

Patterns of Inheritance Notes

Heredity

- The _____ of _____ from parent to offspring

Gregor Mendel

- _____ "Father of Genetics"
- late 19th century
- experiments with _____
- Austrian monk
- described the _____ of _____
- significance of work recognized in 20th century
- _____ know "_____"

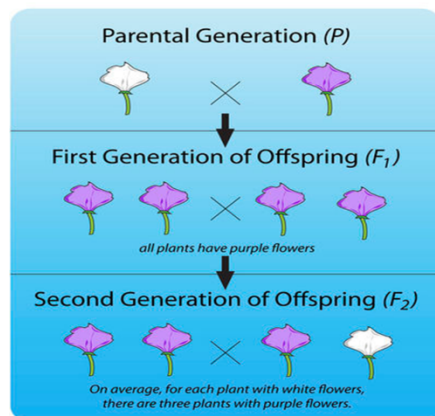
- transferring _____ from the _____ part of one flower to the _____ part of another flower.
- _____ will grow into plants with a desired trait
Example: yellow flowers.

- What people thought during Mendel's time
- Offspring are a "_____" of their _____
- Example: if a pea plant had one _____ parent and one _____ parent, that pea plant would be of _____ height. The offspring would then pass on heritable factors for medium sized offspring.

Mendel's Studies

Flower Color	Flower Position on Stem	Stem Length	Pod Shape	Pod Color
Violet-red (Purple)	Axial	_____	Inflated	Green
White	Terminal	Short	Constricted	_____

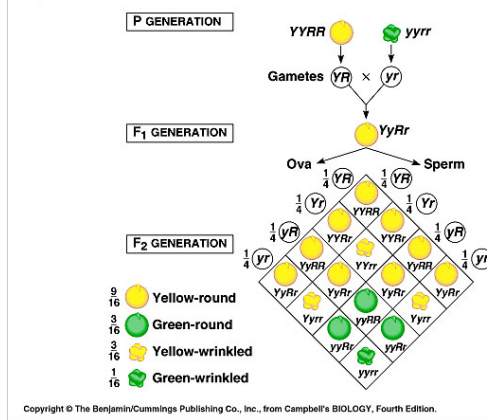
Experiment 1



Law of Segregation

- _____ -characteristic _____
- _____ - characteristic _____ again (75%)
- There are two factors controlling a given characteristic
- One _____
- These factors separate and go to different gametes
- Are different characteristics _____?
- example, are purple flowers and tall stems always inherited together?

Figure 13.7 Independent assortment

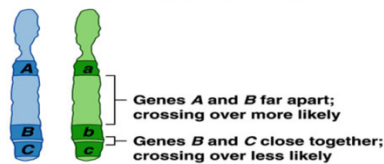


Law of independent assortment

Probability

Linked Genes

- factors controlling different characteristics are _____ of each other.
- If a parent has one _____ and one _____ factor for a trait, then _____ the time the dominant factor will be _____, and _____ the time the _____ factor will be passed on.
- Mendel observed _____ dominant: recessive in his _____ generation
- _____ - genes that are _____ on a chromosome, and are packaged into the _____ together.
- tend to be inherited together because they are located on the same chromosome.



- a chart that allows you to easily determine the _____ of different genotypes in the offspring of two parents.
- _____ means that there is one dominant allele and one recessive allele.
- _____ means that the alleles are the same; either both are dominant or both are recessive.
- A dominant _____ shows up $\frac{3}{4}$ of the time.
- A _____ allele shows up $\frac{1}{4}$ of the time.
- The gametes produced by the male parent are at the _____ of the chart, and the gametes produced by the female parent are along the _____.
- The different possible combinations of alleles in their offspring are determined by filling in the square with the correct letters (alleles).

		pollen ♂	
		B	b
pistil ♀	B	BB	Bb
	b	Bb	bb

- _____ - genes that are inherited from parents represented by _____, one letter for each gene
- _____ of the genotype
Example: a phenotype would be _____.
- You can _____ the percentages of phenotypes in the offspring of this cross from their _____.
- B is dominant so _____ or _____ genotype will have the purple-flower phenotype.
- _____ genotype will have the white-flower phenotype.
three out of four (75 percent) have purple flowers and one out of four (25 percent) have white flowers.
- These are the same percentages that Mendel got in his first experiment.

Genotype and phenotype

Parents	b	b
B	Bb	Bb
?	?b	?b

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