# Punnett Square Practice

## Use your clicker to choose the correct answer

# Dominant vs. Recessive

Which trait is dominant?

A. B

B. b

# Dominant vs. Recessive

Which trait is recessive?

A.B

B.b

# Heterozygous or Homozygous

For each genotype, indicate whether it is heterozygous (hybrid) or homozygous (purebred)

# Question 1

# Rr

A) Heterozygous (hybrid)

B) Homozygous (purebred)

# Question 2

tt

A) Heterozygous (hybrid)
B) Homozygous (purebred)

# Question 3

## DD

A) Heterozygous (hybrid)
B) Homozygous (purebred)

# Filling in a punnett square and interpreting the results

For this set of questions fill in the punnett square or draw conclusions from the punnett square.

# Question 4

| | R | r |
|---|---|---|
| R | | |
| R | | ? |

A)RR
B)Rr
C)rr

# Question 5

| | D | d |
|---|---|---|
| D | | |
| d | ? | |

A) DD
B) Dd
C) dd

# Question 6

| | G | g |
|---|---|---|
| g | | ? |
| g | | |

A)GG
B)Gg
C)gg

# Question 7

In pea plants smooth seeds are dominant (S) to wrinkled seeds (s). **What is the genotype for a pea seed that is wrinkled?**

A) SS

B) Ss

C) ss

# Question 8

In pea plants smooth seeds are dominant (S) to wrinkled seeds (s). **What is the phenotype for a pea seed that is Ss?**

A) smooth

B) wrinkled

# Question 9

In pea plants smooth seeds are dominant (S) to wrinkled seeds (s). **What is the phenotype for a pea seed that is homozygous recessive (rr)?**

A) smooth

B) wrinkled

# Question 10

One cat carries heterozygous, long-haired traits (Ll), and its mate carries homozygous short-haired traits (ll). **What is the probability of one of their offspring having long hair?**

A) 4:4 100%

B) 1:4 25%

C) 3:4 75%

D) 2:4 50%

# Question 11

A heterozygous round seeded plant (Rr) is crossed with a homozygous round seeded plant (RR). **What percentage of the offspring will be homozygous dominant(RR)?**

A) 4:4 100%

B) 3:4 75%

C) 2:4 50%

D) 1:4 25%

# Question 12

In pea plants purple flowers are dominant (P) to white flowers (p). Two plant, both heterozygous (Pp) for the gene that controls flower color are crossed. **What percentage of the offspring will have purple flowers?**

A) 1:4 25%

B) 3:4 75%

C) 4:4 100%

D) 2:4 50%

# GENETICS REVIEW

# Question 13

A single gene carries _____ unit(s) of information.

A. 1

B. 2

C. 3

D. 4

# Question 14

An inherited trait that is controlled by more than one gene pair is called a

A. Gene

B. Heredity

C. Polygenetic trait

D. Genetics

# Question 15

How many chromosomes are in a human cell?

A.23

B.24

C.46

D.48

# Question 16

How many chromosomes are in a human sex cell?

A.23

B.24

C.46

D.48

# Question 17

Which of the following are **advantages** of asexual reproduction:

A. More time and energy

B. Less time and energy

C. More genetic diversity

D. Less genetic diversity

E. One parent

F. Two parents

# Question 18

Which of the following are **advantages** of sexual reproduction:

A. More time and energy

B. Less time and energy

C. More genetic diversity

D. Less genetic diversity

E. One parent

F. Two parents

# Question 19

Which of the following are **not advantages** of asexual reproduction:

A. More time and energy

B. Less time and energy

C. More genetic diversity

D. Less genetic diversity

E. One parent

F. Two parents

# Question 20

Which of the following are **not advantages** of sexual reproduction:

A. More time and energy

B. Less time and energy

C. More genetic diversity

D. Less genetic diversity

E. One parent

F. Two parents

# Question 21

What is a mutation?

A. Different chromosomes mixing

B. Any change in DNA

C. When DNA combines

D. Different alleles mixing

# Question 22

An example of an acquired trait would be _____.

A. Attached earlobes

B. Doing algebra

C. Spider spinning a web

D. Shoe size

# Question 23

An example of an inherited trait would be _____.

A. Blue eyes

B. The ability to ride a bike

C. Cooking dinner

D. Knowing how to get to grandma's house

# Question 24

What is the difference between instinctive and learned characteristics?

A. Learned characteristics are behaviors an organism is born with know how to do.
B. Learned characteristics are behaviors an organism acquires through out their life time.
C. Instinctive characteristics are behaviors that an organism acquires from watching other in their group.
D. Instinctive characteristics are behaviors that an organism learn through trial and error.

# Question 25

Talk in your group and list some examples of how the environment can influence inherited traits?