

Name: _____

Date: _____

Life Science

Period: _____

Genetics



Smiley Face Genetics

Laboratory Analysis

Part A: Smiley Face Comparison

How does your smiley face compare to the ones created by your classmates? Choose two smiley faces that are displayed near your smiley face and compare each of the 12 traits. Indicate the phenotype for each trait in the chart.

| Trait | My Smiley Face | Smiley by: | Smiley by: |
|-------------|----------------|---------------|---------------|
| Face shape | | | |
| Eye shape | | | |
| Hair style | | | |
| Smile | | | |
| Ear style | | | |
| Nose style | | | |
| Face color | | | |
| Eye color | | | |
| Hair length | | | |
| Freckles | | | |
| Nose color | | | |
| Ear color | | | |
| | ____ D ____ R | ____ D ____ R | ____ D ____ R |

1. Which of the three smiley faces listed above has the most dominant traits? _____
2. Which of the three smiley faces listed above has the most recessive traits? _____
3. What is the probability that a smiley face will have a green face? ____ out of ____, or ____%
4. How many smiley faces in the class have a green face? ____ out of ____, or ____%

5. Does the predicted probability for a green face (question 3) match the actual results (question 4)? Explain.

6. What is the probability that a smiley face will have an orange nose? ___ out of ___, or _____%

7. In the entire class, how many smiley faces have an orange nose? ___ out of ___, or _____%

8. Does the predicted probability for an orange nose (question 6) match the actual results (question 7)? Explain.

Part B: Smiley Face Conclusion

9. Why did you only need to flip the male parent coin to determine the sex of your smiley face?

10. How would the smiley face “children” change if one of the parents were homozygous dominant for all the traits while the other was heterozygous?

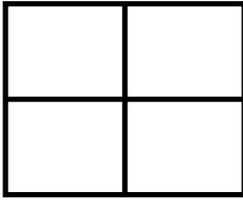
11. Grandma and Grandpa Smiley are heterozygous for the star eye shape. If one of their heterozygous children married a girl with blast-type eyes, what percentage of their grandchildren should have starry eyes? What percent would have blast-type eyes? Complete the punnett square to help you find your answers.



_____ % starry eyes

_____ % blast-type eyes

12. Baby Smiley has curly hair, but neither of her parents do. Is this possible? Create a punnett square to help you find your answer.



Is this possible? Explain.

13. Aunt Smiley has the cutest pointed ears and would love to have children with pointed ears. What type of ears would her husband need to have in order for her to get her wish?

Husband's phenotype: _____

Husband's genotype: _____