Tuesday, December 5, 2017 12:23 PM Mendel and His Garden Peas

In the 1800's a monk named Gregor Mendel, <u>"crossed</u>" a pure breeding Tall pea plant with a pure breeding short pea plant. The resulting Fi generation were all Tall.

Mendel concluded Tall was dominant and short was <u>recessive</u>. The Fi generation were <u>hybrids</u>.

crossed: breed together

pure breeding: contain only those genes; same as parent

Fi : offspring (1st generation)

Dominant: gene that shows

Recessive: masked / hidden by Dominant ... only shows if given recessive gene by BOTH parents

Hybrid: mix of a

Tall & short are called phenotypes. A phenotype is eg) blue eyes, brown eyes, Pink, white flowers,

Pure breeding tall plants are short " are

Hybrids are

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Tet are on the cromosome passed on from the parents

Pure breeding: TT and tt are called ...

hybrids: Tt are called ...

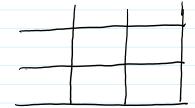
MonoHybrid Cross

one -gene

How does Genetics show a "cross"?

Tall x short

punnett square



Fi generation: phenotype?

genotype?

Next Mendel "crossed" 2 of the Fi generation what were the results?

punnett

F₂ generation: phenotype?

genotype?

2 Important ratio's.
3:1 phenotypes
1:2:1 genotype

<u>Practice Genetics Problems</u> We will solve these together.

- 1. In cats, long tails are dominant over short tails. A pure-bred (homozygous) long-tailed cat, is crossed with a short tailed cat.
- a. What are the parent genotypes?

b. What are the genotypes and phenotypes of the F1 (first filial= kids) generation?
c. Draw a punnett square to show the F2 (second filial = grandkids) offspring, when 2 of the F1 generation are
bred together.
2. In humans, the allele for brown eyes is dominant over blue. A man with blue eyes has a child, with a
woman who is heterozygous fro brown eyes. What is the % chance the child will have blue eyes?
3. A man and a woman who are both heterozygous for brown eyes have a child. What is the % chance the
child will have brown eyes?
4. A couple who are both blue-eyed have a child. What is the % chance the child will have brown eyes?
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