17. Sustainability Lesson #1: PERSPECTIVES ON SUSTAINABILITY

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Overview: This introduces various definitions of sustainability that youth will examine and discuss. They will conclude by creating a working definition of sustainability for the YELL-YCC.

### Learner Outcomes
Youth will:
1. Understand that sustainability is a concept with multiple meanings and definitions.

### Getting Ready
**Materials:** Youth need journals and writing utensils; staff need a dry erase board with markers, and handouts.

**Preparation:** For this lesson display the perspectives quotations for youth to observe.

### Lesson at a Glance

#### Part I - Perspectives on Sustainability (25 minutes)
Youth explore and discuss with a partner what sustainability means to them. They examine the Sustainability Perspective Quotations to find one that stands out to them. Youth engage in a group discussion about quotes they picked.

#### Part II - Creating Our Definition of Sustainability (25 minutes)
Youth create a definition that will guide sustainability in the YELL-YCC community. They will share with the group and explain how they decided on their definitions.

#### Concluding the Lesson (10 minutes)
Youth compare the Yellowstone’s Vision of Sustainability and the YELL-YCC community’s definition of sustainability.

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**Part II - Creating Our Vision of Sustainability (25 minutes)**

1. Create new small groups and explain that it is their job to come up with a vision, perspective, definition, or visual that will help guide sustainability in the YELL-YCC community. Direct them to use the common elements, words, and phrases from the previous discussion to help them. (10 minutes) (F2)
2. In the large group, allow youth to share their results and why they chose to include what they did. (8 minutes)

**Conclude:** (10 minutes) Next share the Yellowstone’s Vision of Sustainability, created by the Yellowstone Green Team.

“Yellowstone strives to demonstrate exemplary leadership for sustainability and climate change mitigation by managing operations and adapting facilities in a sustainable manner to preserve our resources for this and future generations” (Yellowstone National Park, 2013).

1. Explain that this vision is what has guided the development of the following projects in Yellowstone (The following material was provided by Lloyd Krueger).

**Old Faithful Visitor Center**
- LEED certified for green building techniques and recycled material.
- Filterpave permeable pavement (recycled glass) on west side of the visitor center.

**Old Faithful Haynes Photoshop**
- LEED certified for green building techniques.
- Filterpave permeable pavement used on entrance sidewalk.
- Preserved the historic exterior and windows while utilizing new energy efficient building practices inside.
- LED lighting with dimmers based on motion, sound, and available sunlight.
- American Clay interior plaster - no paint, no VOC.
Background

The following material is supplemental information. Adapted from Sustainability Background, 2009.

Sustainability has many definitions, all having a common theme: meeting the needs of today without compromising the ability of future generations to meet their needs. Recognizing the nature and complexity of the interdependence of natural systems and its inhabitants is fundamental to understanding the concept and for evaluating what is and what is not sustainable decision making. Sustainability is understood to refer to conditions that promote a healthy, safe, and economically secure environment for people and all living things, and that do not exceed the limits of the Earth to renew itself.

Suggested Procedure

Part I - Perspectives on Sustainability (25 minutes)
1. Ask youth to journal about the following question: What does sustainability mean to you? (2 minutes)
2. Layout the Sustainability Perspective Quotations and ask them to pick one that resonates with them and one that surprises or challenges them. (12 minutes) (D1)
3. Encourage them to share their thoughts and ideas about each of the perspectives with the group. Ask them to journal about the common elements or key words that come up. (F1) Staff should demonstrate this by writing themes on the dry erase board. (5 minutes)
4. Review the list of common elements and key words that the group shared and ask if they can identify any patterns or themes.
5. Instruct youth to pair up and review their responses to the original journal question. Have them answer the following questions:
   a. Is there anything that you would like to change or add?
   b. How has this activity affected your ideas of sustainability?

Mammoth Recreation Hall behind hotel
- PermeablePave (recycled tires, rocks) used in parking lot section that holds water/ice in winter.

Mammoth Admin Building Parking Area LED Streetlamps
- Custom-made LED clusters used for energy efficiency.
- Lumens calculated to provide the right amount of light to save energy and not zap night vision.
- Fully shielded to protect night sky viewing.

Mammoth Sprinklers
- Controllers measure humidity and upcoming weather to determine the necessity of water.
- Switched regular watering schedule to more frequent, smaller amounts of water to keep grass green.
- These two measures saved 200,000 gallons of water.

Plastic Decking (Old Faithful geyser basin, Mammoth administration porch)
- No maintenance (resists bugs, no need to paint, very durable).

Micro Hydro
- Our drinking water drops 800 feet from Swan Lake Flats – spins thru turbine before entering the water treatment plant.

Solar Power
- Buffalo Ranch in the Lamar Valley utilizes solar panels.
- Bechler Area in the southwest part of Yellowstone utilizes portable solar panels on a trailer so the snow doesn’t damage the panels in the winter.
Compost Facility and Recycling Programs
• Compost facility in West Yellowstone.
• Many recycling bins around Yellowstone.
• Development of the traveling propane and bear spray-recycling trailer.

2. Instruct them to revisit their journal entries and ask: How does Yellowstone’s Vision of Sustainability compare with your vision for YELL-YCC?
3. Have them create one sustainable project that the YELL-YCC community could implement and journal about it. Use the Yellowstone Sustainability Project list as inspiration (S1).
4. Wrap up the conclusion in a large group and have them share their project ideas.

Assessment Check Ins:

(D1): Examines prior knowledge, interests, and misconceptions of sustainability. This information will assist the staff in planning instruction.

(F1): Provides information on what they are learning about sustainability.

(F2): Provides insight into the degree and depth of their understanding about sustainability to guide staff in adjusting the conclusion of the lesson to the youth interest.

(S1): Assesses what they have learned and transfers it into their experience at YELL-YCC.


Handouts:
• Sustainability Quotes
Staff Notes:

- Given the diverse backgrounds and experiences of the participants, they may have different ideas about sustainability; the lesson is designed to help them expand their viewpoints, not to discourage the ideas they already have.
- Keep the tone of the lesson positive and proactive by encouraging all ideas.

References:


*Incorporates the “Perspectives on Sustainability” which served as the central activity. It was modified in the following ways:*  
  a. Instructional language was changed to match the REC.  
  b. The conclusion was added.  
  c. Additional quotes were added that connected to the National Park Service.
... to promote and regulate the use of the ... national parks ... which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

National Park Service Organic Act of 1916

The primary duty of the National Park Service is to protect the national parks and national monuments under its jurisdiction and keep them as nearly in their natural state as this can be done in view of the fact that access to them must be provided in order that they may be used and enjoyed. All other activities of the bureau must be secondary (but not incidental) to this fundamental function relating to care and protection of all areas subject to its control.

Stephen Mather, internal document, February 1925

No generation can contract debts greater than may be paid during the course of its own existence.

Thomas Jefferson, Letter to James Madison, 1789

Our company wide mission statement is “Legendary Hospitality with a Softer Footprint”. We reduce and recycle waste, conserve energy and water, and educate our guests and employees on environmental stewardship. We believe that increasing the sustainability of natural systems is not just good business. It is the right thing to do.

Xanterra, Inc. (Yellowstone National Park Lodge Operator)
The Yellowstone Park Foundation, with direction from the Park Superintendent, will fund projects within these six initiatives. One of these six initiatives is called Greenest Park, which supports projects that reduce Yellowstone’s ecological and environmental impacts, increase operational efficiency, and better preserve environmental resources.

Improving the quality of human life while living within the carrying capacity of supporting ecosystems.

Yellowstone Park Foundation

We believe in protecting the special places we operate in, celebrating the beauty of our national treasures, and ensuring that the generations that follow us have an opportunity to experience the world the way we do today. It is this sense of stewardship that gave rise to GreenPath®, a formal, documented, and comprehensive plan covering just about everything we could think of to preserve and protect our natural resources. Delaware North associates embraced the program immediately, finding dozens of new ways to conserve resources and keep the Earth clean. Yet, we soon wanted more: to be certain GreenPath® became a permanent and irreplaceable part of the company's culture, to be assured that we were doing all we could for the environment, and even to inspire others to follow in our footsteps.

Delaware North Companies Parks & Resorts (Operates Yellowstone’s Grocery, retail, food and beverage services)

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

World Commission on Environment and Development, Our Common Future

Sustainability is an economic state where the demands placed upon
the environment by people and commerce can be met without reducing the capacity of the environment to provide for future generations.

Paul Hawken, 
The Ecology of Commerce

Long term social, economic, and environmental health. A sustainable society is one that can persist over generations, one that is far-seeing enough, flexible enough, and wise enough not to undermine either its physical or its social systems of support.

Donella Meadows et al., 
Beyond the Limits

In order to be socially sustainable, the combination of population, capital, and technology in the society would have to be configured so that the material living standard is adequate and secure for everyone. In order to be physically sustainable, the society’s material and energy outputs would have to meet economist Herman Daly’s three conditions:

• Its rates of use of renewable resources do not exceed their rates of regeneration.
• Its rates of use of nonrenewable resources do not exceed the rate at which sustainable renewable substitutes are developed.
• Its rates of pollution emission do not exceed the assimilative capacity of the environment.

Donella Meadows et al., 
Beyond the Limits

Diversity is both a cause of and a result of sustainability in nature, and it would be in human society as well.

Donella Meadows et al., 
Beyond the Limits
A condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the materials needs of each person on earth are satisfied and each person has an equal opportunity to realize his individual human potential.

The Limits to Growth

Sustainability is not environmentalism. While the former grew out of the latter, “sustainability” and “environmentalism” are now very different causes. Many environmentalists distrust the word “sustainable,” while practitioners of sustainability (myself included) sometimes distance themselves from the environmentalist label—not because they don’t support green causes, but because activism to protect Nature from the ravages of the economy is different from working to redesign the economy itself...for environmentalism’s “No” to be effective, there must also be sustainability’s “Yes.”

Alan Atkisson, Believing Cassandra

We want all of our citizens to play critical roles in decision-making about our future. This is the essence of becoming a sustainable city—meeting our current needs without compromising our values, or the lives and health of future generations.

Burlington Legacy Project

In our every deliberation, we must consider the impact of our decisions on the next seven generations.

Great Law of the Iroquois Confederacy

Five major themes emerged in the common vision that Burlington residents hold for the future of the city. These are:

1. Maintaining Burlington as a regional population, government, cultural, and economic center with livable-wage jobs, full employment, social supports, and housing that matches job
growth and family incomes.
2. Improving the quality of life in neighborhoods.
3. Increasing participation in community decision-making.
4. Providing youth with high-quality education and social supports and lifelong learning opportunities for all.
5. Preserving environmental health.

Burlington Legacy Project

The 4 Es of Sustainability:
Environmental Protection
Social Equity
Education
Economic Development

Burlington Legacy Project

Do all your work as if you had a thousand years to live, and as you would if you knew you must die tomorrow.

Mother Ann Lee Shaker

Students make decisions that demonstrate understanding of natural and human communities, the ecological, economic, political, or social systems within them, and awareness of how their personal and collective actions affect the sustainability of these interrelated systems.

Vermont’s Framework of Standards and Learning Opportunities

Increasing incomes, improving public health, and sustaining critical natural systems.

The National Academies Science and Technology for Sustainability Program

No net per capita loss of natural or human capital.

Christopher Juniper and L. Hunter Lovins, Natural Capitalism, Inc.
A dynamic process which enables all people to realize their potential and to improve their quality of life in ways that simultaneously protect and enhance the Earth’s life support systems.

Forum for the Future

Society is indeed a contract...between those who are living, those who are dead, and those who are to be born.

Edmund Burke, philosopher

- Connectedness
- Interdependence
- Community
- Justice
- Civic Engagement
- Future
- Resources (Not Using Resources Faster Than Their Ability To Regenerate)

Common elements of sustainability identified by the staff of the Sustain-ability Academy, Burlington, VT

Sustainability is another word for justice, for what is just is sustainable and what is unjust is not.

Matthew Fox, theologian

The difference between traditional environmentalists and “sustainability folks” is the ability [of the sustainability folks] to keep the welfare of both humans and the environment in focus at the same time, and to insist on both.

Donella Meadows

Thriving within the carrying capacity of the systems on which we depend.

Cloud Institute for Sustainability Education
Sustainability is the possibility that humans and other life will flourish on Earth forever.

John Ehrenfeld, International Society for Industrial Ecology

Improving quality of life—economically, socially, and environmentally—for all, now and for future generations.

UNESCO (United Nations Educational, Scientific, & Cultural Organization)

Sustainability promotes vibrant communities that are rooted in place and participation, celebrate diverse social and cultural
landscapes, enrich learning, and stimulate both engaged scholarship and public discourse.

University of New Hampshire, University Office of Sustainability

Sustainability is not a problem, a condition, or a program; it’s a way of life, a relationship in which humanity and the rest of nature become, in the words of Thomas Berry, “mutually enhancing presences to each other.” In this respect, sustainability resembles love, health, or peace. Pursued with deliberate imagination, it becomes a life practice for both individuals and communities.

John Tallmadge
Walmart’s Sustainability Index will provide data for every product in the following four categories:

1. Energy and Climate
2. Natural Resources
3. Material Efficiency
4. People and Community

Wal-Mart Stores, Inc.

The human community consists of 3 elements: Those who went before us, those who are with us here and now, and those who are yet to come.

Traditional African concept, referred to in Bishop Desmond Tutu’s sermons

Think of sustainability as a type of infinite game, in which the goal is not to win (which would end the game), but to keep on playing forever.

John Tallmadge

In practical terms, sustainability must always manifest itself in some place with some people; it always has a local, personal flavor. And because conditions and people change, sustainability always appears dynamic and evolving. It involves learning and transformation: this is where creativity comes in. You can’t have sustainability without imagination.

John Tallmadge
Earth Charter Principles: to preserve humankind in its integrity, unity and diversity must be reconciled; the recognition of others is the foundation of all relationships and all peace; acceptance of the constraints imposed by the preservation of the common good is indispensable to the exercise of freedom; material development must advance human development; innovation is not an aim in itself; it is a means to serve human development and the safeguarding of the planet.

Earth Charter Initiative
Yellowstone YCC REC

(Reprinted from Shelburne Farms, 2001)