CHAPTER: Long and Short

Grade: **9**
Board: **CBSE**
Book: **NCERT**

1.

Chapter Summary and Placement

<Read through the following to understand how this chapter is connected with the previous and next grades and also the important concepts covered in it.>

1. This chapter encourages students to estimate length of an object and distance between two given locations.
2. Knowledge of this chapter will help students to solve problems involving length and distances.

2.

LEARNING OUTCOMES

<On completion of the chapter, students will be able to:>

1. Appreciate the need for a standard unit.
2. Measure length in centimetres and metres using ruler and measuring tape
3. Introduce kilometre as a measurement unit

3. TEACHING PLAN

Follow this section for getting ideas on teaching the content covered in the chapter. The subtopic given in the first column with the matching learning outcome can be explained using instructions and resources listed subsequently

Subtopic and Learning Objective #1

Subtopic:
Standard Unit

LO:
Appreciate the need for a standard unit.

1. To make the student appreciate the need for a standard unit.

Teacher Activity

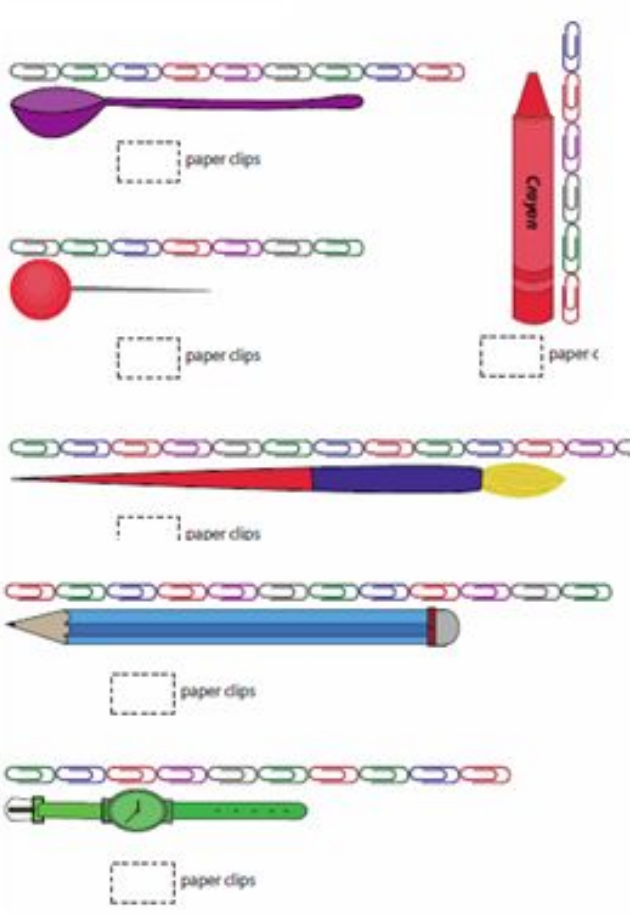
Activity 1 can be performed to make class measure lengths using non-standard units of measurement

1. Discuss that the lengths of objects do not change, then why do different people get different numbers when they measure the same objects?
2. Discuss if these methods of measurement are reliable.
3. Explain the need for standard unit of measurement.

Check for understanding:

Measure each object using paperclips:

Teacher Activity



Resources Suggested

Pencil box, board, chalk and textbook

Activity 1

Name of the activity- Let's measure

Type of activity – Group

Use it for – Making the students use non-standard units of measurement

Materials – text books

Procedure:

Instructions to the teacher

1. Ask the 10 students to count the number of steps they need to take from the front desk to reach the teacher's table. Note the answers on the board.
2. Are the answers different? Why? Discuss with the class.
3. Ask 4 students to measure the length of the teacher's desk using their Science text books. Note the number of books used.
4. Ask 4 students to repeat this using Hindi text books. Note the answer on the board.
5. Ask another 4 students to repeat this using their Math text book. Note the answer.
6. Are the numbers of Science, Hindi and Math textbooks used different? Why? Discuss the reason with the class.
7. Ask 10 different students to measure the length of the black board using their hand spans one by one.
8. Note each reading on the board.
9. Are all the readings same? Why? Discuss.

Subtopic and Learning Objective #2

Sub topic: Using a Ruler

LO:
Measure length in centimetres and metres using ruler and measuring tape

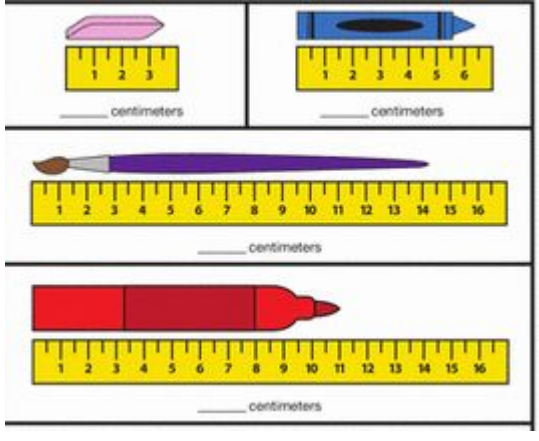
1. To make student measure length of given objects using a ruler.

Teacher Activity

1. Ask the students to take out the ruler from their pencil box.
2. Ask them how many centimetres does it have?
3. Explain that it is advisable to start measuring from the 0 mark.
4. A centimetre is a measure of length.
   We can write centimetre as cm.

Check for understanding:

Look at the things drawn near the scale and find out their lengths.



Resources Suggested

Pencil box, board, chalk and textbook

Subtopic and Learning Objective #3

Sub topic: Using a Measuring Tape

LO:
Measure length in centimetres and metres using ruler and measuring tape

1. To make student measure length of given objects using a measuring tape.

Teacher Activity

1. Discuss with the students why it can be difficult to do all measurements using the ruler.
2. Ask some students to try measuring the length of the classroom wall! How many rulers long is it?
3. Now show the class a measuring tape and measure the wall again. Ask them if it was easier?
4. Explain

   1 metre = 100 centimetres
   We can write metre as ‘m’

Activity 2 can be performed for class to make a metre rope.

Check for understanding:

Using your metre rope, measure the length of objects around you. Identify 3 objects whose length is more than a metre and 3 objects whose length is less than a metre

Resources Suggested

Pencil box, board, chalk, scale and textbook

Activity 2

Name of the activity- Make a Metre rope

Type of activity – Individual

Use it for – Measurement

Materials – long rope, measuring tape

Procedure:

Instructions to the teacher:

1. Each student should have their long rope.
2. Use the measuring tape to help the students mark one end of the rope with a black marker pen.
3. Ask the students to align the zero mark on the tape with the mark on the rope and measure out 100cm on the rope.
4. Ask them to mark this point on the rope.
5. The length between the two black marks is 1 metre.
6. Help the students cut the rope at the marking
7. The metre rope is ready.

Subtopic and Learning Objective #4

Sub topic: Kilometres

LO:
Introduce kilometre as a measurement unit

1. To make student understand that distances can be measured using km as a unit

Teacher Activity

1. Distances that are much longer than metres are measured in kilometres.

We can write Kilometre as Km

2. Ask the students to open the map given on page 57.
3. Help them to read the map and solve the questions given below the map.

Check for understanding:

Which of these can be measured in centimetres and which will be measured in metres?

1. Waist of an elephant
2. Height of a truck
3. Width of an oven
4. Length of a cucumber
5. Height of your uncle

Teacher Activity

6. Distance from Kashmir to Kanyakumari
7.Height of your cycle
8.Length of your dining table
9.Length of a Sari
10.Distance from your house to the school

Resources Suggested

Pencil box, board, chalk and textbook

4. WORKSHEETS

Print or copy the worksheet questions on the blackboard and ask the students to attempt them. They can be given as homework or a class test as well.

Worksheet 1

Use it like: test after the chapter is complete, homework

Use your measuring scale to measure the following things around your classroom (in cm):

1. Length of your desk
2. Height of the black board
3. Width of the door
4. Length of the pencil
5. Length of a paperclip
6. Length of the Math textbook
7. Width of the window

Worksheet 2

Use it like: test after the chapter is complete, homework



Look at the pictures and say ‘True’ or ‘False’:

a) The penguin is 235 cm tall?
b) The giraffe is 190 cm taller than the elephant?
c) The penguin is 62cm taller than the monkey?
d) The giraffe is 515 cm tall?
e) The total height of the penguin and the monkey is 165cm?
f) The total height of the four animals is more than 10m?
g) The giraffe is almost 10 times the height of the monkey?

Worksheet 3

Use it like: classwork, homework, test

Tick mark the option which best determines the length/height:



Ferris Wheel
A. 30 centimeters
B. 5 meters
C. 50 kilometers
D. 23 meters



Screw
A. 20 centimeters
B. 25 centimeters
C. 3 centimeters
D. 1 meter



Can of Beans
A. 120 centimeters
B. 2 meters
C. 2 kilometers
D. 10 centimeters



11 Story Building
A. 1 meter
B. 3 kilometers
C. 335 centimeters
D. 30 meters



Key
A. 5 centimeters
B. 2 meters
C. 15 centimeters
D. 150 centimeters



Flash Drive
A. 30 centimeters
B. 60 centimeters
C. 6 centimeters
D. 15 centimeters



Adult Horse
A. 90 centimeters
B. 2 meters
C. 6 centimeters
D. 30 centimeters



Recliner
A. 60 centimeters
B. 1 meter
C. 120 centimeters
D. 25 centimeters



Notebook Paper
A. 15 centimeters
B. 1 meters
C. 60 centimeters
D. 25 centimeters

5. SOLUTIONS

This section gives you sample answers for activities and questions listed above.

Worksheet 2

1. False
2. True
3. False
4. True
5. True
6. False
7. True

Worksheet 3



Ferris Wheel

A. 30 centimeters
B. 5 meters
C. 50 kilometers
D. 23 meters



Screw

A. 20 centimeters
B. 25 centimeters
C. 3 centimeters
D. 1 meter



Can of Beans

A. 120 centimeters
B. 2 meters
C. 2 kilometers
D. 10 centimeters



11 Story Building

A. 1 meter
B. 3 kilometers
C. 335 centimeters
D. 30 meters



Key

A. 5 centimeters
B. 2 meters
C. 15 centimeters
D. 150 centimeters



Flash Drive

A. 30 centimeters
B. 60 centimeters
C. 6 centimeters
D. 15 centimeters



Adult Horse

A. 90 centimeters
B. 2 meters
C. 6 centimeters
D. 30 centimeters



Recliner

A. 60 centimeters
B. 1 meter
C. 120 centimeters
D. 25 centimeters



Notebook Paper

A. 15 centimeters
B. 1 meters
C. 60 centimeters
D. 25 centimeters

6. EXTRA RESOURCES

Carry out the following suggested activities/ tasks if you have the time and resources to do them

Teacher can use these videos if time and facilities permit:

1. https://www.youtube.com/watch?v=Sz1lRAq_AJo
2. https://www.youtube.com/watch?v=anbimcl5nLw