Environmental Literacy Instrument for Adolescents

PART ONE: ECOLOGICAL KNOWLEDGE

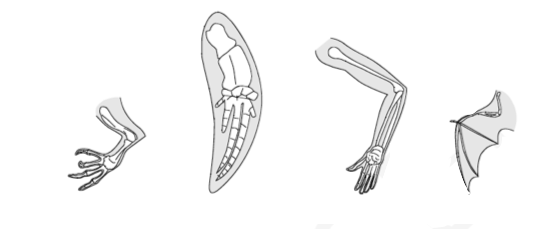
Please choose the best answer for the following questions.

1. Phosphates are harmful in rivers because they:
   1. cause cancer in fish
   2. stop reproduction in fish
   3. make the water cloudy by reflecting sunlight
   4. cause algae blooms that reduce oxygen in the water
2. Ecology is the study of the relationship between:
   1. different species of animals
   2. plants and the atmosphere
   3. organisms and their environments
   4. people and other animals
3. A series of predicable changes that occur in a community over time is called \_\_\_\_\_\_\_\_\_\_\_\_.
   1. succession
   2. climax community
   3. ecosystem
   4. pioneer species
4. There are 150 longleaf pine trees per square kilometer in a certain area of the NC Sandhills. To which population characteristic does this information refer?
   1. growth rate
   2. geographic range
   3. age structure
   4. population density
5. What is the original source of energy for all living things on the earth’s surface?
   1. the sun
   2. water
   3. the soil
   4. plants
6. What do you call all living organisms and nonliving parts of their environment?
   1. the biosphere
   2. the environment
   3. an ecosystem
   4. a community
7. Which process is missing in the blanks below?
   1. the water falls from atmosphere as rain, ice, or snow
   2. the liquid freezes and becomes ice
   3. the sun dries up the water in the clouds
   4. the water stays in the clouds

Surface water is heated and changes to a gas in a cloud.

In the atmosphere, the gas cools and is changed back to a liquid.

?

1. This diagram represents the bone structure of the front limbs of four different animals.

Frog Whale Human Bat

Based on the image above, which do you think is the best conclusion about

these animals?

* 1. they grow at the same rate
  2. they live in the same environment
  3. they live for the same length of time
  4. they evolved from a common ancestor

1. What important role do soil organisms such as worms, bacteria, and fungi play?
   1. storing moisture for plants to absorb
   2. recycling the remains of dead organisms
   3. creating oxygen for animals to use
   4. removing carbon from the soil
2. Mycorrhizae are fungi that live on or in tree roots. Trees provide sugars to the fungi and the fungi transfer essential minerals from decaying organic matter to the plant. Which type of symbiotic relationship does this best illustrate?
   1. commensalism
   2. mutualism
   3. parasitism
   4. predation

PART TWO: ENVIRONMENTAL HOPE

Please choose the best answer for the following questions.

|  | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
| --- | --- | --- | --- | --- | --- |
| I believe people will be able to solve most environmental problems. |  |  |  |  |  |
| The actions I can take are too small to help solve most environmental problems. |  |  |  |  |  |
| I believe scientists will be able to find ways to solve environmental problems. |  |  |  |  |  |
| Even when some people give up, I know there will be people who will continue to try to solve environmental problems. |  |  |  |  |  |
| Environmental problems are out of my control. |  |  |  |  |  |
| Because people can learn from our mistakes, we will influence the environment in a positive direction. |  |  |  |  |  |
| Every day, more people care about environmental problems. |  |  |  |  |  |
| If everyone works together, we can solve environmental problems. |  |  |  |  |  |
| Environmental problems are so complex, we will never be able to solve them. |  |  |  |  |  |
| I know that there are many things that I can do to help solve environmental problems. |  |  |  |  |  |
| I feel helpless to solve environmental problems. |  |  |  |  |  |

PART THREE: COGNITIVE SKILLS

Next, you will read two short passages. Each will give you information about an environmental problem.  After you read the passage, please rank the questions based on how important you think they are for addressing the problem.

Striped Bass

Striped bass is a popular sportfish and is also harvested for food. Anglers and commercial fishers are spending more time fishing for striped bass than they used to, but are catching fewer and smaller striped bass than in the past.  Daniel Pinder is in charge of making sure that fishing for striped bass is sustainable over time. Therefore, Daniel must think about many issues to determine the best solution to this challenge.

What are the most important questions to ask as you begin to solve this problem?

Please rank each question from most important (1) to least important (5). Use each number (1-5) only once.

1. Most important question
2. Second most important question
3. Third most important question
4. Fourth most important question
5. Least important question

|  | Ranking |
| --- | --- |
| What do striped bass fishers use for bait? |  |
| What have been the numbers of new striped bass entering the population each year? |  |
| What are the most important foods striped bass eat? |  |
| What size are the striped bass that can successful reproduce? |  |
| Do predators eat juvenile striped bass? |  |

PART FOUR: BEHAVIOR

How often do you do the following activities?

|  | Never | Rarely | Sometimes | Often | Always |
| --- | --- | --- | --- | --- | --- |
| Turn off the lights at home when they are not in use |  |  |  |  |  |
| Pick up trash that I find outside |  |  |  |  |  |
| Turn off the water when it is not in use |  |  |  |  |  |
| Close the refrigerator door while I decide what to get out of it |  |  |  |  |  |
| Recycle at home |  |  |  |  |  |

PART FIVE: ABOUT YOU

Tell us a little about yourself by selecting the appropriate response.

1. Which grade are you in currently?
   1. 9th grade
   2. 10th grade
   3. 11th grade
   4. 12th grade
2. What is your age today?
   1. 14 years or younger
   2. 15 years old
   3. 16 years old
   4. 17 years old
   5. 18 years or older
3. What is your gender identity?
   1. Female
   2. Non-binary
   3. Male
   4. My gender identity is not listed.
4. What is your race or ethnicity? (select all that apply)
   1. Asian/Pacific Islander
   2. Black or African American
   3. Hispanic or Latino
   4. Native American or Indigenous
   5. White or Caucasian
   6. My race/ethnicity is not listed