Name: Hemingway

Genetics and Evolution

Review

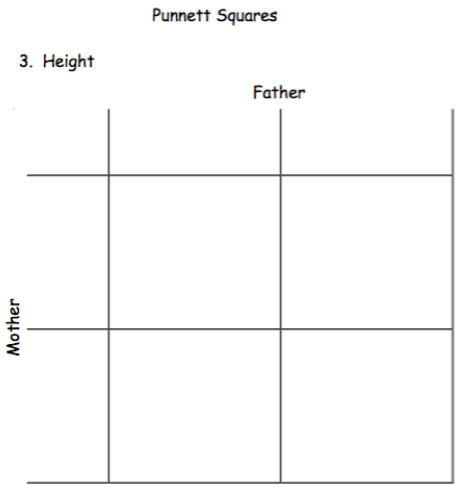
- _____: Half set of chromosomes (1 of each)
- _____: Full set of chromosomes (2 of each)
- _____: Part of the DNA sequence (represented by case sensitive letters)
  - BB, Bb, bb
- _____: The actual appearance of the gene
  - Brown hair, blond hair
- _____: alternative forms of the gene
  - B -dominant, b-recessive

Genes: Units of Variation

- Genes (Alleles) are the carriers of_____ characteristics
- Alleles segregate during the formatting of _____ (sex cells)
- An inheritable characteristic = _____
  - I.e. eye colour, seed colour, hair colour
- A portion of DNA codes for a specific _____
- _____ are the source of random variation
- Therefore variation in DNA is the _____basis for evolution

Gregor Mendel

- "Father of Genetics"
- Austrian Monk
- In charge of Monastery garden
- His work with genetics enabled us to explain the mechanism of evolution
- Studies involving pea plants
  - Would cross plants with different traits to produce_____
- Discovered there are dominant traits and recessive traits
- Those with the _____ trait will express that trait
- Those with the _____ trait will express that trait only if the dominant allele is not present
- _____ do not disappear as later generations could display the trait



Probability and Genetics

- _____ is the likelihood that an event will occur
  - Coin toss
- _____
  - Can be used to determine gene combinations that may result from a genetic cross
  - Letters represent alleles
  - _____=dominant, _____=recessive

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Allele Pairs	
BB	Homozygous
bb	Homozygous
Bb	Heterozygous

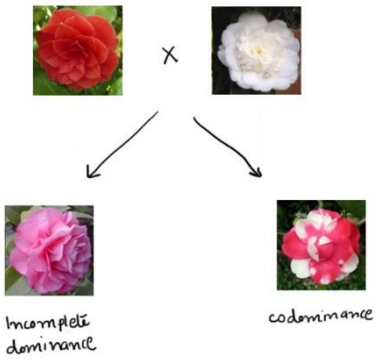
- Organisms that have identical alleles for a trait are said to be _____
- Organisms that have two different alleles for a trait are said to be _____

Independent assortment

- Genes for different traits can segregate _____ during the formation of gametes
- This accounts for the genetic variation observed in plants, animals and other organisms

Gene Control

- Some alleles are _____dominant or recessive, and many traits are controlled by multiple alleles or multiple genes.



_____: One allele is not completely dominant over another

- _____
  - Both alleles contribute to the phenotype

Genetics and the environment

- Characteristics are determined by the interaction of_____ and the _____
  - Ex: Sunflowers height
- Genes will influence
  - Also influenced by climate, soil conditions, availability of water
- Genes provide a plan for development, but how that plan unfolds depends on the environment.