Name_____ Section_____ Date_____

LT: I can define what it means to be alive.

Do Now*: In the Amazon rainforest, there was a toucan that loved to eat seeds from palm trees. It would bring the seeds back to its nest, dropping some of them along the way.*

The toucan went extinct. How would the tree evolve? How would other plants/animals evolve as a result?

Intro the Threshold 5: Life on Earth

Part 1: Review

Wow, we've traveled far in Big History! We started by looking at the beginning of the universe. For a long time, the universe was basically nothing but the simplest elements, _____ and _____. Eventually, these formed into dense clouds called _____. The_____ began to rise and pressure increased, causing the hydrogen atoms to smash together. This released photons, which are a form of _____. We call it a star.

When stars run out of hydrogen, _____ causes the star to collapse on itself, again increasing pressure and temperature until it begins to fuse a heavier element and burns photons again. Sometimes elements are so heavy that incredibly intense heat and temperatures are required. In this way, all the elements were created.

Around these stars were flat, cloudlike discs of dust and dirt. They spun around the stars, running into each other and fusing. As more particles ran into each other, the chunks got bigger, in a process known as _____ Dust became rock, then meteoroids, then asteroids, and eventually, this process formed all eight _____ in our solar system, including our Earth.

When Earth was very young, it was _____. Earth has changed a lot over time, but eventually, it acquired all the qualities necessary for Threshold 5, Life. Its _____ protects us from the sun's harmful radiation. Its _____ allows us to receive direct and indirect sunlight, giving us our seasons. _____ is basically our crust shifting and "surfing" over the hot liquid mantle, and causes complexity because _____.

Part 2: Video Clip (8 minutes)

1. How do most people believe life on Earth began?

2. What is the earliest form of life?

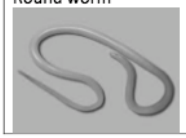
3. Why was the evolution of the egg so important?

4. How many times have mass extinctions occurred?

5. What did the extinction of the dinosaur clear the way for?

Part 3: How closely related are we?

Draw a line between the left and right column to match the following list of organisms with the percentage of DNA shared with humans. Then answer the questions on the right.

Fruit Fly 	15%
Chimpanzee 	21%
Zebrafish 	7%
Bacteria 	85%
Mustard grass 	36%
Round worm 	98%

1. Which organism did you think we were most related to? How did you come to that decision?

2. What do humans have in common with grass? Bacteria? Fruit flies? (choose 2)

Part 4: Notes– What does it mean to be alive?

Characteristics of all life	Definition	Example
1.		
2.		
3.		
4.		

Write a definition of what it means to be alive. (2-3 sentences)