7

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DEPARTMENT OF EDUCATION

Learning Activity Sheet for Science

Quarter 3

Lesson

4

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Worksheet for Science Grade 7
Quarter 3: Lesson 4 (Week 4)
SY 2024-2025

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LEARNING ACTIVITY SHEET

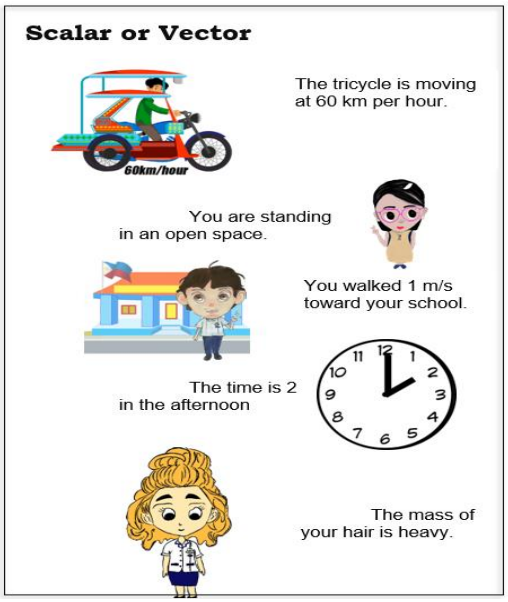
Learning Area:	Science	**Quarter:**	3rd Quarter
Lesson No.:	4	**Date:**	
Lesson Title/ Topic:	**Motion (Distance or Displacement)**		
Name:		**Grade & Section:**	

I. Activity No. 4.1: Scalar vs Vector (10 mins)

II. Objectives:
After this activity, you should be able to differentiate scalar and vector quantity.

III. Materials Needed:
Worksheet
Materials for writing

IV. Instructions:
Tell whether the situation is scalar (magnitude only) or **vector** (magnitude and direction) and provide your reason by writing in a separate sheet of paper.



Guide Questions:

1. What are the commonalities of situation 1, 2, 4 and 5?

_____
_____
_____

2. Why is it that situation 4 is different from the other situations?

_____
_____
_____

3. What is the main difference between a scalar and a vector quantity?

_____
_____
_____

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Learning Area:	Science	**Quarter:**	3rd Quarter
Lesson No.:	4	**Date:**	
Lesson Title/ Topic:	**Motion (Distance or Displacement)**		
Name:		**Grade & Section:**	

I. Activity No. 4.2a : Displacement and Distance (15mins)

II. Objective(s): After this activity, you should be able to determine whether the value is distance or displacement

III. Materials Needed: ruler and pen

IV. Instruction

Study the map below by familiarizing the location of your HOME and SCHOOL. In the map, there are two public roads from your home to school.

Guide Questions

1. By using a strip of yarn, measure the length of each road from your house going to the school. Then lay-over the measured yarn to ruler or tape measure. What is the distance from home to school on Road A and Road B? Which is longer?

_____

_____

_____

2. If you will make a new road going to your school, where will it be? What will be your considerations? Draw your own road by using a broken line from your home going to school. What is the length of that new road? You cannot pass if there are trees or other forms of barriers along the road.

_____
_____
_____

3. Assuming that you were late in the class during the 3rd periodic test, and you are aware that both roads A & B will take 15 min to travel going to school. Will you take the new route (your answer in number 2) or will follow road A or B?

_____
_____
_____

4. In the map, the remaining area having trees is strictly in private possession. Meaning to say outsiders are not allowed to enter that area. Since you are late in class, would you take that shortcut? Why or why not?

_____
_____
_____

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Lesson No.:	4	**Date:**	
Lesson Title/ Topic:	**Motion (Distance or Displacement)**		
Name:		**Grade & Section:**	

I. Activity No. 4.2b: Displacement and Distance (10mins)

II. Objective(s):

After this activity, you should be able to:

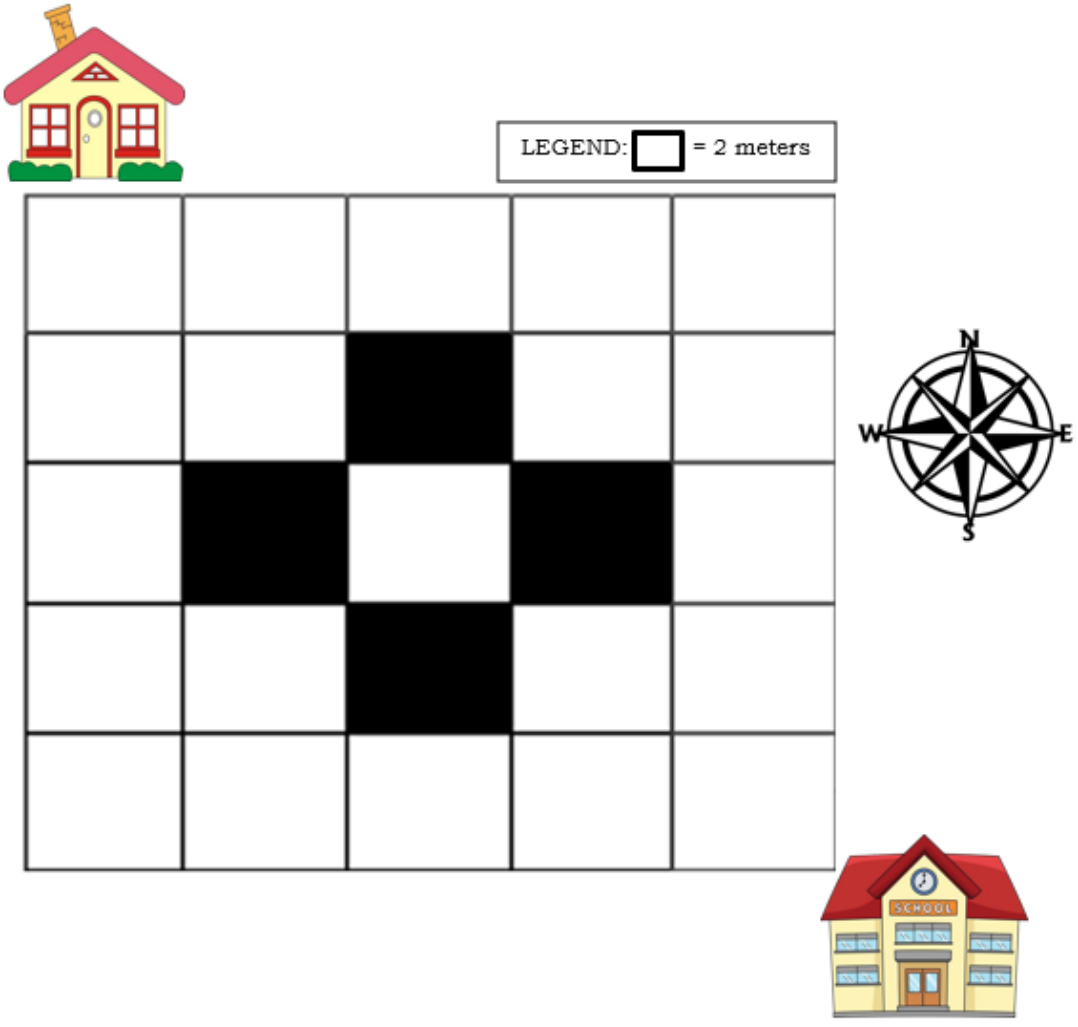
1. identify the number of possible straight paths from house to school.
2. determine whether the value is distance or displacement

III. Materials Needed:

yarn tape measure or ruler

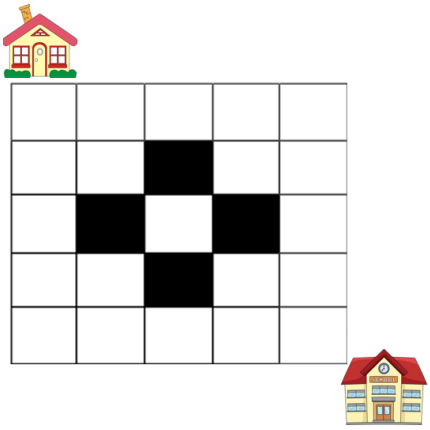
IV. Instruction

Using the diagram, in how many ways can you go to the school from your house in a straight path using the white squares? Each box is 2 meters

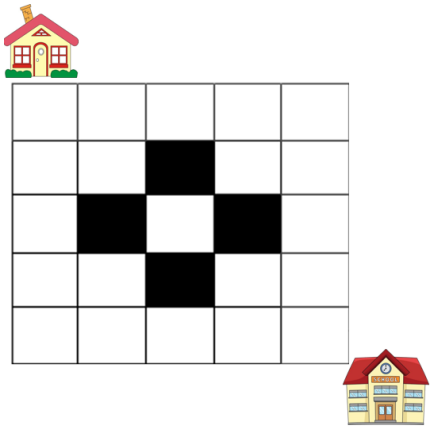


Draw your answers here:

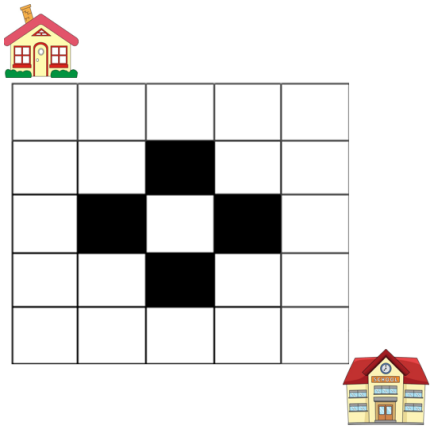
Path A



Path B

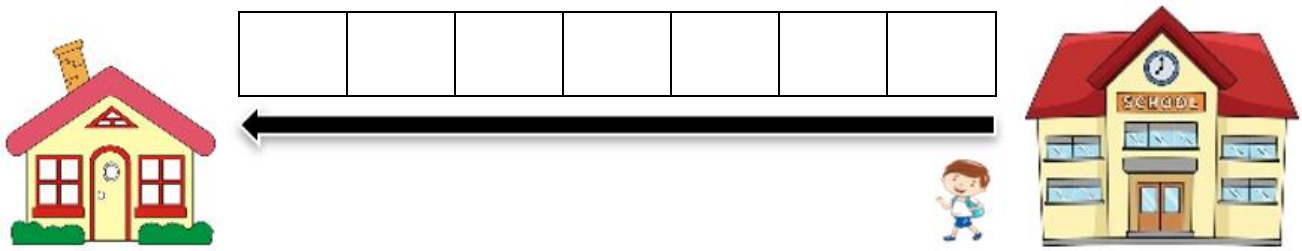


Path C



What is the distance or displacement of each path? Path A: _____ Path B: _____ Path C: _____
What path/s is/are distance and displacement? Why? _____

V. Synthesis/Extend Practice/ Differentiation



LEGEND: ☐ = 10 meters

Based on the figure above, answer the following questions:

1. What is the distance from your **house to your school**? How about the displacement?
   _____
   _____

2. What is the distance from your **school to your house**? How about the displacement?
   _____
   _____

3. If you went to **school and went back home**, what is your total distance? How about total displacement?
   _____
   _____

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Learning Area:	Science	**Quarter:**	3rd Quarter
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I. Activity No. 4.3c: Distance and Displacement (15mins)

II. Objective(s): After this activity, you should be able to:

1. identify the displacement in the map.
2. construct a comprehensive community plan in island school.

III. Materials Needed:

Pen or pencil
tape measure or ruler

IV. Instruction

Below is the actual google map of Pili National High School and selected island barangays in Bacacay, Albay in high tide view. Pili NHS is the nearest secondary school in barangay Banao, island barangays of Manaet, Namantao, Sula, Bariw, Pili Ilawod and Nahapunan.

https://bit.ly/3REFNzL

As a student residing in an island community composed of islets and traveling via motorboat to school, you are aware of the challenges posed by the water bodies between the islets. Upon becoming the mayor of the municipality, you are presented with the opportunity to address the transportation challenges faced by the community. One of the potential solutions to improve connectivity between the islets is the construction of bridges. As the mayor, how would you approach the planning and design of bridges to connect the islets in a sustainable and effective manner, taking into consideration the unique environmental conditions, the need to maintain waterway access for boats, and the safety of the residents and visitors?

Comprehensive community plan in island school:

Design of bridges to connect the islets:

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Name:		**Grade & Section:**	

I. Activity No. 4.D: Displacement and Distance (20 minutes)

II. Objective(s):

After this activity, you should be able to:

1. describe the motion of an object in terms of distance and displacement
2. calculate the distance and displacement of a moving object.

III. Materials Needed:

String or ruler
Paper and pencil

IV. Instruction: Follow the instructions given and compute the total distance travelled by the characters.

SARIG *and* ***GAYON*** *were two immortal siblings living from the faraway place called the* ***Liway-un****. To prove their abilities, their parents,* ***Makusog*** *and* ***Dawani*** *decided to send them to a place named* ***ALBAY*** *and challenged them to solve five different tasks related to energy and motion. Sarig and Gayon were transformed into human forms and each of them was also given an* ***amulet*** *to communicate and return home to Liway-un. The two soon set off on their journey to visit the wonderful locations in Albay in one day.*

CHALLENGE ONE: <u>DISTANCE and DISPLACEMENT</u>

The first challenge for Sarig and Gayon was to differentiate distance from displacement in terms of magnitude and direction and then calculate the distance and displacement of a moving object.

Once they reached Albay, *Sarig* and *Gayo*n each acquired a device called a "smart phone" and located all the tourist destinations in Albay by using Google Maps. However, being a powerless human, they found it hard to compute the distance they will travel from one tourist spot to another. They were sad and clueless!

Sarig and *Gayon* must be able to travel to Albay safely and accurately. They need your help. Are you ready to travel with them all around Albay? Let's go!

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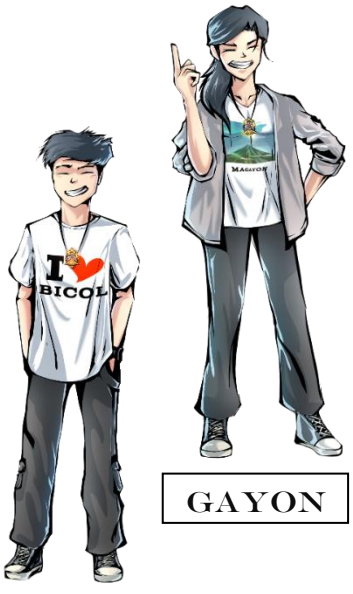
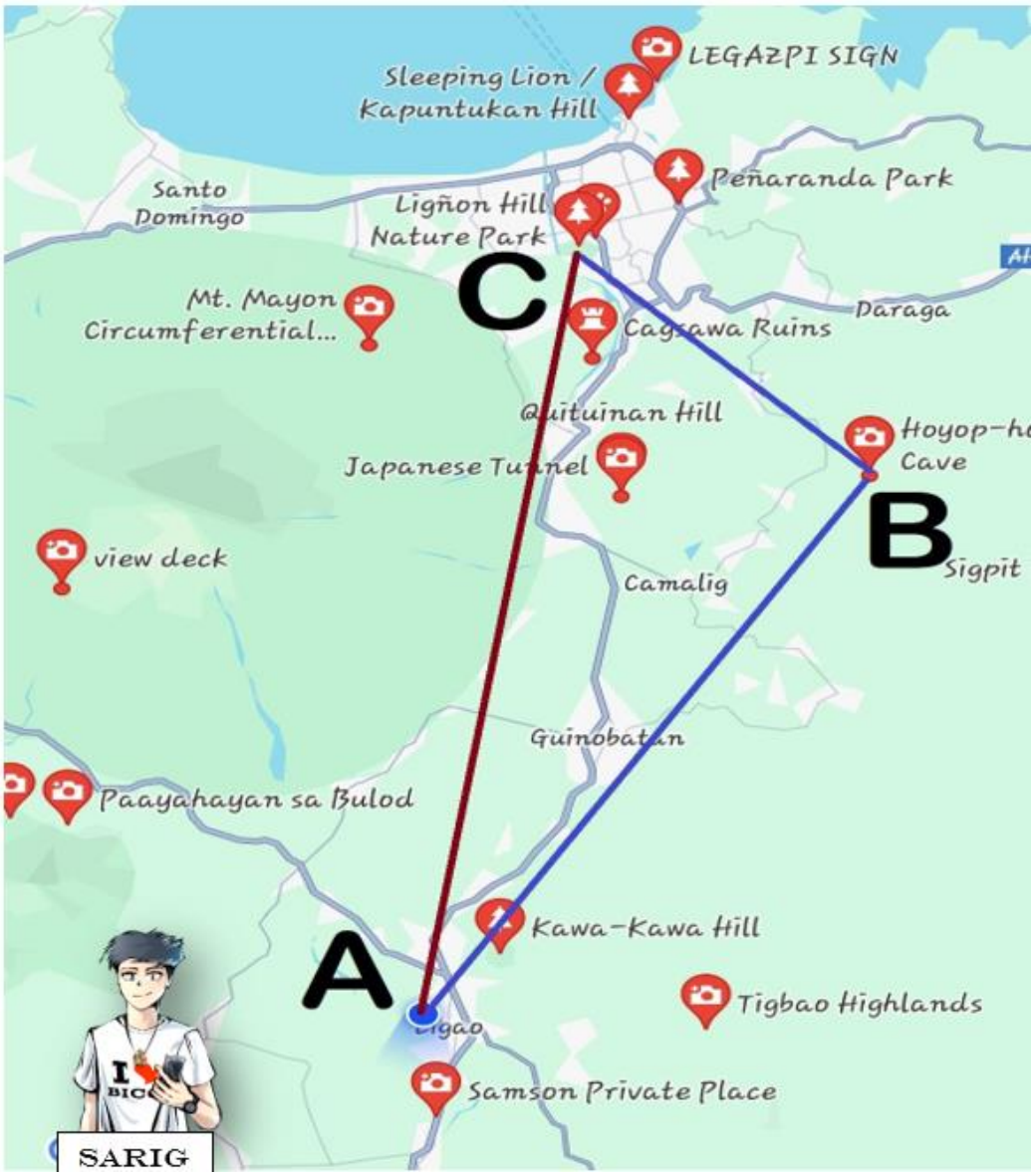


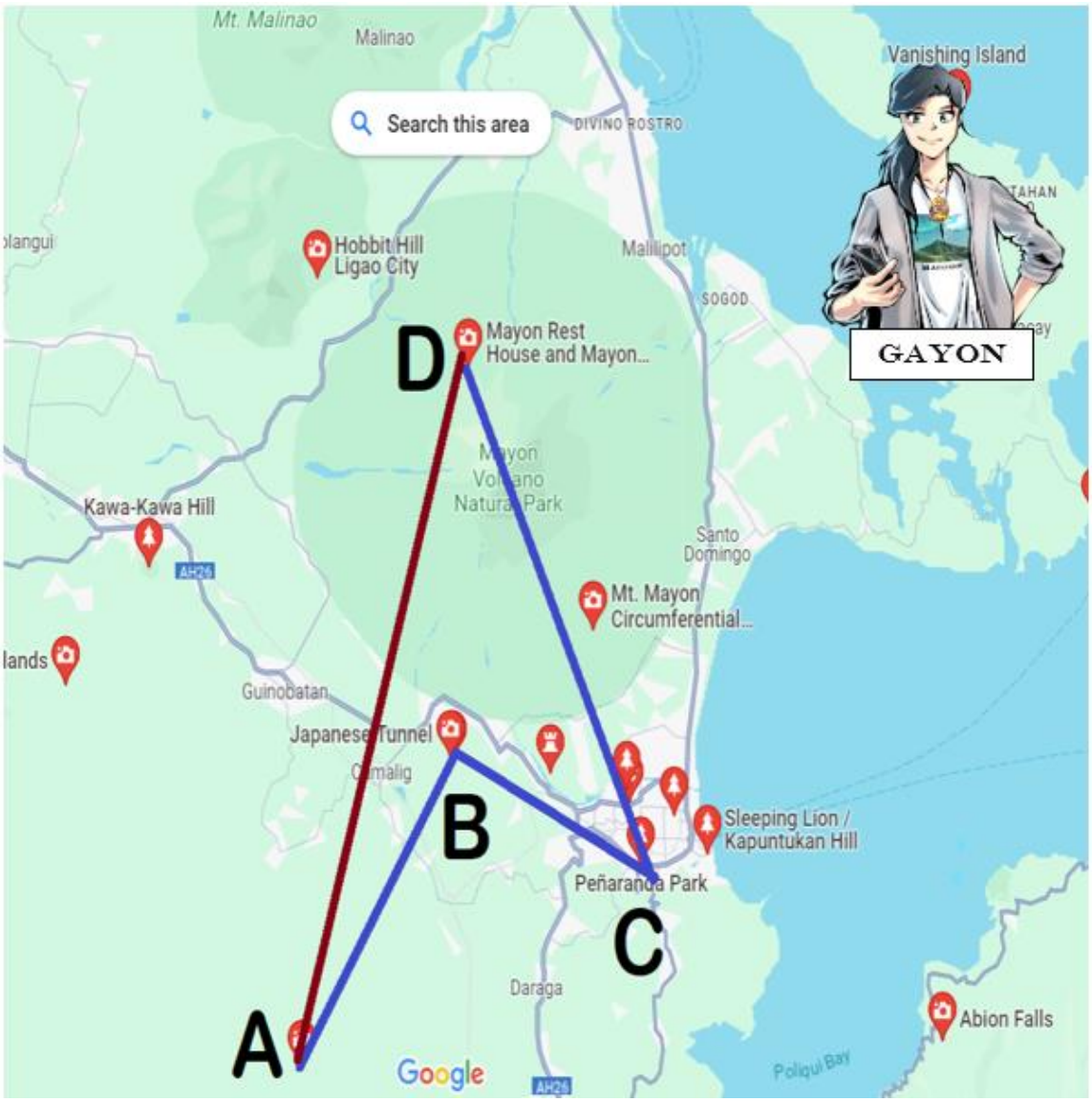
SARIG's Task

Sarig decided to visit the following tourist spots: He started his journey in **Ligao City Proper** to **Hoyop-hoyopan Cave** to the **Ligñon Hill Natural Park** and finally back to **Ligao City Proper.** For the first challenge, he would like to know how far he needs to travel in the entire course of his journey.



GAYON's Task

Meanwhile, *Gayon* planned to go to three (3) different tourist destinations in Albay. She wanted to know how far she will travel from Ligao City (Point A) to **Japanese Tunnel** (point B) then to **Peñaranda Park** (point C) and finally to **Mayon Rest House** (point D). *Gayon* learned through Google the following distances from one tourist destination to another (See the map below):



GUIDE QUESTIONS:
Answer the following questions.
(Note: Use a ruler in measuring the length of path travelled by Sarig and Gayon. Then, convert the measured length using a s*cale: 1cm = 2km.*)

A. SARIG's Task
1. Using the map of the path traveled by **Sarig**, how far do you think will travel from point A to B to C in kilometers?

_____

_____

2. What about his travel from point A to C in kilometers?

_____

_____

B. GAYON's Task
1. Using the map of the path traveled by **Gayon**, how far do you think will travel from point A to B to C to D in kilometers?

_____

_____

2. What about her travel from point A to D in kilometers?

_____

_____

C. Additional Questions
1. How did you find the distance traveled between Sarig and Gayon?

_____

_____

2. How about their displacement?

_____

_____

V. Synthesis/Extend Practice/ Differentiation

Put your Thinking Caps On!
Illustrate your own route from home to school indicating the landmarks like streets or establishments. Calculate as well your distance and displacement.

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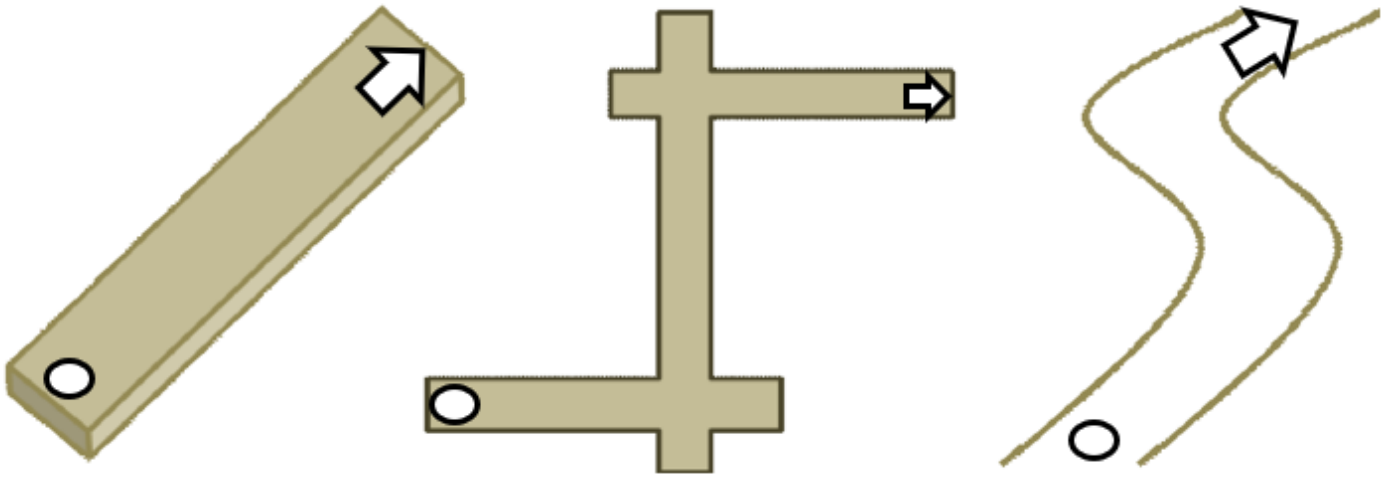
I. Activity No. 4.E: Displacement and Distance (15 minutes)

II. Objective(s):
After this activity, you should be able to draw the displacement and distance in the road.

III. Materials Needed:
Drawing materials

IV. Instruction
Draw the distance and displacement in every illustration. Use broken lines for displacement, then use solid lines for distance. You may use different colors. (Circle represents the starting point, while the arrow is the end point.



Guide Questions:

1. Give one difference between distance and displacement based on the given illustrations.
   _____
   _____
2. Can the distance traveled ever be greater than the displacement?
   _____
   _____
3. When is the displacement equal to the distance traveled?
   _____
   _____