

Sustainability Teachers' Academy Lesson Plan

Defining Sustainability

Topics Covered

Sustainability

Grades

6-8

Duration

55 Minutes

Sustainability Competencies

Values Thinking
Future Thinking
Systems Thinking
Collaborative Thinking

Online Resources

[Sustainability Illustrated](#)

[The Natural Step](#)

Acknowledgments

[The Report of the World
Commission on the
Environment and Devel-
opment: Our Common
Future](#)

Key Questions

What is sustainability?

What are basic human needs?

How do the actions of one generation affect future generations?

Overview

During this lesson, students will explore their current understanding of sustainability, learn a derivative of the Brundtland definition of sustainable development, and examine what this definition implies about meeting basic human needs now, and in the future.

Objectives

Students will be able to:

- Define sustainability as the ability to meet the needs of the present, without compromising the ability of future generations to meet their own needs
- Articulate their vision of a sustainable future, and develop a plan for achieving it

Materials

Per working group

- Small whiteboards
- Dry Erase Markers

Technology

- Whiteboard and Dry Erase Markers
- Projector/Computer
- Defining Sustainability Slides

Teacher Preparation

Organize students into pairs or small working groups. Project Defining Sustainability Slides for students.

Background Information

Sustainability is an idea that is rapidly gaining public awareness, yet, few people fully understand what it means. When asked to define sustainability, most people correctly identify that it has something to do with the environment, conserving natural resources, eliminating waste, or reducing pollution. While this is definitely true, being a good steward of the environment is only part of what it means to live

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sustainably.

This lesson will introduce what is known as the Brundtland definition of sustainability. This definition is derived from a report on global environment and development by the Brundtland Commission called *Our Common Future*, published in 1987. This report, also called the Brundtland Report, discussed the importance of sustainable development to prosperity, now and in the future, and provided a definition of sustainability that is widely used today.

According to the Brundtland Report, sustainable development “Meets the needs of the present without compromising the ability of future generations to meet their own needs”.

Within this perspective, sustainability scientists have developed a framework for sustainable development that includes concerns for the environment, society, and the economy. These are known as the Three Pillars of Sustainability, and will be introduced in the lesson “Sustainability in the News”.

Recommended Procedures

1. Engagement: This activity will focus students on the topic

Slide 2: Encourage students to draw on their current understanding to attempt to define the term Sustainability. Ask students what sustainability means, or to identify ideas, words, or actions that they think of when they hear the word Sustainability.

Give students time to think to themselves and write their initial thoughts in their science notebook. Encourage students to share their ideas with the class. As they do so, capture key words or ideas by writing them on the whiteboard. Highlight the themes, ideas, or words that students offer more than once (use circles, stars, arrows or other visual devices to indicate their importance). Depending on students’ familiarity with sustainability, it may be necessary to lead a short discussion to brainstorm additional terms or ideas.

When finished, take a photograph of the whiteboard. This can be used again later to see how students’ understanding of sustainability has developed.

During this activity, it is common for students to focus primarily on ideas related to the health of environment. This is perfectly acceptable, but keep in mind that the goal of this unit is to develop a more comprehensive view of sustainability which promotes the environment, society, and the economy all at the same time.

2. Exploration: A student-led activity with guidance

Slide 3: Share the following statements with students: “Sustainability means meeting the needs of the present without compromising the ability of future generations to meet their needs.” Explain that this is a widely used definition of sustainability that will be explored in this lesson.

Slide 4: Ask students to think about what this statement means about sustainability

- What are people’s basic needs?
- Do all people have the same needs?
- Will a person living 100 years from now have the same needs as you do today?

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First, allow students to think about their answers to these questions silently. Then, students will share their thoughts, ideas, and questions with a partner. They should record their outcome on their small whiteboards. Finally, a representative from each pair should present their ideas to the class. If time permits, open the discussion to the entire class.

Slide 5: Explain that most of our basic needs will fall into three categories (Environment, Society, and Economy). Ask students to make connections between what they identified as their basic needs, or to identify what category their ideas belong to.

Slide 6: These three categories are known as the Three Pillars of Sustainability, because sustainability depends on promoting the Environment, Society, and Economy all at once. Explain that Sustainability rests on the Three Pillars because sustainability means meeting our basic needs.

Slide 7: Repeat this exercise with the focus on present and future actions. Allow students to explore and share their answers to:

- How can our present actions affect the future?
- Give one example of how something you do today can make the future better.

3. Explanation: Students discuss their understanding of the concept

Slide 8: Ask students to think about their answer to the question on this slide:

- What do you want your future to be like?

After a few minutes, allow students to share their ideas with the class. Record their answers on the whiteboard. Does their ideal future meet their basic needs? What ideas for the future fall under each of the Three Pillars of Sustainability?

4. Elaboration: Students apply the idea in a new context

Slide 9: This slide shows a vacant lot, that appears to be in disrepair. How does this picture compare to students ideal future? Have students work in small groups to answer the following question:

How would you improve this vacant lot to help achieve the future you want

Each group should discuss:

- How will this space be used?
- How will it support the needs of the community now and in the future?
- How will it promote the economy, environment, and society?

Allow students to draw and diagram their plans for the vacant lot on their whiteboards. Their plan should include each of the Three Pillars of Sustainability. Students should share and discuss their plans with the class.

5. Evaluation: Students assess their knowledge, skills, abilities

Students should be evaluated based on their participation in this activity.

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Extensions

Students can further develop their vision for the future of the vacant lot into a detailed plan of action. This should include a process that works back from their vision for the lot and identifies

- Who will benefit from the plan?
- What resources will the plan require?
- What are unintended consequences of the plan (for example, will the future lot require regular maintenance, or will it affect the flow of traffic in the area)?
- What are the steps required to make this plan happen?

Vocabulary

Sustainability: A short definition and discussion goes here.

Term2: The ability to meet the needs of the future, without compromising the ability of future generations to meet their needs

Basic Needs: The resources needed to achieve physical and emotional well-being

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Next Generation Science Standards

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Asking Questions and Defining Problems	ESS3.A: Natural Resources	Systems and system models
Engaging in Argument from Evidence	ESS3.C: Human Impacts on Earth Systems	
Developing and using models		

Common Core English Language Arts

Reading: Informational Text	Writing	Speaking & Listening	Language
		SL.6.1, SL.6.4, SL.7.1, SL.7.4, SL.8.1, SL.8.4	

Common Core Mathematics

6 through 8	9 and 10
N/A	N/A

Other Common Core

Science	History/Social Studies
CCSS.ELA-LITERACY.RST.6-8.1 CCSS.ELA-LITERACY.RST.6-8.4 CCSS.ELA-LITERACY.RST.6-8.7	CCSS.ELA-LITERACY.RH.6-8.1 CCSS.ELA-LITERACY.RH.6-8.4 CCSS.ELA-LITERACY.RH.6-8.7