

Name _____ Section _____ Date _____

LT: I can explain the increase in complexity in each of the six mini-thresholds of life.

Mini-Thresholds: The development of complex life on Earth

Part 1: Spontaneous Generation

Read the excerpts in the box below, then answer the three questions that follow.

Excerpt 1:

"If a soiled shirt is placed in the opening of a vessel containing grains of wheat, the reaction of the leaven in the shirt with fumes from the wheat will, after approximately 21 days, transform the wheat into mice."

--Louis Pasteur's description of an experiment of Jan Baptista van Helmont.

Excerpt 2:

"Pieces of cheese and bread wrapped in rags and left in a dark corner...produce mice... because after several weeks, there were mice in the rags."

Source: "Spontaneous Generation. Dictionary.com.

Excerpt 3:

"Mold seems to grow spontaneously on bread, maggots appear as if by magic in old meat, and every spring new plants sprout and grow...."

Source: Robert Hazen, Genesis

1. Why did the scientists who studied these cases think that life had "spontaneously" appeared?
2. What was wrong with the scientific methods they used?
3. What do they think the scientific explanation for the appearance of life in each of these cases was?
4. Choose one excerpt. What is your explanation for what happened? What do you know that they didn't?

Part 2: Mini-Thresholds for Life

The modern origin story we are studying in this course tells us that life doesn't just pop up out of nowhere. It develops over time. Using fossils, scientists have identified six "mini-thresholds" of how life developed over time and became more complex. Use the sheets to fill out the chart below.

Threshold	# Years Ago	Why is it more complex than the mini-threshold before it?	Either sketch a description or write another interesting fact.
Prokaryotes			

***Remember! "Complex" means "an object or system that is a collection of parts so that it can do something that a single part cannot do alone (Like how a car is more complex than an engine)**