While We Wait – Workshop Zoom Settings

- Set your view settings to “Speaker View” to better see who is talking
- Keep your microphone muted (camera optional) outside of breakout rooms.
- Feel free to use the chat to let us know:
  - where you’re joining from
  - the organization or educational institution
  - Have you ever had food poisoning?

The Meeting will begin at 10:02 AM PST

Oregon State University
Precollege Programs

Zoom Community Agreements

We recognize that the virtual world presents new challenges. In order to do our best to maintain a space of inclusivity, productivity, and respect, we ask that we all agree to the following:

- Chat is open for questions, comments, and concerns, but all communication must be respectful.
- Keep your microphone muted outside of breakout rooms.
- Be patient and understanding with others regarding technology. We all have varying levels of access to and familiarity with technological resources.
- We acknowledge you likely are working from home.

Anyone who violates the agreements or otherwise disrupts our Zoom community will be removed by our moderator.

Zoom Community Agreements: Breakouts

- Join your breakout room when prompted
- Remain in your breakout room during end countdown. You will be automatically brought back to the main session.
- Share without expectations. What works for one organization may not necessarily work for others.
- Stories stay, lessons leave. Don’t distribute what you heard from someone unless you have permission to do so.

Food Illness: Outbreak Prevention and Detection

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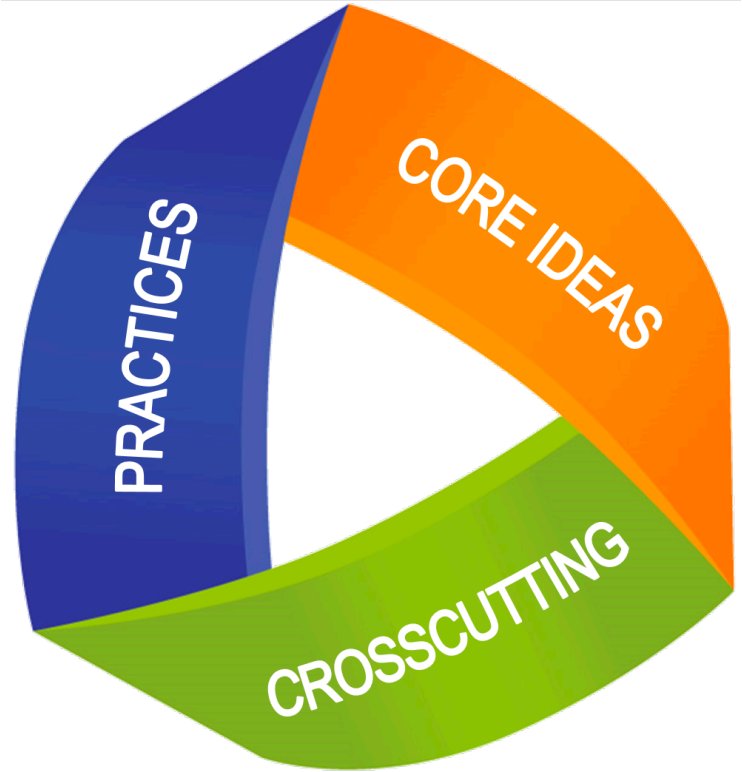
Oregon State University
Precollege Programs

NGSS Connection

- Science and Engineering Practices
  - Obtaining, evaluating, and communicating information
- Disciplinary core ideas
  - MS-LS1-5 Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
- Cross Cutting Concepts
  - Cause and Effect; Patterns
- Oregon distance learning for all guidelines
  - 6-12 supplemental activity is cooking



Why teach agriculture and food system concepts?

- Everyone eats, so everyone is involved in agriculture
- Today's students are far-removed from production agriculture (1% of Oregonians are farmers)
- Agriculture provides an arena for real-world discovery and problem-solving

Foodborne Illness

- 1 in 6 people people affected each year
- 128,000 hospitalized, 3,000 people die
- Costs more than $15.6 billion each year
- 31 Pathogens that are tracked for foodborne illness

Regulatory Agencies Collaborating on Foodborne Illness Outbreaks
Center for Disease Control (CDC)
U.S. Food and Drug Administration (FDA)
United States Department of Agriculture (USDA)
Food Safety and Inspection Service

Questions:

1. Now that you heard some foodborne Illness statistics how would you connect food safety in your classroom?

2. Do you think your students are concerned about foodborne illness?

Lesson Overview

Food Illness Outbreak Prevention & Detection

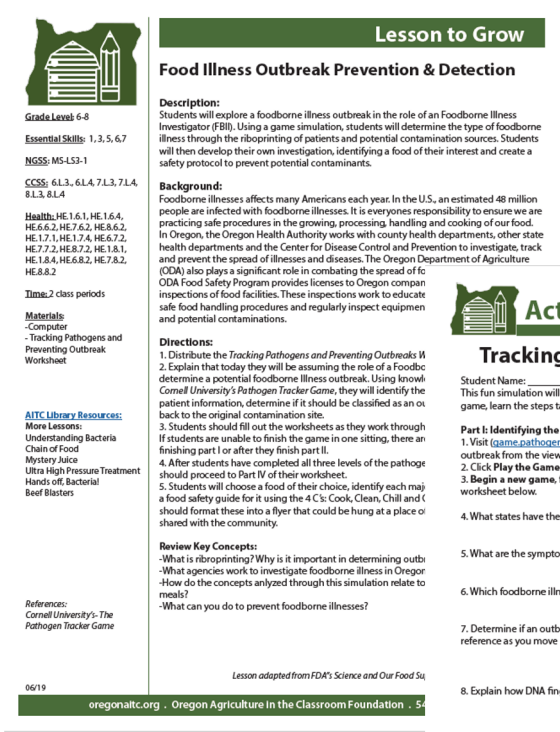
Students will assume the role of a Foodborne Illness Investigator (FBII)

Part 1: Identifying the Outbreak

Part 2: Determine the Food Causing the Outbreak

Part 3: Determine the Source of Contamination

Develop a 4'C Safety Guide for a chosen meal



Lesson to Grow

Food Illness Outbreak Prevention & Detection

Grade Level: 6-8

Essential Skills: 1, 3, 5, 6,7

NGSS: MS-LS3-1

CCSS: 6.L.3., 6.L.4, 7.L.3, 7.L.4, 8.L.3, 8.L.4

Health: HE.1.6.1, HE.1.6.4, HE.6.6.2, HE.7.6.2, HE.8.6.2, HE.1.7.1, HE.1.7.4, HE.6.7.2, HE.7.7.2, HE.8.7.2, HE.1.8.1, HE.1.8.4, HE.6.8.2, HE.7.8.2, HE.8.8.2

Time: 2 class periods

Materials:
-Computer
- Tracking Pathogens and Preventing Outbreak Worksheet

AITC Library Resources:
More Lessons:
Understanding Bacteria
Chain of Food
Mystery Juice
Ultra High Pressure Treatment
Hands off, Bacterial
Beef Blasters

References:
Cornell University's- The Pathogen Tracker Game

Description:
Students will explore a foodborne illness outbreak in the role of an Foodborne Illness Investigator (FBII). Using a game simulation, students will determine the type of foodborne illness through the riboprinting of patients and potential contamination sources. Students will then develop their own investigation, identifying a food of their interest and create a safety protocol to prevent potential contaminants.

Background:
Foodborne illnesses affects many Americans each year. In the U.S., an estimated 48 million people are infected with foodborne illnesses. It is everyones responsibility to ensure we are practicing safe procedures in the growing, processing, handling and cooking of our food. In Oregon, the Oregon Health Authority works with county health departments, other state health departments and the Center for Disease Control and Prevention to investigate, track and prevent the spread of illnesses and diseases. The Oregon Department of Agriculture (ODA) also plays a significant role in combating the spread of fo
ODA Food Safety Program provides licenses to Oregon compan
inspections of food facilities. These inspections work to educate
safe food handling procedures and regularly inspect equipmen
and potential contaminations.

Directions:
1. Distribute the *Tracking Pathogens and Preventing Outbreaks W*
2. Explain that today they will be assuming the role of a Foodbo
determine a potential foodborne illness outbreak. Using knowl
Cornell University's Pathogen Tracker Game, they will identify the
patient information, determine if it should be classified as an ou
back to the original contamination site.
3. Students should fill out the worksheets as they work through
If students are unable to finish the game in one sitting, there ar
finishing part I or after they finish part II.
4. After students have completed all three levels of the pathoge
should proceed to Part IV of their worksheet.
5. Students will choose a food of their choice, identify each maj
a food safety guide for it using the 4 C's: Cook, Clean, Chill and
should format these into a flyer that could be hung at a place o
shared with the community.

Review Key Concepts:
-What is riboprinting? Why is it important in determining outbr
-What agencies work to investigate foodborne illness in Oregon
-How do the concepts anlyzed through this simulation relate to
meals?
-What can you do to prevent foodborne illnesses?

Lesson adapted from FDA's Science and Our Food Su

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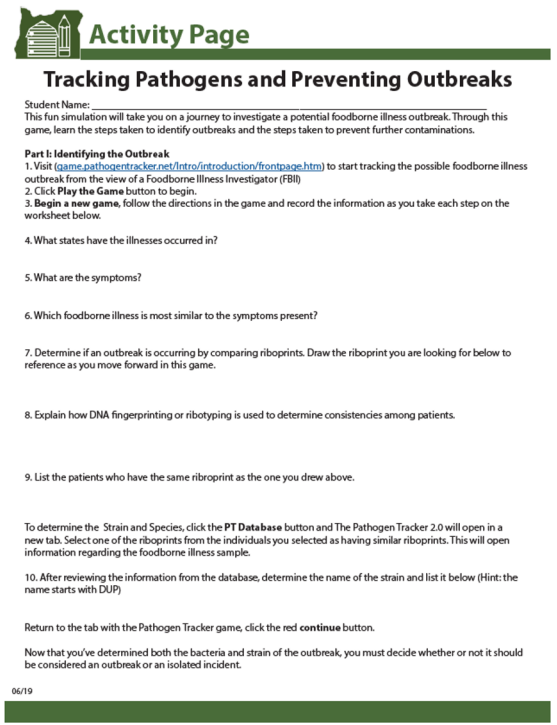
oregonaitc.org . Oregon Agriculture In the Classroom Foundation . 5



Activity Page

Tracking Pathogens and Preventing Outbreaks

Student Name: _____

This fun simulation will take you on a journey to investigate a potential foodborne illness outbreak. Through this game, learn the steps taken to identify outbreaks and the steps taken to prevent further contaminations.

Part I: Identifying the Outbreak
1. Visit (game.pathogentracker.net/Intro/introduction/frontpage.htm) to start tracking the possible foodborne illness outbreak from the view of a Foodborne Illness Investigator (FBII)
2. Click **Play the Game** button to begin.
3. **Begin a new game**, follow the directions in the game and record the information as you take each step on the worksheet below.

4. What states have the illnesses occurred in?

5. What are the symptoms?

6. Which foodborne illness is most similar to the symptoms present?

7. Determine if an outbreak is occurring by comparing riboprints. Draw the riboprint you are looking for below to reference as you move forward in this game.

8. Explain how DNA fingerprinting or ribotyping is used to determine consistencies among patients.

9. List the patients who have the same ribroprint as the one you drew above.

To determine the Strain and Species, click the **PT Database** button and The Pathogen Tracker 2.0 will open in a new tab. Select one of the riboprints from the individuals you selected as having similar riboprints. This will open information regarding the foodborne illness sample.

10. After reviewing the information from the database, determine the name of the strain and list it below (Hint: the name starts with DUP)

Return to the tab with the Pathogen Tracker game, click the red **continue** button.

Now that you've determined both the bacteria and strain of the outbreak, you must decide whether or not it should be considered an outbreak or an isolated incident.

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Breakout share-out

1. Give an overview of what you do during your section of the simulation

2. Could your section be a stand alone lesson or do you think it needs to be combined with additional sections to make sense to your students?

3. What challenges do you see your students face doing this section of the simulation?

4 C's Cook, Clean, Chill, Cross Contamination Prevention

Steps to Ensure Food Safety

Distances teaching challenges

- Is there a way to facilitate this lessons for students that do not have internet access?
  - 4C’s poster
  - Case study

Extensions for distance learning

- Case study on food safety: https://www.fda.gov/food/students-teachers/science-and-our-food-supply
- CDC foodborne illness factsheet: https://www.cdc.gov/foodborneburden/PDFs/FACTSHEET_A_FINDINGS.pdf
- eLearning alternative case study: https://naitcapi.usu.edu/media/uploads/2016/06/15/Heres_What_the_Public_Health_Officials_Did.pdf

Thank you for attending!!

- Questions?
- PDU will be sent to each attendee if registered through Ideal-Logic. If you do not receive a PDU please email us at precollege@oregonstate.edu
- We have sessions every Tuesday from 10-11am PST register here: https://precollege.oregonstate.edu/virtual-professional-development-teachers