

# Life Science POSTASSESSMENT April 2020

This will indicate what you have learned concerning Life Science concepts that we have covered this school year.

THIS IS FOR A GRADE - your improvement from the Preassessment in September will be recorded as your grade for this assessment. If you answered 5 correctly in September and today you answer 10 correctly, you will receive 5 points and that shows growth in your knowledge.

THIS WILL NOT DROP YOUR GRADE NO MATTER WHAT YOU SCORE! NO PRESSURE!

READ each question carefully.

READ each choice carefully.

CHOOSE the best answer.

Consider all information included in drawings and diagrams.

Use of scrap paper is encouraged.

DO NOT ANSWER "I do not know" - you obviously can choose that answer but I would hope that you can at least guess based on throwing the obvious incorrect choices out.

Use the read aloud app.

DO NOT USE YOUR RESOURCES - This is a challenge of what you have learned, show that you know without looking it up!!!

COMPLETE THIS WHEN YOU HAVE AT LEAST 30 MINUTES OF NO INTERRUPTIONS AND TAKE YOUR TIME!

Each question is worth 1 point.

\* Required

1. Email address \*

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2. Period Lastnamefirstinitial \*

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3. 1) What is the advantage of a dandelion reproducing asexually? \*

*Mark only one oval.*

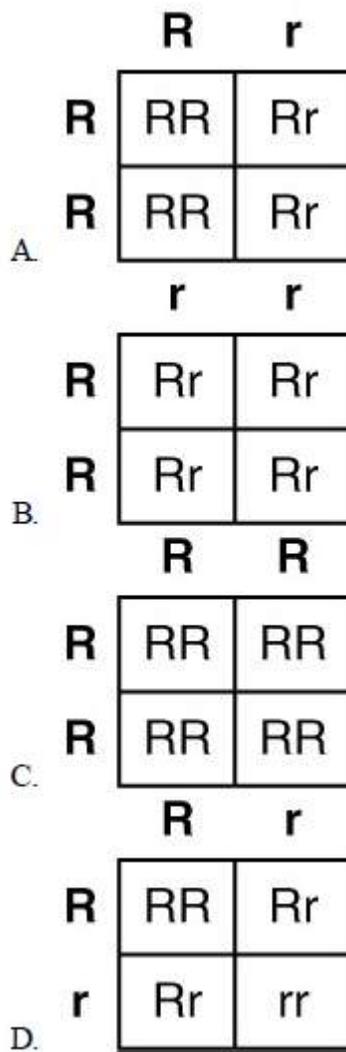
- A. Reproduction occurs rapidly.
- B. Reproductive competition is increased.
- C. Mating compatibility improves.
- D. Diversity increases between generations.
- I do not know

4. 2) In some plants red flowers are dominant (R) and white flowers are recessive (r). Two plants are crossed and the offspring have a possibility of red flowers and white flowers. Which Punnett square shows the cross and its offspring? \*

REFER TO THE PUNNETT SQUARES BELOW BEFORE SELECTING AN ANSWER.

*Mark only one oval.*

- A
- B
- C
- D
- I do not know



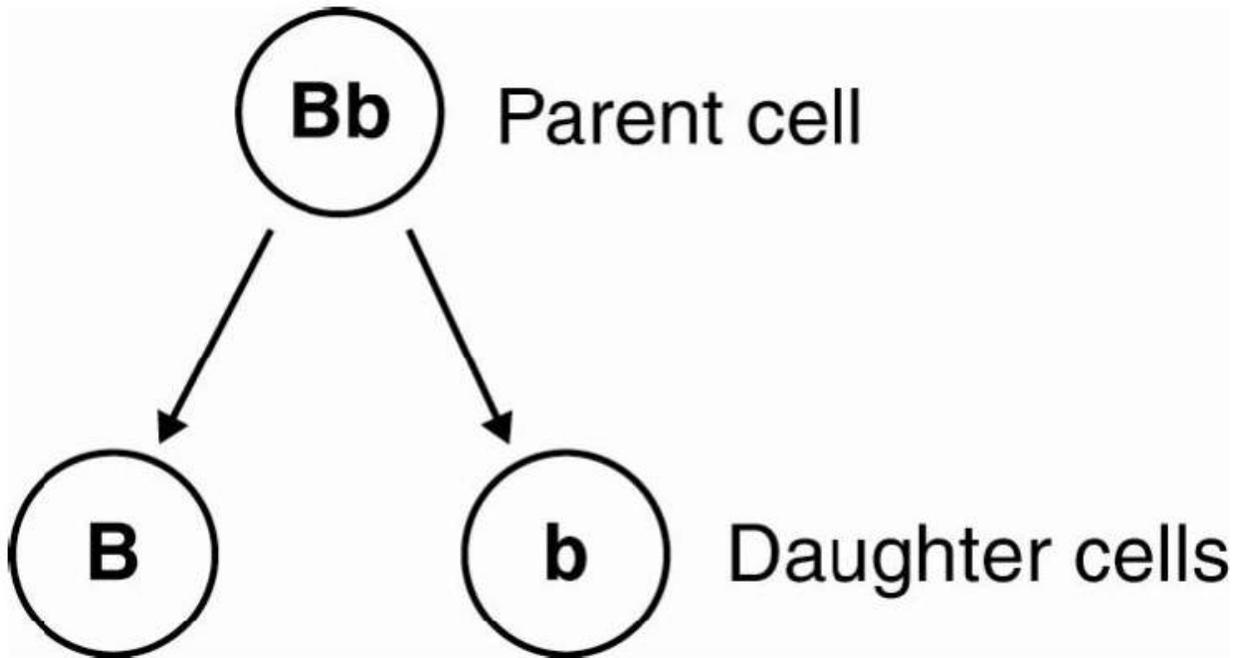
5. 3) REFER TO DIAGRAM 2 BELOW - A parent cell includes the alleles B and b for a trait. When the cell divides, each daughter cell inherits one allele. \*

What does this process indicate about the organism from which the parent cell originated?

Mark only one oval.

- A. it is a female
- B. it is unicellular
- C. it reproduces sexually
- D. it is genetically diverse
- I do not know

Diagram 2



6. 4) Which is the greatest benefit of sexual reproduction? \*

*Mark only one oval.*

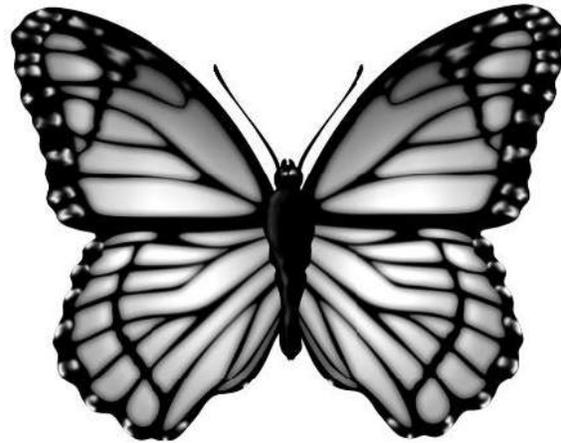
- A. capable of reproducing by meiosis
- B. ability to reproduce without a mate
- C. ability to produce genetically different offspring
- D. capable of producing offspring genetically identical to parent
- I do not know

Refer to these two drawing of butterflies to answer question 5.

**Monarch**



**Viceroy**



7. 5) Monarch butterflies are toxic to birds. As a result, birds avoid eating the monarchs. Over time, the viceroy butterfly has adapted to look very similar to monarch butterflies. Even though the viceroys are non-toxic to birds, the birds avoid the viceroys because they look so similar to the monarch. Which statement best describes this adaptation of the viceroys? \*

*Mark only one oval.*

- A. This adaptation helps viceroys easily find mates.
- B. This adaptation helps viceroys survive to reproduce.
- C. This adaptation allows viceroys to look like predators.
- D. This adaptation allows viceroys to behave like monarchs.
- I do not know

8. 6) The flower petals of a hydrangea plant change color as the acidity of the soil changes. The color changes are directly related to which factor? \*

*Mark only one oval.*

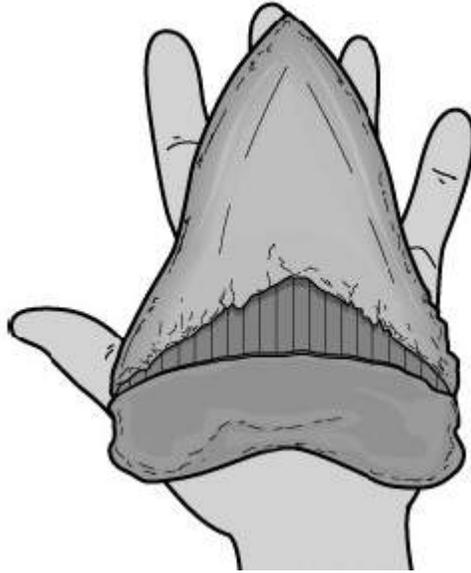
- A. gravitropism
- B. photosynthesis
- C. geographic location
- D. environmental conditions
- I do not know

9. 7) The picture shows the fossilized tooth of an extinct shark called a Megalodon. \*  
Which evidence can scientists most likely gain from studying the fossilized tooth illustrated below?

*Mark only one oval.*

- A. the different types of prey eaten by the shark
- B. the differences from teeth of living sharks
- C. the events that led to how the shark died
- D. the color of the skin of the shark
- I do not know

## Megalodon Tooth



10. 8) Scientists found a fossil of an elephant in the African savannah. It has much longer tusks and is much larger than elephant species presently inhabiting the area. This elephant fossil most likely reveals \*

*Mark only one oval.*

- A. the diet of early elephants.
- B. that elephants travel in herds.
- C. the function of the trunk of the elephant.
- D. that physical changes occurred in elephants over time.
- I do not know

11. 9) Paleontologists are scientists who study evidence of past life on Earth. Which method do paleontologists most likely use to determine the forms of life that existed millions of years ago? \*

*Mark only one oval.*

- A. examine current species of plants and animals
- B. research past species in the library
- C. interview older scientists
- D. examine fossils records
- I do not know

12. 10) Mitosis and meiosis are similar processes. Which statement best describes meiosis? \*

*Mark only one oval.*

- A. Parent cells can be either haploid or diploid.
- B. Products of cell division result in identical genotypes.
- C. Four daughter cells are produced by a single parent cell.
- D. The number of chromosomes per nucleus remains the same after division.
- I do not know

13. 11) At the end of the mitotic cell cycle, a cell divides into two cells. What must happen before the cell divides? \*

*Mark only one oval.*

- A. The number of organelles doubles.
- B. Chromosomes must be copied.
- C. Four nuclei must be formed.
- D. The membrane thickens.
- I do not know

14. 12) Which of the following are not true statements concerning the Geologic Time Scale. \*

Select all that apply

*Check all that apply.*

- The oldest event is always at the top of the time scale.
- Shows time in relation to key events in Earth's history.
- Allows scientists to study past life forms and any changes that have taken place in Earth's history.
- Shows all organisms that have existed on Earth in complete detail.
- I do not know

15. 13) Genetic crosses involving a particular type of flower exhibit complete dominance with respect to petal color. Red (R) is dominant to white (r). \*

Using the Punnett square below the choices, what is the expected percentage of offspring that will have white flowers from a cross of parent flowers with a genotype of Rr.

*Mark only one oval.*

- A. 0%
- B. 25%
- C. 50%
- D. 75%
- I do not know

	<b>R</b>	<b>r</b>
<b>R</b>		
<b>r</b>		

16. 14) The dominant trait for height in a particular plant is tall (T), and the recessive trait is short (t). If both parents are heterozygous for height (Tt), which ratio of offspring will the parents produce based on Mendel's law of segregation? \*

*Mark only one oval.*

- A. 4 tall : 0 short
- B. 3 tall : 1 short
- C. 2 tall : 2 short
- D. 1 tall : 3 short
- I do not know

17. 15) Which of the following describes a phenotype? \*

*Mark only one oval.*

- A. Gg
- B. homozygous
- C. brown eyes
- D. heterozygous
- I do not know

18. 16) Which of the following is/are used by scientists to prove evolution has taken place on Earth through time. \*

Select all that apply

*Check all that apply.*

- fossils
- similar body structures between different species
- similar DNA makeup and embryo development between species
- calculating the amount of sunlight that the Earth has received over time to allow plants to flourish
- I do not know

19. 17) Human cells have how many pairs of chromosomes? \*

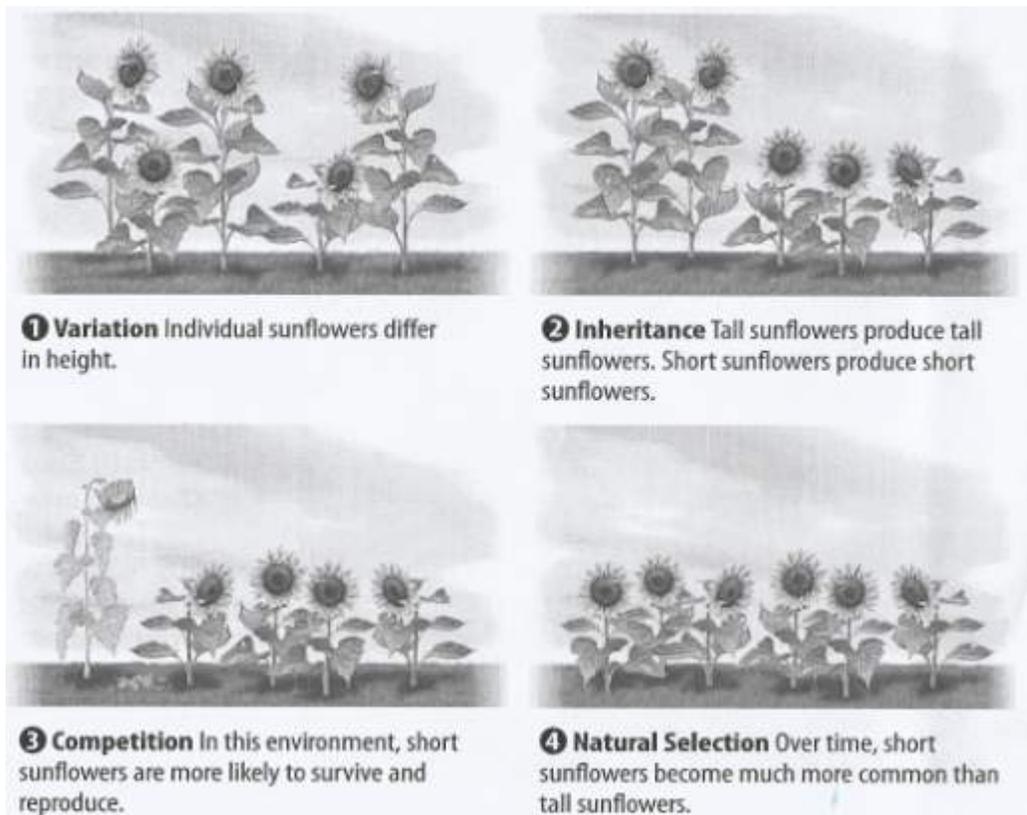
*Mark only one oval.*

- A. 2
- B. 4
- C. 23
- D. 46
- I do not know

20. 18. Use the diagram below to answer the following question. In the diagram with sunflowers 1 correlates to first growing, 2 is the second growing season and so on end with 4 being the last season depicted in this diagram. Which of the following is a true statement? \*

*Mark only one oval.*

- A. Short plants can be a dominant gene eventually.
- B. Variation can aid in the survival of species of organisms.
- C. Tall plants need more water.
- D. The small plants were poisonous to all animals therefore nothing ate them.
- I do not know



21. 19. A certain plant species contains a bad-tasting chemical. Which of these is the most likely outcome of adaptation? \*

*Mark only one oval.*

- A. The plant is able to live in more places.
- B. The plant is able to live in fewer places.
- C. Animals are less likely to eat the plant.
- D. Animals are more likely to eat the plant.
- I do not know

22. 20. When a species becomes extinct, \*

*Mark only one oval.*

- A. adaptations occur to changed environmental conditions.
- B. new variations appear in the species.
- C. most of its members die.
- D. all of its members die.
- I do not know

23. 21. What is most likely to happen if an environment changes and a population in that environment does not have variations that are helpful in the new conditions? \*

*Mark only one oval.*

- A. The population is not likely to survive.
- B. Members of the population will develop adaptations.
- C. The population is likely to form a new species.
- I do not know

24. 22. Which adaptation best allows a tiger to hunt in tall grasses? \*

*Mark only one oval.*

- A. powerful jaws
- B. striped fur
- C. long, sharp claws
- D. large teeth
- I do not know

25. 23. Which of the following can be used to show which members of a family have a certain trait? \*

*Mark only one oval.*

- A. a Punnett square
- B. cross
- C. a pedigree
- D. a chromosome
- I do not know

26. 24. Offspring that result from asexual reproduction \*

*Mark only one oval.*

- A. get their DNA from two parents.
- B. get their DNA from their environment.
- C. get their DNA from one parent.
- D. do not have DNA.
- I do not know

27. 25. Ryan notices that all of his friend's brothers and sisters are tall. What is the most likely explanation for this characteristic? \*

*Mark only one oval.*

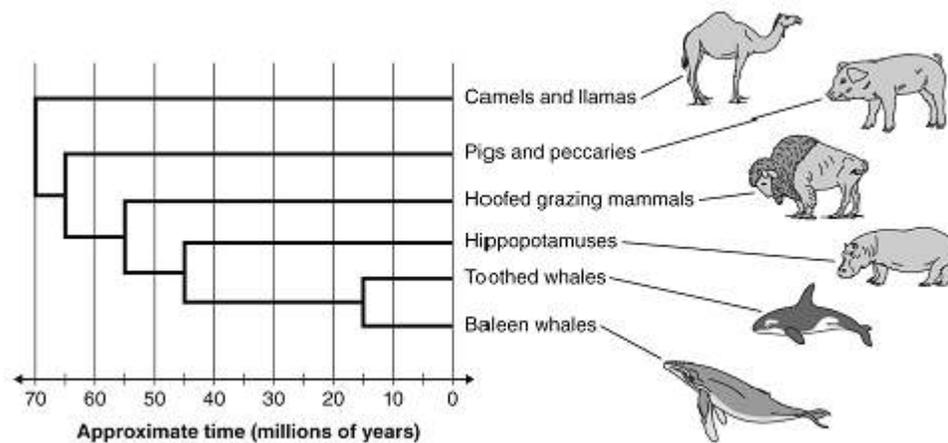
- They have tall parents.
- They have identical genes.
- They eat only healthy foods.
- They live in the same environment.
- I do not know

28. 26. William discovered that two modern-day species have very similar DNA. He concludes that the two species are closely related. What type of evidence did William most likely use to reach his conclusion? \*

Mark only one oval.

- fossil evidence
- genetic evidence
- structural evidence
- evidence from developmental patterns
- I do not know

29. 27. The diagram below shows a model of the proposed relationships among some groups of mammals. \*



Which of these organisms is most closely related to whales?

Mark only one oval.

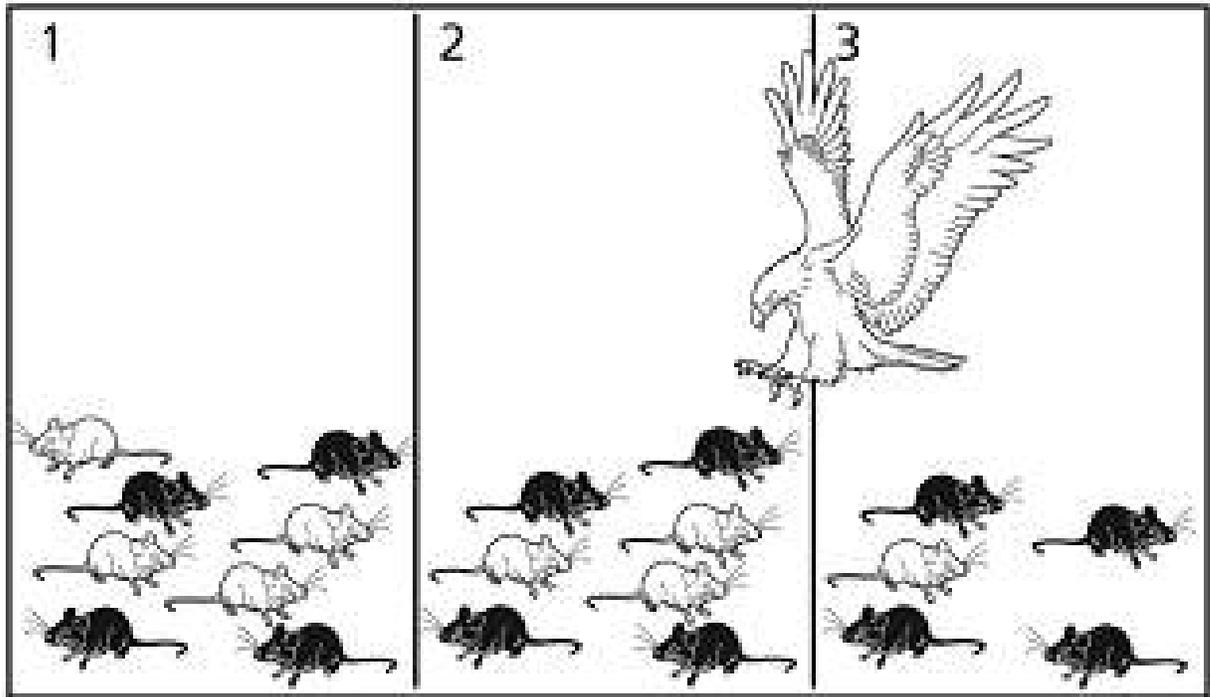
- pig
- bison
- camel
- hippopotamus
- I do not know

30. 28. Which of the following provides structural evidence for evolution? \*

*Mark only one oval.*

- A fossil from the Mesozoic era shows an extinct animal similar to a modern animal.
- A comparison of similar bones in the legs of a human, a dog, and a bat.
- A genetic analysis of two animals shows similar sequences of DNA.
- The embryos of two animals look similar at similar stages.
- I do not know

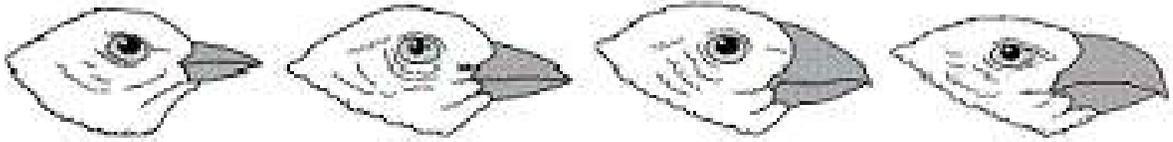
31. 29. The illustration below shows the changes over time in a population of mice in the wild after a population of hawks has moved into the grassy fields where they live. The white and dark mice differ only in color. \*



Which of the following terms would best be used to describe the survival of the mice shown in this diagram?  
*Mark only one oval.*

- variation
- selection
- overproduction
- selective breeding
- I do not know

32. 30. Charles Darwin studied the finches of the Galapagos Islands and found that their beaks vary in shape and size. \*

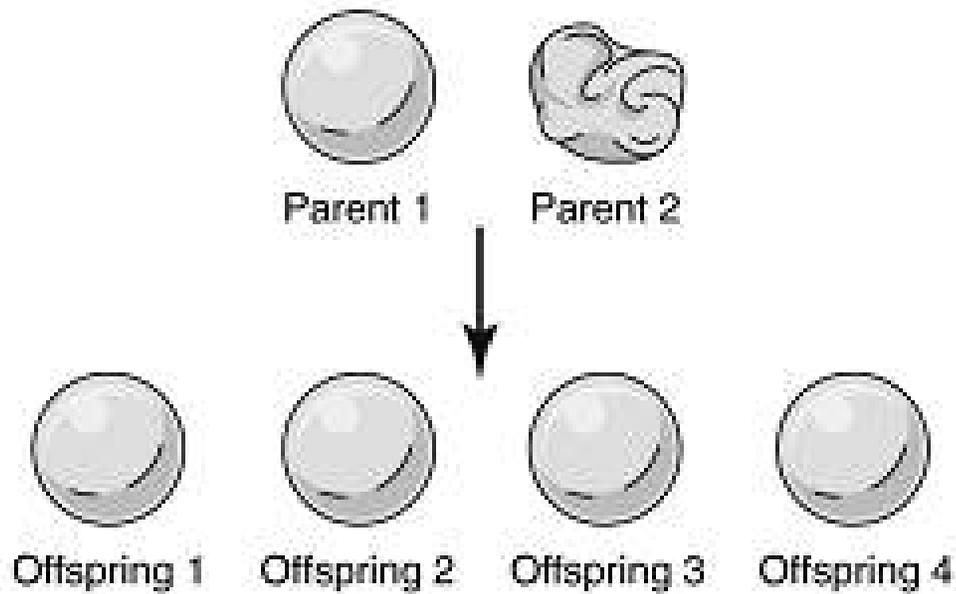


Darwin found that the finches that ate mostly insects had long, narrow beaks. Finches that ate mostly seeds had shorter, broad beaks to crush seeds. Which statement below best describes how natural selection resulted in the four types of finches shown above?

*Mark only one oval.*

- The residents of the Galapagos Islands selectively bred together finches having the traits that they wanted them to have.
- The narrow-beaked finches came first, and evolved into the broad-beaked finches through a series of natural mutations.
- The broad-beaked finches wore down their beaks digging for insects and passed these narrower beaks on to their offspring.
- Over time, the finches that were born with beaks better suited to the available food supply in their habitats survived and reproduced.
- I do not know

33. 31. A pea plant with round seeds is crossed with a pea plant with wrinkled seeds. The figure below shows the results of this cross. \*

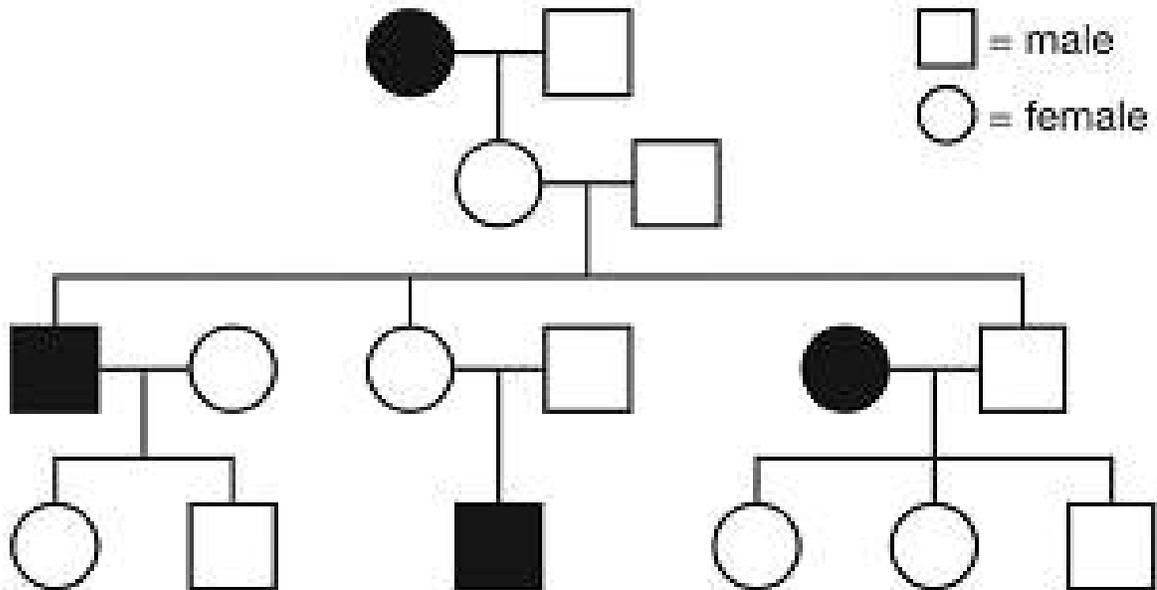


What can you conclude about wrinkled seeds?

Mark only one oval.

- The wrinkled shape is a recessive trait.
- The wrinkled shape is a dominant trait.
- The wrinkled shape is an acquired trait.
- The wrinkled shape is an incomplete trait.
- I do not know

34. 32. Jake made the following pedigree chart to trace the traits of straight and curly hair in his family. A shaded circle or square in Jake's pedigree represents a person with straight hair. \*



Which of the following is the most accurate statement concerning Jake's pedigree?

Mark only one oval.

- Only females have straight hair.
- The trait for curly hair is dominant.
- The trait for straight hair is dominant.
- Black hair is not very common in this family according to this pedigree.
- I do not know.

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