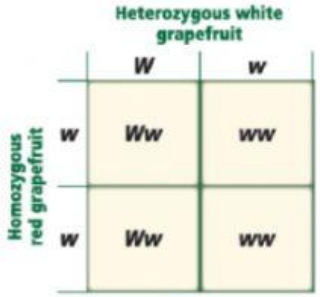
1.3 Applied Genetics Worksheet

Use the illustration below to answer questions 3 and 4.



3. What is the genotypic ratio of the offspring in the cross above?
   A. 1:2:1 **C.** All are homozygous recessive.
   B. 1:1 **D.** All are heterozygous.

4. The cross above could be used to determine the genotype of a parent with a dominant phenotype. What is this type of cross called?
   A. a homozygous cross **C.** a test cross
   B. a heterozygous cross **D.** a parental cross

. In camel racing and horse racing, the fastest animals are most wanted. What process could be used to increase the number of racing camels or racing horses in the next generations?

A. Natural selection
B. Random mating
C. Selective breeding
D. Introduce new competing species

. A farmer produced a tomato that has the great taste of one parent and the fast growth rate of another parent. This offspring with different, natural and desired traits from two parents was created using what process?

A. Inbreeding
B. Hybridization
C. Random mating
D. Natural selection

Selective breeding is effectively used with both plants and animals. True/False

To ensure the tasty and fast-growing traits (mentioned in the previous question) are passed to futur generations of tomatoes, what process should be used?

A. Inbreeding
B. Hybridization
C. Random mating
D. Natural selection

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Both parents in the image are Golden Retrievers that are closely related with similar traits. The offspring are all very similar and the desired traits have been passed to them from the parents. The puppies or offspring are called _____.

A. hybrids
B. pure breeds
C. test crosses
D. true breeds

Why does a scientist or breeder use a test cross?

Explain the major disadvantage of inbreeding.

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