

RESOURCE LIBRARY
ACTIVITY : 1 HR

Germology Game Show

This is the culminating activity in *The Truth about Germs* unit. Students finalize and present their trivia questions, answers, and evidence-based explanations about why germs make us sick more often in the winter, in a fun and engaging way. Students reflect on and celebrate their learning and hard work in the unit.

GRADES

3, 4

SUBJECTS

Biology, Health

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OVERVIEW

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For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/germology-game-show/>

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DIRECTIONS

This activity is part of *The Truth About Germs* unit.

1. Support the class as they complete final preparations for the Germology Game Show.

- Provide any necessary time for the class to finalize and/or rehearse their trivia questions, answers, and explanations.
- Students should have the class set of questions, answers, and explanations prepared in final format from the *Telling the Truth about Germs* activity. It may be useful to have these written on index cards that students can read from during the game show, and/or have the questions, answers, and explanations on a slide deck that can be projected during the game show.
- If students have not already chosen or been assigned to key roles for the game show, do that now.
 - Roles could include: hosts, scorekeepers, or explainers.
- Explain the game show format, which will vary depending on the school context, audience, and mode of presentation.
 - Include any other finalizing steps as needed for your class's final product format and context.
- Prepare and practice technology, introductions, and roles:
 - Technology: Any technology involved in the game show (such as audio systems or projectors) should be tested out by student groups ahead of time.
 - Student introductions: Even if the game show venue is digital, remind students to introduce themselves before presenting their question set and to take questions from the audience after the game show has concluded.
 - Roles: Hosts and explainers should prepare scripts so they can practice what they will say. Scorekeepers should set up and practice keeping score.

2. Facilitate as students lead the audience through the Germology Game Show.

- Welcome additional audience members, whether in-person or virtually, and introduce the students who will be hosting the game show. Be sure to introduce (or have students

explain) the inquiry process that students undertook to understand the unit driving question.

- Provide opportunities for audience members and peers to ask questions of presenting groups.
- Conclude the game show and celebrate the conclusion of the unit!

3. Use a reflection form to have students reflect on *The Truth about Germs* unit.

- Collectively revisit the class Question Quadrant chart; students can likely now answer many of the questions that they had at the beginning of the unit.
- Distribute [The Truth about Germs Unit Reflection](#) sheet. Review the prompts with students.
- Ask students to complete a self-evaluation/reflection of their work in this project.
- Consider leading a whole-class discussion in which students share one or two of their reflections with the class.

Informal Assessment

Use [The Truth about Germs Project Checklist and Rubric](#) to assess students on the key concepts and practices of the unit via their group's set of trivia questions, answers, and explanations. Additionally, students' reflection responses can be used to inform your final assessment of each student's individual understanding and contribution to the project.

Extending the Learning

To extend the impacts of the important ideas students learned in this unit and communicated via the Germology Game Show, consider having students take the game show out into the community for relevant contexts and audiences. These could include younger grade levels, childcare centers, community centers, or health and wellness fairs. Another option is to digitally record and upload the game show (or alternative format for the final product) onto an internet platform to share their message with a wider audience.

OBJECTIVES

Subjects & Disciplines

Biology

- Health

Learning Objectives

Students will:

- Present their trivia questions, answers, and evidence-based explanations about why germs make us sick more often during the winter.
- Reflect on their process of learning and collaboration during the unit.

Teaching Approach

- Project-based learning

Teaching Methods

- Discussions
- Reflection
- Self-directed learning

Skills Summary

This activity targets the following skills:

National Standards, Principles, and Practices

COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY

- Speaking and Listening Standards K-5:

Presentation of Knowledge and Ideas, SL.3.4

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Presentation of Knowledge and Ideas, SL.4.4

NEXT GENERATION SCIENCE STANDARDS

- **Science and Engineering Practice 8:**

Obtaining, evaluating, and communicating information.

Preparation

What You'll Need

REQUIRED TECHNOLOGY

- Internet Access: Optional
- Tech Setup: 1 computer per classroom, 1 computer per pair, Presentation software, Projector, Speakers

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group learning
- Small-group work

ACCESSIBILITY NOTES

To support students and the audience, consider projecting a slide deck so they can read along as students present their trivia questions, answers, and explanations.

BACKGROUND & VOCABULARY

Background Information

Scientists communicate their findings to scientific communities as well as the public in order to contribute knowledge to developing fields but also to educate the public and shape policies. To be successful in these goals, it is essential for scientists to break down complicated ideas and support their claims with evidence. Similarly, scientific game and quiz designers must communicate clearly if they are to achieve their goal of educating participants and audience members on issues of importance, such as public health.

One of the distinguishing features of project-based learning is that students engage in authentic, disciplinary work. In this unit, a game show means that the audience for students' work is not confined to their own classroom. Just as scientists must clearly communicate with public audiences, students must also share their work with community members, who in turn can provide meaningful feedback about students' ideas, suggestions, and concerns. A public product is a powerful motivator for students. In order to create a product that they can present to outsiders, students understand that they must hold themselves and their work to high standards.

Prior Knowledge

["Many common illnesses are caused by microbes/germs."; "Our susceptibility to getting sick from germs can depend on environmental and individual factors, which can be related to seasonal variations in temperature and humidity."]

Recommended Prior Activities

- None

Vocabulary

Term	Part of Speech	Definition
antibody	<i>noun</i>	molecule that help fight disease and infection.
bacteria	<i>plural noun</i>	(singular: bacterium) single-celled organisms found in every ecosystem on Earth.
environment	<i>noun</i>	conditions that surround and influence an organism or community.
germ	<i>noun</i>	disease-producing microbe.
immune system	<i>noun</i>	network of chemicals and organs that protects the body from disease.
mucus	<i>adjective, noun</i>	slimy, fluid secretion of some animals.
virus	<i>noun</i>	pathogenic agent that lives and multiplies in a living cell.

