

# How the Earth was Made Video Questionnaire

<https://www.youtube.com/watch?v=6sxLpLkHjO8>

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

Period: \_\_\_\_\_

## **Introduction (first 10 min of video)**

1.) **Kelvin** calculated the age that the earth would take to cool from the initial collision and accretion of earth to be 20 million years, what was the information that he was missing (why is the core still hot)?

2.) What is radiometric dating (as best as you can explain it)

3.) What does radioactive uranium decay into? \_\_\_\_\_

## **4.4 Billion yrs ago ( 13:00→17:30) (Precambrian Eon, Early Archean Era)**

4.) a.) At 4.4 billion years old, what was the surface of the earth composed of? \_\_\_\_\_

b.) was the crust solid or still liquid? \_\_\_\_\_

5.) Where do scientists now speculate the earth's water initially came from?

6.) Water vapor and \_\_\_\_\_ gas given off from the crust combined to make the first clouds 4 billion years ago?

7.) What % of the Earth was now covered by water due to the rain created from the formation of early clouds?

8.) What was the air temperature like during this time? \_\_\_\_\_ F

## **3.4 Billion-2.5 billion ( 17:45→21:00) (Precambrian Eon, Middle-Late Archean Era)**

9.) What color were the oceans at this time? \_\_\_\_\_ (why? B/c they were filled with Iron)

10.) Where are the oldest rocks in the world found and what kind are they?

11.) What major change on earth was happening from 3.4→2.5 billion years old?

## **2.5 billion→1.5 billion (21:00→25:20) (Precambrian Eon, Early Proterozoic Era)**

12.) The oldest (primeval) organism still living today, called the **Stramatolite**, was responsible for creating what life-giving gas in our atmosphere?

13.) What are stromatolites?

14.) What was responsible for turning the oceans green to blue? (hint: has to do with O<sub>2</sub>)

15.) When oxygen was emitted into the atmosphere, it diluted what thick gas? \_\_\_\_\_

1.5 billion → 1 billion ( 26:45-36:00) (SKIP!!! ON Continental DRIFT)

**1 billion → 550 million (36:20→40:50) (PreCambrian Eon, Late Proterozoic Era)**

16.) The first known super continent 1 billion years ago was called Rodinia, what was it like there?

17.) 700 million years ago, Rodinia blocked the warm currents from the equator towards the poles, what did this result in?

18.) What were the only life forms in earth left?

19.) Where were they found?

20.) How cold was it (temp)?

21.) What was responsible for both splitting up Rodinia and emitting CO<sub>2</sub> into the atmosphere that would eventually melt the ice (hint: caused a greenhouse effect)?

**Formation of the Rockies 550 million → 400 million (40:55 - 46:30) (Phanerozoic Eon, Cambrian Period)**

22.) The Canadian Rockies were formed during what time period? \_\_\_\_\_

23.) What famous rock group is useful for finding marine fossils here? \_\_\_\_\_

24.) Organisms during the **Cambrian Period** lived in the ocean or on land? \_\_\_\_\_

25.) What famous layer in the atmosphere now allowed organisms in the sea to evolve on land?

\_\_\_\_\_

**300 m.a.→ 250 million yrs ago (46:50→52:00) (Paleozoic Era, Permian Period)**

- 26.) During the next giant supercontinent, what was earth's climate/environment like?
- 27.) What material is evidence today for the existence of this type of environment? (we use it for energy)
- 28.) In which order did amphibians reptiles and insects evolve on land?
- \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_

**250 m.a.→240 m.a. (52:00-53:00) (End fo the Paleozoic Era/Permian Period)**

- 30.) The **biggest mass extinction** on earth was during this time period at the end of the **Paleozoic Era**. What caused it?
- 31.) How long did these eruptions last in present day Siberia? \_\_\_\_\_

**240 m.a. → 200 m.a. (During and end of Pangaea) (53:00-58:00) (Mesozoic Era, Triassic Period)**

- 32.) What famous reptile group evolved after this mass extinction? \_\_\_\_\_
- 33.) What was two advantages of dinosaurs vs. lizards that led them to evolve into larger reptiles?

**Continued rule of the Dinosaurs \*up through 65.5 m.a. (Triassic→Cretaceous Periods)(58:00-103:43)**

- 34.) CO<sub>2</sub> levels due to volcanic eruptions were how many times greater than they are today?
- 35.) What did this due to the existing vegetation?
- 36.) This period gave birth to diamonds that we mine today. Where are diamonds created?

**65 m.a → 50 m.a The next mass extinction (103:43-109:00)**

- 37.) What ages can dinosaur bones be found in the rock record? \_\_\_\_\_ → \_\_\_\_\_ m.a.
- 38.) What % of species became extinct during this mass extinction? \_\_\_\_\_%

39.) Dan Durda found dinosaur bones and clay containing large amounts the element Iridium which is found in space. This led to the belief that dinosaurs died from what?

40.) What age did the Iridium date to? \_\_\_\_\_ (same age that bones were dated back to)

41.) What natural catastrophe followed the meteor strike?

42.) We now know it was not the impact that killed the majority of the dinosaurs. What in the atmosphere caused this extinction?

**50 m.a.—2 m.a. The age of Mammals (109:00-1:17:30) (Cenozoic Era, Paleogene→Pliocene Epoch)**

43.) What famous mountain range that runs through Europe was created at this time? \_\_\_\_\_

44.) What two continents created this mountain range?

45.) What **process** is keeping the alps and other mountains from growing too high? \_\_\_\_\_

46.) Canyons and Peaks are older or younger than other landforms? \_\_\_\_\_

**2 m.a. The Ice Ages & Human Rise (1:17:30- End) (Cenozoic Era, Pleistocene Epoch)**

47.) What continent did humans first ancestors come from? \_\_\_\_\_

48.) The Laurentide Glacier that swept over NYC was how thick?

49.) What allowed human beings to evolve further?

50.) Are human beings currently in a period of climatic warmth, cooling or stability? \_\_\_\_\_

51.) When is the next ice age predicted to occur? \_\_\_\_\_

52.) The end of the earth as a living planet is predicted to be when? \_\_\_\_\_

53.) Why? What continues to provide us with continued life and ongoing evolution?