Sperm and Egg

In this activity you and your partner will each receive a sperm and an egg. In each you will find chromosomes, the red from the mother (egg) and the green from the father (sperm).

1. You should open each gamete and lay out the chromosomes so they are arranged like a karyotype.
2. Record the genes for the mother’s and father’s chromosomes in the attached table

**CHECK POINT!** Make sure to have your teacher check your work before continuing

1. Now record the individual’s ***genotype***.
2. Based on the genotype, record the individual’s ***phenotype*** in the next column.

**CHECK POINT!** Make sure to have your teacher check your work before continuing

1. Working with the table next to your, mate your two new individuals. Record 4 traits of your choice in the attached Punnett Squares.
2. After completing the Punnett Squares, record the possible ***genotypes*** created and their corresponding ***phenotypes***
3. Once this is completed, answer the 4 questions following the Punnett Squares.

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|  | Mom’s Gene | Dad’s Gene | ***Genotype*** | ***Phenotype*** |
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1. Now cross your individual with the individual at the table next to yours. Create a Punnett Square for 4 traits of your choice. Once you’ve created the Punnett Square, list the possible ***genotypes*** for each trait and the corresponding***phenotypes***

Trait 1\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Punnett Square ***Genotype/Phenotype***

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Trait 2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Punnett Square ***Genotype/Phenotype***

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Trait 3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Punnett Square ***Genotype/Phenotype***

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Trait 4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Punnett Square ***Genotype/Phenotype***

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1. What do you think would happen if the egg or sperm already had 2 copies of one of the chromosomes?
2. If a male inherited an X chromosome with a gene for color blindness, would he be color blind? Why or why not?
3. Which of the dominant traits do you see in your everyday life? Which dominant traits do you see rarely or never? What does this tell you about dominant traits?
4. Are the male traits or female traits dominant more often? What does this tell you about sex and genetic dominance? To properly answer this question, compare your genotype with at least 2 other groups.