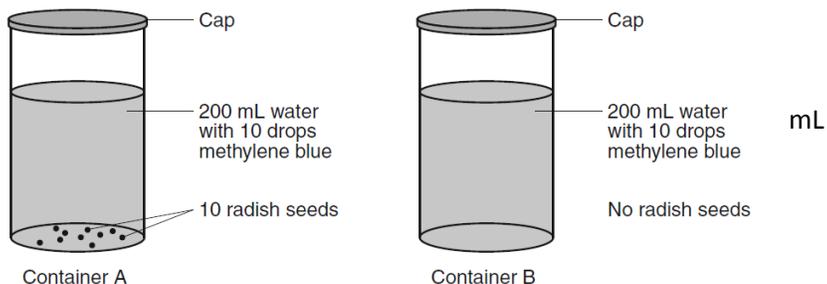




Summer Assignment for 9th Grade Living Environment: Complete all questions on a separate sheet of paper and attach to this document. Graphs and tables should be completed on this document. You will be graded on these questions and you will be tested on this material the first week of school.

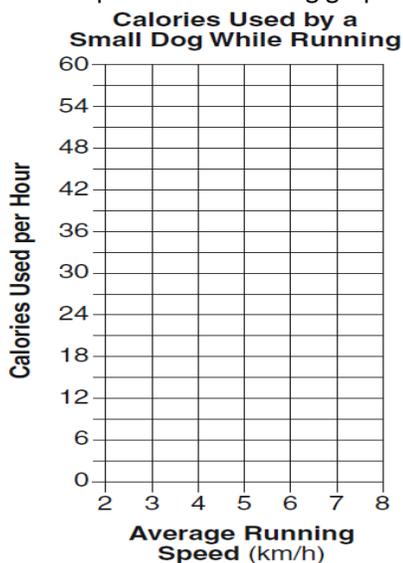
1. A student set up the experiment shown below to determine if radish seeds take in oxygen as they germinate.

Methylene blue is a chemical that is blue when oxygen is present, but is colorless when oxygen is not present. Containers A and B each contained 200 of water and 10 drops of methylene blue. Ten radish seeds were added to container A. Container B had no radish seeds.



- a. Describe the purpose of container B.
- b. Identify the independent variable and dependent variable.
- c. State how this experiment can be changed to make the results more valid.
- d. State a hypothesis for this experiment.

2. Complete the following graph using the data from the table below. Complete all questions based on the graph.



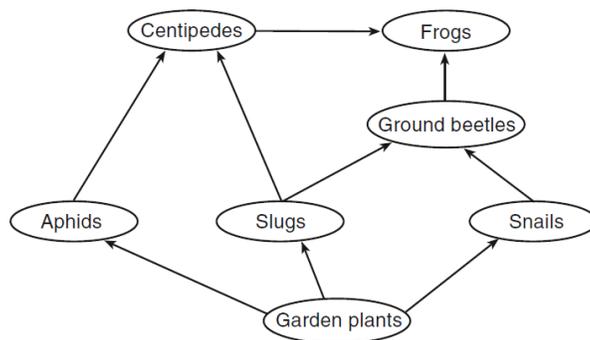
Average Running Speed (km/h)	Calories Used per Hour
2	18
4	27
6	36
8	45

a. Predict the number of calories if the trend in the data continues if a dog were running at 10 km/h.

b. Describe the relationship between the dogs average running speed and the the calories used per hour.

3. Answer the questions based on the following diagram:

- a. Which organism labeled in this food web provides energy, either directly or indirectly, to all of the other organisms?
- b. Explain why the amount of food available to the slug population might increase if the aphid population *decreased*.



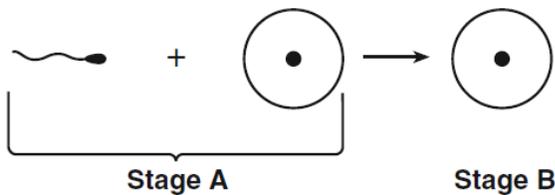
4. The chart below shows the major function of three different human organ systems. For *each* major function listed, identify the human organ system that performs the function.

Major Function	Human Organ System
moves substances to and from all cells of the body	_____ system
creates sex cells and offspring	_____ system
breaks down food	_____ system

5. Producers, consumers, and decomposers are three types of organisms that obtain nutrients in different ways. In the chart below, identify *each* organism as a producer, consumer, or decomposer based on its source of nutrients.

Organism	Source of Nutrients	Type of Organism
mushroom	breaks down dead tree roots	
algae	makes its own food	
cow	eats plants	

6. Answer questions relating to the diagram below:

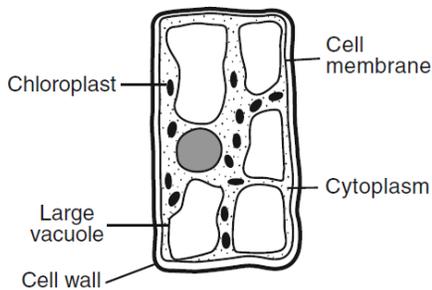


a. Identify the two cells at stage A.

b. Compare and contrast sexual and asexual reproduction.

(Not drawn to scale)

7. The diagram below represents a plant cell. Answer the questions related to this plant cell.



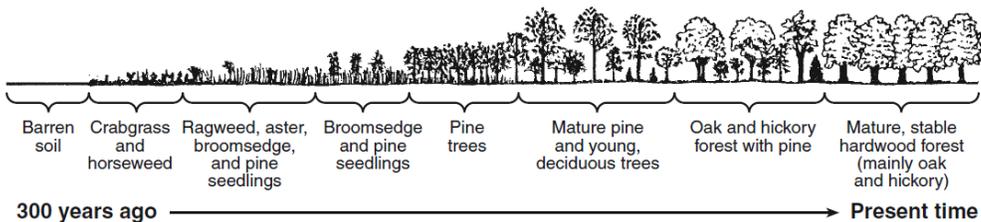
a. Identify two structures that would identify this cell as a plant cell.

b. Identify one other structure that is not labeled on this diagram.

8. In living things, traits are passed on from one generation to the next by the transfer of (1) blood (2) Calories (3) minerals (4) DNA

9. Which statement is an inference?
 (1) A thermometer shows that the air temperature is 56°F. (2) A mineral sample of galena produced a gray-black streak when tested. (3) Based on previous data, ten hurricanes may occur in the year 2013. (4) A weather vane indicates the wind is coming from the west.
10. Which process involves choosing certain organisms to reproduce with one another in order to pass on specific, desirable traits to their offspring?
 (1) selective breeding (2) asexual reproduction (3) resource acquisition (4) natural selection
11. During which process do cells use oxygen to release stored energy?
 (1) photosynthesis (2) circulation (3) respiration (4) digestion
12. Which health condition is an infectious disease? (1) pneumonia caused by microorganisms (2) heart problem caused by a high-fat diet (3) lung cancer caused by smoking (4) eye damage caused by ultraviolet light
13. The basic life functions of an organism are carried on by (1) cells (2) atoms (3) nutrients (4) hormones
14. The sum of all chemical reactions that take place within an organism is known as (1) evolution (2) circulation (3) metabolism (4) reproduction
15. Which factor would most likely limit the number of mice living in an area?
 (1) plentiful resources (3) more predators
 (2) stable climate (4) less competition
16. A structure that carries a single unit of hereditary information is a
 (1) gene (3) sex cell
 (2) tissue (4) pedigree chart
17. Which pair of terms describes the usual location for fertilization and the first stages of development in human reproduction? (1) external fertilization and external development (2) external fertilization and internal development (3) internal fertilization and external development (4) internal fertilization and internal development
18. Abnormal cell division in humans may result in (1) cancer (2) fertilization (3) asexual reproduction (4) dynamic equilibrium

19. The diagram below shows how a plant community changed over 300 years.



Which process caused the gradual changes shown in this plant community?

- (1) urban growth
 (2) environmental pollution
 (3) global warming
 (4) ecological succession

20. The flowchart below represents the process of photosynthesis. One step in the process is labeled X.

Which activity occurs at X?

- (1) Plants are eaten by animals for food.
 (2) Carbon dioxide and water are used to make sugar.
 (3) Plants release water into the soil.
 (4) Animals breathe out carbon dioxide.

