Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_

**#\_\_\_\_**

**How Simple Ideas Lead to Scientific Discoveries**

1. What everyday observation prompted a young Richard Feynman to discuss inertia with his father?
2. His dad falling asleep during synagogue services
3. A ball rolling to the back of a wagon
4. The motion of his body while riding on a bus that was making a sharp turn
5. Getting knocked out by a baseball
6. What prompted Eratosthenes to contemplate the circumference of a spherical Earth in the 3rd century BC?
7. A letter he received from a resident of the city of Swenet
8. A dream his wife had
9. A lunar eclipse
10. His correspondence with Archimedes
11. What’s remarkable about Eratosthenes’s measurements of the Earth?
12. He had to invent a whole new unit of distance because the distance was so long
13. His calculations came within 1% of the actual diameter of the Earth
14. His work went unacknowledged during his own lifetime and was only rediscovered in the 1800s
15. Egypt’s leader, Ptolemy III, forced him to renounce his claim that the Earth wasn’t flat
16. Armand Fizeau improved upon Galileo’s
17. Telescope design
18. Argument for a sun-centered universe
19. Documentation of the moon’s craters
20. Calculation of the speed of light
21. Fizeau did this with simple equipment that included
22. Three convex lenses, a candle and a tub of water
23. A light source, a notched wheel and a mirror
24. A sundial, a string and a pocket watch
25. Duct tape, some rope and a crazy dream

Answer the following questions **completely** on the back of the paper**.** Completely means that you answer **ALL** parts of the questions and that you give details or examples for your answer.

1. Savage says, “We’re all bags of meat and water” and that “we all start with the same tools.” Scientists like Feynman, Eratosthenes and Fizeau, he argues just think a little harder about a question and are a little more curious. Do you agree with Savage that scientists are basically the same as anybody else? In your opinion, what other personality traits or habits of thinking would be helpful to a scientist?
2. Explain what you think Adam Savage means when he says that he hopes that people will think of science as an open field versus a black box?
3. What things connect the three stories that Savage shares?