

What is Sustainability? *Secondary*

Key Inquiry Questions

1. What is sustainability?
2. What are the three pillars of sustainability?
3. Why is sustainability important?

Learning Outcomes

1. Students will be able to define sustainability by the end of the lesson.
2. Students will be able to discuss the 3 pillars of sustainability by the end of the lesson.
3. Students will be able to understand the importance of sustainability and relate it to their everyday lives by the end of the lesson.

Sustainability Curriculum Goals

Systems Thinking:

1. Our planet - the biosphere - is a complex system that supplies resources and creates conditions that sustain life on Earth.
2. All forms of life, including humans, are connected to each other through man-made and natural ecosystems on which their well-being depends on.
3. Sustainable living relies on the interdependence of viable, healthy social, economic, ecological, and political systems.
 - a. Without a healthy ecological system, human life cannot be supported by the biosphere.

Activities/Goals:

1. Students should be able to explain what sustainability is, the importance of ecosystem services and biodiversity.

Overview:

In this lesson, students will be learning about the definition of Sustainability and why it is important to view the world through the lens of sustainability. The United Nations defines sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” The beginning of the lesson will involve the use of a thought experiment as a means of introducing the concept of sustainability. In this activity, students will be asked to imagine a jar that magically refills itself, which represents

sustainability. They will then be asked to imagine a jar without magic powers, representing a counterexample to sustainability and showcasing how the real world works. The purpose of this activity is to give meaning and a visual to the concept of sustainability. In order to further breakdown what it means to be sustainable, students will watch a video called “What is Sustainable Development”. Students will watch this video twice. The first time will be to observe, listen, and really take away the message of the video. The second time will be for note-taking purposes. Students will be given a set of questions to answer during the video that with the video directly. This is to provide students with a set of notes to refer back to when talking about sustainability. Lastly, students will first discuss their answers to the video in pairs and then by popcorn reading the answers as a class to ensure all students have the correct answers [instructions for popcorn reading can be found in the After/Assessment section of this lesson plan]. By the end of the lesson, students will be able to define sustainability and understand why it is important for their daily lives.

Materials

SolarSPELL Resource:

1. “What is Sustainable Development” (Reference Tools → Sustainable Development Goals → Videos → “What is Sustainable Development”)

Other:

1. Worksheet titled “Sustainable Development Worksheet” for Secondary students.

Suggested Procedure

Before Lesson: Explain the following story to the students:

- Tell students to imagine they have a magic jar full of their favorite food. Each time someone takes a piece out, it magically refills itself. This is an example of something called sustainability, meaning that you can use it for a long time without your favorite food running out. In the real world, we don’t have magic jars like that. This time, imagine a jar that doesn’t magically refill itself after you take a piece of your favorite food out.
- Ask students: What do you think happens when you keep taking a piece of food out of the jar and not putting any back in?
 - Answer: If you keep taking food out of the jar and not putting any back in, you will have none left.
- Ask students: Based on what you learned about the first jar, is the second jar considered a sustainable practice and why?
 - Taking food out and not putting any back in is NOT a sustainable practice.
- Ask students: Raise your hand if you think our world is like the first jar? Call on a few students to explain their reasoning. Now, raise your hand and if you think our world is like the second jar? Call on a few students to explain their reasoning.

- Answer: The world is like the second jar that doesn't refill itself. Instead of your favorite food, the world is full of natural resources, like water, trees, and soil.

During Lesson:

- Tell students that they are going to be watching a video titled “What is Sustainable Development”.
- Next, inform them that you will be playing the video two times. The first time, students should simply listen and watch the video. The second time, pass out the worksheet below and give students 5 minutes to read all of the instructions and the questions.
 - If you do not have the ability to print and pass out the worksheet, you can pause the video and ask the questions when each one of them comes up. You can write the questions on the board and have the students just write down their answers.
- Next, ask students if they have any questions about the worksheet. Answer any questions they may have, then go ahead and play the video for a second time.
- After the video is complete, allow students to talk to their neighbor or in groups about the answers they found.

After Lesson/Assessment:

- Before going over the answers to the worksheet, ask students the following questions:
 - 1. What was your favorite part of the video?
 - 2. What is your reaction to the video? Did anything surprise you, if so, what was it? (Question 12 form Worksheet).
- Next, play “popcorn” reading to answer the questions as a class.
 - Instructions for “popcorn” reading:
 - 1. You (the teacher) begins by reading the title of the worksheet. Then you select a student to read the first question. If the question is fill in the blank, have the student read their answer(s) too. If the question is multiple-choice, have the student read the question and answer choices, but not state the answer.
 - Fill in the blank: Ask if any of the students got a different answer.
 - Multiple Choice: Ask students to raise their hand for the answer they selected when it is called. For example, raise your hand if you picked choice A.
 - 2. Have that student pick somebody else to read the next question.
 - 3. Continue having the previous reader pick the next reader until all fill in the blank and multiple-choice questions are answered.
 - Note: This ensures everyone is paying attention and has the correct answers.



- 4. At the end, go over the correct answers one more time to make sure all students have the correct answers.
- To wrap up, ask the students the following questions:
 - 1. Does anybody not have all of the correct answers?
 - 2. Why is it important to examine the world through the lens of sustainability? (Question 11 from the Worksheet).
 - What is one way social, economic, and environmental systems interact in your daily life? (Question 13 from the Worksheet).
 - How did you draw the relationship you see between society, the economy, and the environment? Are they equally important? Does any one of the pillars deserve more consideration than the others? (Question 14 from the Worksheet).



Sustainable Development Worksheet - Secondary

Instructions: Answer the following questions during the video. For questions with a blank spot, fill in the blanks with the correct word(s) used in the video. For multiple-choice questions, select the choice you believe best answers the question. For the open-ended questions, write 1-2 sentences answering the question.

1. Sustainability makes the world a _____ place for all people now, without _____ the possibilities for next generations.
2. How do you know if something is sustainable?
 - A. Ask yourself if what you are doing can be done forever?
 - B. Ask yourself if what you are doing can be done for a year?
 - C. Ask yourself if uses as many resources as possible?
3. Which of the following is NOT one of the three pillars of sustainable development?
 - A. Social Progress
 - B. Technology
 - C. Economic Development
 - D. Climate and Environment
4. We have many natural ecosystems that must be in _____ in order for us to live here.
5. The climate system ensures that the _____ is correct and the atmosphere emits the right amount of _____ energy
6. When we emit harmful greenhouse gases such as CO₂, we _____ the atmosphere, which changes the temperature on Earth and harms our development.
7. Which of the following resources will always be here?
 - A. Wind, Oil, and Water
 - B. Water, Natural Gas, and the Sun
 - C. Wind, Water, and Su
8. How can we make sure we are sustainable?
 - A. Fair distribution of resources and smart resource use
 - B. Unequal distribution of resources
 - C. Use as many natural resources as possible
 - D. Fair distribution of resources, but we can use as many of our share as we want
9. Humans are a part of _____.
10. Equal access to education, safety, food, and _____ is important for all humans.



11. Why is it important to examine the world through the lens of sustainability?

12. What is your reaction to the video? Did anything surprise you, if so, what was it?

13. What is one way social, economic, and environmental systems interact in your daily life?

14. Draw the relationship you see between society, the economy, and the environment? Are they equally important? Does any one of the pillars deserve more consideration than the others?

Sustainable Development Worksheet

Answer Key

1. Sustainability makes the world a BETTER place for all people now, without DESTROYING the possibilities for the next generations.
2. How do you know if something is sustainable?
 - A. Ask yourself if what you are doing can be done forever?
 - B. Ask yourself if what you are doing can be done for a year?
 - C. Ask yourself if uses as many resources as possible?
3. Which of the following is NOT one of the three pillars of sustainable development?
 - A. Social Progress
 - B. Technology
 - C. Economic Development
 - D. Climate and Environment
4. We have many natural ecosystems that must be in BALANCE in order for us to live here.
5. The climate system ensures that the TEMPERATURE is correct and the atmosphere emits the right amount of SOLAR energy
6. When we emit harmful greenhouse gases such as CO₂, we CLOG the atmosphere, which changes the temperature on Earth and harms our development.
7. Which of the following resources will always be here?
 - A. Wind, Oil, and Water
 - B. Water, Natural Gas, and the Sun
 - C. Wind, Water, and Sun
8. How can we make sure we are sustainable?
 - A. Fair distribution of resources and smart resource use
 - B. Unequal distribution of resources
 - C. Use as many natural resources as possible
 - D. Fair distribution of resources, but we can use as many of our share as we want
9. Humans are a part of NATURE.
10. Equal access to education, safety, food, and MEDICINE is important for all humans.
11. Why is it important to examine the world through the lens of sustainability?
 - Possible Answers:
 - In order to have healthy communities, we need natural resources and a healthy environment

- As the population grows, so will our need for natural resources, such as water and energy.
- To ensure there are resources available for future generations

12. What is your reaction to the video? Did anything surprise you, if so, what was it?

- Answers will be individual.

13. What is one way social, economic, and environmental system interact in your daily life?

- Possible Answers:
 - The environment produces clean water that I use to shower, provide drinking water, and for cooking daily.
 - Agriculture: We eat and sell food that uses natural resources in order to grow.
 - Energy: Electricity is provided by Earth's natural resources.

14. Draw the relationship you see between society, the economy, and the environment? Are they equally important? Does any one of the pillars deserve more consideration than the others?

- Answer: Each pillar is important to sustainability and connected to one another. In fact, the pillars are interdependent, and in the end, none can exist without the others. Consider a sawmill without a forest. You can't have the sawmill where you use natural resources to produce a sellable product without the wood from the forest. Thus, the economy [draw a circle labeled economy] could be considered a subsystem of society [draw a circle around the economy and label it society]. Because one cannot begin to create or sell a product without the idea, nor the environment, society becomes a subsystem of the environment [draw a circle around society and label it environment]. Thus, while all the circles are interconnected, they should each be nested within one another.

