

Review Unit 1

Scientific Method, The Cell, The Microscope

1.



Homer suddenly notices that the walls of his shower are covered in a strange green slime. His friend Barney tells him that coconut juice will get rid of the green slime. Homer

decides to test this out by spraying half of the shower with coconut juice every day. He sprays the other half of the shower with water. After 3 days of "treatment" there is no change in the amount of green slime on either side of the shower.

7. What was Homer's initial observation?

Walls of shower covered in strange slime

Identify the:

8. Hypothesis

If I spray the walls w/coconut juice, then the slime will disappear.

9. Control Group

Water group

10. Independent Variable

Coconut juice

11. Dependent Variable

slime

12. What should Homer's conclusion be?

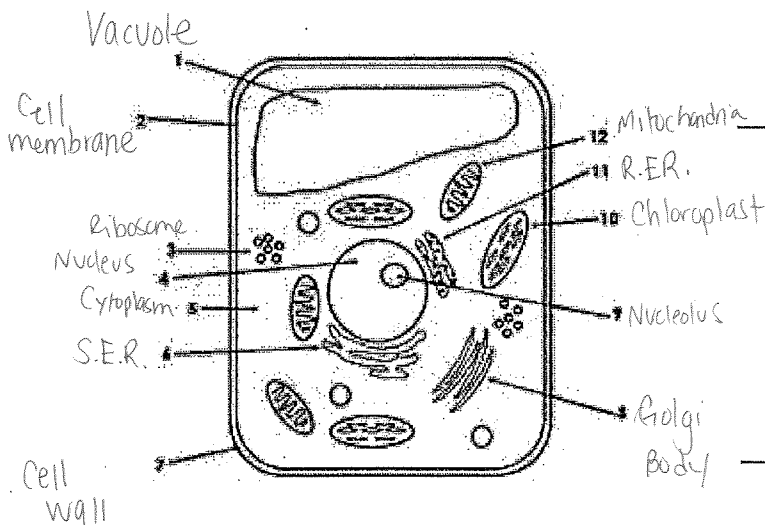
The coconut juice had no effect on amount of slime.

2. Complete more examples of Scientific Method from the Booklet given out at the beginning of the course to ensure you are able to correctly identify all steps to the scientific method.

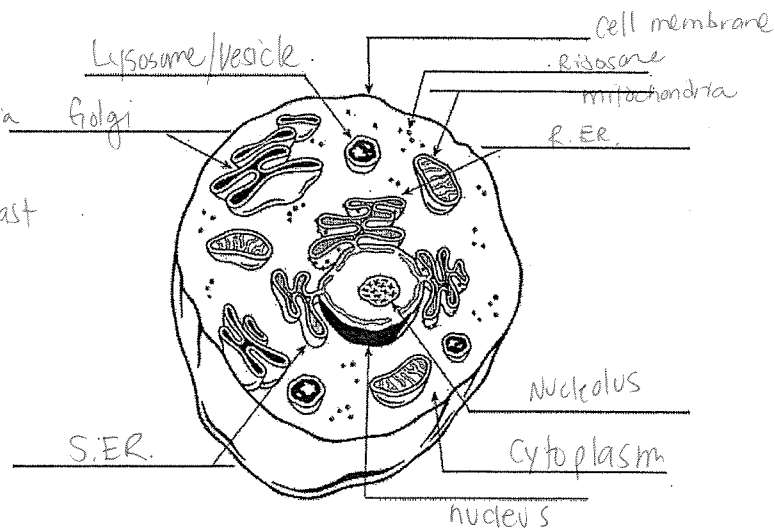
* Refer to booklet

3. Ensure you go through the unit overview for both Scientific method and "the cell".

4. Label and Identify Structure and Function of Plant and Animal cell organelles. Ensure you know how to determine what kind of cell you are looking at.

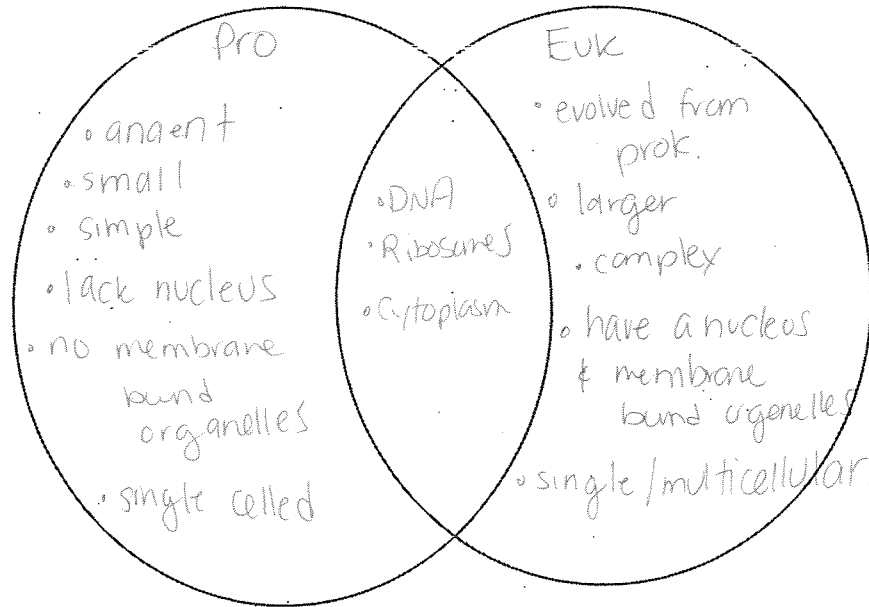


Plant



Animal

5. Complete a Venn Diagram comparing Eukaryotes and Prokaryotes. Give an example of each.

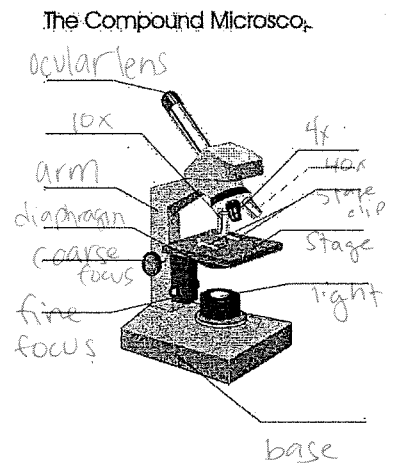


$$D.M = \frac{\text{Drawing Size}}{\text{actual Size}}$$

$$A.S = \frac{FOV}{\# \text{ times}}$$

$$FOV\#2 = \frac{FOV\#1 \times \text{mag}\#1}{\text{mag}\#2}$$

6. Identify all of the parts of the microscope and their function
7. Ensure that you are familiar with how to calculate actual size, Field of view and Drawing magnification.
8. Be able to explain the organization of cells (tissue, organs etc)
9. 5 functions of a cell
 - a. Obtaining Energy
 - i. Know the processes of Photosynthesis/Cellular Respiration
 1. Equations, locations, what they do
 - b. How organisms grow
 - i. Can an organism continue to grow indefinitely?
 - ii. Cell cycle
 1. Be able to identify the different stages
 2. What you start and finish with
 - c. How organisms reproduce
 - i. Types
 1. Asexual vs Sexual
 - ii. How we maintain chromosome #
 1. Meiosis
 - a. What do you start and finish with
 - b. Haploid vs diploid



8. cell \rightarrow tissue \rightarrow organ \rightarrow organ system - organism

\uparrow
Basic unit
of
life

9. Photo: $6\text{CO}_2 + 6\text{H}_2\text{O} + \text{sunlight} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

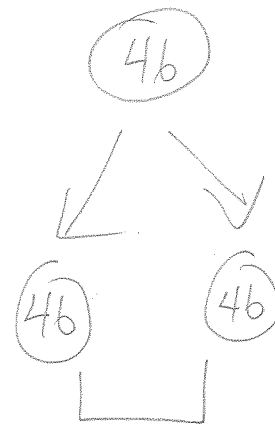
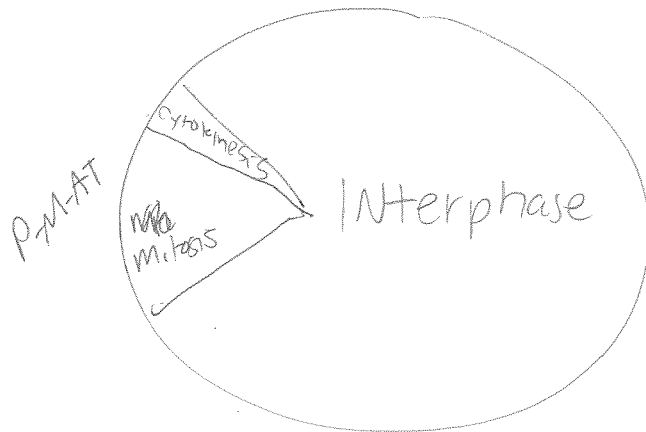
location:
 \downarrow chloroplast

(A) Cell R. $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{ATP}$

\uparrow location:
mitochondria

(B) it NO

ii Cell cycle



Genetically identical.

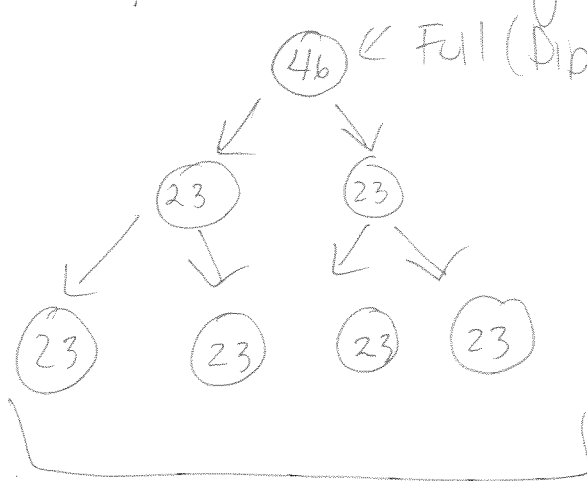
c) Asexual (vs Sexual

- fast
- lots of offspring
- minimal energy
- produce genetically identical offspring

- slow
- produce few offspring
- lots of energy req'd
- Diverse offspring.

Meiosis

→ production of gametes. (sex cells)



*leads to
genetic
diversity

Half (Haploid) of original cell.

Each genetically different