Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_

Unit 1A Test Study Guide (Nature of Science and Intro to Ecology)

**Nature of Science:**

1. **Define:**

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Observation |  |
| Inference |  |
| Hypothesis |  |
| Theory |  |

1. **State whether the following describes an observation, inference, hypothesis or theory**

If the termite is attracted to the blue pen then it will follow the blue pen for the longest amount of time 🡪

Alissa noticed her cat was sitting by the empty food bowl and meowing, so she thought *my cat must be hungry!* 🡪

On the second day of school, Erin counted that she received a total of 5 textbooks for her classes🡪

Myah read in her science textbook an explanation as to why peacocks have colorful feathers 🡪

1. **Define independent, dependent and control variable and experimental and control groups.**

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Independent Variable |  |
| Dependent Variable |  |
| Control Variable |  |
| Control Group |  |
| Experimental Group |  |

1. A group of students wants to study the effect of a new shampoo on hair growth. The students provide some students with regular shampoo and some students with the new shampoo. After one month they measure how much each students’ hair grew.
2. Control group:
3. Experimental group:
4. Independent variable:
5. Dependent variable:
6. Control variable(s):

|  |  |
| --- | --- |
| **Term** | **Definition** |
| **Qualitative Data** |  |
| **Quantitative Data** |  |

1. **Define qualitative data and quantitative data**
2. **Determine if the statement describes quantitative or qualitative data:**

The solution is a bright blue color

It takes a car with premium gasoline 5 sec to reach 60 mph

A panda can eat 20-40 pounds of bamboo in a day!

1. **Understand and list the steps of the scientific method**

What is the best way to test your hypothesis? 🡪

What is the first step of a scientific inquiry? 🡪

1. **Know the 8 characteristics of life.**
   1. Made of cells:
   2. Reproduction:
   3. Universal Genetic Code/Heredity:
   4. Growth and Development:
   5. Need for Materials/Energy:
   6. Response to Environment:
   7. Homeostasis:
   8. Evolution:
2. **What is metabolism?**
3. **Provide the correct characteristic of life for the scenario:**

When Scout the bearded dragon gets too hot, she moves to the cool side of her tank🡪

Before running a race, Olivia eats a big spaghetti dinner 🡪

A caterpillar develops into a butterfly 🡪

**Intro to Ecology**

1. **Define the levels of Organization**

|  |  |
| --- | --- |
| **Level** | **Definition** |
| Organism |  |
| Population |  |
| Community |  |
| Ecosystem |  |
| Biome |  |
| Biosphere |  |

1. Which level would include all the following components: bears, seeds, rocks and temperature 🡪

Which level would include many populations living in the same area 🡪

1. **Define and provide examples of abiotic and biotic factors**

|  |  |  |
| --- | --- | --- |
| **Term** | **Definition** | **Example** |
| Abiotic |  |  |
| Biotic |  |  |

1. **Define and provide examples of producers and consumers**
   1. Producers = Autotrophs:
      1. Photosynthesis:
      2. Chemosynthesis:
   2. Consumers = heterotrophs:
      1. Generalists:
      2. Specialists:
2. **Answer the following questions about producers and consumers**

Algae and plants can be classified as what 2 vocab terms? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rabbits and cows can be classified as what 2 vocab terms? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

True or False? Primary producers convert biotic molecules into energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

True or False? Energy can flow in both directions (producer 🡨🡪 consumer) in a food web \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

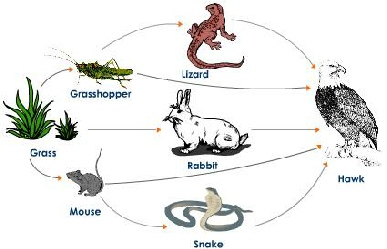
What is the main difference between the two types of producers 🡪

What are the 5 types of consumers?

1. 2. 3.

4. 5.

1. **Interpret a simple food web and food chain and know what organisms are producers or consumers:**

Why is a food web more useful than a food chain?

1. **Based on the food web to the right:**

What is the top predator in the ecosystem 🡪

Provide an example of an herbivore 🡪

What would happen to the mouse population if the hawk population decreased 🡪

What would happen to the lizard population if the grasshopper population increased 🡪