

Genetics review

Ch 10 and 12

Define Dominant

A trait that will mask another trait

Define Recessive

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- A trait that is masked by a dominant trait
 - Or one that disappears in the F1 and reappears 25% of the time in the F2
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Define Genotype

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- The genes present in an individual, written as TT , Tt , or tt
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Define phenotype

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- What an organism looks like outwardly, Tall- short etc...
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Define Heterozygous

Having two different alleles, Tt

Define homozygous

Having two identical alleles, TT

What is a monohybrid cross?

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- Cross btwn parents who differ in one characteristic.
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What is a dihybrid cross?

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- A cross btwn parents who differ in two characteristics.
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What are the steps to solving a genetic cross?

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- 1. define the parents
 - 2. determine gametes
 - 3. assign gametes to punnett square and solve.
 - 4. gather data (genotype and phenotype) from punnett square.
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What is Mendel's first law?

Law of dominance and recessiveness.

What is Mendel's second law?

Law of segregation

What is Mendel's third law?

Law in independent assortment.

What does the law of segregation say?

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- Alleles for traits segregate from one another during meiosis.
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What does the law of independent assortment state?

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- Traits are inherited independently from one another unless they are linked (found on the same chromosome)
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Define incomplete dominance.

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- One allele doesn't completely mask the other resulting in a blended trait. (red flower x white flower = pink)
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Define Codominance.

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- Each allele is expressed equally, red & white striped flowers.
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What is special about the 23rd pair of chromosomes?

They determine gender

What is a sex linked trait?

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- ❑ One that is passed on the X chromosome, from mother to son.
 - ❑ One that is carried by females and typically expressed in males only.
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If a couple just had a female child,
what are the chances their next
child will also be female?

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- 50%, no matter how many children we have there is always a 50% chance of having a boy or girl each time mating occurs.
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What are the genotype and phenotype ratios + percentages for the following cross?

- Black is dom.
 - Homozygous black x wht
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- Genotype: 100% Bb
 - Phenotype: 100% B
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What are the genotype and phenotype ratios + percentages for the following cross?

- Black is dom.
 - Two heterozygous individuals crossed with one another.
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- Genotype=
 - 1BB:2Bb:1bb
 - Phenotype=
 - 3B:1b
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Define fertilization

Union of sperm and egg

Define Mitosis

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- Nuclear division resulting in two identical cells.
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Define meiosis

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- ❑ Nuclear division designed to reduce the amount of genetic material in a cell by half.
 - ❑ Makes gametes.
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Define gamete

Sex cell, sperm or egg

What is a zygote?

Fertilized egg

How do you assign alleles to sex cells (gametes)?

Use FOIL/ JAWS

$AaBb = AB, Ab, aB, ab$

Define pure breeding

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- Individual that always producing more of exactly the same thing.
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In terms of chromosomes, how do gametes compare to body cells?

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- Gametes have half as much as body cells
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What is crossing over?

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- Alleles from non-sister chromatids change place
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What is this... know how to read it.


