Name _____ Class_____Date_____

Skills Worksheet

# Science Skills

## Analyzing Experiments

Part of Gregor Mendel's hypotheses of inheritance proposed that when two different traits occur together, one of them may be completely expressed, while the other may have no observable effect on the phenotype. He called the expressed trait dominant and the unexpressed trait recessive. In his genetic experiments, Mendel studied seven contrasting characters of peas. One of the characters he studied was seed shape. Mendel found that there are two forms of the character for seed shape—wrinkled and round. In an experiment to determine which form of this character was dominant, Mendel performed the following experiment:

A. Mendel first allowed plants of each type of trait to self-pollinate to produce the two different homozygous P generations.

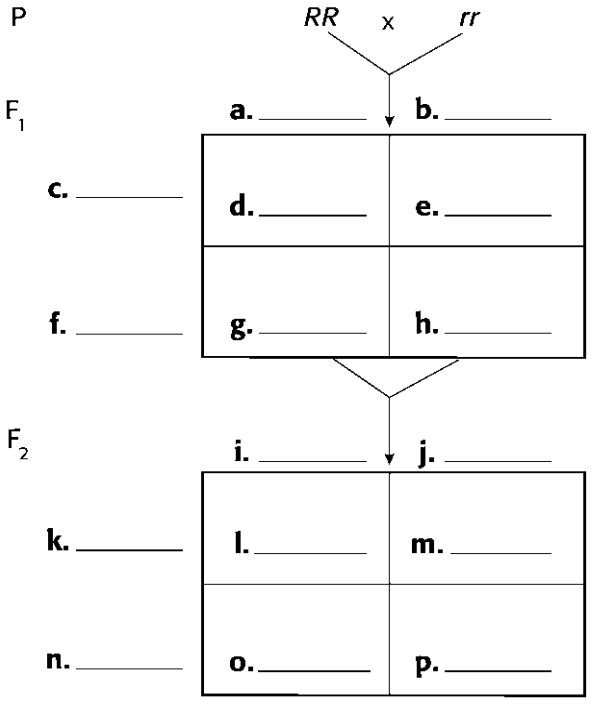
B. Mendel then performed a cross between the homozygous plants with round seeds (*RR*) and homozygous plants with wrinkled seeds (*rr*) to produce the $F_1$ generation.

C. Mendel allowed the $F_1$ plants to self-pollinate to produce the $F_2$ generation.

D. Mendel analyzed the results of the crosses to determine the genotypes and phenotypes present.

**Use the information above to answer questions 1–5.**

1. To determine the results of this experiment, complete the Punnett squares below by writing the correct allele(s) in the space provided.



**Read each question, and write your answer in the space provided.**

2. What phenotypes are present in the $F_1$ generation? What genotypes are present?

_____

_____

_____

_____

3. What phenotypes are present in the $F_2$ generation? In what ratio are they present?

_____

_____

_____

_____

4. Does your analysis support or refute Mendel's hypothesis of dominant and recessive inheritance? Explain.

_____

_____

_____

_____

_____

_____

5. Do you think the ratios of $F_2$ phenotypes that Mendel observed in his experiment were exactly the same as the $F_2$ phenotype ratio that you calculated? Explain.

_____

_____

_____

_____