

Grade 5 Science

Question Bank With Answers

Egyptian Curriculum

First Term • 2027 Editions

707 questions and model answers

Organized by the Ministry textbook's chapters and lessons. Questions from the supplied textbook, external books, assessments and exams are grouped by topic, with repeated wording consolidated.

How to practise

- Cover the answer, attempt the question, then check your response.
- For multiple-choice questions, choose one answer unless the instruction says to choose all correct answers.
- For false statements, learn the corrected statement as well as the answer.
- For drawings and experiments, use the model answer to check labels, observations and fair-test conditions.

Question formats

Completion • Multiple choice • Choose all • True or False • Correction • Scientific terms • Definitions • Reasons • Predictions • Comparisons • Functions • Examples • Matching • Classification • Odd one out • Ordering • Tables • Calculations • Experiments • Diagrams • Observation • Drawing • Thinking questions

Short model answers are provided immediately after each question. Equivalent scientifically correct wording is acceptable.

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شرح وتدريبات

المرحلة الابتدائية

Chapter 1

Bones and Muscles

Source guide: Ministry textbook pp. 6–19; Al Moasser main book PDF pp. 4–31; related assessment, supplement and exam questions.

Lesson 1.1 Bones and Muscles

Complete the sentences

Q1. The human body moves because muscles _____ and _____.

Answer: contract; relax

Q2. Muscles move bones by _____ them.

Answer: pulling

Q3. When the arm stretches, the _____ muscle contracts and the _____ muscle relaxes.

Answer: outer; inner

Q4. When the arm bends, the _____ muscle contracts and the _____ muscle relaxes.

Answer: inner; outer

Q5. Muscles usually work in _____ to move bones.

Answer: pairs

Choose the correct answer

Q6. A person can walk because leg muscles:

A) relax only

B) contract only

C) contract and relax

D) are replaced by bones.

Answer: C) Contract and relax.

Q7. When an arm bends, its outer upper-arm muscle becomes:

A) hard and short

B) soft and long

C) hard and long

D) soft and short.

Answer: B) Soft and long.

Q8. When the inner upper-arm muscle contracts, it becomes:

- A) harder and shorter
- B) softer and longer
- C) harder and longer
- D) softer and shorter.

Answer: A) Harder and shorter.

Q9. Which action moves a bone?

- A) A muscle pushes it
- B) A muscle contracts and pulls it
- C) The bone contracts
- D) The skin expands.

Answer: B) A muscle contracts and pulls it.

True or False with correction

Q10. Muscles are soft body parts beneath the skin and cover many parts of the body.

Answer: True.

Q11. Bones contract and relax to produce movement.

Answer: False. Muscles contract and relax; bones are moved by muscles.

Q12. When the arm stretches, the outer muscle becomes harder than the relaxed inner muscle.

Answer: True.

Q13. When a person holds a heavy box with bent arms, the inner upper-arm muscles contract.

Answer: True.

Correct the statements

Q14. Correct the wrong words: Muscles are hard and strong structures.

Answer: Muscles are soft body parts. Bones are hard and strong structures.

Q15. Correct the wrong word: When the inner upper-arm muscle contracts, the arm stretches.

Answer: The arm bends.

Q16. Correct the wrong words: A contracting muscle becomes longer and softer.

Answer: It becomes shorter and harder.

Write the scientific term

Q17. Soft body parts that contract and pull bones to move the body.

Answer: Muscles.

Q18. The process in which a muscle becomes shorter, thicker and harder.

Answer: Muscle contraction.

Q19. The process in which a muscle becomes longer and softer and returns towards its resting state.

Answer: Muscle relaxation.

Q20. The inner upper-arm muscle that contracts when the arm bends.

Answer: The biceps.

Give reasons

Q21. Why do muscles usually work in pairs?

Answer: Muscles pull rather than push. One muscle contracts while the opposing muscle relaxes, allowing movement in opposite directions.

Q22. Why does the outer upper-arm muscle become shorter and harder when the arm stretches?

Answer: It contracts and pulls the attached bone to straighten the arm.

Q23. Why does the inner upper-arm muscle contract when lifting a load with a bent arm?

Answer: It pulls the forearm bones upwards and helps hold the load.

What happens

Q24. What happens if the muscles attached to bones can no longer contract?

Answer: They cannot pull the bones, so the affected body parts cannot move normally.

Q25. What happens to the arm when its inner muscle contracts while its outer muscle relaxes?

Answer: The arm bends at the elbow.

Q26. What happens if both opposing upper-arm muscles contract strongly at the same time?

Answer: The joint becomes stiff and smooth bending or straightening is restricted because the muscles oppose each other.

Compare

Q27. Compare a muscle during contraction and relaxation in length and hardness.

Answer: Contraction: shorter, thicker and harder. Relaxation: longer and softer.

Q28. Compare the roles of bones and muscles in movement.

Answer: Bones provide firm structures that move at joints. Muscles contract and pull the bones.

Observe and apply

Q29. Name the main muscle groups used when walking, climbing stairs, writing and lifting a glass to drink.

Answer: Walking and climbing stairs: leg muscles. Writing: hand and finger muscles, with arm muscles. Lifting a glass: arm and hand muscles.

Q30. Bend your elbow and feel the front and back of your upper arm. Which side feels harder, and why?

Answer: The front or inner side feels harder because the biceps contracts.

Q31. Stretch the same arm. How does the hardness of the inner and outer muscles change?

Answer: The inner muscle relaxes and becomes softer; the outer muscle contracts and becomes harder.

Lesson 1.2 Structure of Bones

Complete the sentences

Q32. The place where two or more bones meet is a _____.

Answer: joint

Q33. _____ acts as a cushion between the ends of bones at a joint.

Answer: Cartilage

Q34. The shoulder, elbow and wrist are joints of the _____ limbs.

Answer: upper

Q35. The hip, knee and ankle are joints of the _____ limbs.

Answer: lower

Q36. The fingers of one hand contain _____ joints; the fingers of both hands contain _____.

Answer: 14; 28

Choose the correct answer

Q37. Which is NOT a function of bones?

- A) Supporting the body
- B) Protecting organs
- C) Contracting and relaxing
- D) Helping movement with muscles.

Answer: C) Contracting and relaxing.

Q38. Which is a joint of the upper limb?

- A) Hip
- B) Knee
- C) Ankle
- D) Elbow.

Answer: D) Elbow.

Q39. Which joint allows movement in several directions?

- A) Shoulder
- B) Elbow
- C) Knee
- D) Finger joint.

Answer: A) Shoulder.

Q40. Which joint is found in the lower part of the body?

- A) Wrist
- B) Shoulder
- C) Hip
- D) Elbow.

Answer: C) Hip.

Choose all correct answers

Q41. Select joints that mainly bend and straighten in the school classification:

- A) Knee
- B) Hip
- C) Elbow
- D) Ankle.

Answer: A, C and D) Knee, elbow and ankle.

Q42. Select joints in the upper limbs:

- A) Elbow
- B) Wrist
- C) Knee
- D) Shoulder.

Answer: A, B and D) Elbow, wrist and shoulder.

True or False with correction

Q43. All joints can rotate freely in every direction.

Answer: False. The direction and range of movement differ between joints.

Q44. Cartilage helps prevent bones from rubbing directly against each other.

Answer: True.

Q45. The knee joint helps us stand, sit, walk and run.

Answer: True.

Q46. The wrist joint is found in the lower part of the body.

Answer: False. It is in the upper limb.

Correct the statements

Q47. Correct the wrong word: Muscles form a smooth cushion at the ends of bones.

Answer: Cartilage forms the cushion.

Q48. Correct the wrong statement: A joint is a cushion that restricts movement and prevents wear.

Answer: A joint is where bones meet; cartilage cushions their ends, reduces friction and helps prevent wear.

Write the scientific term

Q49. Hard, strong structures that form the body skeleton.

Answer: Bones.

Q50. A flexible cushion at the ends of bones that reduces friction and wear.

Answer: Cartilage.

Give reasons

Q51. Why are joints important for everyday movement?

Answer: They connect bones and allow body parts to bend or move in suitable directions.

Q52. Why is cartilage important in joints?

Answer: It cushions the ends of bones, reduces friction and protects the bones from wear.

What happens

Q53. What would happen if the human skeleton had no movable joints?

Answer: The body would be rigid. Bending the arms, legs and fingers and doing daily tasks would be very difficult or impossible.

Q54. What happens if cartilage between the knee bones wears away completely?

Answer: The bones rub more directly against each other, causing pain and making walking and bending the knee difficult.

Q55. What would happen if the human body had no bones?

Answer: It would lose its firm framework and much of its support and organ protection; normal standing and movement would not be possible.

Compare

Q56. Compare shoulder and elbow joints in their range of movement.

Answer: The shoulder moves in several directions, including rotation. The elbow mainly bends and straightens.

Give examples

Q57. Give one example of a joint that bends the arm, a joint that moves the hand, and a joint that moves the foot.

Answer: Elbow; wrist; ankle.

Classification

Q58. Classify shoulder, elbow, wrist, hip, knee, ankle and finger joints into several-direction joints and mainly bending-and-straightening joints.

Answer: Several directions: shoulder, wrist and hip. Mainly bending and straightening: elbow, knee, ankle and finger joints.

Q59. Classify shoulder, elbow, knee and skull joints as freely movable, limited in direction, or fixed.

Answer: Shoulder: freely movable in several directions. Elbow and knee: movement mainly in one plane. Most skull joints: fixed.

Odd one out

Q60. Knee joint - Elbow joint - Ankle joint - Shoulder joint. Give the reason.

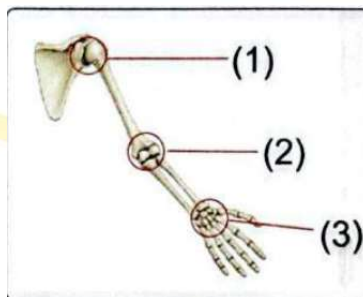
Answer: Shoulder joint; it allows movement in several directions in the school classification.

Q61. Shoulder joint - Hip joint - Wrist joint - Ankle joint. Give the reason.

Answer: Ankle joint; it mainly bends and straightens in the school classification.

Label and interpret the diagram

Q62. Identify joints 1, 2 and 3. Which allow movement in several directions, and which mainly bends and straightens?



Answer: 1: shoulder. 2: elbow. 3: wrist. The shoulder and wrist allow movement in several directions; the elbow mainly bends and straightens.

Observe and apply

Q63. Which small joints help you hold a pen? Which connections allow your back to bend?

Answer: Finger joints help hold a pen. Joints between the small bones of the backbone allow the back to bend.

Lesson 1.3 Whole Body Skeleton

Complete the sentences

Q64. The adult human skeleton consists of about _____ connected bones.

Answer: 206

Q65. The _____ protects the brain, while the _____ protect the heart and lungs.

Answer: skull; ribs

Q66. The backbone consists of many _____ bones arranged _____.

Answer: small; vertically

Choose the correct answer

Q67. The ribs are:

- A) thin bones on both sides of the chest
- B) large bones in the back
- C) muscles in the chest
- D) one straight bone.

Answer: A) Thin bones on both sides of the chest.

Q68. Which part allows the body to bend forwards, backwards and sideways?

- A) Skull
- B) Heart
- C) Backbone
- D) Ribs alone.

Answer: C) Backbone.

Choose all correct answers

Q69. Which organs does the skeleton help protect?

- A) Brain
- B) Heart
- C) Lungs
- D) Hair.

Answer: A, B and C) Brain, heart and lungs.

True or False with correction

Q70. The skeleton is made of connected muscles.

Answer: False. It is made of connected bones.

Q71. The skull protects the brain like a helmet.

Answer: True.

Q72. The backbone is one long, unbendable bone.

Answer: False. It consists of many small connected bones.

Correct the statements

Q73. Correct the wrong word: The backbone protects the brain.

Answer: The skull protects the brain.

Q74. Correct the wrong words: The ribs are located in the abdominal region.

Answer: The ribs are located in the chest region.

Write the scientific term

Q75. The framework of connected bones that gives the whole body its shape.

Answer: The skeleton.

Q76. The part of the skeleton that acts as the main supporting pillar of the body.

Answer: The backbone.

Give reasons

Q77. Why is the skull made of strong bones?

Answer: To protect the soft brain from injury.

Q78. Why do ribs form a cage around the chest?

Answer: To protect the heart and lungs.

Q79. Why does the backbone consist of many small connected bones instead of one long bone?

Answer: This structure supports the body while allowing it to bend and move in different directions.

What happens

Q80. What would happen if the skull were very soft and flexible?

Answer: It would provide less protection for the brain against injury.

Q81. What would happen if the backbone were a single rigid bone?

Answer: The back would lose much of its ability to bend in different directions.

Compare

Q82. Compare the ribs and backbone in location, structure and function.

Answer: Ribs: in the chest, thin bones forming a cage, protecting the heart and lungs. Backbone: in the back, many small bones in a vertical series, supporting the body and allowing bending.

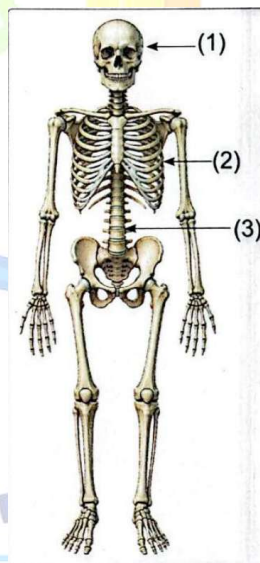
Functions and importance

Q83. State three main functions of the skeleton.

Answer: It supports and shapes the body, protects internal organs, and works with muscles and joints to allow movement.

Label and interpret the diagram

Q84. Identify the structure shown and name parts 1, 2 and 3. Which numbered part allows the back to bend?



Answer: The human skeleton. 1: skull. 2: ribs. 3: backbone. The backbone consists of small bones joined together, allowing the back to bend.

Observe and apply

Q85. Touch your chest while taking a deep breath. Which bones can you feel, and what change occurs?

Answer: You can feel the ribs. The chest expands slightly as you breathe in.

Draw and label

Q86. Draw the main parts of a human skeleton and label the skull, ribs and backbone. State the function of each label.

Answer: Model labels: skull at the head protects the brain; ribs around the chest protect the heart and lungs; backbone down the back supports the body and allows bending.

Lesson 1.4 Animal Bodies

Complete the sentences

Q87. Humans, dogs and rabbits move using _____, _____ and _____.

Answer: bones; muscles; joints

Q88. Animals differ in the _____ and _____ of their bones and in muscle _____.

Answer: shape; length; strength

Q89. A dog's forelimb corresponds to a human's _____ limb.

Answer: upper

Choose the correct answer

Q90. A rabbit can jump quickly because it has:

- A) long, strong hind limbs
- B) no joints
- C) short forelimbs only
- D) a rigid backbone.

Answer: A) Long, strong hind limbs.

Q91. Differences in animal bone shape and length mainly depend on:

- A) body colour
- B) their way of life and movement
- C) the weather on one day
- D) their names.

Answer: B) Their way of life and movement.

Choose all correct answers

Q92. Cats and dogs both have:

- A) bones
- B) feathers
- C) joints
- D) muscles.

Answer: A, C and D) Bones, joints and muscles.

True or False with correction

Q93. A dog's front legs have joints that work in a similar way to human arm joints.

Answer: True.

Q94. Rabbits move because their bones contract and pull their muscles.

Answer: False. Their muscles contract and pull their bones.

Q95. Having similar skeletal parts means all animals can perform exactly the same movements.

Answer: False. Bone proportions, muscle strength and joint movement differ with the animal's needs.

Correct the statements

Q96. Correct the wrong word: The human elbow corresponds to the elbow in a dog's hind limb.

Answer: It corresponds to the elbow in the dog's forelimb.

Give reasons

Q97. Why do cats have flexible muscles and joints?

Answer: These help them jump, climb and move lightly.

Q98. Why do dogs and humans share the same basic mechanism of movement?

Answer: In both, muscles contract and pull bones at joints.

Q99. Why are a camel's toe bones able to spread out on the sand?

Answer: They increase the contact area, distribute its weight and reduce sinking into soft sand.

Q100. How does concentrating fat in a hump help a camel in hot conditions?

Answer: It leaves much of the rest of the body less insulated, allowing heat to escape more easily.

What happens

Q101. What would happen if a rabbit had very short hind limbs?

Answer: Its ability to make long, quick jumps would be reduced.

Q102. Could a dog's skeleton move if it had no attached muscles? Explain.

Answer: No. Bones cannot move themselves; muscles must contract and pull them.

Compare

Q103. Compare a dog's forelimb joints and a rabbit's hind-limb joints.

Answer: Dog forelimb: shoulder, elbow and wrist, helping walking and running.
Rabbit hind limb: hip, knee and ankle, helping running and jumping.

Q104. Compare the limb adaptations of dogs, rabbits and cats.

Answer: Dogs have limbs suited to steady walking and running. Rabbits have long, strong hind limbs for jumping. Cats have flexible muscles and joints for climbing and jumping.

Functions and importance

Q105. What is stored in a camel's hump, and how does it help during a long journey?

Answer: Fat is stored there. Breaking down the fat supplies energy for muscle activity when food is scarce.

Q106. How do a camel's calluses protect it when sitting?

Answer: The thick pads and cushioning tissues protect the joints and absorb pressure and shocks.

Thinking and application

Q107. Different bone shapes can indicate different functions. Support this statement with two examples.

Answer: A rabbit's long hind-limb bones help it jump. The shape and flexible joints of a cat's limbs help it climb and move lightly.

شرح وتدريبات

المرحلة الابتدائية

Chapter 2

Changes in the Seasons

Source guide: Ministry textbook pp. 20–27; Al Moasser main book PDF pp. 32–49; related assessment, supplement and exam questions.

Lesson 2.1 Changes over a Year

Complete the sentences

Q108. Luffa completes its _____ in one year.

Answer: life cycle

Q109. Luffa seeds are planted in suitable _____ weather.

Answer: warm

Q110. During growth, luffa has climbing _____ and wide _____.

Answer: stems; leaves

Q111. As luffa fruits dry, their colour changes from _____ to _____.

Answer: green; brown

Q112. The dry luffa fruit contains _____ seeds that can start the next generation.

Answer: dark

Choose the correct answer

Q113. Which part starts a new luffa life cycle?

- A) A dried leaf
- B) A seed
- C) A dead root
- D) A petal.

Answer: B) A seed.

Q114. Where are new luffa seeds found?

- A) Inside the fruit
- B) On the roots
- C) Inside leaves
- D) On the stem surface.

Answer: A) Inside the fruit.

Q115. Which part of the luffa plant climbs?

- A) Roots
- B) Stems
- C) Fruits
- D) Seeds.

Answer: B) Stems.

Q116. When do luffa flowers usually appear?

- A) In warm growing weather
- B) In extreme cold
- C) Only after the plant dies
- D) Before seeds sprout.

Answer: A) In warm growing weather.

Choose all correct answers

Q117. Which changes occur during the warm growing season?

- A) Stems grow taller
- B) Flowers bloom
- C) All leaves immediately dry
- D) Fruits develop.

Answer: A, B and D.

Q118. Which statements about luffa seeds are correct?

- A) They are dark
- B) They need extreme cold to sprout
- C) They can grow into a new luffa plant
- D) They form inside fruits.

Answer: A, C and D.

True or False with correction

Q119. Many plants change their appearance with seasonal temperature changes.

Answer: True.

Q120. A luffa plant's climbing roots extend above the ground during growth.

Answer: False. Its climbing stems extend above the ground.

Q121. New fruits appear before flowers in the usual luffa life cycle.

Answer: False. Flowers appear before fruits.

Q122. A tomato plant's leaves normally dry because it is growing well in warm weather.

Answer: False. Healthy warm-season growth produces growing stems and leaves; drying and withering occur as conditions become unsuitable or the life cycle ends.

Correct the statements

Q123. Correct the wrong word: Seasonal changes in a plant over one year form its daily cycle.

Answer: Its yearly cycle.

Q124. Correct the statement: A luffa plant dies in winter and leaves no sign of life for the next year.

Answer: The old plant may wither, but it leaves seeds that can grow into the next generation.

Q125. Correct the wrong word: Flowers are planted to start the next luffa generation.

Answer: Seeds are planted.

Write the scientific term

Q126. The stages of a plant's life completed within one year as seasons change.

Answer: A plant's yearly cycle.

Q127. The dark structures inside dry luffa fruits that can grow into new plants.

Answer: Seeds.

Q128. The yellow luffa part that appears after leaf growth and is involved in producing fruit.

Answer: A flower.

Give reasons

Q129. Why do some plants wither as winter becomes cold?

Answer: The lower temperature becomes unsuitable for their active growth, so leaves and stems dry or die at the end of the growing season.

Q130. Why does a luffa fruit turn brown at the end of its growing season?

Answer: It matures and dries out.

Q131. Why does the withering of a luffa plant not end its life cycle permanently?

Answer: Seeds remain in its fruits and can germinate when suitable conditions return.

Q132. Why are flowers important in a plant's life cycle?

Answer: They are involved in reproduction and the formation of fruits and seeds.

Q133. Why do many plants grow rapidly in spring and summer?

Answer: Warmer temperatures, with enough water and other suitable conditions, support germination and growth.

What happens

Q134. What happens if luffa seeds are planted during very cold winter weather?

Answer: They are unlikely to germinate until the temperature becomes suitable, so the start of the life cycle is delayed.

Q135. What happens if a luffa seed has warmth and air but no water?

Answer: It does not germinate because water is essential.

Q136. What changes may occur in a tomato plant when seasonal temperatures become too low?

Answer: Growth slows; leaves may change colour and wither, and the plant may die if conditions remain unsuitable.

Q137. What would happen to luffa seed production if the plant formed no flowers?

Answer: It could not carry out its normal flower-based reproduction, so it would not form new fruits and seeds in that cycle.

Q138. What could happen if every luffa fruit were removed and no seeds were saved or left to grow?

Answer: No new plants would grow from that generation's seeds unless seeds were supplied from elsewhere.

Compare

Q139. Compare the luffa plant in summer and winter.

Answer: Summer: active growth, green leaves, flowers and growing fruits.

Winter: the old plant withers and the fruits dry, leaving seeds for the next warm season.

Q140. Compare the yearly cycles of luffa and tomato plants.

Answer: Both begin from seeds, form seedlings, grow, flower and produce fruits with seeds. Luffa has elongated fruits that dry brown; tomatoes commonly have fleshy fruits that ripen red.

Matching

Q141. Match each item to its description. Items: 1) Green luffa fruit 2) Brown luffa fruit 3) Dark luffa seed. Descriptions: A) Begins a new cycle B) Forms during growth C) Mature dried fruit.

Answer: 1-B; 2-C; 3-A.

Arrange in order

Q142. Arrange: fruit dries and new seeds remain; seed germinates; seeds are planted; climbing stems and leaves grow; flowers bloom and fruits develop.

Answer: Seeds are planted → seed germinates → stems and leaves grow → flowers bloom and fruits develop → fruit dries and new seeds remain.

Observe and apply

Q143. Describe the luffa fruit from early development to the stage when fibres can be collected.

Answer: It begins as a small green fruit, enlarges, then matures and dries. Its colour becomes brown and a fibrous structure with seeds remains.

Lesson 2.2 Animals and Temperature

Complete the sentences

Q144. When temperatures fall, lizards become _____; when temperatures rise suitably, they become more _____.

Answer: slower; active

Q145. Some animals stay in soil or rock crevices during winter in a state called _____.

Answer: hibernation

Q146. Birds that move to warmer places are showing _____.

Answer: migration

Q147. Migrating birds seek suitable temperatures and available _____ and _____.

Answer: food; water

Q148. Flamingos and some ducks visit Egypt during _____.

Answer: winter

Q149. Feathers, fur and layers of _____ help animals retain body heat.

Answer: fat

Choose the correct answer

Q150. Which animal may hibernate?

- A) Frog
- B) Flamingo
- C) Eagle
- D) Duck.

Answer: A) Frog.

Q151. Where might a lizard be found basking on a warm day?

- A) On a sunny rock
- B) Flying overhead
- C) Inside a frozen pond
- D) Always deep in soil.

Answer: A) On a sunny rock.

Q152. The main seasonal factor affecting lizard activity is:

- A) temperature
- B) flower colour
- C) cloud names
- D) bone number.

Answer: A) Temperature.

Choose all correct answers

Q153. Which birds are given as examples of winter visitors to Egypt?

- A) Ducks
- B) Snakes
- C) Flamingos
- D) Frogs.

Answer: A and C) Ducks and flamingos.

True or False with correction

Q154. Lizards are equally active in summer and very cold winter weather.

Answer: False. They are generally more active in warm conditions and less active in cold conditions.

Q155. Hibernation helps conserve energy during cold weather.

Answer: True.

Q156. A motionless lizard in cold weather must be sleeping normally.

Answer: False. Cold lowers its body temperature and slows its movements; it may also be in winter dormancy.

Correct the statements

Q157. Correct the wrong term: Hibernation is the movement of birds to warmer regions.

Answer: Migration.

Q158. Correct the wrong term: Migration is winter inactivity in soil or rock crevices.

Answer: Hibernation.

Q159. Correct the wrong animal: Lizards have feathers to help them stay warm.

Answer: Birds have feathers.

Write the scientific term

Q160. The behaviour in which some animals remain inactive in sheltered places during winter to conserve energy.

Answer: Hibernation.

Q161. Seasonal movement of animals from one region to another, often to find warmer conditions and food.

Answer: Migration.

Give reasons

Q162. Why do lizards bask in sunlight on warm rocks?

Answer: They gain heat from their surroundings, which warms their bodies and helps them become active.

Q163. Why can humans remain active in cold weather while lizards become slow?

Answer: Humans maintain a warm body temperature, while a lizard's body temperature is strongly affected by its surroundings.

Q164. Why do some ducks and flamingos migrate to Egypt in winter?

Answer: Egypt offers relatively warmer conditions and suitable food and water.

Q165. Why do birds have feathers and foxes have fur?

Answer: These coverings help reduce heat loss and keep their bodies warm.

What happens

Q166. What might migratory birds do if their usual winter destination in Egypt became extremely cold?

Answer: They might move to another warmer suitable area where food and water are available.

Q167. What happens if lizards lose sheltered rock crevices during cold winter weather?

Answer: They lose protected places for winter dormancy, making energy conservation and survival harder.

Q168. What happens if shade and rock crevices disappear in an extremely hot desert summer?

Answer: Animals have fewer places to escape excessive heat, increasing the risk of overheating and water loss.

Q169. How might a sudden suitable rise in winter temperature affect a lizard?

Answer: Its body may warm and its activity may increase.

Q170. What could happen if a bird lost its insulating feathers during cold weather?

Answer: It would lose heat more easily and have difficulty staying warm.

Compare

Q171. Compare birds and lizards in their responses to cold weather.

Answer: Birds use insulating feathers, and some migrate. Lizards slow down and may remain in sheltered places in winter dormancy.

Q172. Compare the winter survival of luffa, lizards and migratory birds.

Answer: Luffa survives into the next generation through seeds. Lizards conserve energy in dormancy. Migratory birds move to more suitable regions.

Q173. Compare white and black cloth in the way they interact with sunlight.

Answer: White cloth reflects more sunlight; black cloth absorbs more. Loose clothing can also permit air circulation.

Functions and importance

Q174. How do a fennec fox's large ears help it in the desert?

Answer: Blood vessels in the ears release heat to the surroundings, helping cool the body.

Q175. How does hair on the soles of a fennec fox's paws help it?

Answer: It protects the feet from very hot sand.

Q176. State one important role of the Sun for plants and one for lizards.

Answer: Plants use sunlight to make food after germination. Lizards use heat from their surroundings, including sunshine, to warm their bodies.

Matching

Q177. Match: 1) Eagle 2) Fox 3) Seal. Coverings: A) Fur B) Fat under the skin C) Feathers.

Answer: 1-C; 2-A; 3-B.

Classification

Q178. Classify bird migration and wearing warm socks as a natural adaptation or a human invention.

Answer: Bird migration: natural adaptation. Warm socks: human invention.

Odd one out

Q179. Lizard - Flamingo - Snake. Explain.

Answer: Flamingo; it is a migratory bird, while the lizard and snake are examples of animals that become dormant in cold weather.

Q180. Duck - Flamingo - Snake. Explain.

Answer: Snake; ducks and flamingos are the migratory-bird examples.

Thinking and application

Q181. How can a loose galabeya help cool the body?

Answer: Air circulates between the cloth and body; warm air rises and fresh air enters, helping sweat evaporate.

Q182. If temperatures did not change through the year, how might seasonal plant and animal behaviour differ?

Answer: Temperature-driven changes such as winter dormancy or seasonal growth would be altered. Other factors, including water and day length, could still affect living organisms.

Chapter 3

Conditions for Germination

Source guide: Ministry textbook pp. 28–43; Al Moasser main book PDF pp. 50–82; related assessment, supplement and exam questions.

Lesson 3.1 Inside the Seed

Complete the sentences

Q183. The small plant-like part inside a seed is the _____.

Answer: embryo

Q184. A kidney bean seed has two _____ that store food.

Answer: cotyledons

Q185. The nutrient tested in the bean's cotyledons is _____.

Answer: starch

Q186. _____ solution turns _____ in the presence of starch.

Answer: Iodine; blue-black

Q187. The embryo and cotyledons are protected by the _____.

Answer: seed coat

Q188. A _____ helps us observe the small structures inside a split seed.

Answer: magnifying glass

Choose the correct answer

Q189. Which seed part grows into a new plant?

- A) Embryo
- B) Seed coat
- C) Stored starch
- D) Cotton.

Answer: A) Embryo.

Q190. Which part makes up most of a kidney bean seed?

- A) Leaves
- B) Cotyledons
- C) Root
- D) Stem.

Answer: B) Cotyledons.

Q191. The main function of cotyledons in the early bean seed is to:

- A) store food
- B) collect pollen
- C) make flowers
- D) form a fruit.

Answer: A) Store food.

Q192. What colour change indicates starch?

- A) Brown to blue-black
- B) Blue to red
- C) Green to yellow
- D) Brown to clear.

Answer: A) Brown to blue-black.

Choose all correct answers

Q193. Select correct statements about a kidney bean seed:

- A) Its embryo develops into a plant
- B) Its cotyledons store starch
- C) Its seed coat protects it
- D) It has no stored food.

Answer: A, B and C.

True or False with correction

Q194. The embryo is a miniature structure that can develop roots, a stem and leaves.

Answer: True.

Q195. A germinated bean seed usually has more stored starch than an ungerminated one.

Answer: False. Stored starch decreases as the embryo uses it.

Q196. All plant seeds have exactly the same shape and colour.

Answer: False. Seeds of different plants vary in shape and colour.

Q197. Iodine always becomes blue-black even when starch is absent.

Answer: False. Blue-black indicates the presence of starch.

Correct the statements

Q198. Correct the wrong term: The cotyledon is the tiny plant-like part inside the seed.

Answer: The embryo is the tiny plant-like part.

Q199. Correct the wrong liquid: Soak a seed in oil to soften its coat before opening it.

Answer: Soak it in water.

Q200. Correct the statement: A bean embryo feeds on starch in only one cotyledon.

Answer: A kidney bean embryo can use food stored in its two cotyledons.

Write the scientific term

Q201. The tough outer covering of a seed.

Answer: The seed coat.

Q202. The stored nutrient that gives a blue-black colour with iodine.

Answer: Starch.

Q203. The chemical solution used to test for starch.

Answer: Iodine solution.

Definitions

Q204. What is meant by germination?

Answer: The process in which a seed sprouts and starts growing into a young plant.

Give reasons

Q205. Why are cotyledons important before green leaves develop?

Answer: They supply stored food to the embryo before the seedling can make enough of its own food.

Q206. Why is a bean seed soaked in water before dissection?

Answer: Water softens its coat, making it easier to remove and open the seed.

Q207. Why may a cotyledon from a seed that has grown for several days show only a faint blue-black colour with iodine?

Answer: Much of its stored starch has already been used during germination and early growth.

What happens

Q208. What happens if the embryo inside a kidney bean seed dies?

Answer: The seed cannot develop into a new plant.

Q209. What happens if the cotyledons are removed before a bean seed germinates?

Answer: The embryo loses its main stored food supply and may fail to develop normally.

Q210. What happens when iodine is placed on an ungerminated bean cotyledon?

Answer: It turns blue-black because starch is present.

Q211. What would an iodine test show on a properly prepared leaf containing starch?

Answer: A blue-black colour would appear where starch is present.

Compare

Q212. Compare the embryo and cotyledons in appearance and function.

Answer: Embryo: small plant-like structure that develops into the new plant.
Cotyledons: the two large seed halves that store food for early growth.

Q213. Compare the iodine test before and after several days of bean germination.

Answer: Before: a strong blue-black colour is expected from stored starch. After: the colour is weaker or may not appear because starch has been used.

Classification

Q214. Classify starch and suitable temperature as stored food or an external condition for germination.

Answer: Starch: stored food. Suitable temperature: external condition.

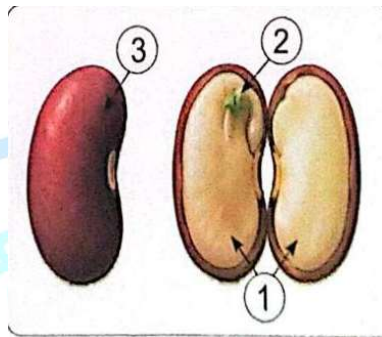
Experiments and fair tests

Q215. Describe how to examine a kidney bean seed and test it for starch.

Answer: Soak the seed, remove the coat, split it into two halves, observe the embryo with a magnifying glass, then add iodine to a cotyledon and look for blue-black colour.

Label and interpret the diagram

Q216. Name parts 1, 2 and 3 of the bean seed. Which nutrient can be detected in part 1 using iodine?



Answer: 1: the two cotyledons. 2: embryo. 3: seed coat. Starch in the cotyledons turns blue-black when iodine solution is added.

Observe and apply

Q217. Describe the typical seed examples shown in the book: wheat, sunflower, chickpea, cotton, date palm and corn.

Answer: Wheat: oval, golden yellow. Sunflower: oval, dark with pale stripes. Chickpea: rounded, yellowish. Cotton: rounded, dark brown beneath its fibres. Date palm: elongated or cylindrical, reddish brown. Corn: approximately rounded, golden yellow. Individual seeds can vary.

Draw and label

Q218. Draw an opened kidney bean seed and label the embryo, two cotyledons and seed coat.

Answer: The embryo lies between the large cotyledons; the seed coat surrounds and protects them.

Thinking and application

Q219. A seed sample does not turn blue-black with iodine. What can you conclude?

Answer: No detectable starch was shown by that test. A germinated sample may have used much of its starch; the test alone does not prove the seed has no other nutrients.

Lesson 3.2 Water and Germination

Complete the sentences

Q220. To test one condition fairly, change _____ condition and keep the others _____.

Answer: one; the same

Q221. In the water experiment, the changed condition is the presence or absence of _____.

Answer: water

Q222. The seeds are placed on _____, which holds moisture.

Answer: cotton

Choose the correct answer

Q223. Which must differ between the two cups when testing the need for water?

- A) Water supply
- B) Seed type
- C) Temperature
- D) Light.

Answer: A) Water supply.

Q224. What happens if two conditions are changed together?

- A) The cause becomes clearer
- B) The cause of the result cannot be isolated
- C) All seeds must sprout
- D) The experiment needs no observations.

Answer: B) The cause of the result cannot be isolated.

Choose all correct answers

Q225. When testing water, keep these the same:

- A) temperature
- B) access to air
- C) brightness
- D) presence of water.

Answer: A, B and C.

True or False with correction

Q226. Seeds on dry cotton will germinate just because the place is warm.

Answer: False. They also need water.

Q227. Seeds can germinate on moist cotton without agricultural soil if the other conditions are suitable.

Answer: True. Their stored food supports early growth.

Write the scientific term

Q228. Testing one condition while keeping all other conditions the same.

Answer: A fair test or comparison under the same conditions.

Q229. The factor deliberately altered to test its effect in an experiment.

Answer: The changed condition or independent variable.

Give reasons

Q230. Why must temperature, air and light be kept the same in the water experiment?

Answer: So any difference in germination can be linked to the water supply.

Q231. Why should the cotton be moist without completely covering the seeds in water?

Answer: The seeds need both water and access to air.

What happens

Q232. Predict the result after several days for identical seeds on moist cotton and dry cotton in the same warm place.

Answer: Seeds on moist cotton can germinate. Seeds on dry cotton do not germinate.

Q233. How does drought affect seed germination and young plants?

Answer: Seeds may not germinate without enough water; seedlings may wilt and their growth may slow or stop.

Experiments and fair tests

Q234. Plan a fair test to show whether water is needed for germination.

Answer: Use equal numbers of the same seeds on equal amounts of cotton in two cups. Moisten one cup and leave the other dry. Keep temperature, air and light the same, observe daily, and compare germination.

Thinking and application

Q235. Cup A contains wet cotton in a warm room; cup B contains dry cotton in a cold room. Is this a fair test of water? Explain.

Answer: No. Both water and temperature differ, so the result cannot identify the effect of water alone.

Q236. What should be recorded each day in a germination experiment?

Answer: Whether seeds have sprouted, how many have sprouted, and visible changes such as root and shoot development.

Lesson 3.3 Air and Germination

Complete the sentences

Q237. Seeds need _____ for respiration during germination.

Answer: air

Q238. When testing air, keep water, _____ and _____ the same.

Answer: temperature; light

Choose the correct answer

Q239. How does the school experiment restrict a seed's access to air?

- A) Completely submerge it in water
- B) Put it on moist cotton
- C) Warm the room
- D) Open the cup.

Answer: A) Completely submerge it in water.

Q240. Seeds completely submerged in the experiment fail to germinate mainly because they lack enough:

- A) air
- B) seed coats
- C) stored food
- D) sunlight.

Answer: A) Air. _____

True or False with correction

Q241. Changing the seed type is the main condition when testing the need for air.

Answer: False. The condition changed is access to air; use the same seed type.

Correct the statements

Q242. Correct the statement: Temperature should differ between the two cups when testing air.

Answer: Temperature should be the same; access to air should differ.

Give reasons

Q243. Why may overwatering prevent bean seeds from germinating?

Answer: Water can fill the spaces around the seeds and limit the air needed for respiration.

What happens

Q244. Can a seed germinate with water and suitable warmth but no air, for example in an airless space experiment?

Answer: No. It lacks an essential condition for respiration and germination.

Compare

Q245. Compare seeds on moist cotton exposed to air with seeds kept fully submerged, with other conditions the same.

Answer: Seeds exposed to air can germinate. Fully submerged seeds in the school experiment fail because their air supply is restricted.

Experiments and fair tests

Q246. Plan a test of whether air is necessary for bean germination.

Answer: Place one group on moist cotton exposed to air and fully submerge the other group. Keep seed type, temperature and light the same. Observe daily; the air-exposed group germinates under suitable conditions.

Lesson 3.4 Temperature and Germination

Complete the sentences

Q247. Seeds in a refrigerator do not germinate in the school experiment because the _____ is too low.

Answer: temperature

Q248. The warm-room cup is covered with a cardboard box to keep _____ conditions like those in the refrigerator.

Answer: light

Q249. Wooden blocks under the box leave a gap for _____ to enter.

Answer: air

Choose the correct answer

Q250. Which condition changes when one seed cup is in a warm room and another is in a refrigerator?

- A) Temperature
- B) Seed type
- C) Water supply
- D) Cotton type.

Answer: A) Temperature.

Q251. Why cover the warm-room cup?

- A) To equalise light conditions
- B) To remove all air
- C) To add fertilizer
- D) To change the seed type.

Answer: A) To equalise light conditions.

Choose all correct answers

Q252. Keep these the same in the temperature experiment:

- A) water
- B) air
- C) light
- D) temperature.

Answer: A, B and C.

True or False with correction

Q253. Bean seeds germinate faster at refrigerator temperature than at suitable warmth.

Answer: False. Refrigerator conditions are too cold for the bean seeds in this experiment.

Give reasons

Q254. Why is a gap left under the cardboard box?

Answer: To let air reach the seeds while the box blocks light.

Q255. Why do both cups receive equal suitable amounts of water in the temperature experiment?

Answer: To isolate temperature as the cause of any difference in germination.

What happens

Q256. What happens to bean seeds on moist cotton in a warm dark box with an air gap?

Answer: They can germinate because water, air and suitable warmth are present; sunlight is not needed for this stage.

Q257. What happens if a box used in the temperature experiment is sealed so no fresh air can enter?

Answer: Air may become limited, introducing another changed condition and making the test unreliable.

Experiments and fair tests

Q258. Explain how to test whether bean seeds need warmth.

Answer: Place identical seeds on equally moist cotton in two cups. Keep one in a refrigerator and the other in a warm room under a dark box with an air gap. Keep light, air and water comparable and observe germination.

Lesson 3.5 Summary of Germination

Complete the sentences

Q259. The three conditions needed for bean seed germination are _____, _____ and _____.

Answer: water; air; a suitable temperature

Q260. Sunlight and added _____ are not needed for bean germination itself, but support later healthy growth.

Answer: fertilizer

Choose the correct answer

Q261. Which statement is correct?

- A) Water alone is sufficient
- B) All three basic conditions must be suitable
- C) Seeds need no air
- D) Extreme cold is essential.

Answer: B) All three basic conditions must be suitable.

True or False with correction

Q262. Fertile soil is an essential requirement for a bean seed to begin germinating.

Answer: False. It can begin germinating on moist cotton using stored food if air and temperature are suitable.

Correct the statements

Q263. Correct the statement: Light is the main food supply for a bean embryo during germination.

Answer: The embryo uses stored food in the cotyledons; light is not food and is not required for bean germination itself.

Give reasons

Q264. Why can a bean seed germinate without sunlight or fertilizer?

Answer: It uses the food stored in its cotyledons during germination.

What happens

Q265. What happens if any one essential germination condition is missing?

Answer: The seed does not germinate normally.

Compare

Q266. Compare the changed condition and the conditions kept the same in the water, air and temperature germination experiments.

Answer: Water test: change water; keep air, temperature and light the same. Air test: change access to air; keep water, temperature and light the same. Temperature test: change warmth; keep water, air and light the same.

Matching

Q267. Match the test to the changed condition: 1) Water test 2) Air test 3) Temperature test. A) Warm or cold B) Wet or dry C) Air available or restricted.

Answer: 1-B; 2-C; 3-A.

Classification

Q268. Classify water, air, suitable warmth, sunlight and added fertilizer into essential conditions for bean germination and additional factors for later growth.

Answer: Germination: water, air and suitable warmth. Additional factors for healthy later growth: sunlight and nutrients such as those supplied by fertilizer.

Complete the table

Q269. Predict germination: A) water + air + warmth B) no water + air + warmth C) water + no air + warmth D) water + air + refrigerator temperature E) water + air + warmth + darkness.

Case	Conditions	Will the seeds germinate?
A	Water, air and warmth	
B	No water; air and warmth	
C	Water and warmth; no air	
D	Water and air; refrigerator temperature	
E	Water, air and warmth; darkness	

Answer: A) Yes. B) No. C) No in the experiment. D) No in the experiment. E) Yes.

Observe and apply

Q270. Would wheat, corn and chickpea seeds necessarily look the same? What basic conditions would you investigate for each?

Answer: They differ in appearance. Investigate water, air and suitable temperature using a fair test for each type.

Thinking and application

Q271. Write a short diary entry from the viewpoint of a bean embryo waiting to germinate.

Answer: Model answer: I have food stored in my cotyledons. I am waiting for water, air and suitable warmth. When these are available, I can sprout and develop roots, a stem and leaves.

Chapter 4

Conditions for Growth

Source guide: Ministry textbook pp. 44–51; Al Moasser main book PDF pp. 83–101; related assessment, supplement and exam questions.

Lesson 4.1 Sunlight and Growth

Complete the sentences

Q272. After germination, plants need _____ to make their own food.

Answer: sunlight

Q273. A healthy seedling receiving suitable sunlight has _____ leaves and a _____ stem.

Answer: dark green; thick and strong

Q274. A seedling kept in darkness may develop _____ leaves and a _____ stem.

Answer: yellowish; long, thin and weak

Q275. When testing sunlight, use seedlings of the same _____ and approximately the same _____.

Answer: type; size

Choose the correct answer

Q276. Which is changed in the sunlight experiment?

- A) Light supply
- B) Water supply
- C) Plant type
- D) Temperature.

Answer: A) Light supply.

Q277. Which structure supports the plant and helps it withstand wind?

- A) Stem
- B) Pollen
- C) Seed coat
- D) Petal.

Answer: A) Stem.

Choose all correct answers

Q278. Keep these the same when testing sunlight:

- A) plant type
- B) water
- C) temperature
- D) light exposure.

Answer: A, B and C.

True or False with correction

Q279. Water alone allows a green plant to remain healthy indefinitely in complete darkness.

Answer: False. The plant also needs light to make food and grow healthily.

Q280. A dark cardboard box increases the sunlight reaching a plant.

Answer: False. It blocks the light.

Q281. A plant can be affected by dry soil even when it receives sunlight.

Answer: True. Water is also necessary.

Correct the statements

Q282. Correct the wrong words: A dark-grown seedling usually has thick, strong stems and dark green leaves.

Answer: It usually has long, thin, weak stems and pale or yellowish leaves.

Q283. Correct the statement: Use different-sized plants of different kinds to test sunlight fairly.

Answer: Use the same kind of plant at approximately the same starting size.

Write the scientific term

Q284. A young plant that has recently developed from a germinating seed.

Answer: A seedling.

Q285. The energy source green plants use to make food.

Answer: Sunlight.

Give reasons

Q286. Why is sunlight necessary for healthy growth after germination?

Answer: It supplies energy for the plant to make its own food.

Q287. Why must both plants receive equal water in the sunlight experiment?

Answer: So differences in growth can be linked to sunlight rather than water supply.

What happens

Q288. Predict the appearance of a bean seedling after about a week under a light-blocking box.

Answer: Its leaves become pale or yellowish and its stem becomes thin and weak; it does not grow healthily.

Compare

Q289. Compare two similar seedlings grown with sunlight and without sunlight.

Answer: With sunlight: greener leaves and stronger stems. Without sunlight: pale or yellowish leaves and weak, often elongated stems.

Experiments and fair tests

Q290. Plan a fair test of the effect of sunlight on seedling growth.

Answer: Use two similar seedlings. Place one in light and cover the other with a dark box that permits air. Keep water, temperature, soil and nutrients the same. After about a week compare leaf colour, stem strength and growth.

Label and interpret the diagram

Q291. Plant A is in light and plant B is under a dark box. Predict their leaf colour and strength after several days. Why must both receive equal water?



Answer: A remains greener and grows more strongly. B becomes pale and weak as it cannot make enough food without light. Equal water makes the comparison a fair test of light.

Thinking and application

Q292. A dark-grown seedling becomes taller but weaker. Does greater height alone prove healthier growth?

Answer: No. Leaf colour, stem thickness, strength and overall condition must also be considered.

Lesson 4.2 Fertilizer and Growth

Complete the sentences

Q293. Fertilizer contains _____ that support plant growth.

Answer: nutrients

Q294. Plant height can be measured using a _____ or a _____.

Answer: ruler; measuring tape

Q295. When fertilizer is tested, the presence or absence of _____ is changed.

Answer: fertilizer

Q296. With suitable nutrients, leaves may become _____ and increase in _____, while stems become longer and stronger.

Answer: larger; number

Choose the correct answer

Q297. Which is NOT an expected benefit of suitable fertilizer?

- A) Bigger plant
- B) Stronger stem
- C) More leaves
- D) Fewer leaves caused by poor growth.

Answer: D) Fewer leaves caused by poor growth.

Q298. To test fertilizer fairly, give both plants:

- A) equal water
- B) different light
- C) different temperatures
- D) different soil types.

Answer: A) Equal water.

Choose all correct answers

Q299. Keep these the same in a fertilizer experiment:

- A) sunlight
- B) water
- C) plant type and starting size
- D) fertilizer treatment.

Answer: A, B and C.

True or False with correction

Q300. Fertilizer can completely replace sunlight for a green plant.

Answer: False. Fertilizer supplies nutrients, while sunlight provides energy for food-making.

Q301. Fertilizer affects only the leaves and never the stem.

Answer: False. Suitable nutrients support growth of both leaves and stems.

Q302. Both plants should receive the same light when testing fertilizer.

Answer: True.

Correct the statements

Q303. Correct the wrong words: A plant given suitable fertilizer normally grows more slowly and becomes smaller in the comparison experiment.

Answer: It normally grows faster and becomes larger when the other plant lacks needed nutrients.

Q304. Correct the statement: Fertilizer is the only factor needed for healthy plant growth.

Answer: Plants also need suitable light, water, air and temperature.

Q305. Correct the statement: A plant does not need air to grow well.

Answer: A plant needs air as well as suitable water, light, temperature and nutrients.

Definitions

Q306. What is meant by fertilizer?

Answer: A material added to soil to supply nutrients for plant growth.

Give reasons

Q307. Why do farmers add suitable amounts of fertilizer to nutrient-poor soil?

Answer: To supply nutrients that help plants grow bigger and stronger.

Q308. Why are the two fertilizer-test pots placed in the same location?

Answer: To keep sunlight and temperature the same.

Q309. Why should seedlings have similar starting sizes in a fertilizer test?

Answer: So any later difference is more likely to be caused by fertilizer, not an initial size difference.

What happens

Q310. What happens if fertilizer is provided but the plant is kept in complete darkness?

Answer: It still cannot make food normally and becomes weak; fertilizer cannot replace light.

Q311. What may happen if a very large amount of fertilizer is added at once?

Answer: Excess fertilizer can damage roots and harm or kill the plant; more is not always better.

Compare

Q312. Compare plants given water only and water plus suitable fertilizer in the school experiment.

Answer: With fertilizer: usually larger, stronger plants with more or larger leaves. Without added nutrients in the comparison: slower, smaller growth.

Q313. Compare the sunlight and fertilizer growth experiments in changed and fixed conditions.

Answer: Sunlight test: change light; keep fertilizer, water, air, temperature, soil and plant type and starting size the same. Fertilizer test: change fertilizer; keep sunlight and the other conditions the same.

Functions and importance

Q314. How did Nile silt help agriculture?

Answer: It supplied fine, nutrient-rich material that improved soil fertility and supported crop growth.

Matching

Q315. Match: 1) Sunlight 2) Fertilizer 3) Ruler. A) Measures height B) Supplies mineral nutrients C) Provides energy for making food.

Answer: 1-C; 2-B; 3-A.

Experiments and fair tests

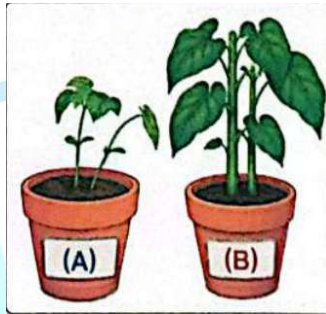
Q316. Describe a fair fertilizer experiment and how to record its results.

Answer: Use similar seedlings in the same soil. Give equal water, but fertilizer to only one. Keep light, air and temperature the same. Measure heights every few days and record leaf number, leaf colour and stem strength.

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Label and interpret the diagram

Q317. Both plants began at a similar size and were grown under the same conditions except fertilizer. Which likely received fertilizer, and what visible evidence supports your answer?



Answer: Plant B likely received fertilizer: it is taller and has larger, more numerous leaves. Plant A shows weaker growth. The conclusion depends on the other conditions being kept the same.

Observe and apply

Q318. How can flowing river water help form soil suitable for roots?

Answer: It wears and transports rock material, producing finer sediments that can form soft soil in which roots can spread.

Thinking and application

Q319. If a plant could choose between plenty of light and nutrient-rich soil, which would be best for healthy growth?

Answer: It needs both adequate light and nutrients, together with water, air and suitable temperature. One cannot fully replace the other.

Q320. Why can plants sometimes grow well without artificial fertilizer?

Answer: The soil may already contain enough nutrients, for example from nutrient-rich silt or organic matter.

Chapter 5

From Flower to Fruit

Source guide: Ministry textbook pp. 52–63; Al Moasser main book PDF pp. 102–133; related assessment, supplement and exam questions.

Lesson 5.1 Structure of a Luffa Flower

Complete the sentences

Q321. The _____ is the plant part responsible for reproduction and seed production.

Answer: flower

Q322. A male luffa flower has _____ in its centre that produce _____.

Answer: stamens; pollen grains

Q323. A female luffa flower has a _____ in its centre and a _____ at its base.

Answer: pistil; swelling

Q324. Both male and female luffa flowers have _____ and _____.

Answer: sepals; petals

Q325. Luffa pollen looks like a _____ powder.

Answer: yellow

Choose the correct answer

Q326. Which structure is absent from a normal female luffa flower?

- A) Sepals
- B) Petals
- C) Pistil
- D) Stamens.

Answer: D) Stamens.

Q327. Which flower can develop a fruit after successful pollination?

- A) Male luffa flower
- B) Female luffa flower
- C) Either flower without pollination
- D) A detached petal.

Answer: B) Female luffa flower.

Q328. Which is the correct order from the centre outwards in a male luffa flower?

- A) Stamen, petals, sepals
- B) Sepals, petals, pistil
- C) Petals, sepals, stamen
- D) Pistil, petals, sepals.

Answer: A) Stamen, petals, sepals.

Choose all correct answers

Q329. Select parts present in a male pumpkin flower:

- A) Sepals
- B) Petals
- C) Stamens
- D) A fruit-forming swelling at the base.

Answer: A, B and C.

Q330. Which statements describe a female luffa flower?

- A) It has a pistil
- B) It has a swelling at the base
- C) It produces pollen in stamens
- D) It can form a fruit.

Answer: A, B and D.

True or False with correction

Q331. A male luffa flower and a female luffa flower have exactly the same structure.

Answer: False. They share sepals and petals but differ in their central reproductive parts and the basal swelling.

Q332. A male luffa flower has a pistil and a swelling at its base.

Answer: False. It has stamens and no fruit-forming swelling.

Q333. Both male and female luffa flowers can have yellow petals.

Answer: True.

Correct the statements

Q334. Correct the wrong word: Leaves are responsible for seed production in flowering plants.

Answer: Flowers are responsible for reproduction and seed production.

Q335. Correct the wrong colour: Male luffa flowers produce green pollen.

Answer: They produce yellow pollen.

Q336. Correct the wrong part: The stamen is the central part of a female luffa flower.

Answer: The pistil is the central part.

Write the scientific term

Q337. The flower structure that produces pollen grains.

Answer: The stamen.

Q338. The female flower structure whose tip receives pollen.

Answer: The pistil; its tip is the stigma.

Q339. Small grains produced by stamens and transferred to female flower parts during pollination.

Answer: Pollen grains.

Q340. The green outer flower parts that protect the flower bud.

Answer: Sepals.

Q341. The coloured flower parts that help attract pollinating insects.

Answer: Petals.

Q342. The flower with stamens but no fruit-forming swelling at its base in luffa.

Answer: The male flower.

Q343. The flower with a pistil and a fruit-forming swelling at its base in luffa.

Answer: The female flower.

Give reasons

Q344. Why do male and female luffa flowers differ in structure?

Answer: They perform different reproductive roles: male flowers produce pollen; female flowers receive pollen and can form fruits and seeds.

Q345. Why are petals useful to insect-pollinated flowers?

Answer: Their appearance helps attract insects that can carry pollen between flowers.

Compare

Q346. Compare male and female luffa flowers in central part, base and reproductive role.

Answer: Male: stamens, no swelling, produces pollen. Female: pistil, swelling at the base, receives pollen and develops fruit.

Functions and importance

Q347. State the functions of the sepals, petals, stamens and pistil.

Answer: Sepals protect the bud; petals help attract insects; stamens produce pollen; the pistil receives pollen and its swollen base develops into fruit after successful reproduction.

Odd one out

Q348. Sepals - Pistil - Swelling below the flower - Pollen-producing stamens. Explain for a female luffa flower.

Answer: Pollen-producing stamens; these are found in the male luffa flower.

Q349. Petals - Pistil - Stamens - Pollen grains. Explain for a male luffa flower.

Answer: Pistil; the male luffa flower has stamens, not a pistil.

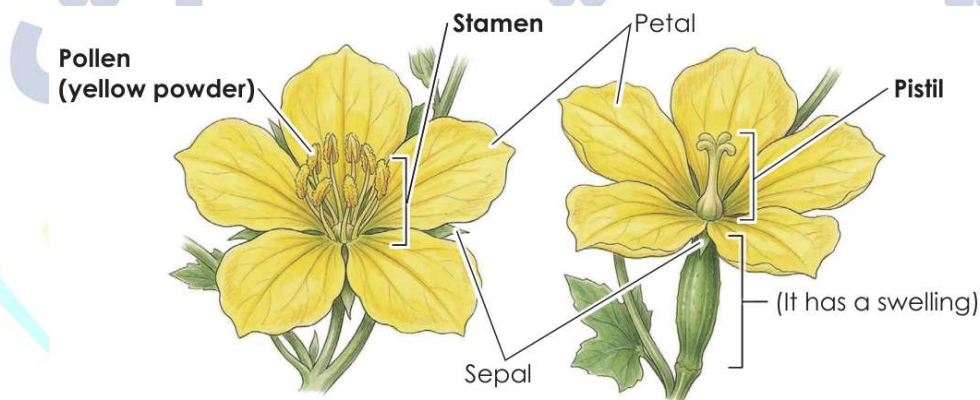
Arrange in order

Q350. Arrange the visible parts from outside to centre in a female luffa flower: pistil, sepals, petals.

Answer: Sepals → petals → pistil.

Observe and apply

Q351. Observe the two luffa flowers. Identify the male and female flowers and explain which can develop into a fruit.



Answer: The left flower is male because it has stamens with pollen. The right flower is female because it has a pistil and a swollen base. The swollen base can develop into a fruit after successful pollination.

Draw and label

Q352. Draw a male and a female luffa flower. Label the shared parts and the different reproductive parts.

Answer: Both: sepals and petals. Male: stamens with pollen. Female: pistil and swollen base.

Lesson 5.2 How to Use a Microscope

Complete the sentences

Q353. A microscope helps us see _____ objects and their fine details.

Answer: tiny

Q354. Look through the _____ lens to view a microscope specimen.

Answer: eyepiece

Q355. The _____ lenses are nearest the specimen.

Answer: objective

Q356. The prepared slide rests on the _____ and is held by _____.

Answer: stage; clips

Q357. The _____ directs light towards the specimen, while the _____ helps focus the image.

Answer: reflector; adjustment knob

Q358. Use a microscope on a _____, bright surface away from direct _____.

Answer: flat; sunlight

Q359. Start observation with the _____ magnification objective lens.

Answer: lowest

Q360. Total magnification equals eyepiece magnification _____ objective magnification.

Answer: multiplied by

Q361. At higher magnification, the field of view becomes _____ and usually _____.

Answer: narrower; less bright

Choose the correct answer

Q362. Which part carries the objective lenses and rotates to select one?

- A) Stage
- B) Revolving nosepiece
- C) Clips
- D) Cover glass.

Answer: B) Revolving nosepiece.

Q363. Which part helps make the image clear?

- A) Adjustment knob
- B) Arm alone
- C) Clips alone
- D) Base alone.

Answer: A) Adjustment knob.

Q364. At low magnification, the view is usually:

- A) wide and bright
- B) narrow and dark
- C) wide and dark
- D) invisible.

Answer: A) Wide and bright.

Q365. To focus while looking through the eyepiece, move the objective lens:

- A) gradually away from the slide
- B) rapidly into the slide
- C) sideways through the cover glass
- D) directly against the specimen.

Answer: A) Gradually away from the slide.

Choose all correct answers

Q366. Which are microscope parts?

- A) Reflector
- B) Revolving nosepiece
- C) Objective lens
- D) A separate prepared cover glass.

Answer: A, B and C. The cover glass is part of slide preparation.

True or False with correction

Q367. A microscope has only one lens.

Answer: False. It uses an eyepiece and objective lenses.

Q368. Different objective lenses can have different magnification powers.

Answer: True.

Q369. The object appears upside down and reversed left to right in the microscope used in the book.

Answer: True.

Q370. Moving a slide right makes its image move right.

Answer: False. The image moves left.

Q371. Higher magnification is always the best starting point for finding a specimen.

Answer: False. Low magnification gives a wider field, making the specimen easier to find.

Correct the statements

Q372. Correct the wrong term: The eyepiece is the lens closest to the specimen.

Answer: The objective lens is closest to the specimen.

Q373. Correct the wrong words: Place a microscope on an uneven surface in direct sunlight.

Answer: Place it on a flat, stable surface in a bright place away from direct sunlight.

Q374. Correct the statement: The adjustment knob holds the slide on the stage.

Answer: The clips hold the slide; the adjustment knob is used for focusing.

Write the scientific term

Q375. An instrument used to magnify very small objects for observation.

Answer: A microscope.

Q376. The cylinder that holds the eyepiece and connects it with the objective system.

Answer: The tube.

Q377. The curved supporting part used when carrying a microscope, while supporting its base.

Answer: The arm.

Q378. The number of times larger the observed image appears compared with the object.

Answer: Magnification.

Q379. A specimen arranged on a glass slide and covered with a thin cover glass for viewing.

Answer: A prepared slide.

Give reasons

Q380. Why do we use a microscope to examine pollen grains?

Answer: The grains and their fine surface details are too small to see clearly with the unaided eye.

Q381. Why should observation begin at low magnification?

Answer: Its wider, brighter field makes the specimen easier to locate.

Q382. Why should you look from the side when bringing the objective close to a slide?

Answer: To see the distance and avoid hitting or breaking the slide.

Q383. Why move the objective away from the slide when focusing through the eyepiece?

Answer: This reduces the risk of the lens hitting the slide.

Q384. Why is the cover glass lowered slowly from one side?

Answer: To reduce trapped air bubbles.

Q385. Why is filter paper used around a prepared slide?

Answer: To absorb excess water around the cover glass.

What happens

Q386. What happens if the microscope is used with insufficient light?

Answer: The image becomes too dark to observe clearly.

Q387. What may happen if the slide is not secured by the clips?

Answer: It may move, making the specimen difficult to find and keep in focus.

Q388. What happens if excess water remains around the cover glass?

Answer: Water can spill or allow the cover glass to move, making observation less clear and stable.

Q389. What happens to the image when you move the slide to the right?

Answer: The image moves to the left.

Q390. What happens to the view when you change from low to high magnification?

Answer: The specimen appears larger and finer details can be seen, but the field becomes narrower and usually dimmer.

Compare

Q391. Compare low and high microscope magnification in field of view and brightness.

Answer: Low: wider and brighter. High: narrower and less bright under the same lighting.

Q392. Compare a glass slide and cover glass.

Answer: The slide is the larger, thicker glass support. The cover glass is a small, thin piece placed over the specimen.

Functions and importance

Q393. State the functions of the eyepiece lens and objective lens.

Answer: The eyepiece is the lens you look through and magnifies the image further. The objective lens nearest the specimen produces a magnified image of it.

Q394. State the functions of the reflector, stage, clips and adjustment knob.

Answer: Reflector: directs light. Stage: supports the slide. Clips: secure the slide. Adjustment knob: changes the lens-slide distance to focus.

Arrange in order

Q395. Arrange slide preparation: absorb excess water; place specimen on slide with a drop of water if needed; lower the cover glass from one side.

Answer: Place specimen and water → lower the cover glass → absorb excess water.

Q396. Arrange: A) Focus while increasing the slide-lens distance B) Adjust the reflector C) Put the slide on the stage D) Bring the objective close while watching from the side.

Answer: B → C → D → A. Start with the low-power objective.

Calculations

Q397. An eyepiece is 10× and an objective is 40×. Calculate total magnification.

Answer: $10 \times 40 = 400\times$.

Q398. An eyepiece is 10× and an objective is 20×. Calculate total magnification.

Answer: $10 \times 20 = 200\times$.

Q399. An eyepiece is 10× and an objective is 60×. Calculate total magnification.

Answer: $10 \times 60 = 600\times$.

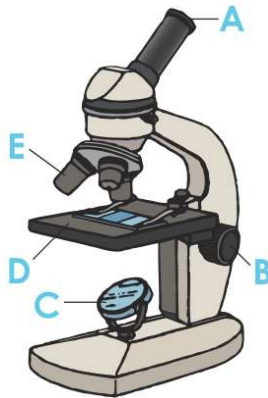
Experiments and fair tests

Q400. Describe how to examine luffa pollen under a microscope.

Answer: Collect pollen from a male flower, prepare a slide with a little water and cover glass, secure it on the stage, begin at low power, adjust light, focus safely, then increase magnification if needed and record observations.

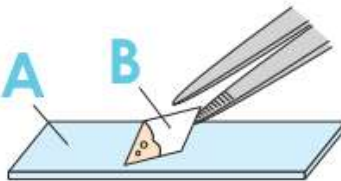
Label and interpret the diagram

Q401. Write the names of microscope parts A, B, C, D and E.



Answer: A: eyepiece lens. B: adjustment knob. C: reflector or mirror. D: stage. E: objective lens.

Q402. Name parts A and B used when preparing a microscope slide.



Answer: A: slide glass. B: cover glass.

Observe and apply

Q403. What does an objective magnification of $100\times$ mean?

Answer: The objective produces an image 100 times the object's linear size. Total microscope magnification also depends on the eyepiece.

Q404. Compare luffa pollen seen by eye and under the microscope.

Answer: By eye: a fine yellow powder with few visible details. Under the microscope: separate, magnified grains with clearer shapes and surface details; the book illustrates oval grains.

Draw and label

Q405. Label a microscope with eyepiece, tube, arm, revolving nosepiece, objective lenses, stage, clips, adjustment knob and reflector.

Answer: Model arrangement: eyepiece at the top of the tube; objectives below the nosepiece; stage and clips beneath the objectives; reflector below the stage; arm and adjustment knob at the side.

Thinking and application

Q406. To make the image move upwards in your field of view, in which direction should you move the slide?

Answer: Downwards, because the image moves in the opposite direction.

Lesson 5.3 Pollination and How Fruits Grow

Complete the sentences

Q407. Transfer of pollen to the tip of the pistil is called _____.

Answer: pollination

Q408. _____ can carry pollen from a male luffa flower to a female one.

Answer: Bees

Q409. After successful pollination, the swelling at the base of the female flower develops into a _____ containing _____.

Answer: fruit; seeds

Q410. In the experiment, the female flower buds are covered with _____ before they open.

Answer: paper bags

Choose the correct answer

Q411. Which transfer represents pollination in luffa?

- A) Male stamen to female pistil
- B) Female pistil to a root
- C) Leaf to stem
- D) Fruit to soil.

Answer: A) Male stamen to female pistil.

Q412. What happens to an unpollinated female luffa flower in the experiment?

- A) A normal fruit always grows
- B) It withers and the undeveloped fruit falls
- C) It becomes a male flower
- D) Its petals become seeds.

Answer: B) It withers and the undeveloped fruit falls.

Choose all correct answers

Q413. Which statements are correct?

- A) Bees can transfer pollen
- B) Pollination is important for normal fruit formation
- C) Pollen is made by the female luffa pistil
- D) Seeds form inside the developing fruit.

Answer: A, B and D.

True or False with correction

Q414. The male luffa flower becomes the fruit after pollination.

Answer: False. The swollen base of the female flower develops into the fruit.

Q415. A seed can develop into a new plant when conditions are suitable.

Answer: True.

Correct the statements

Q416. Correct the wrong term: Germination is the transfer of pollen from a male flower to a female flower.

Answer: Pollination.

Q417. Correct the wrong part: After pollination, the female flower's swelling becomes a single seed.

Answer: It becomes a fruit containing seeds.

Write the scientific term

Q418. The structure that develops from the flower and contains the plant's seeds.

Answer: A fruit.

Q419. Animals such as bees that transfer pollen as they move between flowers.

Answer: Pollinating insects or pollinators.

Give reasons

Q420. Why are bees important for fruit production in luffa?

Answer: They transfer pollen from male flowers to female flowers, allowing normal reproduction and fruit development.

Q421. Why cover female flower buds before they open in the pollination experiment?

Answer: To prevent accidental pollination by insects or other outside sources.

Q422. Why is the bag replaced after hand-pollinating flower A?

Answer: To keep the treatment controlled and prevent further uncontrolled pollen transfer.

What happens

Q423. What happens if the stamens of all male pumpkin flowers are removed before they release pollen?

Answer: They cannot supply pollen, so female flowers may fail to form normal fruits unless pollen comes from another suitable source.

Q424. What happens if the pistil of a female luffa flower is removed?

Answer: That flower cannot carry out normal female reproduction and form a normal fruit.

Q425. Two female luffa flowers are placed together with no pollen source. Will this alone produce normal fruits?

Answer: No. They still need suitable pollen; two female flowers do not supply it to one another.

Q426. What might happen to insect-pollinated plants if their pollinating insects disappeared?

Answer: Pollination and fruit or seed production would decrease greatly unless another means, such as hand pollination, replaced them.

Q427. If the bags are removed from both female flowers and the flowers are left in the garden without hand pollination, what could happen?

Answer: Insects may pollinate either flower naturally. The test would no longer provide a controlled comparison between pollinated and unpollinated flowers.

Compare

Q428. Compare flower A that receives pollen and flower B that is kept bagged without pollen.

Answer: A: its swollen base grows into a fruit containing seeds. B: it fails to develop a normal fruit and eventually withers.

Matching

Q429. Match: 1) Flower 2) Fruit 3) Seed 4) Bee. A) Can germinate B) Carries pollen C) Reproductive part D) Contains seeds.

Answer: 1-C; 2-D; 3-A; 4-B.

Arrange in order

Q430. Arrange: a new plant grows; pollination occurs; the female flower's base grows into a fruit; seeds form and mature; a seed germinates.

Answer: Pollination → fruit develops → seeds form and mature → seed germinates → new plant grows.

Experiments and fair tests

Q431. Describe the experiment proving that pollination is needed for luffa fruit formation.

Answer: Bag two female buds before opening. When they open, transfer pollen to the pistil of A with a brush and re-cover it. Leave B unpollinated. After the flowers wither, compare the swollen bases: A develops fruit; B does not.

Thinking and application

Q432. Why must both experimental flowers be female and at a similar stage of development?

Answer: So flower sex and maturity do not explain the difference; the comparison should test pollen supply.

Chapter 6

Human Growth and Reproduction

Source guide: Ministry textbook pp. 64–71; Al Moasser main book PDF pp. 134–152; related assessment, supplement and exam questions.

Lesson 6.1 Stages of Human Growth

Complete the sentences

Q433. Reproduction produces new individuals of the same _____.

Answer: species

Q434. Growth includes changes in body _____ and _____ over time.

Answer: size; shape

Q435. Infancy begins at _____, after about _____ months inside the mother's body.

Answer: birth; nine

Q436. During childhood, bones and muscles become _____.

Answer: stronger

Q437. Youth is followed by _____, then _____.

Answer: adulthood; old age

Choose the correct answer

Q438. Which process continues human life across generations?

- A) Reproduction
- B) Digestion alone
- C) Sleeping alone
- D) Movement alone.

Answer: A) Reproduction.

Q439. Which stage begins immediately after birth?

- A) Childhood
- B) Infancy
- C) Youth
- D) Adulthood.

Answer: B) Infancy.

Q440. The stage associated in the book with starting to walk, talk and go to school is:

- A) old age
- B) childhood
- C) adulthood
- D) the time before birth.

Answer: B) Childhood.

Q441. Which stage is associated with taking responsibility for a family and community?

- A) Infancy
- B) Adulthood
- C) Early childhood
- D) Before birth.

Answer: B) Adulthood.

Choose all correct answers

Q442. Which describe infancy?

- A) Begins at birth
- B) Small body size
- C) Full independence
- D) Dependence on caregivers for food and protection.

Answer: A, B and D.

True or False with correction

Q443. A human stays the same size and shape throughout life.

Answer: False. The body changes through stages of growth and ageing.

Q444. Growth and reproduction mean exactly the same thing.

Answer: False. Growth changes an individual's body; reproduction produces new individuals.

Q445. Old age comes before youth and adulthood.

Answer: False. It follows adulthood.

Correct the statements

Q446. Correct the wrong term: Producing new individuals is called growth.

Answer: It is called reproduction.

Q447. Correct the wrong number: Infancy begins after about five months in the mother's body.

Answer: About nine months.

Q448. Correct the wrong word: During childhood, bones and muscles usually become weaker.

Answer: They become stronger.

Write the scientific term

Q449. The process in which an organism produces new individuals of its own kind.

Answer: Reproduction.

Q450. Changes in a living organism's size, shape and body development over time.

Answer: Growth.

Q451. The stage between childhood and adulthood in the book's sequence.

Answer: Youth.

Q452. The later life stage in which people may need more rest and health care.

Answer: Old age.

Give reasons

Q453. Why is reproduction important to living organisms?

Answer: It produces new generations and helps preserve the species.

Q454. Why does an infant depend on its mother or other caregivers?

Answer: Its body and abilities are still developing, so it needs help with food, care and protection.

What happens

Q455. What would happen to a species if none of its members reproduced?

Answer: Its numbers would eventually decline to zero as existing individuals died.

Q456. What difficulties would a child have if their bones and muscles did not grow and strengthen normally?

Answer: Walking, playing and other physical tasks would be difficult, and the child would need appropriate support and care.

Compare

Q457. Compare infancy and childhood.

Answer: Infancy: small size and strong dependence on caregivers. Childhood: increasing size and strength, with learning to walk, talk, play and attend school.

Q458. Compare youth and old age as described in the curriculum.

Answer: Youth: increasing strength and activity with learning and work. Old age: possible reduction in strength and a greater need for rest and health care.

Q459. Compare infancy and adulthood in independence and responsibility.

Answer: Infants depend on caregivers. Adults are generally more independent and can take responsibility for family and community.

Matching

Q460. Match: 1) Infancy 2) Childhood 3) Adulthood 4) Old age. A) More rest and health care B) Dependence for feeding C) Starting school D) Family and community responsibilities.

Answer: 1-B; 2-C; 3-D; 4-A.

Arrange in order

Q461. Arrange the stages: old age, youth, infancy, adulthood, childhood.

Answer: Infancy → childhood → youth → adulthood → old age.

Observe and apply

Q462. Which growth stage are most Grade 5 pupils in? Give two abilities they have that an infant has not yet developed.

Answer: Childhood. Model examples: reading and writing; walking and playing independently.

Thinking and application

Q463. Explain why growth is more than becoming larger.

Answer: Body shape, strength, complexity and abilities also change, such as learning to walk and perform more tasks.

Lesson 6.2 Similarities between Parents and Children

Complete the sentences

Q464. A human life begins from a _____ and a _____.

Answer: father; mother

Q465. Traits passed from parents to children are called _____ features.

Answer: inherited

Q466. Eye colour, hair colour and _____ colour are examples of inherited features.

Answer: skin

Choose the correct answer

Q467. Which is an acquired skill rather than an inherited feature?

- A) Natural eye colour
- B) Natural hair colour
- C) Learning a new language
- D) Skin colour.

Answer: C) Learning a new language.

Q468. Why do children often resemble their parents?

- A) Only because they share meals
- B) They inherit features
- C) They wear identical clothes
- D) They read the same books.

Answer: B) They inherit features.

Choose all correct answers

Q469. Select inherited features:

- A) Eye colour
- B) Natural hair colour
- C) Ability to read a particular book
- D) Skin colour.

Answer: A, B and D.

True or False with correction

Q470. Children must be identical to one parent in every feature.

Answer: False. They inherit features from both parents and can show similarities and differences.

Correct the statements

Q471. Correct the wrong word: Children inherit their natural features from their friends.

Answer: From their parents.

Q472. Correct the wrong example: Eye colour and clothes colour are inherited features.

Answer: Eye colour and natural hair colour are inherited features; clothes colour is chosen.

Write the scientific term

Q473. Features passed from parents to their children.

Answer: Inherited features or inherited traits.

Functions and importance

Q474. What role do parents or caregivers play in children's development?

Answer: They provide food, care, protection and support while children grow.

Classification

Q475. Classify skin colour, reading, natural hair colour and playing a musical instrument as inherited features or learned skills.

Answer: Inherited features: skin colour and natural hair colour. Learned skills: reading and playing an instrument.

Observe and apply

Q476. A child has one parent's eye colour and the other parent's hair colour. What does this show?

Answer: Children can inherit different features from each parent.

Lesson 6.3 Conditions for Healthy Growth**Complete the sentences**

Q477. Three conditions for healthy growth are a healthy _____, enough _____ and proper _____.

Answer: diet; sleep; exercise

Q478. During sleep, the _____ rests and the _____ grows and repairs itself.

Answer: brain; body

Q479. Proper exercise helps strengthen the _____ and _____.

Answer: heart; muscles

Q480. Milk, vegetables and fruits provide useful _____.

Answer: nutrients

Choose the correct answer

Q481. Which habit helps the brain rest?

- A) Staying awake all night
- B) Enough sleep
- C) Watching screens all night
- D) Skipping sleep.

Answer: B) Enough sleep.

Choose all correct answers

Q482. Select habits that support healthy growth:

- A) Varied healthy food
- B) Enough sleep
- C) Proper exercise
- D) Eating only sweets.

Answer: A, B and C.

True or False with correction

Q483. Exercise weakens the heart and muscles when it is suitable and done regularly.

Answer: False. It helps strengthen them.

Q484. Sleeping alone can replace a healthy diet.

Answer: False. Growth also requires nutrients and appropriate activity.

Correct the statements

Q485. Correct the statement: The brain becomes more tired because sleep gives it no rest.

Answer: Sleep helps the brain rest and supports body growth and repair.

Write the scientific term

Q486. Substances in food that the body needs for energy, growth and health.

Answer: Nutrients.

Give reasons

Q487. Why should children eat a varied healthy diet?

Answer: Different foods provide the nutrients needed for healthy growth and body function.

Q488. Why is regular suitable exercise important?

Answer: It strengthens the heart and muscles and supports health.

Q489. Why is enough sleep important for children?

Answer: It gives the brain rest and supports body growth and recovery.

What happens

Q490. What may happen if a child eats only sweets, stays up late and does not exercise?

Answer: Healthy growth and energy can be affected because the child lacks a balanced nutrient supply, enough rest and physical activity.

Q491. What might happen if a pupil regularly gets too little sleep?

Answer: The pupil may feel tired, concentrate poorly and miss some of the rest needed for healthy growth and recovery.

Matching

Q492. Match each action to a condition for healthy growth: 1) Drinking milk and eating vegetables 2) Active play 3) Resting at night. A) Exercise B) Healthy diet C) Sleep.

Answer: 1-B; 2-A; 3-C.

Observe and apply

Q493. Choose one healthy habit and explain how it could help studying or sport.

Answer: Model answer: Keeping a regular bedtime helps me feel rested and concentrate better at school.

Thinking and application

Q494. Write a simple healthy-growth plan for a pupil.

Answer: Model answer: Eat varied meals including vegetables, fruit and suitable protein foods; keep a regular bedtime that allows enough sleep; take part in suitable exercise or active play each day.

Chapter 7

Animal Growth and Reproduction

Source guide: Ministry textbook pp. 72–79; Al Moasser main book PDF pp. 153–169; related assessment, supplement and exam questions.

Lesson 7.1 Animals that Give Birth to Babies

Complete the sentences

Q495. A newborn cat is called a _____.

Answer: kitten

Q496. A mother cat carries developing young _____ her body before birth.

Answer: inside

Q497. After birth, a mother cat feeds her kittens with _____.

Answer: milk

Q498. As an animal grows, its size _____ and some of its features _____.

Answer: increases; change

Choose the correct answer

Q499. Which animal gives birth to live young?

- A) Hen
- B) Cat
- C) Duck
- D) Turtle.

Answer: B) Cat.

Q500. Which depends most completely on its mother?

- A) Adult cat
- B) Newborn kitten
- C) Independent adult dog
- D) Mature cat.

Answer: B) Newborn kitten.

Q501. Which statement does NOT describe a typical adult cat?

- A) Larger than a newborn
- B) Independent feeding
- C) Completely dependent on its mother
- D) Able to live independently.

Answer: C) Completely dependent on its mother.

Choose all correct answers**Q502.** A mother cat:

- A) carries developing kittens inside her body
- B) cleans newborn kittens
- C) feeds them milk
- D) lays eggs in water.

Answer: A, B and C.**True or False with correction****Q503.** Newborn kittens are already the same size as their adult parents.**Answer:** False. They are smaller and grow over time.**Q504.** Cats and dogs both give birth to live young and feed them milk.**Answer:** True.**Correct the statements****Q505.** Correct the wrong stage: An adult cat depends completely on its mother for feeding and care.**Answer:** A newborn kitten depends completely on its mother.**Give reasons****Q506.** Why does a mother cat care for newborn kittens?**Answer:** They are small and cannot yet feed and protect themselves independently.**Q507.** Why do young animals resemble their parents in some features?**Answer:** They belong to the same species and inherit features from their parents.**What happens****Q508.** What does the mother cat do after giving birth?**Answer:** She cleans the kittens, feeds them milk and helps protect them as they grow.**Q509.** What may happen if newborn kittens lose all care and feeding?**Answer:** They may not get enough food, warmth or protection to survive and grow normally.

Compare

Q510. Compare a newborn kitten, a growing young cat and an adult cat in size and dependence.

Answer: Newborn: small and fully dependent. Growing young cat: larger and partly dependent. Adult: full-grown and generally independent.

Give examples

Q511. Give four examples of animals in the book that give birth to live young.

Answer: Cat, dog, cow and horse. Camel is another acceptable example.

Arrange in order

Q512. Arrange the stages: adult cat, newborn kitten, growing young cat.

Answer: Newborn kitten → growing young cat → adult cat.

Lesson 7.2 Animals that Lay Eggs

Complete the sentences

Q513. Young animals coming out of eggs are said to _____.

Answer: hatch

Q514. Fish such as tilapia reproduce by laying _____ in _____.

Answer: eggs; water

Q515. Many fish lay _____ numbers of eggs to increase the chance that some young survive.

Answer: large

Choose the correct answer

Q516. Which animal lays eggs?

- A) Horse
- B) Fox
- C) Turtle
- D) Cow.

Answer: C) Turtle.

Q517. What is the emergence of a young animal from an egg called?

- A) Hatching
- B) Germination
- C) Pollination
- D) Evaporation.

Answer: A) Hatching.

Q518. Why do many fish produce numerous eggs?

- A) Every egg is guaranteed to survive
- B) Many eggs and young face danger
- C) To feed all other animals deliberately
- D) Fish do not reproduce.

Answer: B) Many eggs and young face danger, so producing many eggs increases the chance of survival.

True or False with correction

Q519. All animals reproduce by giving birth to live babies.

Answer: False. Some lay eggs.

Q520. Ducks and turtles are examples of egg-laying animals.

Answer: True.

Correct the statements

Q521. Correct the wrong animal: A hen releases a huge number of eggs into open water.

Answer: Many fish release eggs into water; hens lay eggs on land.

Q522. Correct the statement: Cats and tilapia use the same method of producing young.

Answer: Cats give birth to live kittens; tilapia lay eggs.

Write the scientific term

Q523. The process in which a young animal emerges from an egg.

Answer: Hatching.

What happens

Q524. What might happen if a fish species that normally lays many eggs produced only very few in open water?

Answer: Fewer young might survive to adulthood, so the chance of maintaining the population could decrease.

Compare

Q525. Compare cats and the egg-laying fish studied in the book.

Answer: Cats carry developing young inside the mother, give birth to relatively few kittens, and feed them milk. These fish lay many eggs in water; their young hatch from the eggs.

Q526. Compare a cat and a bird such as a chicken in the arrival and feeding of their young.

Answer: A cat gives birth to kittens and feeds them milk. A chicken lays eggs; chicks hatch and eat food rather than mother's milk, with the mother providing protection and guidance.

Give examples

Q527. Name an animal that lays eggs on land and one that lays eggs in water.

Answer: On land: chicken or turtle. In water: tilapia or frog.

Thinking and application

Q528. Why does the book contrast producing many fish eggs with caring for a few kittens?

Answer: Many fish eggs and young may not survive in open water. Kittens are fewer and receive substantial care from their mother, which helps their survival.

Lesson 7.3 Comparing Animals and Preserving the Species

Complete the sentences

Q529. Reproduction helps living organisms preserve their _____.

Answer: species

Q530. Protected areas where animals can live and reproduce safely are called _____.

Answer: nature reserves

Q531. Two Egyptian examples are _____ National Park and _____ National Park.

Answer: Ras Mohammed; White Desert

Choose the correct answer

Q532. Which place is set up to help protect wildlife?

- A) Nature reserve
- B) Shopping centre
- C) Amusement park
- D) Car park.

Answer: A) Nature reserve.

Q533. Which is NOT a purpose of a nature reserve?

- A) Protecting animals
- B) Supporting safe reproduction
- C) Reducing animal numbers through uncontrolled hunting
- D) Preserving species.

Answer: C) Reducing animal numbers through uncontrolled hunting.

True or False with correction

Q534. Nature reserves help prevent the decline of protected species.

Answer: True.

Correct the statements

Q535. Correct the wrong word: Nature reserves aim to decrease the numbers of endangered animals.

Answer: They aim to protect populations and help them recover or increase.

Write the scientific term

Q536. A protected natural area that helps conserve organisms and their habitats.

Answer: A nature reserve.

Give reasons

Q537. Why do countries establish nature reserves?

Answer: To protect wildlife and habitats, reduce threats, and allow animals to reproduce safely.

What happens

Q538. What may happen if animals are hunted without control?

Answer: Their populations can decline, and some species may become threatened with extinction.

Q539. What happens to an animal species if it cannot produce a new generation?

Answer: Its numbers decline as individuals die, and it may eventually disappear.

Q540. What if animals cannot reproduce safely even inside a nature reserve?

Answer: The reserve would fail to provide a key protection, and the population might not recover. The causes of disturbance or danger would need to be addressed.

Classification

Q541. Classify cow, chicken, turtle, dog, tilapia, cat, horse, camel, frog and the egg-laying snake example into live-birth and egg-laying groups.

Answer: Live birth: cow, dog, cat, horse, camel. Egg laying: chicken, turtle, tilapia, frog and the snake example used in the book.

Odd one out

Q542. Cow - Cat - Tilapia - Dog. Give the reason.

Answer: Tilapia; it lays eggs while the other listed animals give birth to live young.

Q543. Chicken - Duck - Cat - Egg-laying bird. Give the reason.

Answer: Cat; it gives birth to live young while the others lay eggs.

Complete the table

Q544. Give method of reproduction, habitat and a similar animal for: cat, chicken and tilapia.

Animal	Reproduction	Habitat	Similar animal
Cat			
Chicken			
Tilapia			

Answer: Cat: live birth, land, dog. Chicken: eggs, land, duck. Tilapia: eggs, water, salmon.

Thinking and application

Q545. Add one more row to the animal table with an animal, its reproduction method, habitat and a similar animal.

Answer: Model answer: Horse; live birth; land; cow.

Q546. Suggest two actions that help protect animal species.

Answer: Model answer: Protect habitats through nature reserves and prevent uncontrolled hunting.

Q547. As a nature-reserve supervisor, suggest a plan to help threatened animals reproduce safely.

Answer: Model answer: protect their habitats, prevent hunting and disturbance, maintain access to food and water, and monitor the animals and their young.



Chapter 8

Changes in Weather

Source guide: Ministry textbook pp. 80–91; Al Moasser main book PDF pp. 170–192; related assessment, supplement and exam questions.

Lesson 8.1 Clouds and Weather

Complete the sentences

Q548. The condition of the atmosphere at a place over a short time is called _____.

Answer: weather

Q549. The proportion of the sky covered by clouds is called _____.

Answer: cloud cover

Q550. For the cloud-cover activity, divide the sky into _____ equal parts.

Answer: eight

Q551. With no rain or snow falling, cloud cover from 0 to 6 eighths is classified as _____, and 7 to 8 eighths as _____.

Answer: sunny; cloudy

Q552. When raindrops fall, call the weather _____; when snowflakes fall, call it _____.

Answer: rainy; snowy

Choose the correct answer

Q553. A cloud cover of 5 out of 8, with no precipitation, is classified as:

- A) sunny
- B) cloudy
- C) snowy
- D) necessarily stormy.

Answer: A) Sunny, according to the scale used in the textbook.

Q554. What is the minimum cloud cover classified as cloudy on the textbook's eight-part scale?

- A) $\frac{1}{8}$
- B) $\frac{4}{8}$
- C) $\frac{6}{8}$
- D) $\frac{7}{8}$.

Answer: D) $\frac{7}{8}$.

Q555. Which is NOT a weather element?

- A) Temperature
- B) Wind
- C) Rain
- D) Earthquakes.

Answer: D) Earthquakes.

Choose all correct answers

Q556. Which cloud-cover values fall in the textbook's sunny category when no rain or snow falls?

- A) 2/8
- B) 4/8
- C) 7/8
- D) 6/8.

Answer: A, B and D.

Q557. Which can change when weather changes?

- A) Cloud amount
- B) Cloud shape
- C) Cloud colour
- D) The number of compass directions.

Answer: A, B and C.

True or False with correction

Q558. A cloudy sky must always be producing rain.

Answer: False. A sky can be cloudy without rain falling.

Q559. Weather describes the atmosphere over a short period of time.

Answer: True.

Q560. If snow is falling, the weather should only be called cloudy.

Answer: False. It is described as snowy.

Q561. A cloud cover of 4/8 is classified as cloudy in the textbook activity.

Answer: False. It is classified as sunny when no rain or snow is falling.

Correct the statements

Q562. Correct the wrong word: We estimate cloud cover by measuring the location of clouds only.

Answer: We estimate the proportion or amount of sky covered by clouds.

Q563. Correct the wrong description: A sky covered by clouds in all eight parts is sunny.

Answer: It is cloudy, unless rain or snow is falling, when rainy or snowy is used.

Q564. Correct the statement: Weather means atmospheric conditions over a long period of many years.

Answer: Weather means atmospheric conditions over a short period; long-term patterns are climate.

Write the scientific term

Q565. The fraction of the sky hidden by clouds.

Answer: Cloud cover.

Definitions

Q566. What is meant by weather?

Answer: The condition of the atmosphere at a particular place over a short time.

Give reasons

Q567. Why can the textbook call a day sunny even when some clouds are present?

Answer: On its scale, cloud cover up to $\frac{6}{8}$ is in the sunny category; sunlight can still reach the ground.

Q568. Why do thick rain clouds often look dark from the ground?

Answer: They contain many droplets and allow less sunlight to pass through to the observer.

What happens

Q569. What happens to the weather description if cloud cover rises from $\frac{4}{8}$ to $\frac{7}{8}$ with no rain?

Answer: It changes from sunny to cloudy on the textbook scale.

Q570. What happens to the appearance of clouds as they become thicker and contain more droplets?

Answer: Less light passes through, so they can look darker or dark grey.

Q571. How would thin clouds with relatively few droplets usually look compared with thick rain clouds?

Answer: They would generally let more sunlight through and appear lighter or whiter.

Compare

Q572. Compare clouds on a sunny day and thick clouds on a rainy or stormy day.

Answer: Sunny-day clouds are often light, white and fluffy. Thick rain clouds transmit less sunlight and often look dark grey.

Complete the table

Q573. Classify cloud cover values of 0/8, 2/8, 4/8, 6/8, 7/8 and 8/8 when no rain or snow falls.

Cloud cover	Weather
0/8	
2/8	
4/8	
6/8	
7/8	
8/8	

Answer: 0/8, 2/8, 4/8 and 6/8: sunny. 7/8 and 8/8: cloudy.

Observe and apply

Q574. What should a four-day weather observation card record?

Answer: Date, time, cloud cover out of eight, weather description, cloud colour and shape, and any rain, snow or other observations.

Thinking and application

Q575. Two pupils estimate cloud cover differently. How can they improve their comparison?

Answer: Observe the same sky at the same time and place, divide it into the same eight parts, compare estimates and record a reasonable shared estimate.

Lesson 8.2 Cloud Movement

Complete the sentences

Q576. Clouds move mainly because of the _____.

Answer: wind

Q577. In the pattern taught for Egypt and Japan, clouds generally move from _____ to _____.

Answer: west; east

Q578. A fixed object used to compare cloud positions is a _____.

Answer: reference point

Q579. A _____ helps identify directions, and its marked north-seeking needle points towards _____.

Answer: compass; north

Q580. Hold a compass _____ and wait for its needle to settle.

Answer: horizontally

Choose the correct answer

Q581. Which is unsuitable as a fixed reference point?

- A) Building
- B) Tree
- C) Moving car
- D) Window frame.

Answer: C) Moving car.

Q582. Which tool identifies north, south, east and west?

- A) Ruler
- B) Compass
- C) Microscope
- D) Thermometer.

Answer: B) Compass.

Choose all correct answers

Q583. Which are moving objects and therefore unsuitable as fixed reference points?

- A) A racing bicycle
- B) A tower
- C) A flying aeroplane
- D) A moving car.

Answer: A, C and D.

True or False with correction

Q584. Clouds always keep exactly the same shape and size as they move.

Answer: False. Their shape and size can change.

Q585. The compass needle should be used while the compass is held vertically.

Answer: False. Hold it horizontally.

Q586. A fixed tree or building can help us observe cloud movement.

Answer: True.

Correct the statements

Q587. Correct the wrong cause: The Sun directly pushes clouds across the sky.

Answer: Wind moves clouds.

Q588. Correct the wrong direction: Clouds generally move from east to west in the pattern taught for Egypt.

Answer: From west to east.

Q589. Correct the wrong word: A moving reference point gives the clearest comparison of cloud positions.

Answer: A fixed reference point.

Write the scientific term

Q590. An instrument with a magnetic needle used to identify directions.

Answer: A compass.

Q591. A stationary object used to compare the position of a moving object.

Answer: A reference point.

Give reasons

Q592. Why use a fixed reference point when tracking clouds?

Answer: It lets us compare cloud positions without confusing cloud movement with movement of the reference object.

Q593. Why use a compass when observing clouds?

Answer: It identifies directions so we can describe the direction of cloud movement accurately.

What happens

Q594. What happens if you observe clouds only from a moving car and use the car's movement as your reference?

Answer: It becomes harder to separate the clouds' true movement from your own movement.

Matching

Q595. Match: 1) Cloud 2) Tree 3) Compass 4) Wind. A) Helps find directions B) Moves clouds C) Can be a fixed reference D) Moves with wind.

Answer: 1-D; 2-C; 3-A; 4-B.

Odd one out

Q596. House - Tower - Flying aeroplane - Tree. Explain.

Answer: Flying aeroplane; it moves and is not a fixed reference point.

Experiments and fair tests

Q597. Describe how to observe cloud movement using a compass and a fixed object.

Answer: Choose a safe observation place and a fixed object, identify directions with a level compass, record a cloud's position, observe again after about 15 minutes, and compare the positions.

Thinking and application

Q598. Can cloud direction and speed vary during the day or between seasons?

Answer: Yes. They depend on wind conditions, which can change. West-to-east movement is a general pattern, not a rule for every cloud at every moment.

Lesson 8.3 Weather Forecast**Complete the sentences**

Q599. Weather satellites take images of cloud conditions from _____.

Answer: space

Q600. In the satellite images used in the book, the white areas represent _____.

Answer: clouds

Q601. A prediction of future weather is a weather _____.

Answer: forecast

Q602. Weather radar uses _____ waves to locate rain or snow.

Answer: radio

Choose the correct answer

Q603. A large mass of clouds is approaching from the west. What is a reasonable forecast?

- A) It may become cloudy or rainy
- B) The sky must remain clear
- C) No change is possible
- D) It must snow everywhere.

Answer: A) It may become cloudy or rainy.

Q604. If satellite images show no clouds over Egypt, the current weather is likely to be:

- A) sunny
- B) cloudy
- C) snowy
- D) heavy rain.

Answer: A) Sunny.

Q605. Which device observes the location and intensity of rainfall in real time?

- A) Weather radar
- B) Compass
- C) Microscope
- D) Ruler.

Answer: A) Weather radar.

True or False with correction

Q606. Weather satellites can show cloud conditions over countries and continents.

Answer: True.

Q607. Meteosat observes Europe only.

Answer: False. The book describes observations of Europe and Africa.

Q608. Looking at the local sky alone gives the complete information needed for an accurate weather forecast.

Answer: False. It provides limited information; satellite, wind and other weather data improve forecasts.

Correct the statements

Q609. Correct the wrong instrument: A compass takes cloud pictures from space.

Answer: A weather satellite.

Q610. Correct the wrong colour: Clouds appear blue in the satellite images shown in the book.

Answer: They appear white.

Q611. Correct the wrong waves: Weather radar uses visible light waves to observe rainfall.

Answer: It uses radio waves.

Write the scientific term

Q612. A prediction of future atmospheric conditions using weather information.

Answer: A weather forecast.

Q613. An artificial object in space used to observe weather over wide areas.

Answer: A weather satellite.

Q614. A weather-observation device that uses radio waves to detect precipitation.

Answer: Weather radar.

Q615. A hot, dry, dusty wind event described in the Egyptian spring-weather enrichment section.

Answer: Khamsin.

Give reasons

Q616. Why are satellites useful for forecasting?

Answer: They show cloud distributions and movement over much wider areas than we can see from the ground.

Q617. Why can approaching western clouds help forecast a change in local weather?

Answer: Under the common west-to-east movement pattern, those clouds may move over the area.

Q618. Why can the Nile contribute moisture to the surrounding air?

Answer: Water evaporates from the river, adding water vapour that may later condense under suitable conditions.

What happens

Q619. What weather may continue for a while if the western area is clear of clouds?

Answer: Sunny weather may continue, according to the simple forecasting pattern in the book.

Q620. How would weather forecasting be affected if weather satellites stopped working?

Answer: Forecasters would lose broad cloud images and some important data, making tracking large weather systems harder; other tools such as radar would still provide information.

Compare

Q621. Compare a compass, weather satellite and weather radar in use.

Answer: Compass: finds directions. Satellite: observes broad cloud patterns from space. Radar: detects where rain or snow is falling and how intense it is.

Functions and importance

Q622. What does the book say Meteosat observes, and from approximately what altitude?

Answer: It observes weather over Europe and Africa and collects air and ocean information from about 35,800 km above the equator.

Q623. Why is weather radar useful for short-term forecasts?

Answer: It tracks current rain or snow and its movement, supporting forecasts for the next few hours and warnings of severe weather.

Odd one out

Q624. Wind - Rain - Temperature - Stars. Give the reason.

Answer: Stars; the others are weather elements.

Observe and apply

Q625. A satellite image shows a dense white cloud mass west of your city moving east. Write a forecast and its evidence.

Answer: Forecast: cloudier weather, with possible rain. Evidence: clouds lie west of the city and are moving towards it.

Q626. How can Khamsin change the sky and temperature?

Answer: Strong winds lift desert dust and sand, reducing visibility, while hot air can raise the temperature rapidly.

Chapter 9

Water Cycle

Source guide: Ministry textbook pp. 92–103; Al Moasser main book PDF pp. 193–209; related assessment, supplement and exam questions.

Lesson 9.1 Water Evaporation

Complete the sentences

Q627. Liquid water changing from its surface into water vapour is called _____.

Answer: evaporation

Q628. Water vapour is the _____ state of water and is _____.

Answer: gaseous; invisible

Q629. Evaporation becomes faster in _____ weather and when there is _____.

Answer: hot or sunny; wind

Q630. In the two-cup experiment, the _____ cup loses more water to the surrounding air.

Answer: open

Choose the correct answer

Q631. Which correctly describes evaporation?

- A) Liquid to gas
- B) Gas to liquid
- C) Liquid to solid
- D) Solid to liquid.

Answer: A) Liquid to gas.

Q632. Laundry usually dries fastest on a:

- A) sunny, warm, windy day
- B) cold rainy day
- C) still damp day
- D) snowy day.

Answer: A) Sunny, warm, windy day.

Q633. Why can a puddle become smaller after sunshine?

- A) Water vanishes from existence
- B) Water evaporates into the air
- C) All water becomes ice
- D) Water becomes soil.

Answer: B) Water evaporates into the air.

Q634. What happens in a tightly covered cup of water?

- A) Evaporation is impossible
- B) Vapour can form but is trapped and can condense
- C) Water must leak through glass
- D) The water immediately freezes.

Answer: B) Vapour can form but is trapped and can condense.

Choose all correct answers

Q635. Which are examples of evaporation?

- A) Drying laundry
- B) A shrinking puddle
- C) Droplets forming outside a cold cup
- D) Water vapour leaving a river surface.

Answer: A, B and D.

True or False with correction

Q636. Water disappears from an undamaged open glass because it leaks through the glass.

Answer: False. It evaporates from the surface into the air.

Q637. Heating can increase the rate of evaporation.

Answer: True.

Q638. Water in a sealed cup cannot change into vapour at all.

Answer: False. Evaporation can occur, but vapour remains inside and can condense.

Correct the statements

Q639. Correct the wrong state: During evaporation, liquid water becomes solid water.

Answer: It becomes gaseous water vapour.

Q640. Correct the statement: Wet clothes dry fastest when temperature is very low.

Answer: They generally dry faster in warmer, sunnier and windier conditions.

Write the scientific term

Q641. The invisible gaseous form of water present in the air.

Answer: Water vapour.

Definitions

Q642. What is meant by evaporation?

Answer: The change of liquid water at its surface into water vapour.

Give reasons

Q643. Why do clothes dry faster in sunlight and wind?

Answer: Heat helps water evaporate, and wind carries water vapour away from the clothes.

Q644. Why does the water level in an open cup fall after several days?

Answer: Some liquid water evaporates and its vapour escapes into the surrounding air.

Q645. Why does a tightly covered cup retain almost the same total amount of water?

Answer: Vapour cannot easily escape; it can condense inside and return to the liquid.

What happens

Q646. What happens to a puddle's evaporation rate if the surrounding temperature rises?

Answer: It generally evaporates faster.

Q647. Compare equal water containers left in a warm sunny place and a cool dark place.

Answer: The warm sunny container usually loses water faster through evaporation, if other conditions are comparable.

Q648. What happens to drying clothes on a day with very high humidity, with other conditions unchanged?

Answer: They dry more slowly because the air already contains much water vapour and takes up additional vapour less readily.

Compare

Q649. Compare the observations in the open and covered cups after several days.

Answer: Open cup: water level falls as vapour escapes. Covered cup: little total water is lost, and condensed droplets may appear on the inner cover.

Experiments and fair tests

Q650. Describe the two-cup experiment that shows where water goes.

Answer: Put equal amounts of water in identical cups. Leave one open and cover the other tightly with plastic wrap. Keep them together for 2-3 days. The open cup loses more water, while droplets may form inside the cover of the closed cup.

Thinking and application

Q651. Does a shrinking puddle prove that all its water has evaporated?

Answer: Not always. Some water may also soak into the ground. Evaporation is the process demonstrated by water loss from an undamaged open cup.

Lesson 9.2 Water in the Air

Complete the sentences

Q652. Cooling water vapour until it becomes liquid is called _____.

Answer: condensation

Q653. Droplets outside a cold glass come from _____ in the surrounding _____.

Answer: water vapour; air

Q654. Water vapour forms droplets on a surface when it is cooled sufficiently by the _____ surface.

Answer: cold

Choose the correct answer

Q655. Which is an example of condensation?

- A) Freezing water
- B) Drying clothes
- C) Droplets on a cold window
- D) Melting ice.

Answer: C) Droplets on a cold window.

Q656. What is cooled to form droplets outside an iced-water glass?

- A) Water vapour in the surrounding air
- B) Glass turning to liquid
- C) Sand
- D) Water leaking through the glass.

Answer: A) Water vapour in the surrounding air.

Q657. Where can cloud droplets form?

- A) Where moist air rises and cools
- B) Only inside soil
- C) Only in a hot oven
- D) Nowhere in the atmosphere.

Answer: A) Where moist air rises and cools.

True or False with correction

Q658. Condensation changes water vapour into liquid water.

Answer: True.

Q659. Droplets outside a sealed cold cup prove that water leaked through the glass.

Answer: False. They can form from water vapour in the surrounding air.

Q660. Invisible water vapour and visible tiny water droplets are the same state of matter.

Answer: False. Vapour is gas; droplets are liquid.

Correct the statements

Q661. Correct the wrong process: Ice turning into water droplets is condensation.

Answer: Ice turning into liquid water is melting. Condensation is water vapour turning into liquid.

Q662. Correct the wrong word: Water vapour heats up and condenses in the upper atmosphere.

Answer: It cools sufficiently and condenses.

Q663. Correct the wrong word: A hot surface helps nearby water vapour condense into droplets.

Answer: A sufficiently cold surface helps water vapour condense.

Definitions

Q664. What is meant by condensation?

Answer: The change of water from the gaseous state to the liquid state on cooling.

Give reasons

Q665. Why can water droplets appear on leaves early in the morning without rain?

Answer: The leaves become cold enough for water vapour in the air to condense on them as dew.

Q666. Why do droplets form on a car window on a cold morning?

Answer: Water vapour touching the cold glass can cool and condense.

What happens

Q667. What happens when water vapour in the air touches a sufficiently cold cup?

Answer: It condenses into liquid droplets on the cup's outer surface.

Q668. What may be observed under a cool glass plate placed over warm water?

Answer: Water vapour condenses on the cooler underside of the plate, forming droplets.

Compare

Q669. Compare evaporation and condensation in starting state, final state, heat effect and example.

Answer: Evaporation: liquid to gas, supported by heat; drying laundry.

Condensation: gas to liquid when cooled; droplets on a cold glass.

Classification

Q670. Classify drying wet hair, droplets on a cold bottle, a drying floor and dew on leaves as evaporation or condensation.

Answer: Evaporation: drying wet hair and a drying floor. Condensation: droplets on a cold bottle and dew on leaves.

Experiments and fair tests

Q671. Describe the covered cold-cup experiment and its conclusion.

Answer: Put ice-cold water in a cup, mark the level, cover it and dry the outside. Wait and observe droplets forming outside. They come from surrounding water vapour condensing on the cold surface, not from leakage through the glass.

Thinking and application

Q672. Why is covering the cold cup useful when investigating the source of outside droplets?

Answer: It prevents direct escape of water from the top and helps show that the droplets can come from moisture in the surrounding air.

Lesson 9.3 Where Does Water Go

Complete the sentences

Q673. The continuous movement of water between Earth's surface and the atmosphere is the _____.

Answer: water cycle

Q674. The simplified water journey is sea → _____ → _____ → sea.

Answer: sky; land

Q675. The _____ supplies the main energy that drives evaporation in the water cycle.

Answer: Sun

Q676. Rising water vapour cools and _____ into droplets that form _____.

Answer: condenses; clouds

Q677. Water falls as rain, or as _____ when conditions are cold enough.

Answer: snow

Choose the correct answer

Q678. Which sequence is correct?

- A) Evaporation, cloud formation, rain, return to the sea
- B) Rain, evaporation, river, first cloud
- C) Sea, soil only, no air
- D) Cloud, seed, flower, sea.

Answer: A) Evaporation, cloud formation, rain, return to the sea.

Q679. What supplies energy for evaporation from seas and rivers?

- A) Sun's heat
- B) Coldness alone
- C) Starlight alone
- D) Soil colour.

Answer: A) Sun's heat.

Choose all correct answers

Q680. Select processes or events in the water cycle:

- A) Evaporation
- B) Condensation and cloud formation
- C) Rain or snow
- D) Water returning through rivers.

Answer: A, B, C and D.

True or False with correction

Q681. The water cycle ends permanently when water reaches the sky.

Answer: False. Water can condense, fall and return to surface stores; the cycle continues.

Q682. The sea is the only possible starting point of the water cycle.

Answer: False. A cycle has no single beginning; the sea is a convenient starting point for the textbook diagram.

Q683. Water changes state during the water cycle.

Answer: True.

Correct the statements

Q684. Correct the statement: Evaporation is the only step in the water cycle.

Answer: The cycle also includes condensation, precipitation and the movement or collection of water on land and in seas.

Q685. Correct the statement: Water changes only from gas to liquid in its natural cycle.

Answer: It can change from liquid to gas by evaporation and from gas to liquid by condensation; freezing and melting may also occur.

Q686. Correct the statement: The Sun is the only factor involved in the water cycle.

Answer: The Sun provides energy for evaporation, while cooling, wind and gravity also help water move and change state.

Q687. Correct the statement: The total amount of water on Earth continually disappears during evaporation.

Answer: Evaporation changes water's state and location; it does not destroy water. Earth's water is continually recycled.

Write the scientific term

Q688. Tiny water droplets and sometimes ice crystals gathered in the atmosphere.

Answer: Clouds.

Q689. The solid form of water found as ice or snow.

Answer: Solid water or ice.

Definitions

Q690. What is meant by the water cycle?

Answer: The repeated journey of water through seas, air and land while it may change state.

Give reasons

Q691. Why does rising moist air form cloud droplets when it cools sufficiently?

Answer: Cooling causes water vapour to condense into tiny liquid droplets.

Q692. Why does water continue circulating even though living organisms use it?

Answer: Used water returns to the environment and participates in evaporation, condensation and precipitation. The total cycle continues, although usable fresh water can still be limited locally.

What happens

Q693. What happens when cloud droplets combine and become too heavy to remain suspended?

Answer: They fall as rain; under suitable cold conditions, precipitation may fall as snow.

Q694. What would happen if rising moist air did not cool enough to condense?

Answer: Cloud droplets would not form through that process, so the usual development of clouds and rain would be reduced or interrupted.

Q695. What would happen to the water cycle without the Sun's heat?

Answer: Evaporation would be greatly reduced, weakening the supply of moisture to clouds and disrupting the cycle.

Q696. What happens to snow on a mountain when it receives enough heat to melt?

Answer: Solid snow becomes liquid water that can flow into streams and rivers.

Q697. Where does some Nile water go when it seems to disappear in hot desert conditions?

Answer: It evaporates and enters the air as invisible water vapour, remaining part of the water cycle.

Q698. What would be missing from the usual rain-forming process if there were no clouds?

Answer: There would be no cloud droplets or ice particles to grow and fall as ordinary rain or snow from clouds.

Compare

Q699. Compare the roles of evaporation and condensation in the water cycle.

Answer: Evaporation transfers liquid surface water into the atmosphere as vapour. Condensation turns cooled vapour into droplets that can form clouds.

Functions and importance

Q700. How does the Aswan High Dam help manage Nile water?

Answer: It stores and regulates water supplies for use through the year, including agriculture.

Q701. How can dew support small desert organisms?

Answer: Condensed water droplets on surfaces can provide a small source of water.

Arrange in order

Q702. Arrange these numbered stages: 1) Evaporation 2) Rainfall 3) Return to the sea 4) Cloud formation.

Answer: 1 → 4 → 2 → 3.

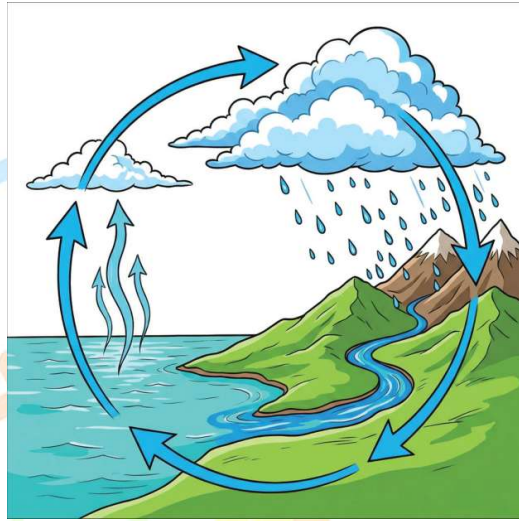
Observe and apply

Q703. Where can rainwater go after reaching land?

Answer: It can collect in streams, rivers or lakes, soak into the soil, or flow towards the sea; some later evaporates again.

Draw and label

Q704. Copy the water-cycle diagram and label evaporation, condensation, rainfall and water returning to the sea.



Answer: Model sequence: Sun warms sea water → vapour rises by evaporation → cooling and condensation form clouds → rain falls → rivers carry water back to the sea.

Thinking and application

Q705. Why is water conservation important even though water is recycled naturally?

Answer: Clean fresh water is not always available where and when it is needed; wasting or polluting it can reduce usable supplies.

Q706. Imagine global conditions stopped liquid water from evaporating. How would this affect the cycle?

Answer: Much less water vapour would reach the atmosphere, so cloud formation and precipitation would be reduced and the cycle disrupted.

Q707. Humid air is high in the atmosphere. Is humidity alone enough to guarantee rain?

Answer: No. The air must cool enough for condensation, and droplets or ice particles must grow sufficiently before precipitation can fall.