

# EDPuzzle: Microscope: The Tube That Changed the World

1. Who is credited with the invention of the microscope? **JANSSEN**

2. Who coined the term "cells" after he observed cork under a microscope? **HOOKE**

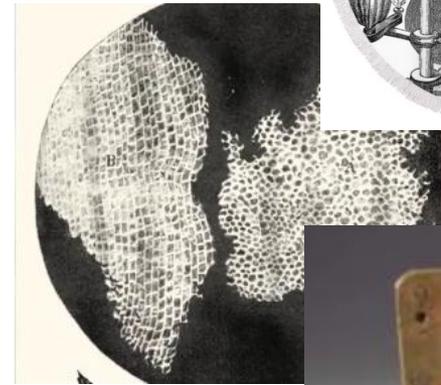
3. What was used as his lens?

**WATER DROP**

4. Who first observed "animalcules" and human cells under a microscope?

**LEEUVENHOEK**

5. How many times can an electron microscope magnify objects? **10 million**



# Powers of Ten

1. What is the first thing you see?  
How far away is it

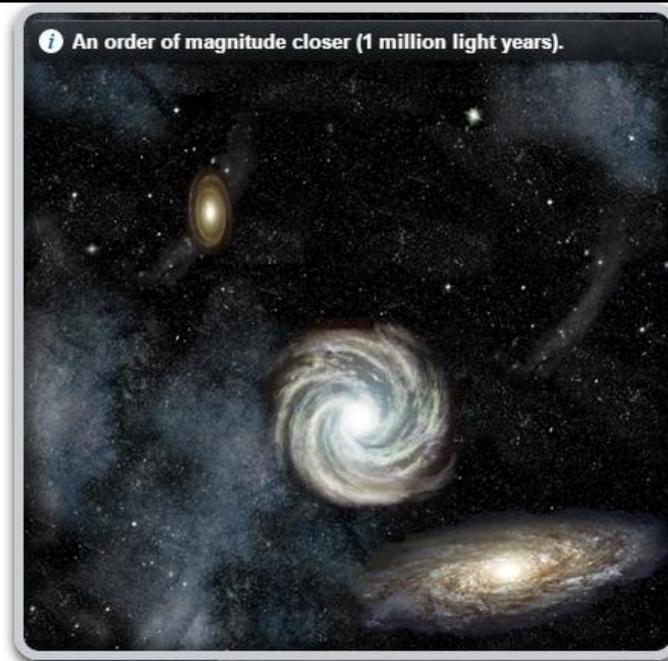
*Milky Way galaxy*

*100000000000000000000000 m*  
*1 hundred quintillion*

2. What is the last thing you see?  
How much is it magnified?

*Quarks*

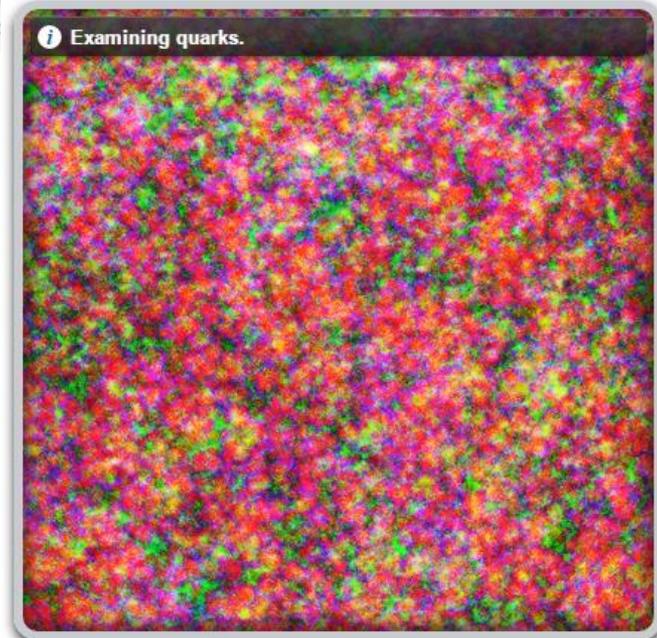
*Make up protons & neutrons inside an atom*  
*.000000000000000001 m*



**i** An order of magnitude closer (1 million light years).

$10^{+22}$  meters

Distance:



**i** Examining quarks.

$10^{-16}$  meters

Distance:

100 attometers

## Magnification Module -

1. View the rock at each of the different magnifications.

**X25**



**X1000**

2. Answer these questions based on what you observed?

(a) At which power do you see the greatest detail? **X1000**

(b) At which power do you see the largest amount of the sample? **X25**

(c) At which power do you see the smallest amount of the sample? **X1000**

3. Complete this statement based on your observations: You can see more of the sample at **LOW** power, but you can see more details at **HIGH** powers.

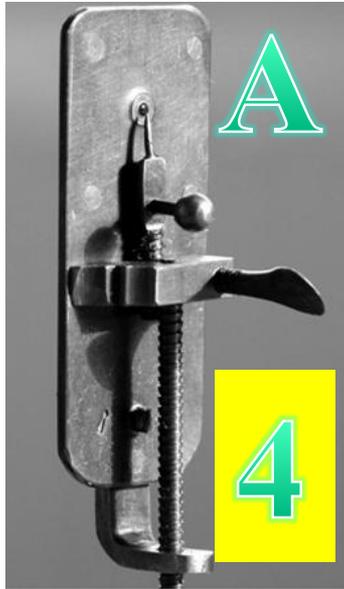
**(or lower)**

**(or higher)**

**Challenge: Put the microscopes in order from 1 for the oldest to 6 for the most recent.**



*Van Leeuwenhoek*



*Galileo*

*Optical Microscope*



*Janssen*



*Hooke*

## Review Time

- Glue the review worksheet on page 21 (FAF BOTTOM).
- Complete the review worksheet BEFORE class tomorrow.
  - See how much you can do without your notes.
  - Use your notes to check your answers and complete any you did not know.

*After you are done,*

- *Use the links on SS Kid Zone → Microscopes to study for the quiz.*
- *Work on Legends of Learning lessons*
- *Work on homework or interventions from another class.*

**Quiz FRIDAY – NO NOTES!**