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DepED
DEPARTMENT OF EDUCATION

Learning Activity Sheet for Science

Quarter 3

Lesson

6

Worksheet for Science Grade 7
Quarter 3: Lesson 6
SY 2024-2025

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LEARNING ACTIVITY SHEET

Learning Area:	Science 7	**Quarter:**	3th Quarter
Lesson No.:	6	**Date:**	
Lesson Title/ Topic:	**Motion: Displacement and Velocity (Distance-Time Graph)**		
Name:		**Grade & Section:**	

I. Activity No. 6.1 WORD SEARCH

II. Objective(s): At the end of the activity, you should be able to identify and explain terms connected to Motion especially displacement and velocity

III. Materials Needed:

Paper and Pencil

IV. Instructions:

Search for words that can be formed by the scrambled letters inside the box below. There are a total of 6 words that you must find in the box. Clue: All of the words can be related to motion. Once you identify the words, write anything you know about it.

Identified Words and what are they?

Q	N	U	C	C	P	I	Q	J	O	E	F	L	J	Z	H	K	E
I	N	M	E	T	E	R	P	E	R	S	E	C	O	N	D	X	B
O	S	L	O	P	E	B	B	N	O	D	E	G	R	E	C	B	P
U	I	I	C	C	L	H	J	O	Y	M	S	P	E	E	D	F	U
W	S	R	O	N	B	I	W	L	I	N	E	G	R	A	P	H	K
A	H	R	B	R	O	D	Q	Q	L	D	Z	N	F	M	U	N	A
Z	A	K	O	Z	S	R	C	S	H	D	T	F	P	L	C	U	B
T	E	F	C	S	Q	K	Y	R	N	G	M	Y	X	H	P	Y	R
T	F	B	C	M	D	M	A	T	D	I	S	T	A	N	C	E	A
C	P	I	T	N	R	S	L	U	R	N	Y	E	W	X	X	O	H
I	D	L	V	E	L	O	C	I	T	Y	N	L	W	W	W	L	D
S	N	N	I	L	T	I	N	Z	O	M	V	U	R	H	X	R	Y

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I. Activity No. 6.2 Graphing Uniform Motion

II. Objective(s): At the end of the activity, you should be able to describe uniform motion of an object using a line graph

III. Materials Needed:

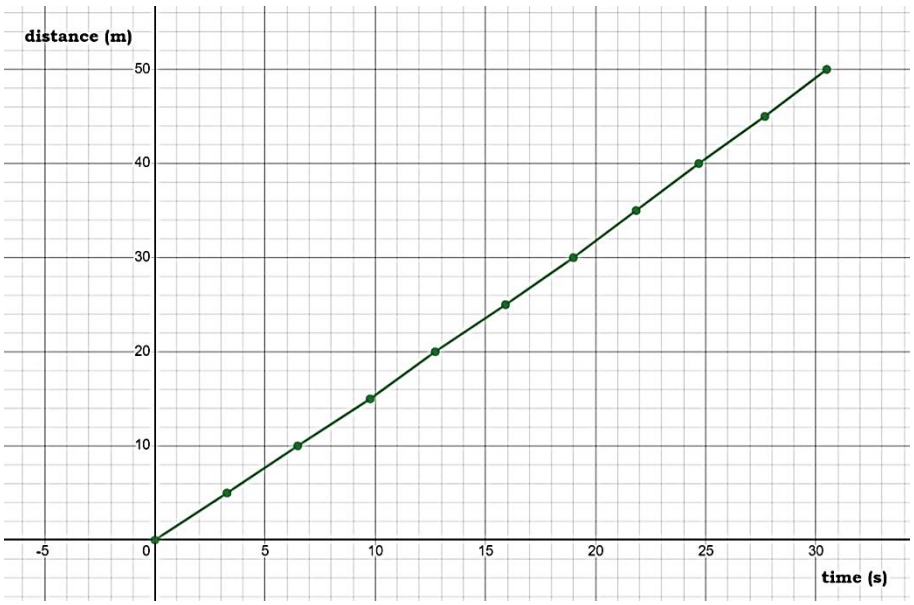
Paper and Pencil

IV. Instructions:

Perform the following activities.

PART A

Distance-Time graph of a walking person



Observe the line graph that shows the motion of a walking person.

1. What can you say about the motion of a walking person?

_____

_____

_____

_____

PART B

Instructions:

Plot the tabulated data in a graphing paper. Then answer the questions using the Data Set.

Data for a Bicycle's Motion

Distance d (m)	Time t (s)
0	0
4	2
8	4
12	6
16	8
20	10
24	12

1. Plot the tabulated data (distance, d vs. t)

2. Describe the graph. What does it show regarding the motion of the bicycle?

_____
_____
_____
_____

3. Determine the slope of the graph for different time intervals.

Slope can be determined by the equation:

$$slope = m = \frac{rise}{run} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{d_2 - d_1}{t_2 - t_1}$$

Interval	Solution	Slope/Velocity
a. t = 0s to t = 2s		

b. t = 2s to t = 4s		
c. t = 4s to t = 6s		
d. t = 6s to t = 8s		
e. t = 8s to t = 10s		

Guide Questions:

1. Describe the graph of distance vs time.

   _____

   _____

2. What does the slope of a distance – time graph represent?

   _____

   _____

3. What is the total distance traveled by the body based on the graph?

   _____

4. What is the total time of travel?

   _____

5. What is the average speed of the bicycle?

   _____

6. Compare the slope (total distance traveled) in (3) with the average speed you calculated in (5). What does it show?

   _____

   _____

   _____

   _____

Use this space for computations:

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I. Activity No. 6.3 Wheels on the Jeep Go Round and Round

II. Objective(s): At the end of the activity, you should be able to describe the motion of an object using distance-time graph

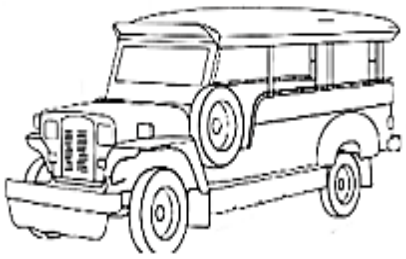
III. Materials Needed:

Paper and Pencil

IV. Instructions:

Data for the Motion of a Passenger Jeepney

Time (s)	Displacement (m)
0	0
1	5
2	10
3	10
4	10
5	15



1. Plot the given tabulated data (displacement vs. time)

2. Describe the graph. What does it show regarding the motion of the jeepney?

_____

_____

_____

3. Determine the slope of the graph.

Slope can be determined by the equation: $slope = m = \frac{rise}{run} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{d_2 - d_1}{t_2 - t_1}$

Interval	Solution	Slope/Velocity
a. t = 0s to t = 1s		
b. t = 1s to t = 2s		
c. t = 2s to t = 3s		
d. t = 3s to t = 4s		
e. t = 4s to t = 5s		

Guide Questions:

1. Describe the motion of the jeepney based on the displacement-time graph.

   _____

2. What do slopes represent?

   _____

3. What do the slopes indicate regarding the motion of the jeepney?

   _____

4. Describe the motion of the jeepney based on the calculated slopes for different time interval (in no.3)

   _____

5. In a displacement-time graph, what does a positive slope mean? A zero slope? A negative slope?

   _____

   _____

   _____

   _____

V. Synthesis/Extended Practice/Differentiation (if needed):

Compare and contrast the motion of the bicycle (from previous activity 2) and jeepney (from previous activity 3)

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I. Activity No. 6.4- 40-Meter Dash Race (Graphing Activity)

II. Objective(s): At the end of the activity, you should be able to create a distance-time graph out of an actual scenario

III. Materials Needed:

Stopwatch
Whistle
Pen and Paper
Cartolina or Manila paper
Meter Stick
Marker

IV. Instructions:

The class will be divided into groups consisting of 6 members. 1 member will be the runner who will participate in the 40-meter dash race. And the other members will serve as the timers who will be holding stopwatches. Activity will be performed in an open field; learners are required to be in their PE uniform and they will need to bring their water and umbrella.

1. Each group will have 1 runner who will run in the 40-meter dash race. Other members will be the timer who will hold the stopwatches in different positions such as:
   a. Member 2 will be situated at 10 meters from the starting line.
   b. Member 3 will be situated at 20 meters from the starting line.
   c. Member 4 will be situated at 30 meters from the starting line.
   d. Member 5 will be situated at 40 meters from the starting line or the finish line.
   e. The 6th member will be the one to record the results.
2. Teacher will make a signal to start the race. The timers should press the **start** button in their stopwatches at the same time the race started.
3. Once the race begins, the runners of each group will run as fast as they can until they reach the finish line.
4. Every time the runner reaches 10, 20, 30, and 40 meters respectively, the timer assigned in each distance will press the **stop** in their stopwatches.
5. The recorder will record the time it took for the runner to reach the 10, 20, 30, and 40-meter mark.
6. Fill the table with the time recorded by each timer in the table below and compute for the velocity at each mark.
7. To calculate the speed, you will use the equation for speed which is

$$v=d/t$$

Distance from the starting line (m)	Time (s)	Speed (m/s)
10 meters		
20 meters		
30 meters		
40 meters		

Guide Question:

1. Create a Distance vs Time graph describing the motion of the runner who participated in the 40-meter dash and present your work to the class.

2. In a distance vs. time graph, what do you think is being depicted or represented by the slope of a line? Explain.

_____

_____

_____

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I. Activity No. 6.5 My Distance-Time Graph Story

II. Objective(s): At the end of the activity, you should be able to apply the concept of distance time-graph using a story

III. Materials Needed:

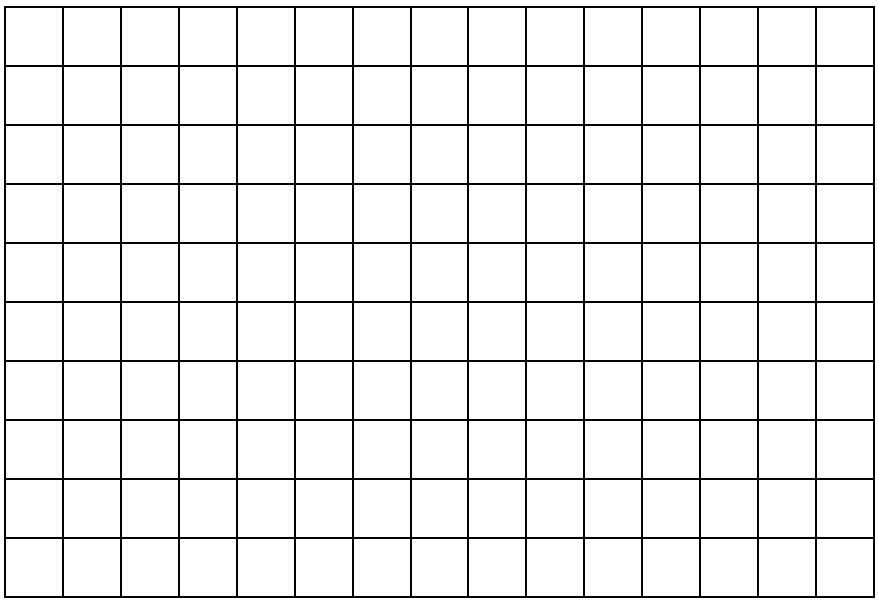
Pen and paper

IV. Instructions:

Write a story showing a detailed description of the motion of a person, animal, or object in terms of distance and time. After that, create a distance vs time graph describing the motion depicted in the story. Be creative in showing and telling the story. (You may do this on a graphing paper).

Story

Distance vs Time graph



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I. Activity No. 6.6 My Take Aways

II. Objective(s): At the end of the activity, you should be able to make generalizations and reflection from the lesson

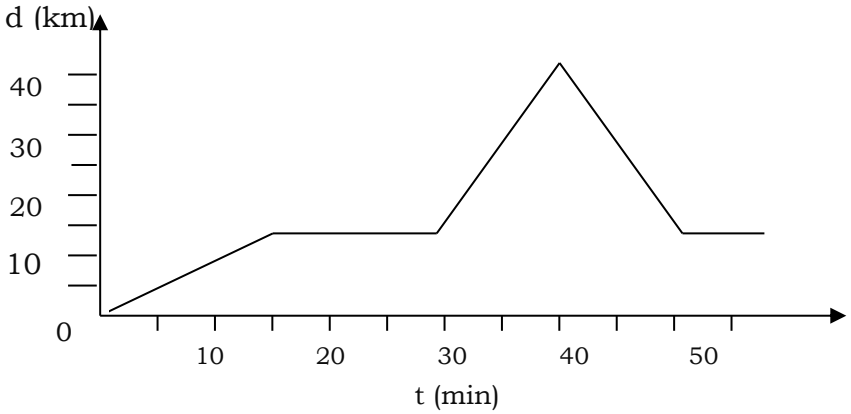
III. Materials Needed:

Pen and paper

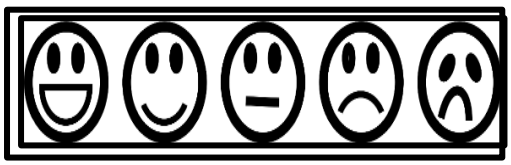
IV. Instructions:

Perform the following activities

Given a position-time graph of a passenger jeepney's motion, make a simple story out of the graph describing the jeepney's motion while you are riding.



HOW WELL DID I



Color or box the emoji that describes your emotion during your journey in this lesson. In the space provided below, briefly explain what made you feel that way.

Reflection on Learning

Using a distance-time graph, how will you represent the achievements in your life from elementary until the present? Draw your graph in the space provided below and briefly explain your achievements based on your created line graph.