

Sustainability Literacy Assessment – Pre/Post

1. Of the following, which would be considered living in the most environmentally sustainable way?

- a. Recycling all recyclable packaging
- b. Reducing consumption of all products
- c. Buying products labeled "eco" or "green"
- d. Buying the newest products available
- e. Don't know

2. What factors influence the human population's impact on Earth?

- A. Size of the population
 - B. Amount of materials used per person
 - C. Use of technology that lessens our impact
- a. A, B, and C
 - b. A and B, but not C
 - c. B and C, but not A
 - d. A, but not B or C
 - e. Don't know

3. What is the most common cause of pollution of streams and rivers?

- a. Dumping of garbage by cities
- b. Surface water running off yards, city streets, paved lots, and farm fields
- c. Litter near streams and rivers
- d. Waste dumped by factories
- e. Don't know

4. Which of these are projected impacts of global climate change?

- a. Loss of habitats
- b. Less severe weather
- c. Loss of ozone layer
- d. Decrease in sea level
- e. Don't know

5. Which of the following countries has now passed the U.S. as the biggest emitter of the greenhouse gas carbon dioxide?

- a. China
- b. Sweden
- c. Brazil
- d. Japan
- e. Don't know

6. Which of the following statements about water is true?

- a. Globally, water for personal use such as washing dishes, doing laundry, and bathing is the largest user of water resources.
- b. Globally, freshwater reserves (aquifers) are used faster than they are replenished.
- c. Floods and severe weather will increase the availability of clean drinking water.
- d. Because water is a free and abundant resource, it is not a major concern for most countries.
- e. Don't know

6. The most significant driver in the loss of species and ecosystems around the world is...

- a. Overhunting/overharvesting
- b. Conversion of natural spaces into human developments (farmland, cities, etc.)
- c. Acid rain
- d. Breeding of animals in zoos
- e. Don't know

7. Living in Virginia, we see signs about entering the Chesapeake Bay Watershed or about the “New River Watershed.” Which of the following is the greatest pressure leading to the degradation of these aquatic ecosystems?

- a. Dredging for sand
- b. Litter that flows from streams and rivers into the Lake
- c. Application of fertilizer on lawns and farms
- d. Gas-powered boats
- e. Don't know

8. Imagine you are one of the many fishermen who rely on the fish you catch from the Chesapeake Bay as your main source of income. The Fisherman Council determined that each fisherman must limit his/her catch to 5 tons per year to maintain the fishery at its current productivity. You decide to catch 6 tons of fish this year.

What could be the results of your decision?

- A. You make more money this year than you would have if you caught 5 tons of fish
 - B. You make less money this year than you would have if you caught 5 tons of fish
 - C. The total number of fish that are available to catch each year could decrease
 - D. Fishermen, including you, could go out of business
- a. B, C, and D, but not A
 - b. B and C, but not A or D
 - c. A and C, but not B or D
 - d. A, C, and D, but not B
 - e. Don't know

9. Which of the following is the most commonly used definition of economic sustainability?

- a. Maximizing the share price of a company's stock
- b. Long term profitability
- c. When costs equal revenue
- d. Continually expanding market share
- e. Don't know

10. Which of the following is the best example of environmental justice?

- a. Urban citizens win a bill to have toxic wastes taken to rural communities
- b. The government dams a river, flooding Native American tribal lands to create hydro-power for large cities
- c. All stakeholders from an indigenous community are involved in setting a quota for the amount of wood they can take from a protected forest next to their village
- d. Multi-national corporations build factories in developing countries where environmental laws are less strict.
- e. Don't know

11. Using resources, like fossil fuels, can create economic growth. However, future generations may be disadvantaged if the current generation overuses these resources. Which of the following principles can we follow if we do not want to disadvantage the next generation?

- a. Renewable resources such as fish, soil, and groundwater must be used no faster than the rate at which they regenerate.
- b. Nonrenewable resources such as minerals and fossil fuels must be used up quickly to encourage the development of renewable substitutes.
- c. Pollution must be emitted at current levels so that natural systems can maintain the ability to absorb them, recycle them, or render them harmless
- d. None of the above are true
- e. Don't know

12. Which of the following is the most commonly used definition of sustainable development?

- a. Creating a government welfare system that ensures universal access to education, healthcare, and social services
- b. Setting aside resources for preservation, never to be used
- c. Meeting the needs of the present without compromising the ability of future generations to meet their own needs
- d. Building a neighborhood that is both socio-demographically and economically diverse
- e. Don't know

13. Imagine that we had to pay for all the costs associated with the goods we use every day.

What would go into calculating the true costs of a product?

- a. The cost of raw materials to make the product
- b. The cost of environmental damage caused by production
- c. The cost of health care for employees who manufacture the product
- d. All of the above
- e. Don't know

14. What is the largest contributor of CO₂ to the atmosphere, causing global warming and climate change?

- a. Deforestation
- b. Land use changes
- c. Burning of fossil fuels
- d. Respiration
- e. Volcanic Eruptions

15. Put the following list in order of the activities with the largest environmental impact to those with the smallest environmental impact:

A. Keeping a cell phone charger plugged into an electrical outlet for 12 hours

B. Producing one McDonald's quarter-pound hamburger

C. Producing one McDonald's chicken sandwich

D. Flying in a commercial airplane from Washington D.C. to China

- a. A, C, B, D
- b. D, A, B, C
- c. D, C, B, A
- d. D, B, C, A
- e. Don't know

16. How do greenhouse gases like carbon dioxide (CO₂) and methane (CH₄) cause global warming?

- a. Greenhouse gases are warmer.
- b. Greenhouse gases in the atmosphere trap heat from the sun. The more greenhouse gases the better the atmosphere traps heat which warms the earth.
- c. Increased greenhouse gases in the atmosphere allow more sunlight to reach the earth's surface which causes global warming.
- d. Increased greenhouse gases in the atmosphere are not causing global warming.

17. What is the best action an organization can take to reduce food waste?

- a. Compost leftovers
- b. Feed Hungry People with the good leftovers
- c. Source Reduction – Reduce the amount of food prepared so there is less left over
- d. Landfill/Incineration
- e. Don't Know

18. Workers around the world face a variety of social injustices, including low wages, poor working conditions, and lack of access to education. To help improve conditions for these workers you can:

- a. Support corporations that do not allow workers to join labor unions
- b. Buy the newest products to keep factories around the world open
- c. Purchase products from companies that conduct business in a socially responsible manner
- d. Support large corporations because they generally have more money to pay their workers
- e. Don't know

19. Many economists argue that electricity prices in the U.S. are too low because...

- a. They do not reflect the costs of pollution from generating the electricity
- b. Too many suppliers go out of business
- c. Electric companies have a monopoly in their service area
- d. Consumers spend only a small part of their income on energy
- e. Don't know

20. An effective strategy for reducing greenhouse gas emissions and reversing global warming and climate change is:

- a. Burn the remaining fossil fuels by 2030, then switch energy sources to wind and solar.
- b. Maintain current global greenhouse gas emissions levels.
- c. Convince China and India to stop burning fossil fuels.
- d. Stop burning fossil fuels worldwide as soon as possible and implement other solutions to capture carbon out of the atmosphere.

21. Single Use plastic beverage packaging creates an enormous amount of waste on our campus and around the world. The best way to reduce this waste is to:

- a. Recycle your used containers
- b. Fill a reusable cup or bottle instead of buying drinks single use plastic containers
- c. Be sure to purchase beverages in aluminum cans
- d. Purchase beverages in the new bio-plastic

22. Which of the following is an example of sustainable forest management?

- a. Setting aside forests to be off limits to the public
- b. Never harvesting more than what the forest produces in new growth
- c. Producing lumber for nearby communities to build affordable housing
- d. Putting the local communities in charge of forest resources
- e. Don't know

23. The best way to support a local economy, such as the economy of the City of Radford, is to buy goods (groceries, clothing, toiletries, etc)...

- a. At large chain stores that may employ workers from the local community
- b. Online from discount retailers
- c. From stores that sell locally-produced goods
- d. From second-hand/thrift stores
- e. Don't know

Adapted from:

Zwickle, A., Koontz, T., Bodine, A., Slagle, K., Stewart, S., Horvath, N. (2013) Assessment of Sustainability Knowledge. The Ohio State University School of Environment and Natural Resources, Office of Sustainability, and University of Maryland Office of Sustainability.

<https://ess.osu.edu/sites/essl/files/imce/Phase%20II%20Questions%20no%20bold%20answers.pdf>

Other References:

United States National Aeronautics and Space Administration: <https://climate.nasa.gov/causes/>

United States Environmental Protection Agency: <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy>