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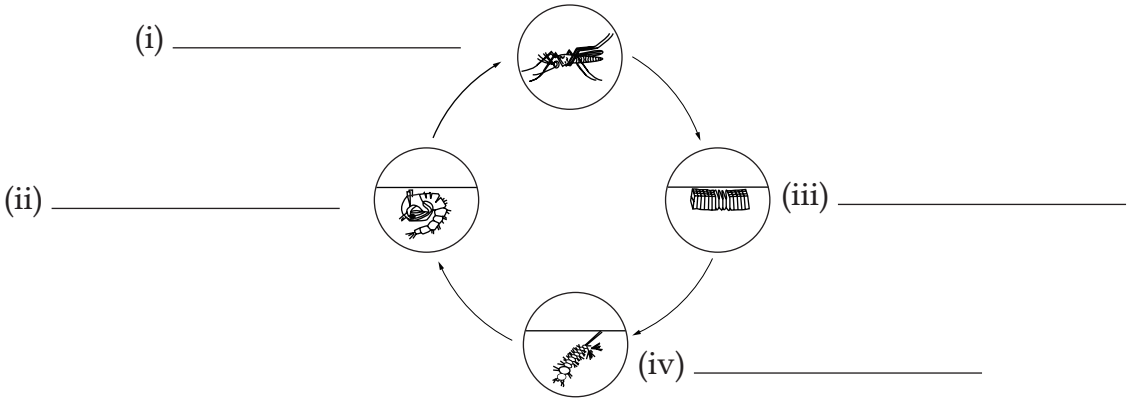
Life Cycles

1. The pictures below show the four-stage life cycle of a common household pest. Study it carefully and answer the questions that follow.



(a) Which insect's life cycle is shown above? [$\frac{1}{2}$m]

(b) Label the stages next to the pictures in the above life cycle. [1m]

(c) Where does the female insect lay her eggs? [$\frac{1}{2}$m]

(d) During which stage of its life cycle does the insect not feed? [$\frac{1}{2}$m]

(e) Why is the insect considered a pest? [$\frac{1}{2}$m]

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(f) State two ways to prevent the insect from breeding. [2m]

- _____

_____

- _____

_____

(g) Name another animal that undergoes a similar life cycle to the insect in this worksheet. [1m]

_____

(h) How is the life cycle of the animal you mentioned in (g) similar to the life cycle of the insect in this worksheet? List two similarities. [2m]

- _____

_____

- _____

_____

(i) How is the life cycle of the animal you mentioned in (g) different from the life cycle of the insect in this worksheet? List two differences. [2m]

- _____

_____

- _____

_____

Answers: 1. (a) It is the mosquito's. 1. (b) (i) adult mosquito (ii) pupa (iii) egg (iv) larva (wriggler) 1. (c) The female insect lays her eggs in stagnant water. 1. (d) It does not feed during the pupal stage. 1. (e) It can spread harmful diseases such as encephalitis, dengue fever and malaria. 1. (f) • Do not leave stagnant water in containers. • Clear drains and roof gutters regularly of leaves and other dead matter so that water can flow easily. *(Accept any other reasonable answers.)* 1. (g) It is the butterfly. (Accept any other reasonable answers.) 1. (h) • Both the butterfly and mosquito are able to fly when they are adults. • The pupae of the butterfly and mosquito do not feed. *(Accept any other reasonable answers.)* 1. (i) • The butterfly lays its eggs on land (usually on the underside of leaves) but the mosquito lays its eggs on stagnant water. • The life cycle of the butterfly takes a longer time to complete (about 6 to 7 weeks) than the life cycle of the mosquito (about 2 weeks). *(Accept any other reasonable answers.)*

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Life Cycles Of Plants

Flowering plants produce flowers. The flowers later become fruit. Inside the fruit, we can find seeds. The fruit protect the seeds. Seeds can develop into new plants. The life cycle of flowering plants follows the three stages of seed-seedling-adult.

Seed

Stage 1: The plant begins its life as a seed. With enough air, food, water and the right temperature, the seed will begin to germinate or grow.

Seedling (Young plant)

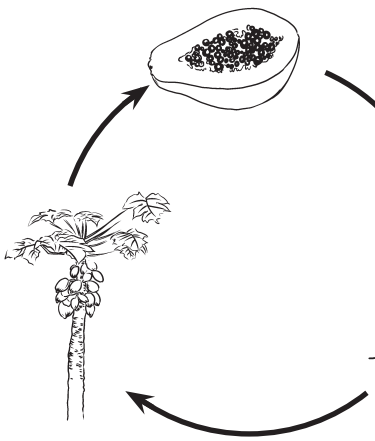
Stage 2: The young plant that grows is known as a seedling.

At first, the seedling obtains its food from the seed leaves.

When the true leaves start to grow, the plant is ready to make its own food by the process of photosynthesis. The seed leaves will shrivel and fall off.

Roots grow deep down into the ground to obtain water and mineral salts needed for the plant.

The plant will grow towards the sunlight.



The shoot grows upwards to obtain maximum sunlight. When the true leaves appear, the plant is ready to make its own food.

Seed leaves provide the plant with food before the true leaves develop.

Roots grow downwards to absorb water and mineral salts from the ground. They hold the plant firmly in the soil.

Adult plant

Stage 3: As the plant grows, it develops flowers which later become fruit.

There are seeds inside the fruit.

The seeds will fall to the ground and develop into new plants. The life cycle then repeats itself.

Life cycle of a flowering plant

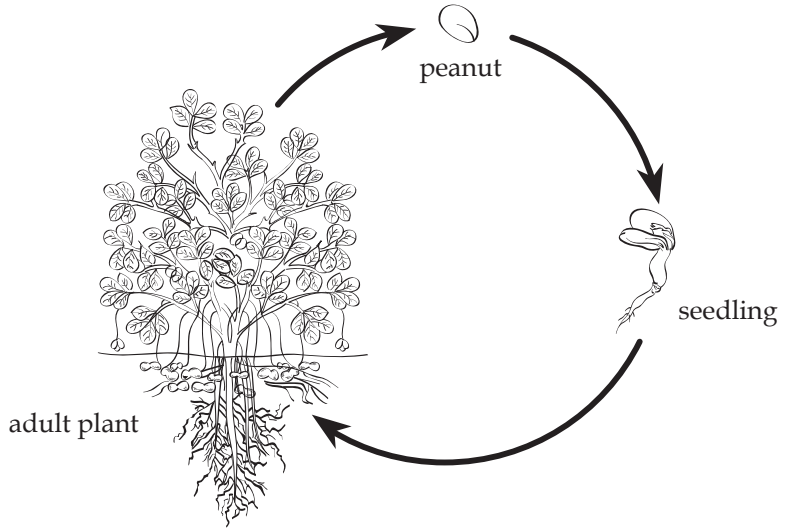
Life Cycles Of Plants

An example of a flowering plant which follows the life cycle shown on the previous page is the tomato plant. Other flowering plants (e.g. morning glory and lady's finger) also follow the same life cycle.

Apart from protecting the seeds inside them, some fruit have a sweet and juicy flesh which can be eaten. Two examples of such fruit are the mango and papaya.

The seeds of some plants can be eaten too. Examples are soya beans and sunflower seeds.

The peanut is also a flowering plant. When the peanut flower withers, the stalk curves downwards, forcing the fruit to grow underground. The two peanuts inside the shell which we eat are actually its seeds.



Life cycle of a peanut plant

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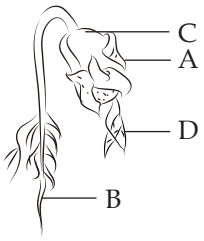
Life Cycles Of Plants

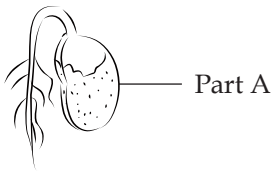
1. The picture below shows a germinating seed.



Which part will grow first?

(1) A
(2) B
(3) C
(4) D ( )

2. In the diagram below, what is the function of Part A?



(1) It provides food for the seedling.
(2) It provides protection for the seed.
(3) It provides water for the seedling.
(4) It provides chlorophyll for the seedling. ( )

3. Antonia carried out an experiment. She placed some seeds into four beakers and watered them daily.

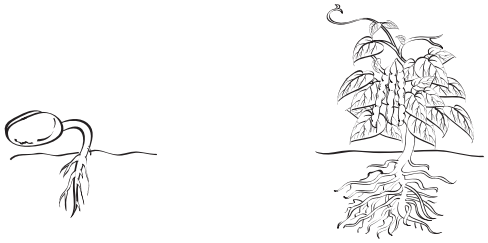
Beaker	Amount of water	Air	Location of beaker
A	10 m*l*	50 cm^3	In the freezer
B	10 m*l*	40 cm^3	By the window
C	5 m*l*	40 cm^3	In the freezer
D	10 m*l*	50 cm^3	By the window

Which two beakers should she use if she wants to find out whether warmth is needed for germination?

(1) Beakers A and B
(2) Beakers A and C
(3) Beakers A and D
(4) Beakers B and C ( )

Life Cycles Of Plants

4. Study the diagrams of a seedling and an adult bean plant shown below.



What is/are the common characteristic(s) between the seedling and the adult plant?

A. They can absorb water and mineral salts through their roots.
B. They can make their own food.
C. They are able to produce seeds.

(1) A only
(2) B only
(3) A and B only
(4) A, B and C ( )

5. Leila wanted to find out if water is needed for a seed to germinate. Which of the following variables must she keep the same to make it a fair experiment?

A. Number of seeds
B. Size of pots
C. Type of seeds
D. Colour of pots
E. Amount of water

(1) A, B and C only
(2) A, B, C and D only
(3) A, C and E only
(4) A, B, C and E only ( )

Answers: 1. 2 2. 2 3. 3 4. 1 5. 1

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Life Cycles Of Plants

1. The diagram below shows the life cycle of a bean plant.

At which stage is sunlight needed for its growth?

(1) D only
(2) C and D only
(3) B, C and D only
(4) A, B, C and D ( )

2. What are the conditions needed for the germination of a seed?

A. oxygen
B. carbon dioxide
C. warmth
D. water
E. sunlight

(1) A, C and D only
(2) A, D and E only
(3) B, C and D only
(4) B, D and E only ( )

3. Ivan planted some bean seeds in four similar pots.

Pot	Number of bean seeds	Location of pot	Type of cotton wool
W	5	in a black box	damp
X	5	in the freezer	dry
Y	5	near a window	dry
Z	5	in the bathroom	damp

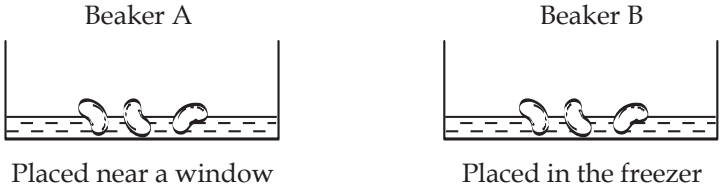
Which pot of seeds would most likely germinate?

(1) Pot W only
(2) Pot X only
(3) Pots X and Y
(4) Pots W and Z ( )

Life Cycles Of Plants

4. Which shows the correct order of the stages in a life cycle of a plant?
   (1) seed → shoot → roots → leaves
   (2) shoot → leaves → roots → seed
   (3) seed → roots → shoot → leaves
   (4) shoot → roots → leaves → seed ( )

5. Jacob did an experiment by putting the same number of seeds into two identical beakers. He provided the same amount of water and nutrients in both beakers daily.



   What was Jacob trying to find out from the experiment?
   (1) Whether seeds need water to germinate
   (2) Whether seeds need nutrients to grow healthily
   (3) Whether seeds need warmth to germinate
   (4) Whether there should be the same number of seeds ( )

Answers: 1. 2 2. 1 3. 4 4. 3 5. 3