Name: _____ Period: _____ Date: _____

Genetics with a Smile:
Wrapping it up!

Review:
Provide an example for each of the following terms from the activity.

A. Gene /Trait--
B. Allele--
C. Dominant--
D. Recessive--
E. Genotype--
F. Homozygous--
G. Heterozygous--
H. Phenotype--

Analysis Questions:
1. Determine how many dominant traits your smiley face has. _____
2. Who in your class has the most dominant traits? _____
3. Who in your class has the most recessive traits?_____

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

5. Your smiley face's parents were each heterozygous for each trait. How would your smiley faces change if one of the parents were homozygous dominant for all of the traits while the other was homozygous recessive? (Hint: Think about the possible combinations. Use the penny if you need to try it out!)

6. How would the smiley faces change if one of the parents were recessive for all the traits while the other was heterozygous?

7. What was the chance that you gave your smiley a dominant allele? _____
8. If you are homozygous dominant, what are the chances that you give your smiley a dominant allele? _____
9. If you are homozygous dominant for a gene, do you need to know your partner's genotype to figure out what trait your child will have? Why or why not?

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10. Uncle Smiley, who is heterozygous for a yellow face, married a woman with a green face. Would uncle smiley or his wife be responsible for giving the allele that would determine the face color of their offspring? Explain.

11. Baby smiley has curly hair, but neither of her parents do! Is this possible? If so, what must the genotypes of her parents be?

12. 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 are the possible eye shapes that their offspring will have? How do you know?

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? Give the genotype and phenotype as part of your answer.