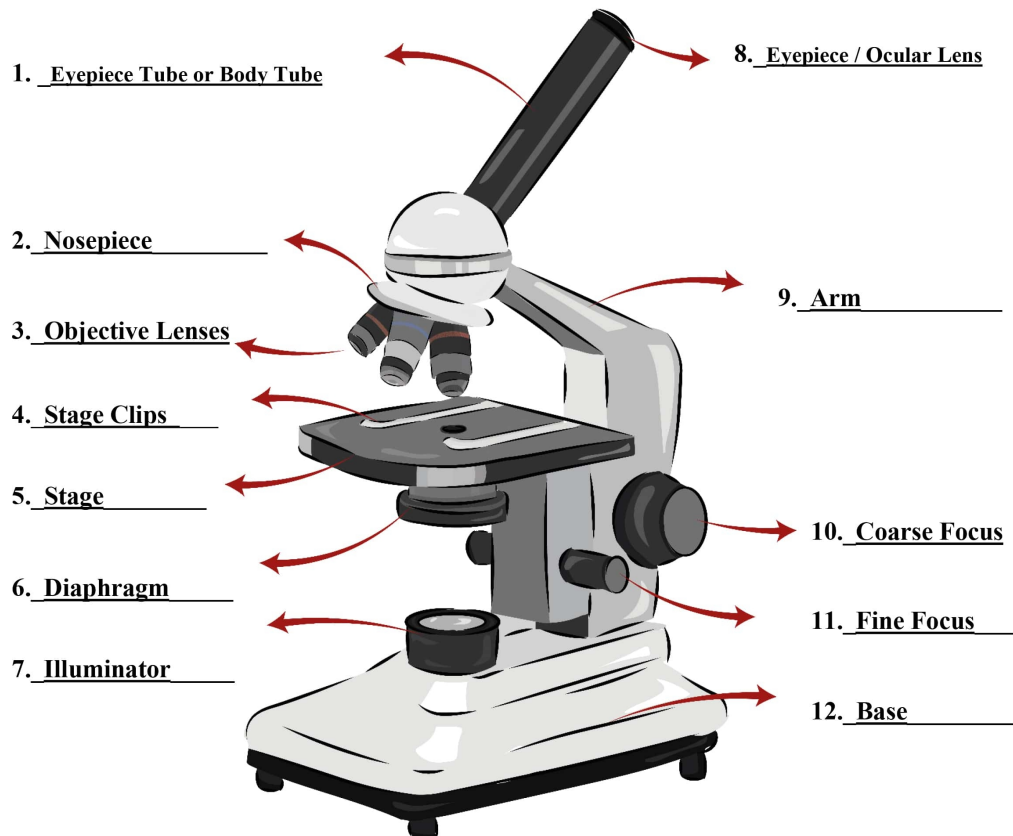


BIO QUIZ - QUESTIONS & ANSWERS - Scientific Method - (3 pages)

What are the **(8) characteristics of living organisms?**

- 1) **Cellular organization:** All living organisms are made up of one or more cells.
- 2) **Metabolism:** They carry out chemical reactions to transform energy and materials, like digestion and respiration.
- 3) **Growth & Development:** They grow by increasing in size, mass, and develop by undergoing changes.
- 4) **Reproduction:** They reproduce sexually or asexually to produce new organisms.
- 5) **Response to stimuli:** All organisms respond to stimuli (light, touch, sound, movement, smell)
- 6) **Homeostasis:** All have a stable internal environment: Temperature, pH, water, etc.
- 7) **Heredity:** Genetic information is passed from one generation to the next using DNA, genes, & chromosomes.
- 8) **Adaptation and evolution:** Over time, species evolve and adapt to their environment.

2) What are the **(12) parts of the microscope?** Sketch and label.



3) What are the **(9) steps of the Scientific Method** that WE identified in class?

- 1) observe
- 2) question
- 3) hypothesis
- 4) design & carry out experiment
- 5) data
- 6) analysis
- 7) conclusion
- 8) publish
- 9) retest (replicate)

4) What are the **(3) types of variables** that most experiment use?

Explain the meaning of each by describing how type of music played affects plant growth.

1) **independent variable**: the variable that “I change.” In the experiment we discussed , you observe how the change in the independent variable (type of music) affects the dependent variable (plant growth).

2) **dependent variable**: the variable that you measure in an experiment. It depends on or responds to the change in the independent variable. In our experiment, it would be the amount of plant growth.

3) **control variable**: the variable that you keep constant, so you can determine the precise effect that the independent variable has on the dependent variable. In our plant experiment, this would be plant species, water, sunlight, type of soil, etc.