

Grade 7 • 110 mins • Fall, Winter, Spring 

NEW!

GRADE 7

SCHOOL PARTNER
LESSON PLAN

SUBMITTED BY

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ESSENTIAL QUESTIONS

- Why do people exhibit different traits?



MATERIALS

- Cilantro
- Tomatoes
- Onions
- Peppers
- Tortilla chips
- PTC paper
- Sticky notes
- Paper plates
- Soap
- Water
- Sponge/cleaning brush



VOCABULARY

- Gene
- Trait



ASSESSMENT

Formative discussion throughout the lesson, consensus model and **observational checklist**.

PREPARATION (ESTIMATED TIME VARIES)

All salsa ingredients unavailable in the garden should be prepurchased from the store.

TEACHER BACKGROUND

Students should understand asexual and sexual reproduction. Additionally, they should know how to build blind experiments.



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LESSON DESCRIPTION

Student will make two types of salsa, one with cilantro and another without. These will then be used in a blind taste test, along with PTC paper, to introduce the concept of genetic traits.

LEARNING OBJECTIVES

- I can construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals probability of surviving and reproducing in a specific environment.
- I can work in teams and divide up tasks.

Life Skills Learning Objectives

Community Life Skills

CLS.2 Students cooperate and communicate well with each other.

ACADEMIC STANDARD CONNECTIONS

NGSS.MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

7-MS-LS1-4 Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individual's probability of surviving and reproducing in a specific environment.

HEALTH STANDARD CONNECTIONS

National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

*Lesson Sequence**Engage***Ignite Interest (15 mins):**

Students will be given the open ended bellwork question: why do people exhibit different traits? A whole group classroom discussion of the hook question should take place here. The teacher must be careful not to explicitly answer the question yet.

*Explore***Stir Discoveries (40 mins):**

Students will harvest ingredients in the garden. Students will hypothesize why some students like certain foods and others do not. This will likely develop into a dialogue about both genetic and environmental factors as well as the interplay between the two. They will then be split into two groups to make salsa. One group will make salsa with cilantro while the other group will make salsa without cilantro. All other aspects of the two recipes will be identical.



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*Explain***Clarify New Ideas (15 mins):**

Students will journal about their initial thoughts on trait inheritance before having a whole class discussion about the particular TRAITS being examined. Here they will hypothesize how these TRAITS might be the products of GENES.

*Elaborate***Watch It Rise (20 mins):**

The students will be divided into two groups which make two batches of salsa. One batch will be prepared with cilantro from the garden while the other will not. Students will then design and conduct a blind taste test comparing the two recipes. Afterwards students will conduct a blind taste test using PTC paper.

*Evaluate***Reflect (20 mins):**

Students will collaboratively work together on the whiteboard with the teachers guidance to conduct a consensus model as to why some students like cilantro and others do not (as well as to why some students can taste PTC and others cannot).

CONNECTIONS TO GARDEN LESSONS

The cilantro and other salsa ingredients used in the kitchen recipe will be grown and harvested in the garden.

POSSIBLE EXTENSIONS

Students can later prepare salsa for community or parent involvement events.

ADDITIONAL RESOURCES

The next day the teacher should follow up with [color blindness tests](#).



OTHER COMMENTS

This lesson will likely stretch into a second day.



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