Questions #1 - 7

This drawing of a stream ecosystem in Hawai‘i shows producers, consumers and decomposers. The algae growing on the rocks in the stream capture energy from the sun. The algae use the energy to make food. The energy flows through the stream ecosystem from the plants to the animals in the stream.

1. Decomposers in the stream ecosystem:
   A. Help to keep balance in the stream by feeding on the plants
   B. Capture energy from the sun and use it to create their own food
   C. Help to break down dead plants and animals and make nutrients available to the plants
   D. Help to keep balance in the stream by giving off oxygen

2. Producers in the stream ecosystem:
   A. Capture energy from the sun and use it to produce food
   B. Help to keep balance in the stream by feeding on the decomposers
   C. Give off carbon dioxide, which helps other organisms to survive
   D. Help to break down dead plants and animals and make nutrients available to the consumers
3. Which food chain illustrates the flow of energy from producers to consumers and decomposers?
   A. Snails – prawns – fish – algae
   B. Snails – algae – prawns – fish
   C. Algae – snails – fish
   D. Algae – snails – fish – prawns

4. Which statement is true?
   A. Fish give off oxygen that the algae need and take in carbon dioxide from plants.
   B. Snails give off oxygen through their shells that the algae need and take in carbon dioxide.
   C. Algae give off oxygen that the animals need and the animals give off carbon dioxide that the algae need.
   D. None of the above statements are true.

5. What might happen if all of the fish were removed from the stream?
   A. The stream would have more carbon dioxide than oxygen.
   B. The algae population in the stream would decrease.
   C. The algae population in the stream would increase.
   D. The stream community would immediately adjust to the changes.

6. Which of the following statements is **not** true?
   A. The birds in the picture do not live in the stream, so they are not part of the stream ecosystem.
   B. The birds are consumers that feed on the snails and fish in the stream.
   C. The birds help to keep the balance in the stream ecosystem.
   D. The birds can fly to other locations, but they are still part of the stream ecosystem.

7. Which of the following statements is **not** true?
   A. Algae in the stream give off oxygen during photosynthesis.
   B. Algae in the stream use carbon dioxide that stream animals give off.
   C. Algae in the stream give off carbon dioxide during photosynthesis.
   D. Stream animals give off carbon dioxide that the plants use.
Questions #8 - 11
Some fifth grade students are investigating a stream. They want to find out how changes to the stream environment affect the number of native stream animals. They will be comparing two stream environments. One is a straight, channelized stream and the other is a natural stream in a forest. The water in the channelized stream is shallower and the bottom is lined with concrete. There are no trees growing along the banks of the channelized stream. The water in the natural stream is deeper, the bottom is rocky, and there are trees along the banks.

The students have read a summary of a scientific study of streams in their community. They learned that the scientists found more native stream animals in the forested site than in the urban site. They have also learned that dissolved oxygen is higher in water that has cooler temperatures.

Students will be recording the temperature at five different study sites for each stream. They will also be recording the number of stream animals at each site.

Urban Site - Channelized Stream  
Forest Site - Natural Stream

8. Which of the following is the best hypothesis based on what students learned from the scientists’ study?
   A. The urban stream site will not be as good a habitat as the forest stream site.
   B. If the temperature is cooler in the forest stream site, there will be more native stream animals than in the urban site because the dissolved oxygen will be higher.
   C. The forest stream site will provide a better habitat for native stream animals than the urban stream.
   D. If there are more native stream animals in the forest stream site, the dissolved oxygen there will be lower than in the urban site because the native fish will use up the oxygen.
9. A testable hypothesis:
   A. Is testable if we have the equipment we need to test it.
   B. Is clearly stated.
   C. Is testable if the relationship between the variable and the predicted result is based on knowledge and observations.
   D. All of the above are true.

10. In their own stream study, the students will be recording water temperature at the two stream sites. How should they control variables when recording temperature?
   A. They should record the temperatures near the same time of day.
   B. They should record the temperatures at the same water depths at both sites.
   C. They should record the temperatures at the same number of sites.
   D. All of the above are true.

11. Why do the students need to control variables when conducting their stream study?
   A. They want to test the effects of temperature on the size and number of the fish.
   B. They want to test the effects of too much oxygen on the number of fish and the temperature.
   C. They want to be sure that the only variable being tested is temperature.
   D. None of the above

Questions #12 - 15
The charts on the following page show the data that students collected in their stream investigation. The water temperature was recorded in degrees Celsius.
Water Temperature in Urban and Forest Stream Sites

<table>
<thead>
<tr>
<th>Sampling Sites</th>
<th>Urban Stream</th>
<th>Forest Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>32</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>30.5</td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>28</td>
<td>20.5</td>
</tr>
<tr>
<td>5</td>
<td>30.5</td>
<td>22</td>
</tr>
</tbody>
</table>

12. Based on the charts above, which of the following is the mean for the students’ temperature data in the urban stream?
   A. 28
   B. 31
   C. 32
   D. 33

13. Based on the charts above, which of the following is the mode for the students’ temperature data in the forest stream?
   A. 30.5
   B. 20.5
   C. 22
   D. 25

14. Based on the charts above, which of the following is the median for the students’ temperature data in the forest stream?
   A. 22
   B. 24
   C. 20.5
   D. None of the above
15. Based on the data gathered by the students, which of the following is a true statement?
   A. The mean water temperature for the two streams is the same.
   B. The mean water temperature for the forest stream is at least 8 degrees lower than the mean water temperature for the urban stream.
   C. The mean water temperature for the forest stream is at least 5 degrees lower than the mean water temperature for the urban stream.
   D. There is not enough data to compute the mean for the two streams.

Questions #16 - 17
Students collected the following data about the number of native stream animals:
Number of Native Stream Animals in Urban and Forest Stream Sites

<table>
<thead>
<tr>
<th>Sampling Sites</th>
<th>Urban Stream</th>
<th>Forest Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>12</td>
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<td>1</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>12</td>
</tr>
</tbody>
</table>

16. Which of the following statements is the best conclusion based on the students’ findings?
   A. The mean number of native stream animals in the forest stream was 12.
   B. The range of native stream animals in the forest stream was less than the range of native stream animals in the urban stream.
   C. The mean number of native stream animals in the urban stream was 2.
   D. There is no pattern to the abundance of native stream animals.

17. Which of the following statements is not a correct conclusion based on the students’ findings?
   A. There are more native stream animals in the forest stream than in the urban stream.
   B. The number of native stream animals is less in the urban stream than the forest stream.
   C. The number of native stream animals is similar for all of the sampling sites.
   D. There are fewer stream animals in the channelized stream than the forest stream.
18. Some fifth grade students are preparing to study a stream in their community. They ask a *kupuna* to teach them an *oli* (chant) to chant when they arrive at the stream. What is the purpose of chanting when you go to a field site?
   A. To ask permission to enter
   B. To focus attention and prepare for the task at hand
   C. To show respect for cultural traditions
   D. All of the above

19. The **best** way to make good observations at a stream is to:
   A. Get into the water and observe and catch animals with a net.
   B. Sit quietly by the edge of the stream and watch for movement of stream life.
   C. Record all observations on a chart.
   D. None of the above.

20. Students discovered that human actions were having a negative effect on native stream animals. When they returned to the classroom, they decided to conduct community service to help *mālama* the stream. Which of these are **not** community service projects that teach others about the concept of *mālama* through example?
   A. Students plant trees along the stream banks.
   B. Students conduct a *hoʻike* to inform others about caring for the stream.
   C. Students conduct research about stream life.
   D. Students pick up rubbish along the stream banks.
Grade 5 Stream Life *Aloha ʻĀina* Test Answer Sheet

SC.5.3.1 Describe the cycle of energy among producers, consumers, and decomposers.
1. C
2. A
3. D

SC.5.3.2 Describe the interdependent relationships among producers, consumers, and decomposers in an ecosystem in terms of the cycles of matter.
4. C
5. C
6. A
7. C

SC.5.1.1 Identify the variables in scientific investigations and recognize the importance of controlling variables in scientific experiments.
8. B
9. D
10. D
11. C

MA.5.12.1 Determine the range, median, mode, and mean for a data set.
12. B
13. C
14. A

MA.5.12.2 Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.
15. B

SC.5.1.2 Formulate and defend conclusions based on evidence.
16. D
17. C

NHMO 8 – 4 Apply cultural and traditional knowledge of the past to the present.
18. D
NHMO 14 - 1 Be keen observers of their natural environment.
19. B

NHMO 15-2 Plan and participate in community service projects.
NHMO 15-3 Teach others about the concept of mālama through example.
20. C
## Aloha 'Āina Grade 5 Pre-Post Assessment

**Answer Sheet**

Use pencil to completely darken the appropriate circle for each question.

1. [ ] A  [ ] B  [ ] C  [ ] D
2. [ ] A  [ ] B  [ ] C  [ ] D
3. [ ] A  [ ] B  [ ] C  [ ] D
4. [ ] A  [ ] B  [ ] C  [ ] D
5. [ ] A  [ ] B  [ ] C  [ ] D
6. [ ] A  [ ] B  [ ] C  [ ] D
7. [ ] A  [ ] B  [ ] C  [ ] D
8. [ ] A  [ ] B  [ ] C  [ ] D
9. [ ] A  [ ] B  [ ] C  [ ] D
10. [ ] A  [ ] B  [ ] C  [ ] D
11. [ ] A  [ ] B  [ ] C  [ ] D
12. [ ] A  [ ] B  [ ] C  [ ] D
13. [ ] A  [ ] B  [ ] C  [ ] D
14. [ ] A  [ ] B  [ ] C  [ ] D
15. [ ] A  [ ] B  [ ] C  [ ] D
16. [ ] A  [ ] B  [ ] C  [ ] D
17. [ ] A  [ ] B  [ ] C  [ ] D
18. [ ] A  [ ] B  [ ] C  [ ] D
19. [ ] A  [ ] B  [ ] C  [ ] D
20. [ ] A  [ ] B  [ ] C  [ ] D