

Video Worksheet

Cosmos S1E5 = Hiding in the Light

Name: _____

Period: _____ Date: _____

1. Who was the Chinese philosopher who created the first camera?
2. What is the name of the first camera called?
3. One of the only things remaining from this ancient Chinese philosopher is a 3-pronged test for every doctrine. What are they?
 - a.
 - b.
 - c.
4. What do we call what this approach has eventually evolved into today?
5. Emperor Chin unified china and created measures to unify everything within it. What are the four major things he unified?
6. Almost all scientific work before Emperor Chin was destroyed. Why?
7. How long after the book burning until the next advancement in understanding light?
8. Who is the Islamic philosopher that advanced our understanding of light?
9. What was the belief of how our eyes work up until this time?
10. Who invented the first telescope?
11. What year was the telescope invented?
12. What are the 4 major parts of the “finding the truth” method developed by this Al-Hazen?
 - a.
 - b.
 - c.
 - d.
13. What do we call what this approach has eventually evolved into today?
14. What is special about the speed of light?
15. Who was the first person to decipher the mystery of the rainbow?
16. What does the word “spectrum” mean?
17. How long after Newton “missed” on a critical piece of evidence about light?
18. Who was the scientist who finally figured out this critical piece of evidence?
19. In a scientific experiment, you always have to use a control to make sure your results are caused by your variable. What did the scientist discover when looking at his control?

20. Which orphan boy was able to become educated after an incident of his boss' house collapsing while he was working there?
21. When the narrator talks about "short" waves and "long" waves, what is he referring to?
22. What is the distance between waves called?
23. When passing thru a prism, which color of light slows down the most?
24. When passing thru a prism, which color of light slows down the least?
25. Which color has the most energy?
26. Which color has the least energy?
27. Which atom is the simplest as well as the one that there is the most of in the universe?
28. How many protons does this atom have?
29. How many electrons does this atom have?
30. What dictates the chemistry of any atom?
31. To get to a larger orbit, what must an electron do?
32. To get to a smaller orbit, what must an electron do?
33. Other than just what things are made of, what else do spectral lines allow us to determine about distant galaxies?
34. What are the major types of light in the electromagnetic spectrum
 - a.
 - b.
 - c.
 - d.
 - e.
35. In the space below, write a paragraph about how the ability of scientists to use the scientific method and the knowledge of chemistry to help us learn about things that we never would have imagined up until about 100 years ago. Be sure to talk specifically about spectra, atoms, and the chemistry/nuclear physics we have learned in the book.