

Harvest of the Month September - Hazelnuts

Oregon Hazelnuts and Genetics

Have you ever wondered how scientists help farmers grow healthier hazelnut trees? Oregon grows nearly all of the hazelnuts produced in the United States, making them one of the state's most important agricultural crops. Hazelnut orchards thrive in the fertile soils and mild climate of the Willamette Valley. Hazelnuts are used in many foods we enjoy, including chocolate, cookies, cereals, coffee flavoring, and dairy-free milk, while the shells can be recycled into mulch, fuel, and other useful products.

Like all crops, hazelnut trees face challenges. One of the biggest threats is Eastern Filbert Blight, a fungal disease that can damage trees and reduce harvests. To help protect orchards, scientists study the genetics of hazelnut trees. By understanding which trees naturally have helpful traits, such as disease resistance, larger nuts, or the ability to grow with less water, scientists can work with farmers to develop stronger, healthier varieties.



Build the Best Hazelnut Tree

Description: Students will explore a tasty way to learn about genetics with a real-life application

Materials:

- 1 Growing the Best Hazelnut Tree Investigation Sheet
- 1 Hazelnut Tree Trait Card
- Pencil
- Coloured pencils

Procedure:

- Give each student (or pair of students) a Hazelnut Tree Trait Card containing the inherited traits of a unique hazelnut tree.
- Before examining their tree's traits, have the students complete the **Prediction** section of the Investigation Sheet.
- Students record traits of their assigned tree in the data table and determine whether each trait would be beneficial for Oregon farmers.
- Students complete the drawing of their hazelnut tree, including inherited characteristics.
- Students will then work together to answer the **Explain the Science** questions.
- Finish with a class discussion comparing different trees and asking whether any single tree had every desirable trait. Discuss how scientists use genetics and selective breeding to combine beneficial traits and improve future hazelnut varieties.



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Investigation Sheet

Name: _____ Partner: _____

Prediction: What traits do you think make the best hazelnut tree? Explain.

Trait	Does Your Tree Have This Trait?	Would This Help Oregon Farmers? (Y/N)
Resistant to Eastern Filbert Blight		
Produces Large Hazelnuts		
Needs Less Water		
Produces Many Nuts		
Strong Root System		

Draw your hazelnut tree on a sheet of paper. Include traits it inherited. Label at least 3 features.

Explain the Science:

1. Would you recommend planting your tree in an Oregon hazelnut orchard? Why or why not? _____
2. Which inherited trait do you think is the most important for helping Oregon farmers? Why? _____
3. How can genetics help scientists develop healthier hazelnut trees? _____

4. Why is it helpful for plants within the same species to have different traits? _____
5. If you could give your hazelnut tree one additional trait, what would it be? Explain your choice. _____