



Amoeba Sisters | Video Recap

NAME: _____

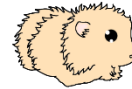
Amoeba Sisters Video SELECT Recap: *Incomplete Dominance, Codominance, Polygenic Traits, and Epistasis (Non-Mendelian Inheritance)*

In some guinea pigs, having hair is associated with the presence of a dominant allele "H." Hairless guinea pigs do not have the dominant allele "H." This is a **Mendelian** trait.

Mendelian Trait

HH or Hh

hh



1. Show a Punnett square with a **Mendelian** cross between two guinea pigs that are Hh x Hh.

2. According to your work, complete the following **phenotype** ratio: _____ Have Hair: _____ Hairless

3. According to your work, complete the following **genotype** ratio: _____ HH: _____ Hh: _____ hh

4. The traits covered in this video are **non-Mendelian** traits, unlike #1. What does it mean for a trait to be **non-Mendelian**?

Non-Mendelian Traits



5. Describe how **incomplete dominance** and **codominance**, two **non-Mendelian** traits, are different from each other.

Codominance

We shall rule this chicken together!

Huzzah!

BW

It's just really hard for me to fully commit to this flower...



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Incomplete Dominance

6. There are a variety of ways to represent the alleles for incomplete dominance, codominance, and other non-Mendelian traits. Many times, there are different pros and cons for how alleles are represented as well as different preferences. How do you plan to represent the alleles for incomplete dominance and codominance, and how are you planning to keep them separate in your mind?

Remember:

Allele symbols may vary

Incomplete Dominance

RW or Rr

Codominance

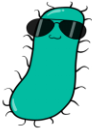
BW or C^BC^W

7. **Pleiotropy**, not discussed in the video, is when just one gene can affect several traits! How is this vocabulary term different from a **polygenic** trait, which is discussed in the video?



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Codominance can be observed in some breeds of chicken. Black chickens can result from BB alleles. White chickens can result from WW alleles. A chicken with alleles BW can be speckled with black and white.

8. Show a Punnett square with a **Mendelian** cross between two chickens that are BW x BW.

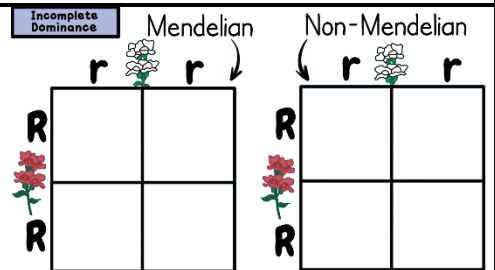
9. According to your work, complete the following **phenotype** ratio: _____ Black: _____ Speckled: _____ White

10. According to your work, complete the following **genotype** ratio: _____ BB: _____ BW: _____ WW

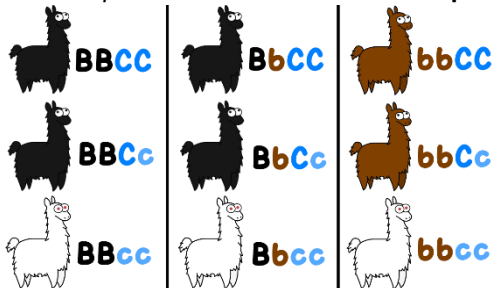
Incomplete dominance can be observed in snapdragons. Snapdragon flowers that have two RR alleles have a red phenotype. Snapdragon flowers with a rr have a white phenotype. Snapdragon flowers that are Rr are pink.

11. Fill in the two Punnett squares in diagram at right.

12. This is a **non-Mendelian** trait, but how could this be different if the trait was **Mendelian**?



13. *Explain the Graphic!* How does this relate to **epistasis**?



14. *Apply the Vocab!* The below graphic is a follow-up from the graphic in #13. Circle genotypes below that you would expect to result in white coloration and explain why.

