

Name: _____

Engage: It's Alive!!

(Or is it?)

THE ACTIVITY

People have often wondered if there is any life on other planets. A few years ago, NASA published that it had found fossil traces that indicated life may have once existed on Mars. However, one thing scientists have to grapple with is the actual definition of life. How do we **know** if something is alive or not? Throughout history, scientists, philosophers, and the general public have grappled with this question. Books have been written and movies made (Bladerunner, Pinocchio, The Andromeda Strain, etc.) that all ask the question: What does it mean to be alive? Does “life” have a certain shape or form? Do living things have to be made out of certain materials?

Is it “alive”?

1. Define “life”.

- Write down a definition of what it means to be alive. You may want to just create a list or checklist of what something has to be or do to be considered alive.
- Discuss your definition with your table partners. Listen to their definitions, and modify your definition to include any additions or modifications the group has brought up.

2. Make a table in your notebook that looks like this, but include spaces for twenty objects.:

Object	Alive? (y/n)	Explanation (If alive, which parts of your definition does it fulfill? If not alive, what part of your definition does it not meet?)	Oops

Watch the series of slides “Wanted: Dead or Alive!”. List each object in your table, and classify it as being alive or not **according to the definition you gave in your answers to question #1**. As you watch the slides, if your definition makes you mark something alive that you think isn’t, or vice versa, mark the “Oops” box in your table.

FOLLOW UP QUESTIONS

Answer the following questions in your notebook using complete sentences.

- Working with your table group, revise your definition of life to better handle the examples you saw in the slide show. (Think about the slides that you had to mark your “Oops” box for. In what way did your definition of life cause you to mark things incorrectly? How can you revise your definition to take care of those cases?)
- Read the essay in your book called “Describing Life: An Impossible Challenge?” and list the six common characteristics of all living things shown there.
- You watched two videos about a new type of bacteria that uses arsenic instead of phosphorus for part of its DNA. Does this new type of bacteria still fit the criteria for life given in question #2?
- Do you think it’s possible that we may some day find life in another environment or on another planet that doesn’t fit our current definition? If so, what do scientists need to do?