GRADE: 9

UNIT (S): Measurement

TOPIC: Distance, Maps, and Metric Conversion (km & m)

DATE: October 6 -- October 10, 2025 (1 week)

STANDARDS:
AT1A: Know the value of numerals, associate them with their names, numbers, ordinals and use concrete objects to model patterns, expressions, and numbers.
AT5: Collect, organize, interpret and represent data and make inferences by applying knowledge of statistics and probability.

GENERAL OBJECTIVES:

- Students will recognize the practical application of measurement and conversion in everyday navigation and planning.
- Students will appreciate the logic and simplicity of the metric system.
- Students will develop problem-solving skills by interpreting real-world data from maps and charts.

SPECIFIC OBJECTIVES:
By the end of the week, students will:

1. Compare and order distances in km between main towns in Jamaica using a road map, road signs, or a distance chart.
2. Use the fact that 1000 m = 1 km to convert distances:
   a. from km (and km & m) to metres (m).
   b. from metres (m) to a decimal amount of km, or to km and m.
3. Use the meaning of the prefix 'kilo-' to remember the relationship between kilometre and metre units.

KEY VOCABULARY:

- Distance
- Kilometre (km)
- Metre (m)
- Convert / Conversion
- Prefix
- Kilo-
- Distance Chart
- Compare / Order

RESOURCES:

- Road maps of Jamaica
- Printed distance charts between Jamaican towns
- Flashcards with conversion problems
- Metre sticks / measuring tapes

- String or yarn (for marking distances)
- Whiteboards and markers
- Digital maps (e.g., Google Maps, if technology permits)

PRIOR LEARNING:
Check that students can:

- Read numbers up to millions and understand decimal notation.
- Understand basic place value.
- Perform basic multiplication and division by 1000.

LEARNING OUTCOME:
Students will be able to confidently interpret distance information from maps and charts and accurately convert between kilometres and metres.

CONTENT
Distances can be measured in kilometres (km) or metres (m). The prefix **kilo-** means one thousand. Therefore, **1 kilometre = 1000 metres**. This relationship allows us to convert between the two units. We will use maps and charts of Jamaica to find real distances between places. To convert km to m, we will multiply by 1000. To convert m to km, we will divide by 1000. Understanding this helps us plan journeys and understand scale.

TEACHING/LEARNING ACTIVITY:

Engage

The teacher will begin with a class discussion: "You need to travel from Kingston to Montego Bay. How will you find out how far it is? What unit will the distance be in? What about the distance from your classroom to the school gate?"

Activity: "How Far Is It?" Guessing Game:

- Students will see images of road signs showing distances between Jamaican towns (e.g., Ocho Rios 65 km, Spanish Town 21 km).
- In pairs, they will use string and a metre stick to measure out what they *think* 1 metre, 10 metres, and 100 metres look like in the hallway or school yard.
- This will activate prior knowledge and introduce the need for a larger unit (km).

Explore
Students will recap the need for a larger unit of distance. The teacher will formally introduce the kilometre (km) and the conversion fact (1 km = 1000 m).

Activity: Jamaican Road Trip:

- Students will work in small groups, each receiving a simplified road map or a distance chart of Jamaica.
- They will be given task cards with instructions like: "Find the distance from Kingston to Mandeville and from Kingston to Port Antonio. Which is closer/further? Order these three towns by their distance from Kingston."

- Groups will record and compare their findings.

Explain
The teacher will review the exploration activity and introduce the concept of conversion.

Activity: "Kilo-" Means 1000:

- The teacher will lead a discussion on the prefix 'kilo-', linking it to other words students know (kilogram, kilolitre).
- The teacher will explicitly model the conversion algorithms on the board:
    - **Km → m:** Multiply by 1000 (e.g., 2.5 km = 2.5 × 1000 = 2500 m).
    - **m → km:** Divide by 1000 (e.g., 3500 m = 3500 ÷ 1000 = 3.5 km).
- Students will practice with guided whiteboard problems.

Elaborate/Evaluate
The teacher will review conversion strategies and connect them to the map work from the previous lesson.

Activity: "Plan My Journey" Project:

- Students will be assigned a project where they plan a trip to visit three Jamaican towns of their choice.
- They will create a small poster or presentation that includes:
    1. A drawn or printed map section with their route.
    2. The distance between each town in km.
    3. The conversion of one leg of the journey from km to metres.
    4. The conversion of another distance from metres (e.g., 5400 m) to km.
- Students will present their projects to the class, explaining their conversions.

ASSESSMENT:

- Observation of group work and participation in games and activities.
- Accuracy in completing the "Jamaican Road Trip" task cards.
- Successful completion of whiteboard conversion practice.
- Quality, accuracy, and explanation in the "Plan My Journey" project.

LINKS TO OTHER SUBJECTS:

- **Social Studies/Geography:** Interpreting maps and understanding the geography of Jamaica.
- **Science:** Understanding the metric system and the use of prefixes like 'kilo-' in other measurements (e.g., kilogram, kilowatt).
- **Digital Citizenship:** Using online maps responsibly and effectively for research (if technology is used).