8.13

Can you map?

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8.13. Can you map?

We have come across maps in our textbooks – maps of states, the country, and the world. We can also learn to make maps, as you have learned in geography (Class 6, Chapter 4). Many mobile phones have an application (app) called "Google Maps". This app shows the map of a locality and can show a larger area as you zoom out, and can even show the map of the whole world.

Have you ever made a map of any place on your own?

Are you familiar with these ideas?

- Ratio and proportion
- Cartesian coordinate system

Materials: Graph paper, plain paper, rulers of different size (6 inch or 1 foot), measuring tape (5 m – 10 m, commonly used for measuring racing track), mobile phone (optional).

Task 1: From words to drawings

Joseph wanted to invite his friends to his home for a birthday party. He gave the following instructions to reach his home to his friends:

Our school gate faces east. As you come out of the gate on to Gandhi Road, turn left. At the second road crossing, there is a grocery shop on the left. Turn right here on to Ambedkar Road. You will see a Ganesh temple on your right after about five minutes of walking. At the temple, turn towards south on to Kalam Road. After crossing the bridge on the river, turn left on to Vivekananda Lane. My house is on the right just after a playground.

Q1. Can you draw a map as per these instructions? Assume all the roads to be straight and to intersect at right angles.

Note: Before you start making the map, you may want to draw the four cardinal directions (North, East, West, South) for reference on one part of the page.

Q2. Make a group with 4-5 friends. Compare the maps you have drawn. Discuss with each other and draw a common map on which everyone agrees.

Q3. Which of the following statements are true?

a) The school and grocery shop are on the same side of Ambedkar Road. True / False / Can't be said

b) The school and grocery shop are on the same side of Gandhi Road. True / False / Can't be said

c) The school and temple are on the same side of Gandhi Road.	True / False / Can't be said
d) The temple and grocery shop are on the same side of Ambedkar Road.	True / False / Can't be said
e) The school and Joseph's home are on the same side of the river.	True / False / Can't be said
f) The temple is to the west of the grocery store.	True / False / Can't be said
g) The playground is to the west of Joseph's home.	True / False / Can't be said

Task 2: Walking to measure

Now we will use map drawing skills to draw a map of the school premises. In the first task, we did not use any measurements of length or distance. In this task, we will draw a 'scaled map' of the school boundary. That means that the lengths on your map and the actual lengths/distances in the school are in proportion. Let us do this step by step.

Q1. What should be our ratio of length on the map to actual measurement, also known as the scale or scaling ratio? For example, if you represent a distance of 60 m in your school by a line segment of length 12 cm on the map, then the scaling ratio will be 12 cm: 6000 cm or 1:500.

Q2. Based on the scaling ratio you have chosen, complete the following table:

Actual length (in school)	**Length on the graph paper**
1 metre	
7 metres	
65 metres	
	1 millimetre

Table 1

Q3. What is the length of the biggest ruler in your school? ________________________________

Q4. What is the length of the measuring tape which your sports teacher has? ___________________

Q5. Use these measuring devices to measure the length and breadth of your classroom.

Q6. What will be the size of your classroom on the graph paper? ____________________________

Q7. Can you use the same devices to measure the distance from your classroom door to the school gate? Is it easy or tedious? Explain.

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Q8. People have been measuring lengths using many different units. Some of these units are standard units and are accepted in formal documents. Some were standard units in earlier times, but are used less frequently these days. The standard units can denote precise measurements. There are also non-standard or informal units which people use to denote length approximately. These are not meant to be precise, but may be sufficient for many practical purposes. List the different length units you know under these three categories.

Current Standard Units	Old Standard Units	Informal Units

Table 2

Let us use an informal unit to make our task easy. We will approximate the distance between any two points as number of steps needed by one of you to go from one point to another.

Q9. Take the measuring tape from your sports teacher and lay it on the ground / in a corridor. Walk normally from one end of the tape to another. Count how many steps you need to cover the distance. Ask a few of your friends to repeat the experiment.

Length of the measuring tape = __________________

Repetition No.	Number of steps	Repetition No.	Number of steps
1		4	
2		5	
3		6	

Table 3

If there is a wide variation, let students find out 4-5 participants who take roughly similar number of steps.

Average length of each step = ____

Task 3: Making map by pacing

Now we will use this approximate unit and a graph paper to make an actual map. Start measuring different lengths within the school premises and plot them on the graph paper. Make teams of 4-5 students, and divide work among yourselves, such that each team gets reliable measurements of your school spaces. Following questions will give you some ideas about what all lengths you have to measure. The list is not complete. Think along these lines and draw a scaled map of the school premises.

How many steps do you have to walk in a straight line

a) from one corner of the compound to the school gate?
b) from the school gate to the school building?
c) to cover the length of the school building?
d) to cover the breadth of school building?
e) from one end of the school building to your classroom?
f) from the school building to the playground?

If you have completed the Learning Unit on Shadows, you already know the cardinal directions (East, South, West, North) for your school campus. Mark them on your map. If you have not done that unit, you may use a magnetic compass to find approximate cardinal directions.

Task 4: Treasure Hunt (A possible extension)

Let us play a game of finding a hidden treasure. Hide an object somewhere in the school premises and mark its position on the map you have drawn. Do not hide the object next to a major landmark (such as behind the main gate, or exact corner of a building or wall), which makes searching it easier (and can be done without using map).

Now give this map to your friend who hasn't seen where the object is hidden, but only has the position marked on the map indicating the location of the hidden object. Ask her/him to find the object by following the lengths and distances marked in the map. Your friends can also use their step lengths to follow the distances after reading from your map.

Q1. After you have played this game, try to understand what difficulties you and your friends faced in reading the map or in following directions. Can you identify if these difficulties could be related to any mistakes that occurred in the previous task?

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