

# Characteristics of Life

Name: \_\_\_\_\_

1. What are the 5 main characteristics of life?

- 1-
- 2-
- 3-
- 4-
- 5-

2. Use the pictures provided to answer the following questions:

Object #	What is the object?	Living or nonliving? (L or N)	Why do you believe that object is living or nonliving? (remember to consider the characteristics of life)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

3. In the above list are any of nonliving objects made up of substances that were once living? Name them.

4. Label each of the following situations as one of the characteristics of life.

Situation	Characteristic of Life
a. a cell divides	
b. a giraffe eats leaves off of a tree	
c. when using a microscope you see liver cells	
d. you get goose bumps when it's cold	
e. plants capture sunlight to make glucose	
f. a sperm cell and egg cell fuse to make a zygote	
g. a teenager gets acne and goes through puberty	
h. the respiratory system moves oxygen to our cells and carbon dioxide from our bodies	

5. Come up with an acronym to help you remember the five main characteristics.

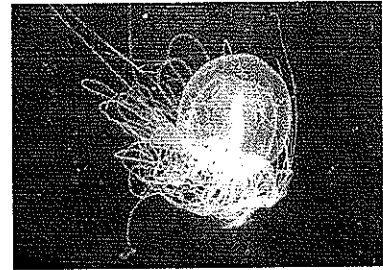
**The Immortal Jellyfish** (<http://www.mostlyodd.com/the-immortal-jellyfish/>)

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Leave a jellyfish out in the sun for long enough, and it will evaporate. Over 95% water, jellyfish are ludicrously simple creatures. They have no brain, no lungs and no eyes. Assemble some tentacles, a stomach cavity, an umbrella head and you are nearly done. For respiration they just have skin thin enough to let oxygen slip through. Yet in this simplicity there is variety, and in one case, immortality.

*Turritopsis nutricul* is the immortal jellyfish and no hulking monstrosity. Adults are 5mm across, and transparent. Were you able to spot it you would see an approximate circle surrounded by anywhere between 8 and 24 tentacles protruding, wiggling and wobbling contentedly. When the jellyfish gets bored, or when things get tough it can change. It begins to grow younger. It moves onto a surface and grips on tightly. Then it slowly becomes a blob.

As a blob it performs the special process, transdifferentiation. This is the way in which some animals, like crabs, regrow their limbs. Cells become simplified, then are remade as new types of cell, giving a crab a new arm, or a starfish a new tentacle. *Turritopsis nutricul* is unique in the animal kingdom because it does this to its entire body.



The jellyfish emerges as a perfectly formed child, ready to live all over again. As long as the jellyfish isn't killed and doesn't evaporate, scientists expect that the trick can be repeated infinitely; making it the only possibly immortal creature.

Given their long lifespan, it is no surprise they want to travel; they are spreading from their Caribbean home to places as varied as Spain, Japan and Panama. As long as the water is warm, they may find their way there, bringing a dose of immortality to waters near you. Long live the jellyfish!

**Please answer the below questions in PARAGRAPH FORMAT. Make sure each sentence is supported by evidence in the above reading.**

1. Is the jellyfish a unicellular or multicellular organism?
2. What makes this jellyfish unlike other organisms?
3. How do you know this jellyfish is living? Using the characteristics of life, choose one characteristic and use your notes and the below rubric to guide your thinking.
4. Would you like to be immortal? Why/why not?

CCR. 2 and CCW.4

Criteria	0	D	C	B	A
<b>understands questions</b>	irrelevant response	some understanding of questions	basic understanding of questions	good understanding of questions	complete understanding of questions
<b>supporting details</b>	did not use supporting details	minimal use of supporting details	supporting details are adequate	supporting details are generally complete	pertinent and complete supporting details, demonstrates integration of ideas
<b>scientific language</b>	did not use scientific language	used scientific language with errors	minimal use of scientific language	use of accurate scientific language	accurate use of scientific language that enhances the response
<b>paragraph format, organization</b>	did not use paragraph format	missing elements of a paragraph	inconsistent use of paragraph	all elements of a paragraph present	all elements of a paragraph present with smooth transitions