

Quiz Review: Formation of The Solar System

Part 1: Solar System Formation

1. Before the solar system took shape, it was called a nebula, and it contained *dust* and *ice*. Describe the nebula that gave rise to our solar system.
 - a. What materials made up the nebula's *dust*?
Rock and metal
 - b. What materials made up the nebula's *ice*?
Hydrogen and Helium
 - c. Describe the nebula's size, compared to today's solar system.
It was much larger
 - d. Describe the nebula's temperature.
Very cold
 - e. Describe its motion.
Slowly rotating
 - f. Describe its shape.
No shape (Blob?)
2. As time passed, the size of the nebula changed.
 - a. Describe the change in its size.
It shrank (got smaller)
 - b. Why did the nebula's size change in this way?
Gravity pulled it together
3. As the size of the nebula changed, its motion also changed. Describe the change in the nebula's motion.
It spun faster
4. What force caused the nebula's motion to change in this way?
Gravity pulled it together, causing it to speed up.
5. The change in the nebula's motion caused a change in its shape. What shape did it become?
Disk
6. The nebula changed in shape because part of it was pulled outward, away from its center. What pulled it outward?
Momentum pulled it outward.
7. Describe how the temperature of the nebula began to change. Did it heat up or cool down?
Heated up
8. Why did the temperature begin to change?
*The nebula was compressed.
Compression heats things up.*

9. Birth of The Sun:
- Our sun's energy comes from a process called Nuclear fusion
 - Our sun's main fuel is Hydrogen.
 - When this fuel is used up, it turns into Helium.
10. Why don't the inner planets have large gas layers, like the gas giants?
The sun melted, vaporized, and blew away nearby gases.
11. The planets are in stable orbits. They do not fly away from the sun, and they do not get pulled in to the sun.
- What prevents the planets from flying away from the sun? Gravity
 - What prevents the planets from being pulled in to the sun? Momentum

Part 2: The Young Earth

12. Scientists think that the early Earth was completely molten. One reason the Earth was hot was because its gravity compressed the Earth. According to the video you watched in class, what other source of heat caused the Earth to heat up to the point that it melted completely?
Radioactive Rocks
13. As soon as the Earth melted, layers began to form. Why did the Earth's materials separate into different layers?
Denser materials sank to the center.
14. After the Earth melted, what caused the outside of the Earth to form a solid crust?
It was cooled by outer space.
15. Scientists used rock samples to find the age of the earth. Where did they get those samples?
Meteorites
16. What is the approximate age of the Earth?
4.6 billion years
17. How do scientists think the moon was created?
The moon is made of debris from a collision between Earth and another planet.
18. According to the video you watched, where do scientists think much of the Earth's water came from?
Meteorites
19. Before about 3.5 billion years ago, there was no oxygen on the Earth. Scientists think the Earth's oxygen was first produced by blue-green algae
20. Where did all of our planet's coal, oil, and gas deposits (i.e. "fossil fuels") come from?
Decayed plants and animals