SCALE DRAWING
GRADE LEVEL: Grade 6
DURATION: 1 hour

SPECIFIC OBJECTIVES:
By the end of the lesson, students will be able to:
Interpret a simple scale drawing and calculate actual distances using the scale of a road map or floor plan

PREREQUISITE KNOWLEDGE
Before doing this lesson students should have knowledge of: a) ratio (including metric conversion) b) similar shapes c) equivalent fractions

MATERIALS/MANIPULATIVES
Copies of a simple map showing a school campus; a sheet of letter sized paper; diagram of three bats of varied sizes; ½ sheet cartridge paper with cm grid and a small 5cm print of a community plan on it (one per group).
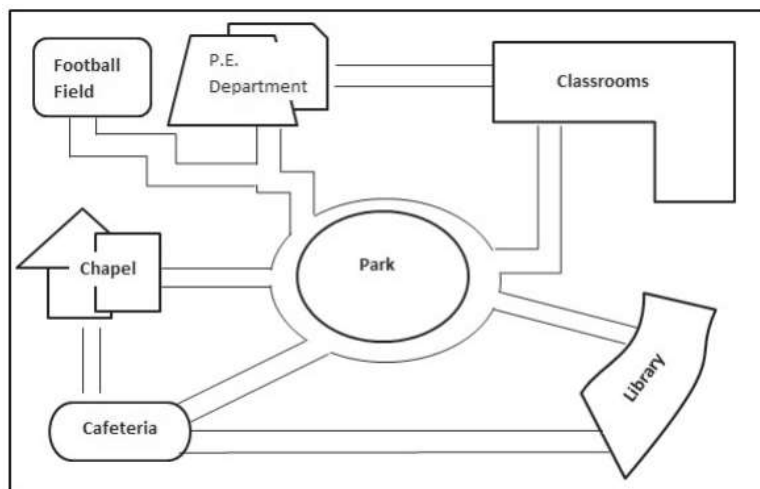
CONTENT OUTLINE
A scale drawing is a drawing of an object/place in which all measurements are changed proportionately. A map cannot be of the same size as the area it represents. So, the measurements are scaled down to make the map of a size that can be used

ENGAGE:
Say: Look at the pictures before you.
Ask: How are they similar?
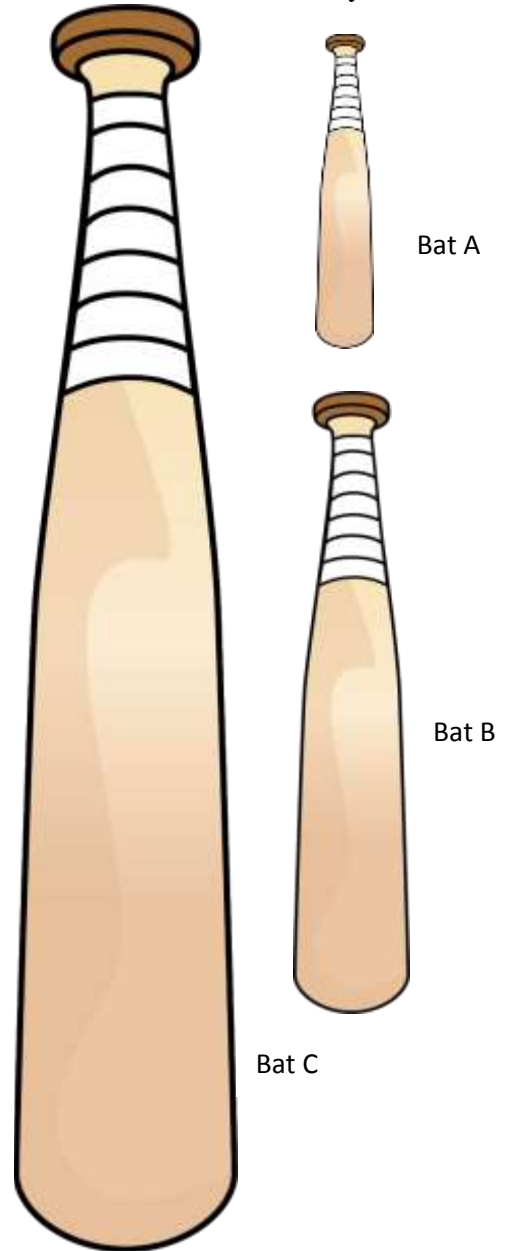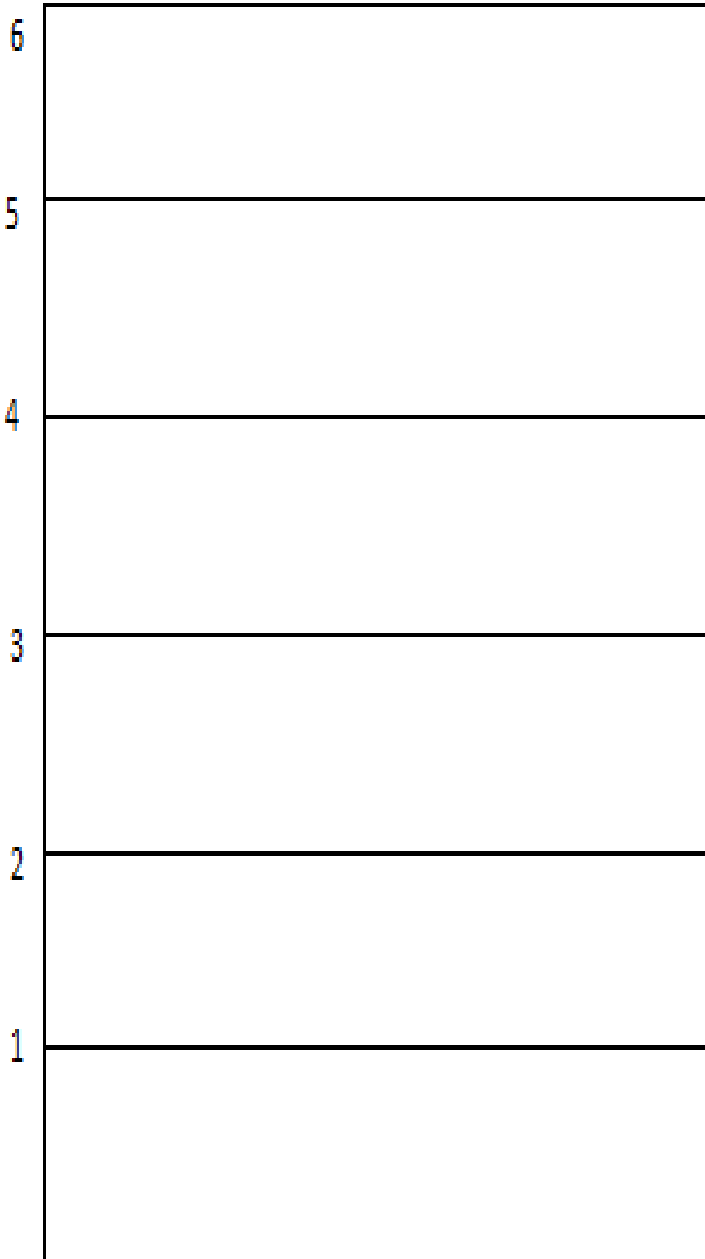   What makes them different?
Discuss similarities and differences among the photographs; highlight the fact that regardless of the size of the pictures the images are the same.

EXPLORE:

Students will compare the sizes of three representations of baseball bats. Students may choose, graph, ruler, string etc to help make the comparison.

Bat A

Bat B

Bat C

Ask: How many times shorter or taller is one bat than the other?
How can you represent the relationship of one bat to the other?

Students will record the relationships using appropriate words and symbols.

EXPLORE:

- Teacher will distribute copies of maps to students in their groups and indicate between which two points they should measure using their rulers (the actual distance between the points will be given to the students). (Map can be found in the "Materials/Manipulatives" of the plan
- The teacher will allow students to use their own method to find out how many times smaller the distance on the map is to the actual distance on the ground (start with scale that is 100:1).
Assist students while they work.
- Using the same map, students will determine the actual distance on the ground between two specified points.

EXPLAIN:
- Students will reflect on the class activities
  Class Discuss: What is scale Drawing?
  Using the vocabulary: Two times taller, Half as tall, Ratio, Scaled up and Scaled down.

Other Questions:
- How do you know that your distance is correct?
- What information/ideas/ skills did you have to use in order to complete the task?
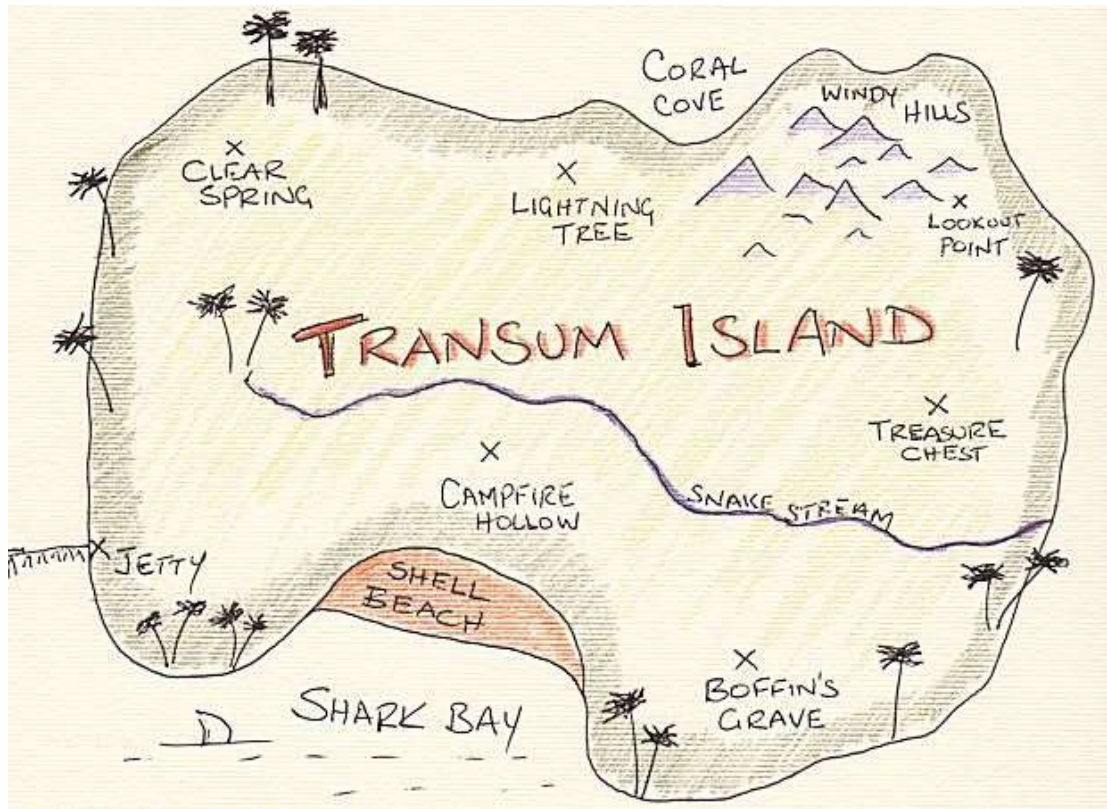- Why is learning about scale drawing important?

ELABORATE
Students will:
- Justify the use of the words scaling and ratio when discussing Scale Drawing.
- List the factors that could affect the outcome when working with scale drawing

EVALUATION:
Students will complete the attached worksheet

Worksheet Scale Drawing

Taken fromhttp://www.transum.org/software/Online_Exercise/ScaleDrawing/

This is a map of Transum Island. The Scale is 1:100, 000. Answer the following questions, giving your answer in Km.

1. Calculate the distance between Campfire Hallow and Clearing Spring

    _____

2. Calculate the distance from Lightening Tree to Boffin's Grave.

    _____

3. Calculate the distance between Lookout Point and Jetty

    _____

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Evaluation (Teacher):

Were students able to:

	0% - 50%	51% - 80%	81% - 100%
Identify the relationship between two points on a scale			
Calculate the actual distance from the scale drawing			
Use the math vocabulary correctly when communicating			
Work collaboratively			

Comments:

Areas of strengths:

_____

Areas of weaknesses

_____

Actions to be taken

_____