pre-germinate (chit) a seed means to make it start to germinate before it has been planted. In some seed this can be done by pre-soaking them. Seeds with hard coats can be made to germinate more quickly by slitting them open or 'nicking' their seed coats with a knife before sowing.