

Genetics Vocabulary Worksheet

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Part 1: Building a Foundation
What is the basic unit of heredity in a living organism?
Hint: Think about the smallest functional unit that carries genetic information.
A) ChromosomeB) GeneC) AllelesD) DNA
Which of the following are components of a chromosome?
Hint: Consider the materials that make up the structure of chromosomes.
□ A) DNA
☐ B) Protein
□ C) Lipids□ D) RNA
Explain the difference between a genotype and a phenotype.
Hint: Consider how genetic makeup differs from observable traits.

List two types of cell division and briefly describe their purpose.

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Hint: Think about the processes that lead to cell reproduction.
1. Type of cell division 1
2. Purpose of cell division 1
2. Pulpose of Cell division 1
3. Type of cell division 2
4. Purpose of cell division 2
Part 2: Understanding and Interpretation
Which of the following best describes an allele?
Hint: Consider the variations of a gene.
○ A) A type of cell division
O B) A form of a gene
C) A protein structure
OD) A genetic disorder
Which scenarios demonstrate dominant allele expression?
Hint: Think about traits that appear in offspring.
Time. Think about that appoar in onopring.
A) A brown avad shild from two blue avad parents
A) A brown-eyed child from two blue-eyed parents B) A tall plant from a short and tall parent.
B) A tall plant from a short and tall parent
□ B) A tall plant from a short and tall parent□ C) A white flower from two white-flowered parents
B) A tall plant from a short and tall parent

Hint: Consider the relationship between genes on the same chromosome.

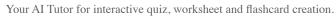


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Part 3: Application and Analysis
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If a child inherits one allele for brown eyes and one for blue eyes, which eye color is likely to be expressed?
Hint: Consider which allele is dominant.
○ A) Blue
○ B) Brown
○ C) Green
OD) Hazel
In a genetic cross between two heterozygous individuals (Aa), what are the possible genotypes of the offspring?
Hint: Think about the combinations of alleles that can result from this cross.
□ A) AA
□ B) Aa
C) aa
□ D) AaBb
Apply your understanding of incomplete dominance to predict the phenotype of offspring from a cross between a red-flowered plant and a white-flowered plant.
cross between a red-flowered plant and a white-flowered plant.
cross between a red-flowered plant and a white-flowered plant.
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cross between a red-flowered plant and a white-flowered plant.

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Which process increases genetic variation during meiosis?
Hint: Think about the mechanisms that shuffle genetic material.
○ A) DNA replication
○ B) Mutation
C) Cross-over
O) Cell division
Which of the following are examples of polygenic traits?
Hint: Consider traits that are influenced by multiple genes.
A) Eye color
☐ B) Blood type
☐ C) Skin color
☐ D) Height
Analyze how mutations can lead to genetic disorders. Provide examples.
Hint: Consider the types of mutations and their effects on genes.
Part 4: Evaluation and Creation
Which of the following best evaluates the impact of genetic engineering on agriculture?
Hint: Consider the benefits and drawbacks of modifying crops.
○ A) It has no impact
○ B) It only benefits large corporations
○ C) It can increase crop yields and resistance to pests
O) It is detrimental to all ecosystems

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Which strategies could be used to predict the likelihood of inheriting a genetic disc	order?
Hint: Consider methods used in genetics to assess risk.	
A) Pedigree analysis	
☐ B) Genetic counseling	
C) Random guessing	
☐ D) DNA sequencing	
Propose a method for using genetic information to address a real-world problem, shereditary disease or agricultural challenge. Describe the steps and potential outcomes	
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