

Punnett Squares Quiz Answer Key PDF

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How can Punnett Squares be applied in selective breeding programs to achieve desired traits?

- A. They are not useful in breeding
- C. They help predict outcomes ✓**
- D. They are only for plants
- C. They can only be used for simple traits

Which allele is expressed in the phenotype when an organism is heterozygous?

- A. Recessiv
- C. Both
- D. Neither
- C. Dominant ✓**

Which of the following represents a homozygous genotype?

- A. Aa
- C. AB
- D. Bb
- C. AA ✓**

What does a dihybrid cross involve?

- A. One trait
- C. Three traits
- D. Four traits
- C. Two traits ✓**

Describe the difference between a genotype and a phenotype with examples.

- A. Genotype is observable, phenotype is genetic
- C. Genotype is genetic, phenotype is observable ✓**
- D. Both are the same
- C. Genotype is dominant, phenotype is recessiv

How does incomplete dominance differ from codominanc? Provide an example for each.

- A. Incomplete dominance is blending, codominanc is both expressed ✓**
- C. Both are blending
- D. Both are fully expressed
- C. Incomplete dominance is recessiv, codominanc is dominant

What role do multiple alleles play in determining blood type in humans?

- A. They determine a single blood type
- C. They allow for multiple blood types ✓**
- D. They have no effect on blood type
- C. They are irrelevant to blood type

Explain how a Punnett Square can be used to predict the probability of a child inheriting a genetic disorder.

- A. Yes
- C. No
- D. Sometimes
- C. Depends on the disorder

What can a test cross help determine? (Select all that apply)

- A. The genotype of an individual with a dominant phenotype ✓**
- C. The probability of offspring traits
- D. The presence of a recessiv allele ✓**
- C. The phenotype of an individual

What information is needed to construct a Punnett Square? (Select all that apply)

- A. Genotypes of the parents ✓**
- C. Alleles of the parents ✓**

- D. Chromosome number
- C. Phenotypes of the offspring

In incomplete dominance, what is the phenotype of a heterozygous individual?

- A. Dominant phenotype
- C. Recessiv phenotype
- D. No phenotype
- C. Blended phenotype ✓**

Which of the following is an example of a sex-linked trait?

- A. Eye color
- C. Hair texture
- D. Height
- C. Hemophilia ✓**

Which of the following are examples of codominanc? (Select all that apply)

- A. Blood type AB ✓**
- C. Pink flowers from red and white parents
- D. Blue eyes
- C. Red and white spotted flowers ✓**

In a dihybrid cross, what is the expected phenotype ratio of the offspring if both parents are heterozygous for both traits? (Select all that apply)

- A. 9:3:3:1 ✓**
- C. 3:1
- D. 1:1:1:1
- C. 1:2:1

Discuss the significance of using a test cross in genetics.

- A. It determines the phenotype of an individual
- C. It reveals the genotype of a dominant individual ✓**
- D. It has no significance

C. It is only used for recessiv traits

Which traits are typically polygenic? (Select all that apply)

A. Skin color ✓

C. Blood type

D. Eye color ✓

C. Height ✓

What is the genotype of an individual with a recessiv phenotype?

A. Homozygous dominant

C. Heterozygous

D. Codominant

C. Homozygous recessiv ✓

What is the primary purpose of a Punnett Square?

A. To predict the physical traits of an organism

C. To calculate the probability of offspring inheriting particular traits ✓

D. To sequence DNA

C. To determine the genetic makeup of an organism

In a monohybrid cross, what is the expected phenotype ratio of the offspring if both parents are heterozygous?

A. 1:1

C. 9:3:3:1

D. 1:2:1

C. 3:1 ✓

Which of the following are true about alleles? (Select all that apply)

A. They are different versions of a gene ✓

C. They determine the phenotype directly

D. They are always expressed in the phenotype

C. They can be dominant or recessiv ✓