* Pollinating is sexual reproduction of flowers
* Hybridization is the mixing of traits
* Incomplete Dominance is the blending of traits red and white make pink
* Law of segregation states that alleles separate independently into each sperm and egg

Law of dominance states that a dominant trait will show up therefore hiding the recessive trait





HOMOZYGOUS PURPLE FLOWERS X HOMOZYGOUS WHITE FLOWERS 🡪 ALL PURPLE FLOWERS

What is the genotype of each

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ X \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3:1 ------ that 3 out of 4 show one trait AND 1 out of 4 show the other

   

Make an example…………………. T = tall t = short

Write all 3 possible genotypes (possible combinations) and the phenotype (appearance) for each

\_\_\_\_\_\_\_\_ -- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_ -- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_ -- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make a Punnett square below for each of the following **(TT X tt**), (Tt X tt) **(Tt X Tt)**

WHICH cross GIVES a 3:1 phenotypical (appearance)ratio? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Homozygous recessive ---------- both “little” letters ------ EXAMPLEs are tt, pp, rr

Heterozygote - different or one of each EXAMPLES are Tt, Pp, Rr

**Setting up a Punnett square: when a homozygous recessive is crossed with a heterozygous**

Parents = \_\_\_\_\_\_\_\_\_\_\_ X \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make Punnett Square

Answer the questions

1. What % is heterozygous (ex. Tt or Pp or Rr)
2. What % shows the dominant phenotype (the appearance of the dominant trait (Tt,TT or Pp, PP))
3. What % shows the homozygous recessive phenotype (ex. tt, or pp or rr)
4. What % is homozygous dominant (ex. TT or PP or RR )
5. What % is homozygous recessive ( ex. tt, pp, rr)
6. \_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_ c. \_\_\_\_\_\_\_\_ d. \_\_\_\_\_\_\_\_\_ e. \_\_\_\_\_\_\_\_

If P is purple (dominant) p is white then Pp is purple.

This shows the rule of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because purple shows over white

In order to predict the outcome of offspring in a cross………do the following

1. Decide on the type of inheritance (dominance, incomplete dominance or codominance)
2. Find the genotypes of the parents
3. Make a Punnett square
4. Analyze the kids in the Punnett square
5. Answer the question

If T is tall and dominant over short………….THEN

What letters would denote HOMOZYGOUS DOMINANT - \_\_\_\_\_\_\_\_\_\_

What letters would the genotype of HETEROZYGOUS - \_\_\_\_\_\_\_\_\_\_

What are letters for a HOMOZYGOUS RECESSIVE - \_\_\_\_\_\_\_\_\_\_\_

Cross a hybrid (heterozygous) tall plant and a homozygous tall.

Parents = \_\_\_\_\_\_\_\_\_ X \_\_\_\_\_\_\_\_\_\_\_

What % of tall kids \_\_\_\_\_\_\_\_\_\_\_\_\_\_

What % of short kids \_\_\_\_\_\_\_\_\_\_\_\_\_

Progeny are offspring or kids

A tall human and a short human had a MEDIUM tall baby………….Did the genes……….

1. Is this complete dominance of one of the traits? \_\_\_\_\_\_\_
2. Is this codominance where both alleles (types) show up? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Is this incomplete dominance when the traits blend? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

RED FLOWERS = RR WHITE FLOWERS = R’R’ PINK FLOWERS = RR’

 

WRITE the GENOTYPES of the following

Homozygous red \_\_\_\_\_\_\_\_\_ homozygous white \_\_\_\_\_\_\_\_\_\_ heterozygous \_\_\_\_\_\_\_\_\_\_\_

Red flowers \_\_\_\_\_\_\_\_ white flowers \_\_\_\_\_\_\_\_\_ pink flowers \_\_\_\_\_\_\_\_\_\_

In CODOMINANCE in cattle… color is inherited as follows

RR = red hairs

WW = white hairs

RW = red and white hairs together CALLED ROAN

Make 4 punnett squares

1. Red X white
2. Roan X roan
3. White X roan
4. Red X roan

***GENE EXPRESSION*** is HOW the genes show up as a physical appearance

* The same genotypes should have the same phenotype (ex. Tt = tall and Tt will be tall)
* Changes in gene expression can be caused by the environment

1. **ph**  **2. temperature**