**Problem:** Are traits controlled by dominant alleles more common than traits controlled by recessive alleles?

**Skill Focus**: developing hypotheses, interpreting data

**Hypothesis**: Write a hypothesis that reflects your ideas about the problem.

I predict...

**Procedure**:

Part 1 Dominant and Recessive Alleles

1. For each of the traits listed in the data table below, work with a partner to determine which trait you have. Highlight that trait in your data table.
2. Transfer your data on to the class data chart using the Google form online.
3. After all students have transferred the data, Record the total number of students who have each trait in the data table.

Part 2 Are Your Traits Unique?

1. Look at the circle of traits diagram. All the traits in your data table appear in the circle. Place the eraser end of your pencil on the trait in the small central circle that applies to you- either free ear lobes or attached ear lobes.
2. Look at the two traits touching the space your eraser is on. Move your eraser onto the next description that applies to you. Continue using your eraser to trace your traits until you reach a number on the outside rim of the circle. Record that number in your data table.
3. Share your circle of traits number by recording it with the class data on the Google Doc.
4. Then answer the analysis questions.

**Data Table**

|  |
| --- |
| Total Number of Students in Class \_\_     \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Trait 1 | Number | Trait 2 | Number |
| A | Free Ear Lobes |       | Attached Ear Lobes |       |
| B | Hair on Fingers |       | No Hair on Fingers |       |
| C | Widow’s peak |       | No Widow’s Peak |       |
| D | Curly Hair |       | Straight Hair |       |
| E | Cleft chin |       | Smooth Chin |       |
| F | Smile Dimples |       | No Smile Dimples |       |
| G | Circle of Traits Number \_\_     \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Name:

**Analyze and Conclude**

1. The traits listed under Trait 1 in the data table are controlled by dominant alleles. Which traits controlled by dominant alleles were shown by a majority of students?

1. The traits listed under Trait 2 are controlled by recessive alleles. Which traits controlled by recessive alleles were shown by a majority of students?­

1. How many students ended up on the same number on the circle of traits? How many students were the only ones to have their number? What do the results suggest about each person’s combination of traits?

1. Does your data support the hypothesis? Explain.

1. What would you do next in attempts to support your hypothesis? Explain the next experiment you would perform.

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