

# *Biology 212*



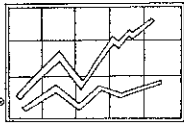
## **Summer Assignment**

Dear Biology 212 Student,

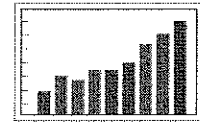
My name is Mr. Olsen and I look forward to meeting you in the fall. I hope you are prepared for a challenging year. In order to make the most of our class time, it is necessary that you complete some foundational assignments before our course begins. This packet will serve as the groundwork for many of our biological investigations.

Please complete this packet over the summer. I will be collecting the packet on the second day of school and it will count as your first assignment.

Sincerely,  
Mr. Olsen



## GRAPHING

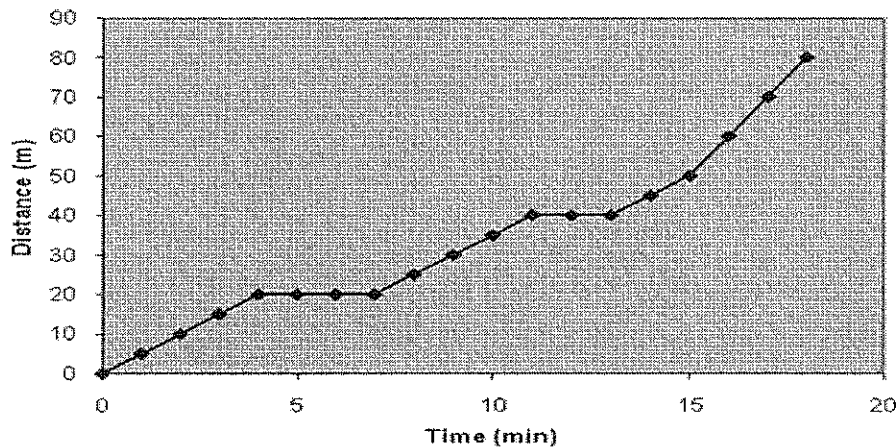


### DIRECTIONS

Answer the following questions in the space provided.

*Use the graph below to answer questions 1-4.*

**John's Nature Walk – Time vs. Distance**



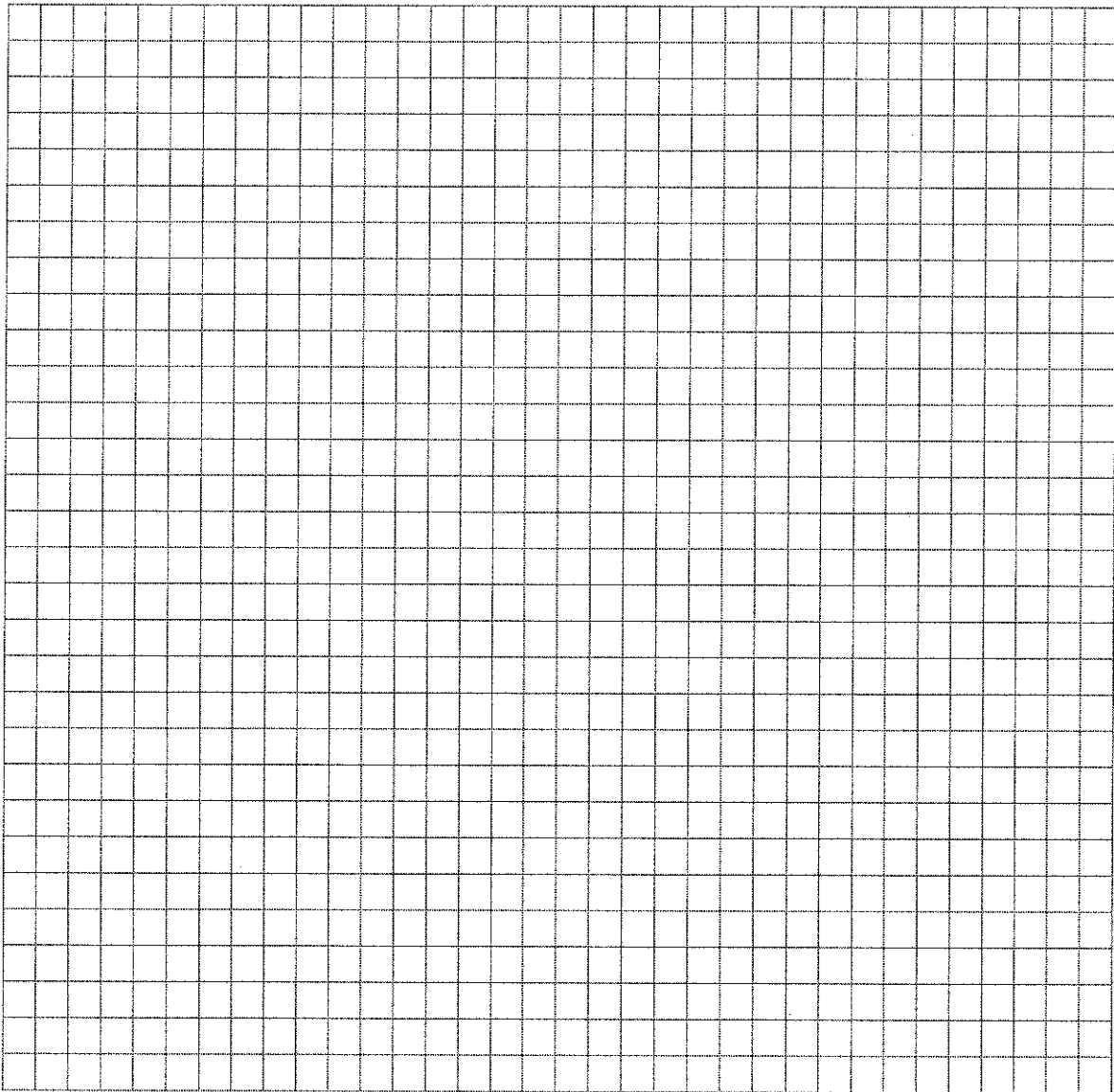
1. What type of graph is shown?
2. How far had John gone after five minutes? How long did it take John to go 40 meters?
3. What do you think happened from 4 to 7 minutes and from 11 to 13 minutes?
4. During which time interval was John walking the fastest?

5. Use the following data from Katherine and Alberto's experiment and make a graph below. Be sure to include a title and labels.

Katherine and Alberto placed a thermometer in a sunny place and recorded the temperature every two hours from 8 a.m. to 6 p.m.

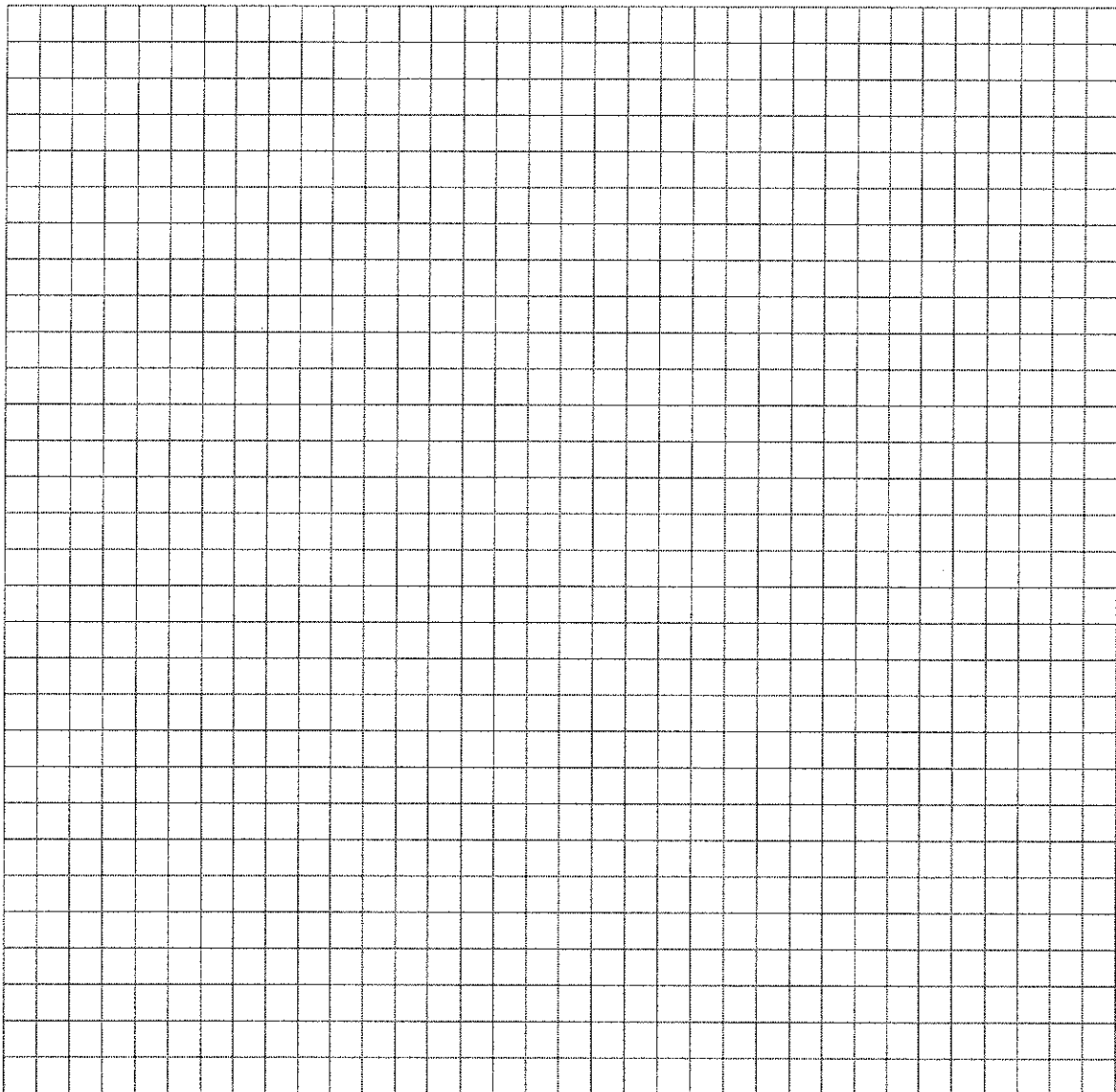
**Data**

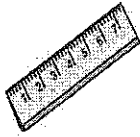
8 am = 12 degrees Celsius  
10 am = 18 degrees Celsius  
12 pm = 20 degrees Celsius  
2 pm = 27 degrees Celsius  
4 pm = 21 degrees Celsius  
6 pm = 19 degrees Celsius



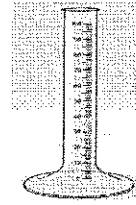
6. Use the following data table showing the diameter of different planets to make a graph below (be sure to include a title and labels).

PLANET	DIAMETER (Earth units)
Mercury	0.4
Venus	0.95
Earth	1.0
Mars	0.5
Jupiter	11.2
Saturn	9.5
Uranus	4.0
Neptune	3.9





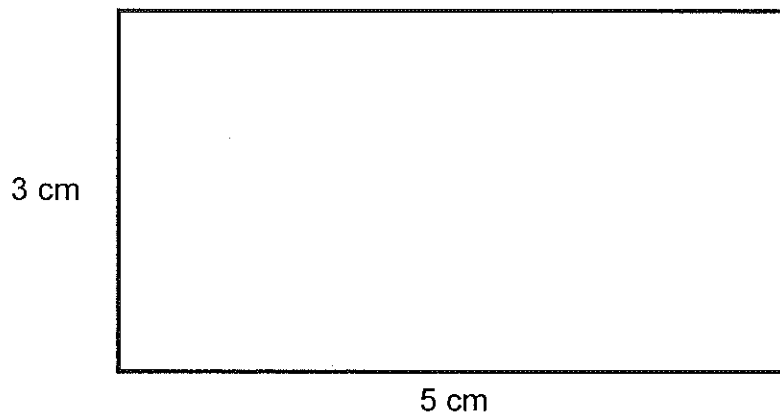
# METRICS and MEASURING



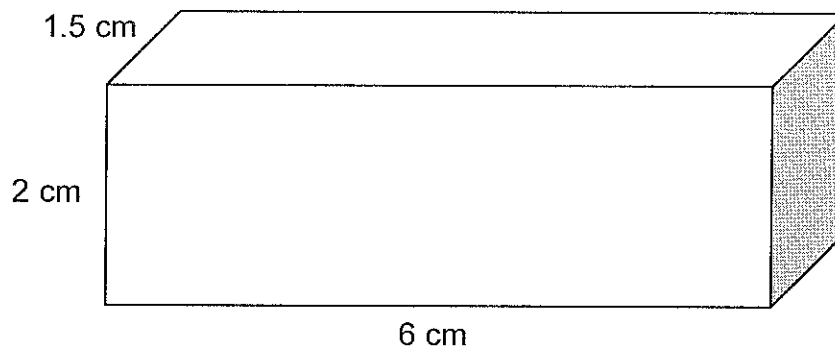
## DIRECTIONS

Answer the following questions in the space provided.

7. The basic unit of length is \_\_\_\_\_.  
a. Gram  
b. Meter  
c. Liter  
d. Celsius
8. The basic unit of mass is \_\_\_\_\_.  
a. Gram  
b. Meter  
c. Liter  
d. Celsius
9. The basic unit of volume is \_\_\_\_\_.  
a. Gram  
b. Meter  
c. Liter  
d. Celsius
10. How many centimeters are in one meter?
11. Make the following metric conversions...
- ⇒ 234.6 m = \_\_\_\_\_ km
- ⇒ 78 g = \_\_\_\_\_ mg
- ⇒ 0.45 mL = \_\_\_\_\_ L
12. If a stick is 25 mm long, what is the length of the stick in centimeters?
13. What is the area of the rectangle below?



14. What is the volume of the block below?



15. A rock has a volume of  $15 \text{ cm}^3$  and a mass of 45 g? What is the density of the rock?

16. Determine the density of a rectangular piece of concrete that measures 3.7 cm by 2.1 cm by 5.8 cm. The mass of the concrete is 43.8 grams.

17. Find the following measurements in centimeters...

⇒ Length of a hair on your head \_\_\_\_\_

⇒ Perimeter of your room \_\_\_\_\_

18. Find the following measurements in meters...

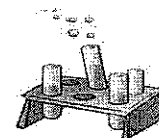
⇒ Distance from your front door to the road \_\_\_\_\_

⇒ Your height \_\_\_\_\_

19. What is the distance from your house to the main entrance of Enfield High School in kilometers?



# EXPERIMENTAL DESIGN



## DIRECTIONS

For each research question below, write down a hypothesis (remember to use an "if...then..." statement), the independent variable, and the dependent variable.

Next, write down a brief overview of how you would test the hypothesis (make sure you control all variables except the independent variable). Lastly, show how you would set up the graph once the data was collected.

20. How does the amount of aspirin given to a plant affect the height of the plant?

## HYPOTHESIS

## INDEPENDENT / DEPENDENT VARIABLE

## OVERVIEW OF PROCEDURE

## GRAPH

21. How does temperature affect seed germination?

HYPOTHESIS

INDEPENDENT / DEPENDENT VARIABLE

OVERVIEW OF PROCEDURE

GRAPH