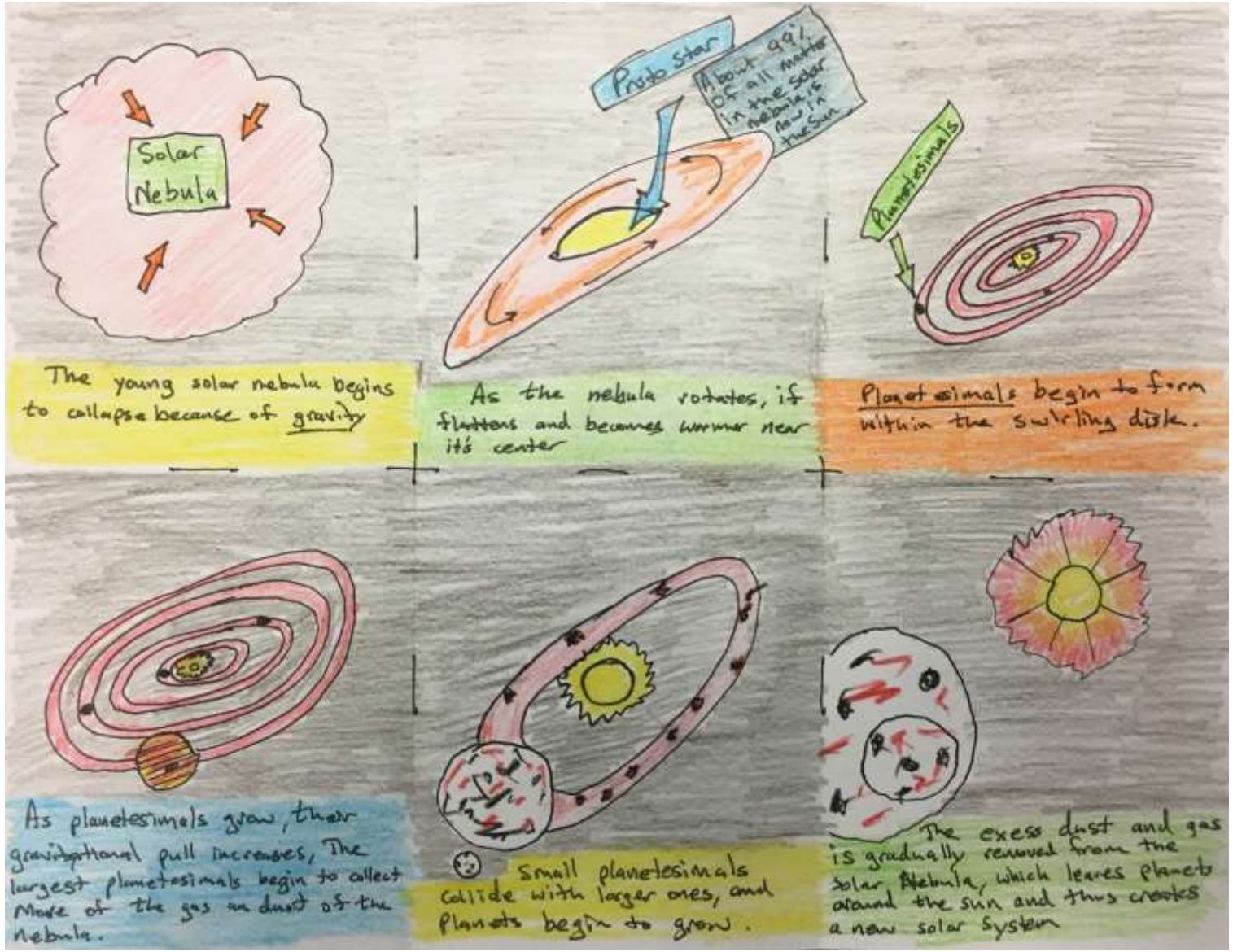
# 2.1 Earth’s Formation Test Review

# Earth’s Formation

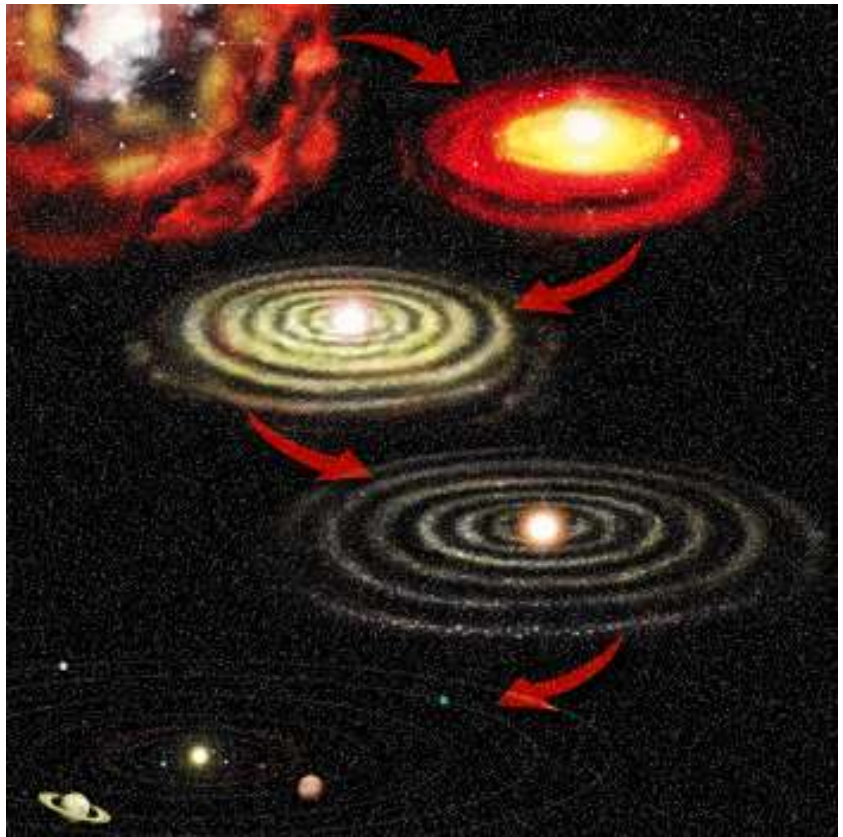
- Nebular Theory Diagram
- Handout 1 (purple) Earth’s Formation
  - #’s 5, 7, 8, 9, and 15

# Study your Nebular Theory Diagram



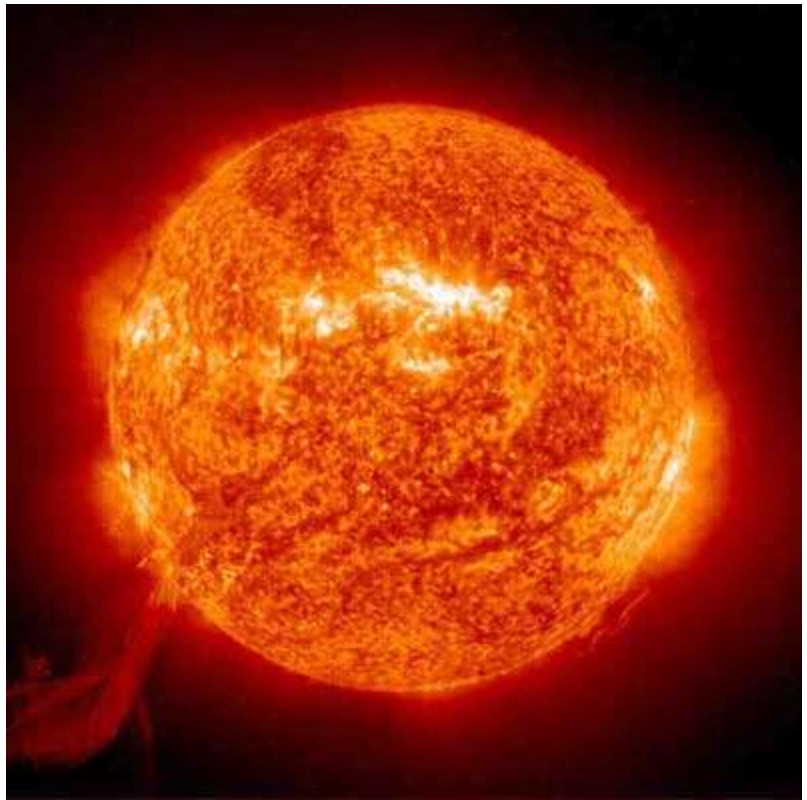
# 5

- The rotating cloud of dust and gas from which our solar system is thought to have formed is called the
  - A. solar nebula



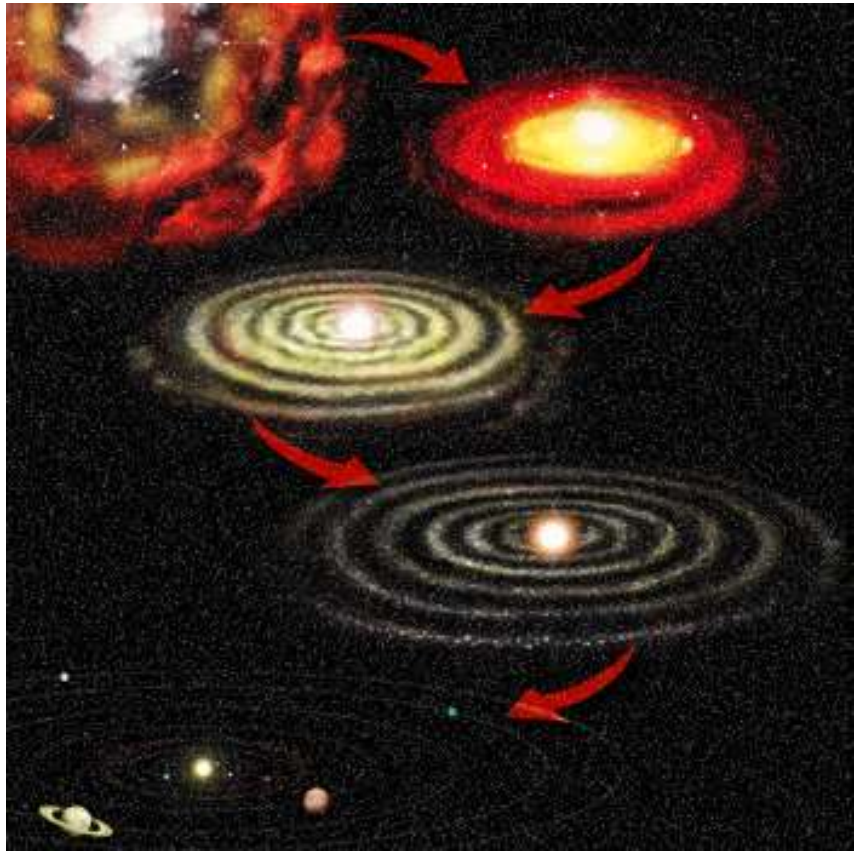
# 7

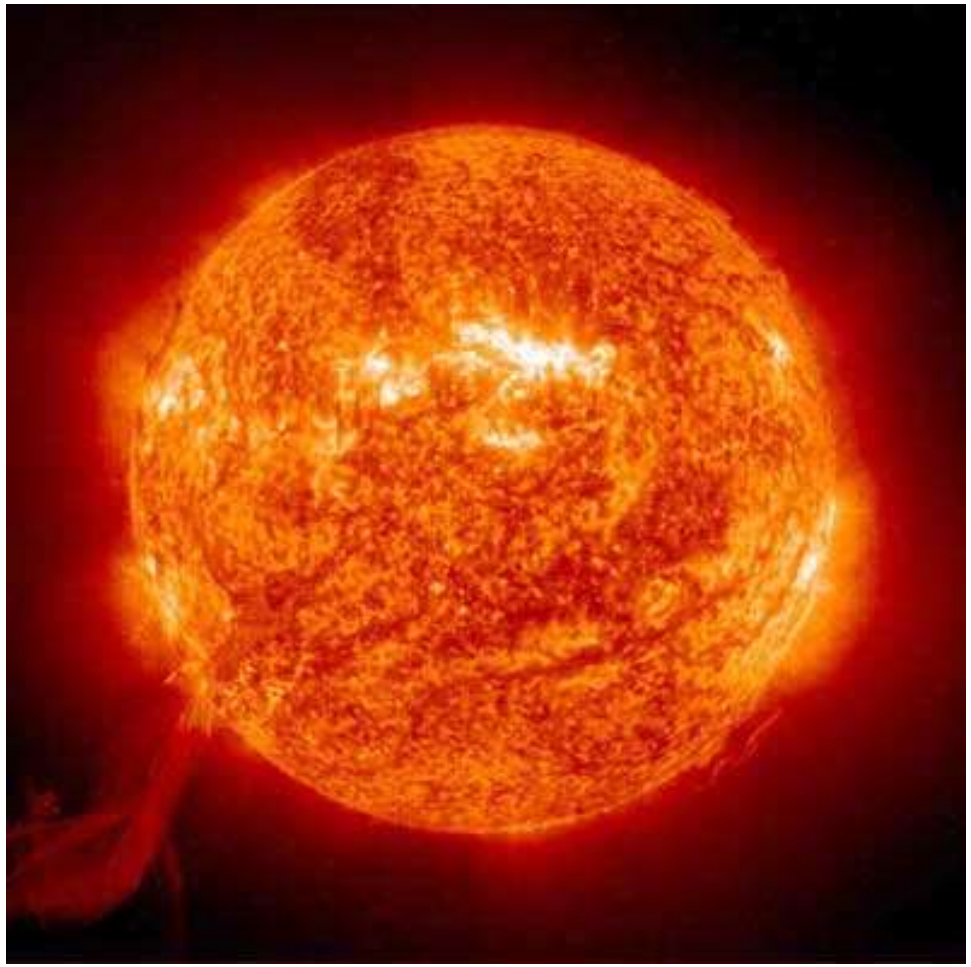
- Which of the following formed when the temperature at the center of the nebula reached about 10,000,000 $^{o}$C and hydrogen fusion began?
  - the sun



8

- How much of the matter that was contained in the solar nebula makes up the sun?
  - B. about 99%



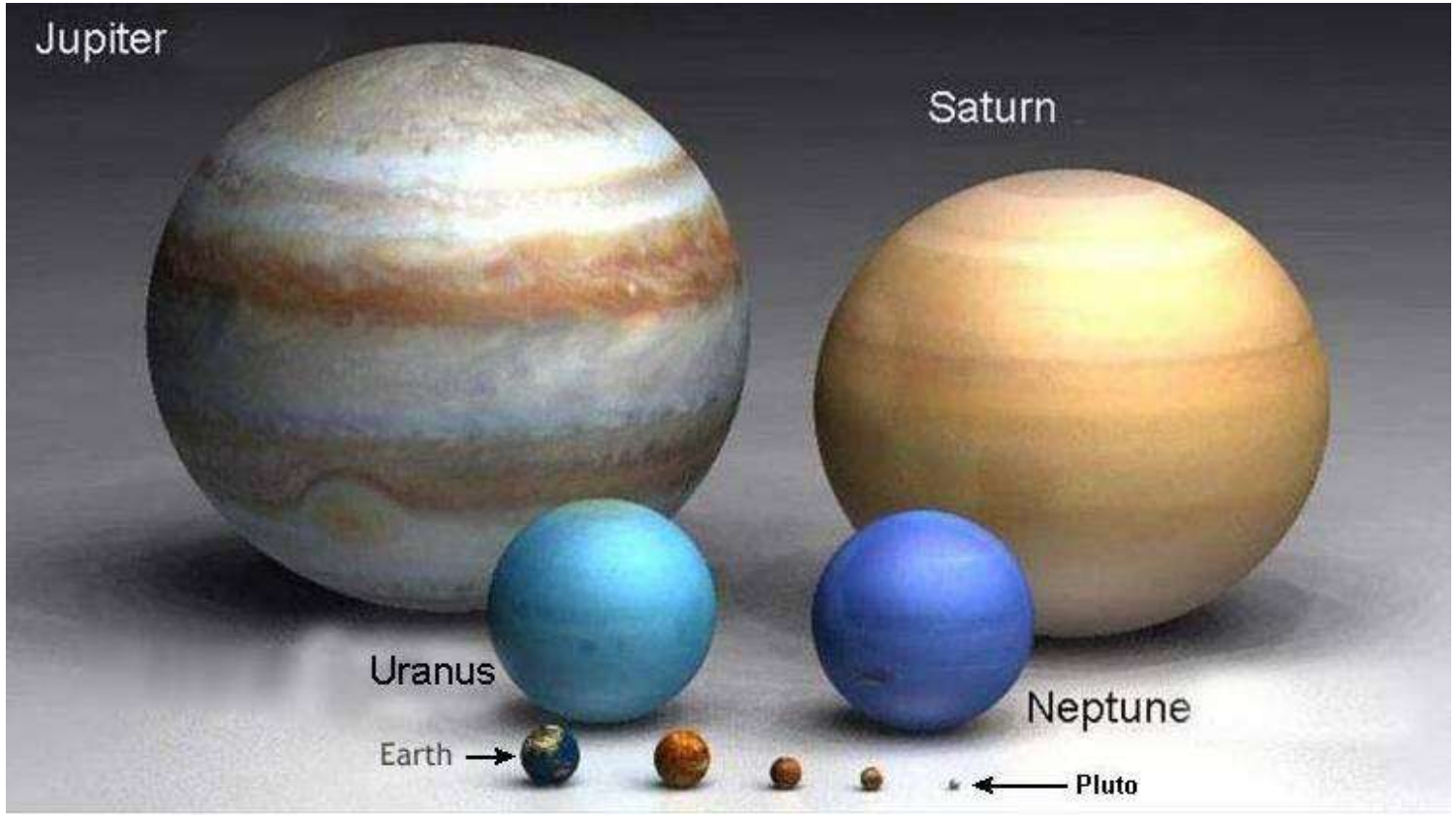


# 9

- Small bodies from which a planet originated in the early development of the solar system are called
  - B. planetesimals

# 15

- How do the inner planets differ from the outer planets?
  - The inner planets are smaller, rockier, and denser than the outer planets.

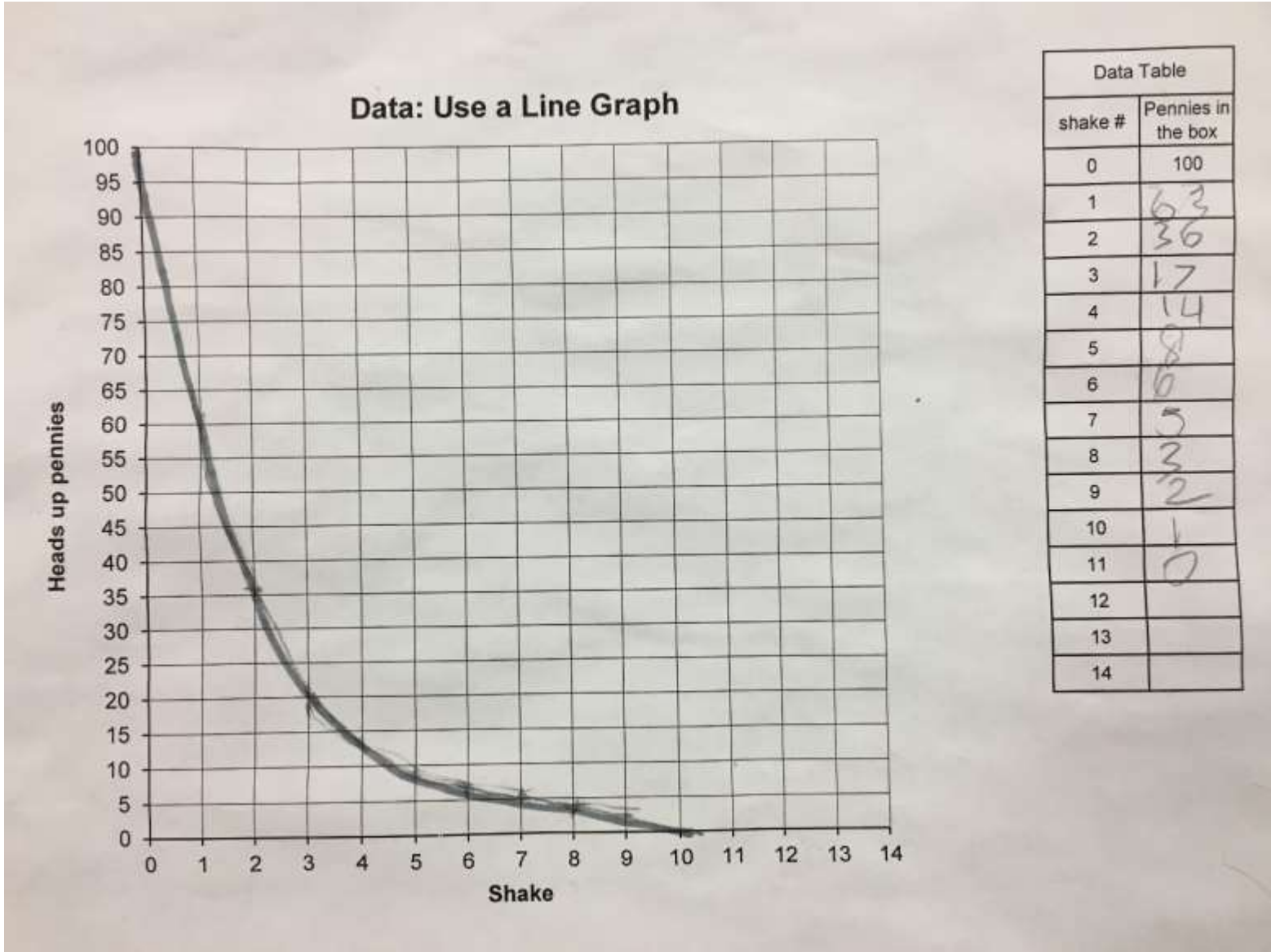


# Radiometric Dating of the Earth

- Penny Lab Graph
- Handout 2 (pink) Earth's Formation
  - #'s 9, 12, and 14

# Penny Lab Graph

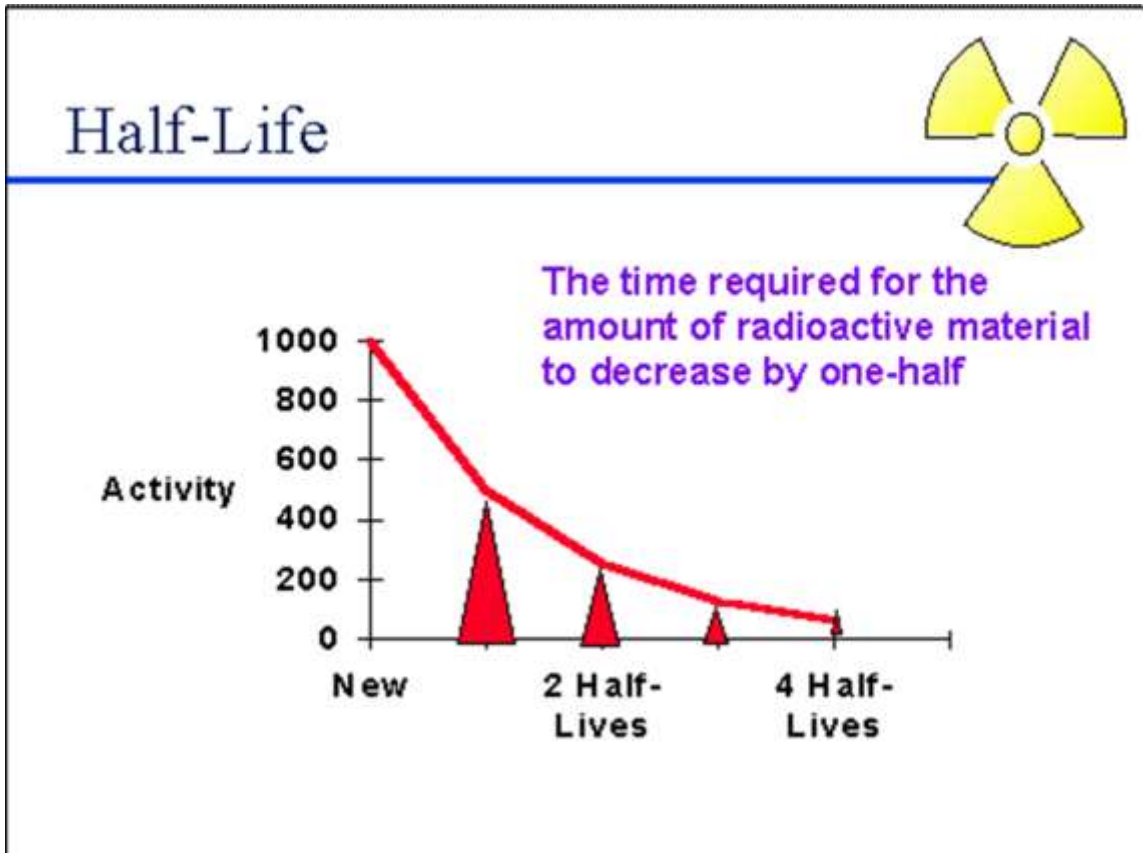
- Be able to explain what is happening to the number of heads up pennies (radioactive parent isotope) over time.




| Data Table | |
|---|---|
| shake # | Pennies in the box |
| 0 | 100 |
| 1 | 63 |
| 2 | 36 |
| 3 | 17 |
| 4 | 14 |
| 5 | 8 |
| 6 | 6 |
| 7 | 3 |
| 8 | 3 |
| 9 | 2 |
| 10 | 1 |
| 11 | 0 |
| 12 | |
| 13 | |
| 14 | |

# 9. What is a half-life?

- The amount of time it takes for half the mass of a given amount of a radioactive isotope to decay into its daughter isotope.



# 12. Explain how radiometric dating is used to estimate absolute age.

- ***By comparing the percentage of a radioactive (parent) isotope to a stable (daughter) isotope in a sample of rock, and based on the known rate of decay (half-life)of the parent, scientists can calculate the length of time since the rock formed.***

# 14. Why are the oldest meteorites important?

- Because they may be 100 million years older than Earth and its moon, and thus may provide information about how the early solar system formed.