

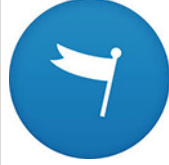
شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية



مراجعة امتحانية الوحدة الثانية Organisms of Reproduction

موقع المناهج ← المناهج الإماراتية ← الصف السادس ← علوم ← الفصل الثالث ← الملف

التواصل الاجتماعي بحسب الصف السادس



روابط مواد الصف السادس على تلغرام

[الرياضيات](#)

[اللغة الانجليزية](#)

[اللغة العربية](#)

[التربية الاسلامية](#)

المزيد من الملفات بحسب الصف السادس والمادة علوم في الفصل الثالث

حل أسئلة الامتحان النهائي الالكتروني بريدج	1
حل أسئلة الامتحان النهائي الالكتروني انسابير	2
أسئلة الامتحان النهائي الورقي بريدج	3
تدريبات مهمة للجزء الكتابي وفق الهيكل الوزاري مع الإجابات النموذجية	4
مراجعة نهاية الفصل وفق الهيكل الوزاري انسابير	5



مؤسسة الإمارات للتعليم المدرسي
EMIRATES SCHOOLS ESTABLISHMENT



Unit 2: Reproduction of Organisms

Exam Review

Term 3

2022-2023

تم تحميل هذا الملف من

موقع المناهج الإماراتية

Prepared by: Ms Taybah Jaffar

Al Ma'ali School, Al Ain



INVESTIGATION

Understanding Traits

By a show of hands, determine how many students in your class have each type of trait below. Write your observations in your Science Notebook.

Student Traits		
Trait	Type 1	Type 2
Earlobes	 Unattached	 Attached
Thumbs	 Curved	 Straight
Interlacing fingers	 Left thumb over right thumb	 Right thumb over left thumb

What do you think determines the types of traits you have?

Answers may vary. Sample answer: I think that my traits are inherited from my family. I look like my parents because they share some of my characteristics.



Your trait (special characteristic) is shown through your phenotype. (What you can see)

A **trait** is distinguishing characteristic or quality of an organism.

Inheritance is the passing on of traits from one generation to the next. (**heredity**)



تم تحميل هذا الملف من
موقع المناهج الإماراتية



INVESTIGATION

Look Both Ways Before Crossing the Seed

Mendel counted and recorded the traits of offspring from many experiments in which he cross-pollinated hybrid plants. Data from these experiments are shown below.

Results of Hybrid Crosses			
Characteristic of Hybrid Parent	Trait and Number of Offspring	Trait and Number of Offspring	Trait Comparison
Flower Color (purple x purple)	 Purple 705	 White 224	$\frac{705}{224} = \frac{3.15}{1}$
Seed Color (yellow x yellow)	 Yellow 6,022	 Green 2,001	$\frac{6,022}{2,001} = \frac{3.01}{1}$
Seed Shape (round x round)	 Round 5,474	 Wrinkled 1,850	$\frac{5,474}{1,850} = \frac{2.96}{1}$
Pod Shape (smooth x smooth)	 Smooth 882	 Bumpy 299	$\frac{882}{299} = \frac{2.95}{1}$

Copyright © McGraw-Hill Education

- MATH Connection** Calculate the relationship of purple to white flowers, yellow to green seeds, round to wrinkled seeds, and smooth to bumpy pods by dividing the higher number by the lower number. Record the answers in the table above.
- What patterns do you notice in Mendel's data?

Students should notice that in each comparison, one trait is seen approximately three times more often than the other.



Dominant trait: blocks another genetic factor
(The stronger gene)

Recessive trait: genetic factor that is blocked
(The weaker gene)

Example: the purple flowers were dominant, the white flowers were recessive.

What controls traits?

When other scientists studied the parts of a cell and combined Mendel's work with their work, Mendel's factors were more clearly understood. Scientists discovered that inside each cell is a nucleus that contains threadlike structures called chromosomes. Over time, scientists learned that chromosomes contain genetic information that controls traits. We now know that Mendel's "factors" are parts of chromosomes and that each cell in offspring contains chromosomes from both parents. These chromosomes exist as pairs—one chromosome from each parent.

Scientists have discovered that each chromosome can have information about hundreds or even thousands of traits.

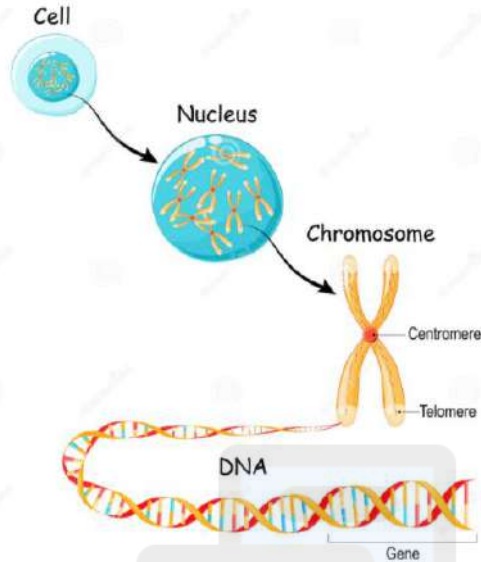
- A **gene** (JEEN) is a section on a chromosome that has genetic information for one trait. The genes on each chromosome can be the same or different, such as purple or white for pea flower color.
- The different forms of a gene are called **alleles** (uh LEELs).
- The two alleles that control the phenotype of a trait are called the trait's **genotype**.



A gene is a section of DNA that has information about a trait

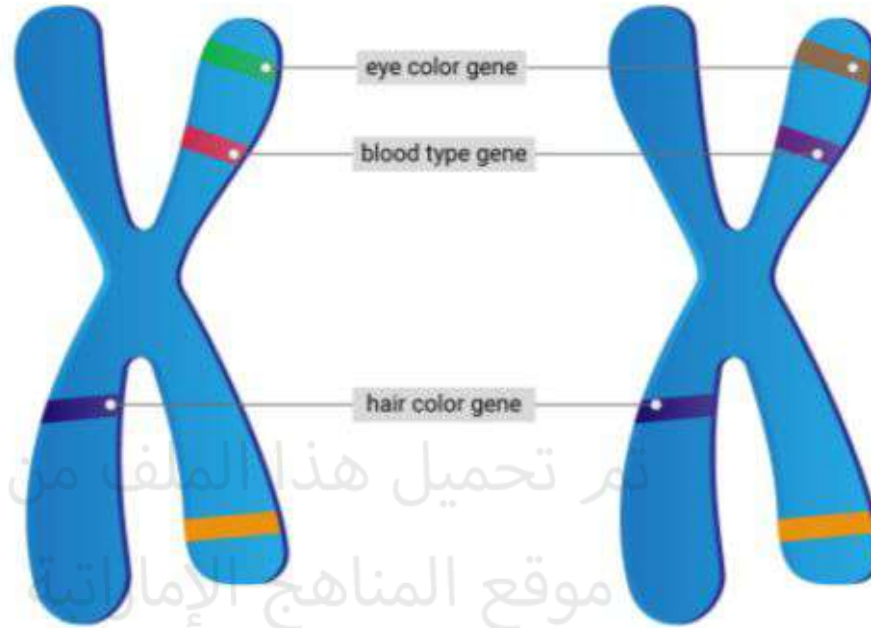
A gene can take two or more forms, called alleles.

For example, the gene that codes for the trait eye color has several alleles such as an allele for black eye color or an allele for brown eye color.







Alleles are different forms of genes





Scientists use symbols to represent the alleles in a genotype, as shown in the table below. In genetics, uppercase letters represent dominant alleles and lowercase letters represent recessive alleles. The table shows the possible genotypes for both round and wrinkled seeds phenotypes.



Phenotype and Genotype			
Phenotypes (observed traits)	 Round		 Wrinkled
Genotypes (alleles of a gene)	Homozygous dominant (RR)	Heterozygous (Rr)	Homozygous recessive (rr)

A round seed can have two genotypes— RR and Rr . Both genotypes have a round phenotype. A wrinkled seed can have only one genotype— rr .

- When the two alleles of a gene are the same, its genotype is **homozygous**.
- Both RR and rr are homozygous genotypes.
- If the two alleles of a gene are different, its genotype is **heterozygous**.
- Rr is a heterozygous genotype.



REMEMBER:

A genotype is an individual's collection of genes.

A phenotype is an individual's observable traits, such as height, eye color, and blood type.



1) Which of the following is NOT an example of a trait?

- A) eye color
- B) ear shape
- C) species
- D) body height

Correct Answer

C) species.

2) Bird A has the genotype ll for bill length, and Bird B is LL . The bills of their offspring would be:



- A) long in 100% of the offspring.
- B) short in 100% of the offspring.
- C) long in 50% of the offspring.
- D) short in 75% of the offspring.

Correct Answer

A) long in 100% of the offspring.

3) A child looks more like one parent than the other because a child only inherits chromosomes from one parent.

- True
- False

Correct Answer

False

4) The study of _____ is called genetics.

- A) heredity
- B) dominance
- C) pea plants
- D) mutations

Correct Answer

A) heredity

5) Passing of traits from parents to offspring is _____.

Correct Answer

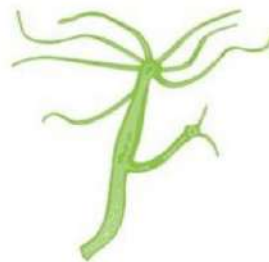
heredity



2. A tree produces seeds in pods when wind-borne pollen from another tree of the same species reaches the flowers. Each seed contains genetic information so the seed can grow into an adult tree. Which do you predict would be the effect of this process?

- A The tree produces a large number of genetically diverse offspring.
- B The tree produces a large number of genetically identical offspring.
- C The tree produces a small number of offspring that are identical to the female parent.
- D The tree produces a small number of offspring that are identical to the male parent.

Hydras are organisms that live in freshwater environments. They have a tube-like body and a mouth at one end. Around the mouth are stinging tentacles that help to capture food. Depending on the conditions, hydras can reproduce sexually or asexually.



3. Based on your observations, which statement best explains what is happening to the hydra in the figure above?

- A The hydra is reproducing asexually by budding a new hydra.
- B The hydra is reproducing asexually by splitting in two.
- C The hydra is reproducing sexually by grafting to another hydra.
- D The hydra is reproducing sexually by releasing sex cells into the water.

Budding: new organism grows on the body of parent.



The Spider

Mating Dance

Meet Norman Platnick, a scientist studying spiders.

Norman Platnick is fascinated by all spider species—from the dwarf tarantula-like spiders of Panama to the blind spiders of New Zealand. These are just two of the over 1,800 species he's discovered worldwide.

How does Platnick identify new species? One way is the pedipalps. Every spider has two pedipalps, but they vary in shape and size among the over 46,000 species. Pedipalps look like legs but function more like antennae and mouthparts. Male spiders use their pedipalps to aid in reproduction.

Getting Ready When a male spider is ready to mate, he places a drop of sperm onto a sheet of silk he constructs. Then he dips his pedipalps into the drop to draw up the sperm.

Finding a Mate The male finds a female of the same species by touch or by sensing certain chemicals she releases.

Courting and Mating Males of some species court a female with a special dance. For other species, a male might present a female with a gift, such as a fly wrapped in silk. During mating, the male uses his pedipalps to transfer sperm to the female.

What happens to the male after mating? That depends on the species. Some are eaten by the female, while others move on to find new mates.

▲ Spiders reproduce sexually, so each offspring has a unique combination of genes from its parents. Over many generations, this genetic variation has led to the incredible diversity of spiders in the world today.

◀ Norman Platnick is an arachnologist (uh rak NAH juh jist) at the American Museum of Natural History. Arachnologists are scientists who study spiders.



It's Your Turn

Research Select a species of spider and research its mating rituals. What does a male do to court a female? What is the role of the female? What happens to the spiderlings after they hatch? Use images to illustrate a report on your research.



Norman Platnick-scientist studying spiders, discovered over 1800 species of spiders.

New species identified through: pedipalps. Every spider has 2. They look like legs but work more like antennae and mouthparts. Male spiders use pedipalps for mating.

Getting ready: male spider places a drop of sperm on sheet of silk. Dips his pedipalps into the sperm.

Finding a mate: females release chemicals and males sense these,

Courting and mating: males have a special dance. Some present female with a gift. Pedipalps used to transfer sperm to female.



INNATE v. LEARNED BEHAVIORS

Parents and offspring both engage in certain behaviors that increase the probability that young animals will survive. Some are inherited and some are learned.

INNATE BEHAVIOR

is a behavior that is inherited rather than learned.

SPIDERS

Spiders instinctively know how to build webs in order to catch food.

TADPOLES

When tadpoles hatch, they already know how to swim. They can avoid danger as soon as they are born.

LEARNED BEHAVIOR

is a behavior that develops through experience or practice.

BIRDS

Birds learn how to fly through trial and error and reinforcement from their parents.

TURTLES

Female sea turtles return to the beach where they were born to lay their eggs. These turtles imprinted on the beach.

EXPLORE/EXPLAIN Lesson 3: Reproduction and Growth of Animals 53

A behavior can be:

1. Known naturally when an animal is born. This is called **Innate Behavior**
2. Be taught to the animal. This is called **Learned behavior.**



Three-Dimensional Thinking

In order to attract a mate, male peacocks fan out their colorful feathers and dance. Females tend to choose males that have larger displays of feathers and feathers with more eyespots. The peahen then builds her nest by scraping a hole in the ground in a hidden area. Once the chicks hatch, the peahen stays close to them, teaching them what foods to eat and defending them from predators.

2. Which of the following is a courtship behavior that increases the probability of successful reproduction for the peacock?
- A fanning feathers
 - B nest building
 - C protecting from predators
 - D all of the above

A

A behavior is the way an organism reacts to its environment or other organisms.

A Courtship behavior can be seen as communication.

Courtship

Answers may vary. Sample answer: Animals engage in certain courtship behaviors, such as dancing, competing with others, and bringing gifts in order to attract a mate.



Environmental Factors
Answers may vary. Sample answer: Environmental factors such as diet, exercise, availability of water and space, and interactions with other organisms determine how an animal will grow.



3. Which of the following is NOT an environmental factor that would affect the hamsters' growth?
- A the amount of food the hamster is given
 - B gene for fur color
 - C the amount of time spent on the exercise wheel
 - D interactions with other hamsters

b



1) Of the following, which is NOT a courtship behavior?

- A) birds singing
- B) fireflies lighting up
- C) frogs croaking
- D) dogs digging

Correct Answer

D) dogs digging

2) Animal communication includes _____:

- A) courtship behavior
- B) aggression
- C) pheromones
- D) all of the above

Correct Answer

D) all of the above

3) Innate behavior increases the survival of young animals because it allows an animal to respond to a stimulus without choosing the proper response.

- True
- False

Correct Answer

True



4) Which animal behavior attracts mates by competing with members of the same species?

- A) aggression
- B) submission
- C) territory
- D) courtship

Correct Answer

D) courtship

5) Female gypsy moths release chemicals called _____ to attract males.

Correct Answer

pheromones



6) Tadpoles survive hatching in water because they are born knowing how to swim. This is an example of _____.

- A) learned behavior
- B) innate behavior
- C) social behavior
- D) none of the above

Correct Answer

B) innate behavior

7) The mating season for white-tailed deer is just two to three months long. Male deer grow antlers before each breeding season. They use their antlers to fight each other to establish dominance in bachelor herds and earn the right to mate with certain females. Scientists claim that this aggressive behavior increases the chances of successful reproduction for the entire deer population. Which statement best supports this claim?

- A) Healthier male deer are able to grow larger antlers.
- B) Healthier males are better able to protect their young.
- C) This behavior extends the length of the mating season.
- D) This behavior gives healthier males a better chance to mate.

Correct Answer

D) This behavior gives healthier males a better chance to mate.

9) Baby whales are born in water tail first. Immediately afterwards, the mother whale pushes the baby to the surface for its first breath. What kind of behavior is this?

Correct Answer

Answers may vary.

Explanation

innate behavior



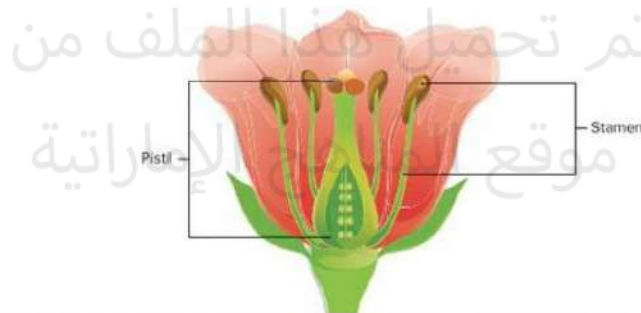
Types of Plant Reproduction Some plants reproduce sexually, some plants reproduce asexually, and some plants can reproduce in both ways. Asexual reproduction occurs when a portion of a plant develops into a separate new plant. Sexual reproduction occurs when a plant's male reproductive cell (sperm) combines with a plant's female reproductive cell (egg). The way a plant reproduces depends on the structures it has.



These hens and chicks can reproduce without seeds, or asexually. New "chicks" can grow from the stolons on the main "hen" plant.

Seedless Plants Not all plants grow from seeds. The first land plants to inhabit Earth most likely were seedless plants—plants that grow from spores, not from seeds. Mosses and ferns are examples of seedless plants found on Earth today.

Seed Plants There are two groups of seed plants—flowerless seed plants and flowering seed plants. Both produce seeds that result from sexual reproduction. The plants produce pollen grains, which contain sperm. They also produce female structures, which contain one or more eggs. **Pollination** occurs when pollen grains land on a female plant structure of the same species. If the pollen joins with an egg, fertilization occurs and a seed develops. In nonflowering plants, the pollen is produced by the male cone, and the eggs are contained within the female cone. In flowering plants, the female reproductive organ is the pistil, and the male reproductive organ is the stamen.





Sexual reproduction: needs two parent organisms

Asexual reproduction: needs only one parent organism

In plants:

Asexual reproduction: a portion of the plant develops into a new plant

Sexual reproduction: plant's male reproductive cell (sperm) combines with female reproductive cell (egg)



Seedless plants

- Grow from
- Examples: moss and ferns



تم تحميل هذا الم
موقع المناهج الإ



Seed plants

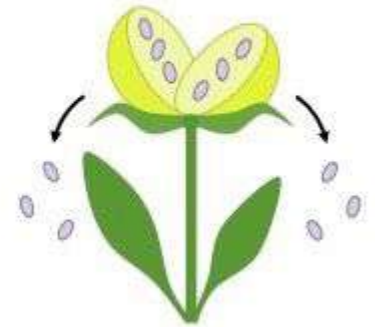
- Two groups: flowerless seed plants and flower seed plants
- Sexual reproduction
- Plant has pollen grains which has the sperm cell
- Plant also has the female egg cell
- Pollination occurs when the pollen grain lands on the female part of the plant
- When sperm and egg are fertilized a new seed is formed



Pollination



Fertilization



Seed Dispersal

تم تحريك هذا الملف من

موقعنا الإلكتروني الإماراتية

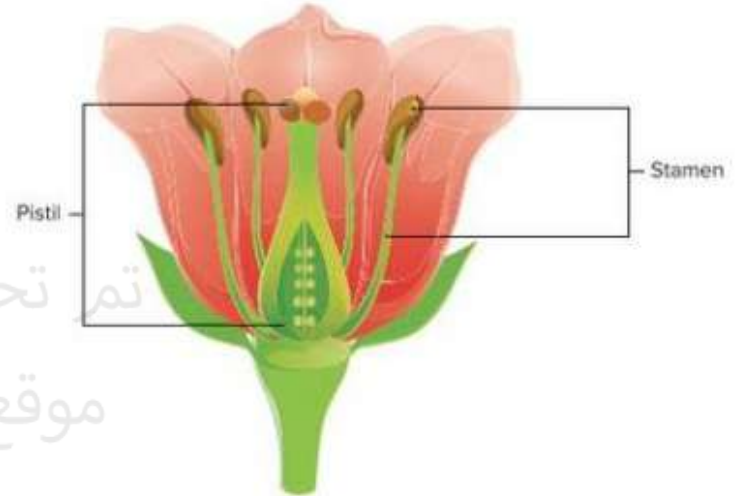


Non flowering plants

- Pollen is produced in male cone
- Eggs in the female cone

Flowering plants

- Female reproductive organ is the pistil
- Male reproductive organ is the stamen






تم تحميل هذا الملف من
موقع المناهج الإماراتية



Seeds on the Move

There are several factors that influence how seeds travel from place to place.

How they get there:

Method	Description	Examples
 WIND	These seeds are light, small and/or have special structures to help them "fly," such as:	<ul style="list-style-type: none">parachutes <i>dandelion</i>propellers <i>milkweed</i><i>maple</i>
 WATER	These seeds have special structures that help them stay afloat, such as:	<ul style="list-style-type: none">fibrous husks <i>coconut</i>floats in water <i>water lily</i>waterproof outer layer <i>mangrove</i>
 ANIMALS	These seeds are eaten and deposited, or have hooks that attach to fur or feathers, such as:	<ul style="list-style-type: none">hitchhikers <i>beggar-ticks</i>juicy fruits <i>blackberry</i>carry outs <i>acorn</i>



1) Seedless plants grow from _____.

Correct Answer

spores

2) What raw materials does a plant need for photosynthesis?

- A) sugar and carbon monoxide
- B) water and carbon dioxide
- C) water and nitrogen
- D) sugar and water

Correct Answer

B) water and carbon dioxide

3) Which part of a flower is the male reproductive organ?

- A) ovary
- B) pistil
- C) stamen
- D) sepal

Correct Answer

C) stamen

4) Which is the most likely description of a seed that is dispersed by wind?

- A) It can float.
- B) It has a thick, hard shell.
- C) It has a waterproof coating.
- D) It is small and light.

Correct Answer

D) It is small and light.

5) _____ are plant structures that are colorful and may have specific odors to attract pollinators.

Correct Answer

Flowers



6) Which is an example of an animal behavior that directly affects plant reproduction?

- A) birds building a nest using twigs
- B) squirrels burying nuts
- C) ducks hiding in predators in marsh grass
- D) horses moving in a herd over prairie grass

Correct Answer

B) squirrels burying nuts

9) Name three ways seeds can be dispersed.

Correct Answer

Answers may vary.

Explanation

wind, water, animals