

introduction to sustainability



Introduction to Sustainability



background

Background:

This lesson is based on the concepts of sustainability. Sustainability is commonly defined as: “Meeting the needs of current generations without compromising the needs of future generations.” In order to determine if something is sustainable, three elements must be considered: economics, environment, and social equity. These are known as the “three Es.”

- Economic pertains to money. Some examples include jobs, cost, and human hours.
- Environment pertains to the natural and built world. Some examples include air quality, water quality, and open space.
- Social equity pertains to people. Some examples include health care, safety, culture, art, and religion. See the Defining Sustainability–Teacher Information Sheet for additional information.

goal

Goal:

Students will develop their own definitions of sustainability.

objectives

Objectives:

Students will...

- Brainstorm and prioritize long-term goals
- Draw conclusions
- Identify the concepts of sustainability
- Write concise definitions

Standards Met: S1, S6, S7, LA12



Time Required: One – 45 to 60 minute class period

materials

Materials (for a class of 30):

- 15-20 pieces of easel paper (depending on group sizes)
- 15-20 markers
- Defining Sustainability – Teacher Information Sheet

Procee



In Class

- Have students brainstorm a list of things they would like to see last beyond their lifetimes. For example, you can say that you would like to have an education system or books available to your grandchildren.
- As students share their lists, decide into which category (environment, social equity, or economics) the item fits. Write their items down on the easel paper or white board, grouping them according to category. Categories should not be written at the top of each list at this point.
- After all the students have shared their lists, read the items in each category back to the students.
- Ask the students to identify headings for each of the three categories.
- Paraphrase the heading so that the class has identified the “three Es” of sustainability: environment, social equity and economics.
- Allow students to work in groups of two to develop their own definitions of sustainability.
- Ask students to write their definitions on a blank piece of paper as largely as possible. The sheets will be put up around the room when everyone is finished.
- Share the definitions with the group.
- Display the definitions where the students can refer back to them throughout the unit.
- End class today by explaining to students that this is the beginning of a unit on the Human Element of chemistry. Students will learn how to use the concept of sustainability to make decisions in relation to a simulation they will be involved in during the course of this unit.

Assessment

- Participation in class activity
- Completed definition of sustainability

Outline

Defining Sustainability – Teacher Information Sheet

Below is a compilation of definitions for sustainability taken from the website www.utoronto.ca/envstudy/sustainabletoronto/whoweare.htm#3.

1. “Urban sustainability involves the complex and difficult task of finding balances among social, economic, and environmental pluses and minuses, between short- and long-term considerations, and between the immediate interests of a part of the population and the more diffuse interests of everyone.” (Government of Canada, 1996).
2. “Meeting the needs of the present without compromising the ability of future generations to meet their own needs.” (Bruntland Report, 1987). Needs are defined as basic human needs including food, shelter, clean water and a healthy environment. Fair and efficient use of resources is necessary to meet basic human needs.
3. To sustain is to support, keep alive, to endure, to uphold the validity of (Oxford Dictionary, 1995) e.g., our environment and ourselves.
4. “The impacts of unsustainable activity in an urban centre are not usually the result of a direct, large scale assault on the environment, but rather are the cumulative effect of people going about their everyday lives, travelling to work and shopping, building and heating homes and offices: what many view to be the necessities of daily urban life. The challenge for us in the GTA is to redefine the necessities of daily urban life in sustainable terms.” (Task Force on Urban Development and Commerce for the Ontario Round Table, 1991).

5. Genuine Progress Index (GPI) approach (www.gpiatlantic.org): Development that is “sustainable” requires that:

- We do not consume more resources than the planet can provide, and that we do not produce more waste than the planet can assimilate.
- We live in such a way that the next generation will not be worse off than we are.
- We do not consume resources at the expense of others’ basic survival and livelihood.

In other words, “sustainable development” requires that we live responsibly and with awareness, so as not to deplete our natural wealth and leave a poorer world for our children and others to inherit.

6. Sustainability is: Progressive social betterment without growing beyond ecological carrying capacity.

– Herman Daly.

7. Living equitably within the means of nature. – Ecological Footprint

8. Living off the interest, not the principle.
– Scott Noesen, Dow Chemical Company



9. Rejoice in the beauty and wonder of our land, our skies, our waters and life in all its diversity. Let us work to nurture this heritage and protect and promote it for the survival of future generations. Let us work to make and build cities and communities that are socially just, ecologically sustainable, politically participatory, economically productive and culturally vibrant. Let us strengthen our work to realize this vision of better cities and communities through advocacy, networking information, capacity building and resource mobilization. (Moving Forward Towards Our Sustainable Cities, April 1997.)

10. “Socially just, ecologically sustainable, politically participatory, economically productive and culturally vibrant.” From Our Cities, Our Homes held in Kuantan, Malaysia, 1995

11. Given the resource restrictions, an efficient, transparent and participatory decision-making process by the various levels of government in partnership with private sector companies, non-governmental agencies and community-based organizations is crucial to direct the development of society and economy in a democratically decided direction and solve urban problems (United Nations Development Programme (UNDP), The Urban Governance Initiative's Virtual Policy Studio (TUGI-VPS).
12. And, a definition crafted by a Roundtable workgroup without using "the big three" – equity, economy and environment – and not confined to a sweet, neat sentence: A definition of sustainability should include:
- Planning and managing the present and the future.
 - Being efficient and responsible, with awareness of earth's carrying capacity and full-cost of action and inaction.
 - Achievable, enduring, progressive, vibrant goals.
 - Systems which are just, equitable, transparent and participatory.
 - Additional words to incorporate: synergistic, integrative, vision, risk, quality, dynamic, integrity, long-term, balance, strategic.
13. The 1992 Earth Summit in Rio de Janeiro popularized the phrase sustainable development even as the definition of the term remained vague. The many definitions and frameworks that now exist share a number of basic principles including.
- Concern for the well-being of future generations.
 - Awareness of the multi-dimensional impacts of any decision (broadly categorized as economic, environmental, social).
 - The need for balance among the different dimensions across sectors (e.g. mining, manufacturing, transportation), themes (climate change, community cohesion, natural resource management) and scale (local, regional, national, international). The elusive goal of sustainable development, or sustainability as it is also called, is to make decisions and carry out programs and projects in a manner that maximizes benefits to the natural environment and humans and their cultures and communities, while maintaining or enhancing financial viability.

From "The Sustainability Report – A Review of Corporate Sustainability Reporting" prepared by Mary MacDonald and Kim Peters for the Sustainability Reporting Program 2001.