Living, Non-living or Dead

Brainstorming:
1. If you were exploring a new ecosystem, like deep in the ocean, or on a distant planet, how would you determine whether a specimen you are observing is alive or not?

2. What do you think it means to be alive?

3. How is dead related to living?

4. Can something that was never living be dead? Why or why not?

5. Does everything living have to have the same qualities or characteristics? If so, which ones?

6. What characteristics may non-living things have that make them appear alive?

Purpose:
In this activity you will observe and compare unknown specimens in order to compile a list of what characteristics you believe living things have to have. The list will allow you to compare these specimens and then help you to determine whether each is living, non-living, or dead. Finally, you should also be able to use your data to decide which characteristics ALL living thing must have.

PreLab Directions:
Brainstorm at least 8 traits you believe living things have in common, and list them in the “Characteristic” column of the data table. You will need to have a total of 8 before completing the lab, but you may leave 2 blank to fill in as you think of them while observing the various unknown specimens.
**PostLab Questions:** Once you are done with the lab, answer the following questions using complete sentences.

1. How did you determine the difference between a living specimen and a nonliving one?

2. What is the difference between a nonliving specimen and one that you considered dead?

3. According to your observations, what traits do nonliving things have in common with one another?

4. According to your data table, what traits do most living things have in common?

5. Referring to your answers for #4, do you think that is an accurate list for what living things have in common? Why or why not?

6. What traits did you list as characteristics of living things but were not easily observable?

7. What instruments or technologies might have helped you to determine whether or not some of the unknowns are living or not?

8. What traits did you pick as characteristics that were NOT helpful (did not necessarily indicate life)?

9. What traits do you wish you had picked instead?
10. Pick a specimen from the lab that you characterized as nonliving and for fun, argue that it is living. Be sure to use what you have learned about the characteristics of living things as part of your argument. Therefore, include characteristics that this nonliving specimen shares with other living things.

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11. For the following specimens, label them as living (L), nonliving (NL), or dead (D) and then give a short one-sentence answer why it belongs in this category. Answer what you THINK, based on what you have learned after completing this activity. Be ready to defend your answer.

a. cold virus

b. Brown grass

c. Fertilized chicken egg

d. Egg bought in a grocery store

e. Your skin on the back of your hand

f. Boiling water