

**Project FOCUS
Best Lessons
FIFTH GRADE**

Title of Lesson: Fortune of inheritance

Theme: Life Science

Unit Number: 1 **Unit Title:** Genes and Inherited Traits

Performance Standard(s) Covered (enter codes):

S7L2

S5L3a

S5L3b

SB1

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

genetics, inheritance, trait, characteristics

Learning Activity (Description in Steps)

Abstract (limit 100 characters): This activity is designed to introduce elementary students to the world of genetics.

Details: After teaching the class the difference between an inherited trait and an acquired trait, we went around the room to see who had which of the inherited traits listed above. After the students identified that their genes are the reasons why some of the students inherited traits and why others did not possess the same characteristics. The second part of the activity included an interview constructed by the students. They answered the following questions about themselves and went home to ask their parents the same questions. The questions included:

1.
What is your sex?
2.
What is your hair color?
3.
What is your hair type? (curly, wavy, straight etc.)
4.
What is your eye color?
- 5.

What is the shape of your face?

6.

Are your earlobes attached or unattached?

7.

What is your skin color?

8.

Do you have any birthmarks, if so, where and what do they look like?

9.

What is your height?

10.

What is your favorite subject in school?

11.

What is your favorite food?

12.

What is your favorite sport?

The next part of the activity occurred during the second session and included the construction of a Venn diagram. On the diagram each student wrote their name on top of the first circle and the name of one of their parents they chose to interview on the other. In the circle on the left the students placed their answers to the questions that were different than the ones their parents came up with. In the circle on the right the students put the answers of their parent that was different than the ones they came up with. In the middle of the diagram, student wrote the answers that were the same. At the end of the exercise we went around the class and identified which trait was inherited vs. which traits were acquired. After each student presented their diagrams, the diagrams were mounted to the butcher paper to create a visual of how many traits were acquired vs. how many were inherited.

Materials Needed (Type and Quantity):

- One large piece of butcher paper
- One sheet of construction paper per student
- Markers
- Glue
- Roughly 30-40 minutes per session. Roughly 2 were sessions required to acquire and apply information.

Notes and Tips (suggested changes, alternative methods, cautions):

Background Information:

Before starting the activity, I reviewed the term genetics and genes with the students. After they demonstrated an understanding of both, we reviewed pedigrees for the inheritance of blue and brown eyes. They each made their own pedigree and demonstrated how each $\frac{1}{4}$ of the chart would inherit certain eye colors. After compiling all of the different ways to identify the eye colors of potential offspring, we integrated the information into identifying traits of their own as well as their families through interviews conducted after the first session.

Preparation:

This activity required minimal preparation. The few things involved before hand included: finding images online of inherited genetic traits, cutting of butcher paper and obtaining the construction paper and glue. I used Google to find images of inherited traits among individuals which included: widow's peaks, hitchhiker's thumbs, curled tongues, dimples, unattached vs. attached earlobes, Vulcan vs. earthling hand signs and short second toes vs. long second toes.

Safety Issues/Precautions:

There really weren't any safety concerns for this exercise. To avoid a throng of students gluing at one time, I put glue on the paper and called one table at a time to glue their diagrams down.

Sources/References:

- 1) Harcourt Science Publishers "Science Grade 5"
- 2)
- 3)