The Smile Family: Wrap it up!

Name_____

Part A: Comparing traits (gathering data)

1. How does your smiley face compare to the ones created by your classmate? Pick two smiley faces that are displayed and compare each of the 12 traits. Write the **phenotype** for each smiley face for each trait in the chart.

Trait	**Smiley by:** ME	D or R	**Smiley by:**	**D or R**	**Smiley by:**	**D or R**
Face Shape						
Eye Shape						
Hair Style						
Smile						
Ear Style						
Nose Style						
Face Color						
Eye Color						
Hair Length						
Freckles						
Nose Color		n/a		n/a		n/a
Ear Color		n/a		n/a		n/a
Sex		n/a		n/a		n/a

2. In the column labeled "D or R" use the green or golden colored sheet to label which trait is DOMINANT (D) or Recessive (R). If it is labeled "n/a" that means if does not apply so you do not have to fill it in.

3. Look at a random 30 smiley faces in the room (that are not your own) and count how many of the 30 have the following traits:

Trait	Number of smiley faces that have it **OUT OF 30**
Green Faces	
Purple Ear color	

Part B: Data Analysis

4. Based on the data you gathered in question #1 and 2 ,who's smiley face has the most dominant traits? _____ How many dominant traits? _____

5. Based on the data you gathered in questions #1 and 2, who's smiley face has the most recessive traits? _____ How many recessive traits? _____

6. Which traits were the results of incomplete dominance?

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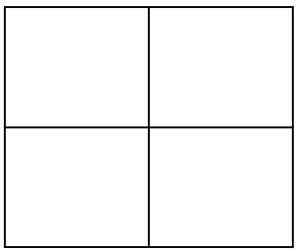
7. How many smiley faces have a green face (which is a recessive trait)?
_____out of 30 OR_____%

8. How many smiley faces have purple ear color? _____out of 30 OR _____%

9. The yellow face allele (Y) is dominant to green face allele (y). If both parents are heterzygous for a yellow face what are the possible offspring? Use a Punnett square to determine the probability of getting a smiley face that is green?



_____% to getting a green smiley face

10. How does your predicted probability for a green face (#9) compare to the actual results (#7)? (use data to support)

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11. Why did you **only** need to flip the male coin parent to determine the sex of your smiley face and not the female coin?

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12. Star eye shape (E) is dominant to blast eye shape (e). A female smiley face hybrid for star eye shape and a male smiley face is homozygous for blast-type eyes have children, what percentage would have starry eyes? What percent would have blast-type eyes? Use a punnett square to show your work.

13. A yellow face color (Y) is dominant to a green face color (y). Uncle Smiley who is heterozygous for a yellow face, married a woman with a green face, both of them always wanted a large family! If they were to have 12 children, how many of the children would have yellow face? Use a punnett square to show your work and explain your answer.

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