



[www.NGSSLifeScience.com](http://www.NGSSLifeScience.com)

**Topic:** Characteristics of Life Lab

**Summary:** Students will learn to use their observation skills to determine if an object is living, dead, dormant, made from an organism or never alive using the main characteristics of life.

**Goals & Objectives:** Students will be able to list the seven characteristics of life.

**NGSS Standards:** *HS-LS1-3. Homeostasis and enzymes.* Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

**Time Length:** 60 minutes

**Prerequisite Knowledge:** Students know the seven characteristics of life, as well as, lab safety rules.

**Materials:**

- 12 lab stations that are numbered 1 through 12
- Place one object at each lab station. The object should either be living, dead, dormant, or never alive. Make sure you have used all five of the conditions.
  - Example Stations: house plant, grass, insects or worms, sponge, sunflower seeds, fruit, candle flame, beaker with water, fossil, animal anatomy specimen, spaghetti, stuffed animal, twigs
- Handouts and pencils

**Procedures:**

1. Students go to each of the lab stations and fill in their data table at each lab station around the room. Students can start at any lab station.
2. At the end of the lab, go over each of the stations and ask students what condition they think it is and why. This might generate a good debate over the condition based upon students' observations. When grading the assignment, focus on the missing characteristics and students using those missing characteristics as part of the evidence for their decision.

**Accommodations:** Students with an IEP can work with a partner and collaborate on the entire lab.

**Editable DOCX File and Answer Key:**

Available at [www.ngsslifescience.com](http://www.ngsslifescience.com)

## Characteristics of Life Lab

**Problem:** Scientists use the following characteristics of life to determine if an object is alive. Even if one characteristic is missing, the object cannot be alive. Write a definition for the seven main characteristics of life.

1. Made of Cells: \_\_\_\_\_

2. Reproduction: \_\_\_\_\_

3. Metabolism: \_\_\_\_\_

4. Homeostasis: \_\_\_\_\_

5. Heredity: \_\_\_\_\_

6. Evolve: \_\_\_\_\_

7. Interdependence: \_\_\_\_\_

**Experiment:** Around the room, there are different stations, each with an object. You must determine the condition of the object: alive, dead, dormant, made from an organism, or never alive.

Check the box for each characteristic the object is *currently* missing. You must state the *current* condition of the material (alive, dead, dormant, made from or never alive) and write the evidence that supports your decision. **DO NOT WRITE THE OBJECT'S NAME** (example: plastic car, leaf).

#	Missing Characteristics	Condition	Evidence Supporting Type of Condition
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		

#	Missing Characteristics	Condition	Evidence Supporting Type of Condition
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		
	<input type="checkbox"/> Made of Cells <input type="checkbox"/> Interdependence <input type="checkbox"/> Reproduction <input type="checkbox"/> Metabolism <input type="checkbox"/> Heredity <input type="checkbox"/> Homeostasis <input type="checkbox"/> Evolve		

**Experimental Errors:** Explain any misconceptions you had for any of the objects.

---



---



---