How big is the Great Bear Rainforest?

Students explore the size of a hectare in relation to areas they know.

Note: These activities may need teacher support and can be modified for your grade level as a whole class activity for younger students but can also be taught to students in grades 4 to 6.

Learning Intentions

1. How big is a hectare?
2. How big is 6.4 million hectares?

Curricular Connections

Refer to the "Curriculum" drop-down option under the "Learn" tab of the Great Bear Rainforest Education and Awareness website.

Curriculum Alignment: Great Bear Rainforest Education and Awareness Trust

https://greatbearrainforesttrust.org/curriculum/

How big is a hectare?

Introduction

- Start with brainstorming around the question, What words do we know about size and distance?

- Have students give examples and write them down on the board or on a flipchart. Depending on the age of students, words may be small, big, enormous, far, close or 1000 meters, a football field, a kilometer, and so on.

- Make connections between students' ideas and the fact that we use:
  - ◆ Descriptive or qualitative words like small, big, medium, tall, short, far, and close to describe items or distances and measurements
  - ◆ Quantitative words like 30 cm, 5 km, one litre, or a cup to accurately measure items or distances.

Activities

- Using a meter stick, tape measure or metric trundle wheel, explore how these items can be used to measure in cm, inches, feet and meters. Measure one meter, then make a square that measures one meter squared. Depending on the age of students, go further by discussing the difference between perimeter and area.

- Ask students to guess how big their class is (area). Using a tape measure or a metric trundle wheel, measure out the class and compare the measurement to student guesses.

- Measure one hundred meters on a field and compare to a kilometer.

- Use scale on a map to compare one kilometer to one hundred meters for a local forest, park or site that students are familiar with.

- Using technology such as Google Maps, show an item that students relate to, like a soccer field, and superimpose the scaled image onto the map of a local park, the school, or a shopping area (for example) so that students can make meaningful connections between the concept of size and an actual place they know.

- Introduce the idea of a hectare. One hectare is 10,000 square meters. Ask students to make predictions about how big that may be. How many times could the class fit into one hectare? How about a field or school?
- Students refer to physical spaces to guess how big a hectare is.
- Return to the previous map and now show a hectare as the size reference and superimpose the hectare over the same area to compare.

Materials

- Meter stick
- Tape measure, or
- Metric trundle wheel

Possible Topics/Key Vocabulary

- Quantitative
- Qualitative
- Units of the metric system
- Area
- Scale
- Meter
- Kilometer
- Meter squared
- Hectare

Reflections on Learning

Have younger students discuss what they learned and what surprised them about size and measurements. Older students can do this as an entry in a math journal.

Suggested Resources

How Big Is A Hectare? A Better Way to Visualize The Size
https://www.kelownanow.com/galavanting/news/Tourist_Information/14/07/17/How_Big_Is_A_Hectare_A_Better_Way_to_Visualize_The_Size/#fs_117270

Animated Kids Book Read Aloud: Actual Size by Steve Jenkins
https://www.youtube.com/watch?v=2AtHdQ1khds

Reference video

How big is a hectare?
https://www.youtube.com/watch?v=zIPyt72yfzY

What is one hectare?
https://www.youtube.com/watch?v=jVe1aVJNEus

How big is 6.4 million hectares?

Students will explore the size of the Great Bear Rainforest using meaningful points of reference in their school or community.

Note: These activities may need teacher support and can be modified for your grade level and taught as a whole class activity for younger students but can also be taught to students in grades 4 to 6.

Introduction

- Have students recall what they learned about quantitative and qualitative data, measurements, and a hectare from the previous lesson.
- Explain that now they are going to start exploring the size of the Great Bear Rainforest in terms of hectares.

Activities

- Have students make predictions on size by showing them a map of the GBR.
- Tell them the size of the GBR - 6.4 million hectares.
- One hectare is about the size of 2 football fields. How many football fields can fit into the GBR?
- Have students research the size of another item and see how many times that would fit into a hectare and then 6.4 million hectares.
- Using Google Maps or a similar technology, superimpose the scaled item chosen by students to see how many times it can fit into the GBR. This can be done by the teacher for younger students or can be done independently in small groups for older students who have technology in their class.

Possible Topics/Key Vocabulary

- Quantitative
- Qualitative
- Units of the metric system
- Area
- Scale
- Meter
- Kilometer
- Meter squared
- Hectare

Reflections on learning

Have students fill out the worksheet (see below) as they work through the activities. After the exploration in question 2, tell students that the size of the GBR is 6.4 million hectares, which is about 12.8 million football fields)

Have students discuss what they learned and what surprised them about the size of the GBR. Students can also do this as an entry in a math journal, podcast, or video to share their learning.

Suggested resources

Comparison of units of area
https://upload.wikimedia.org/wikipedia/commons/7/7e/Comparison_of_units_of_area.png

Great Bear Rainforest Region interactive map
This map is embedded on the Maps tab of the GBREAT website
https://bcgov03.maps.arcgis.com/apps/webappviewer/index.html?id=6fcc0a171c024bd793032ed140d7bac4)

Student worksheet: How big is the Great Bear Rainforest?

Name: _____   Date: _____

1. In the last lesson, we learned about a unit of measure called a hectare. How would you explain a hectare to someone who hasn't learned about it yet?

2. Look at the map provided by your teacher.

   a) One hectare is about the size of 2 football fields. How may football fields do you think can fit into the GBR?

   b) How close was your prediction to the answer?

3. Choose an item.

   a) How many times do you think it can fit into the GBR?

   _____

   _____

   b) Use Google Maps to test out your prediction on one hectare. How close was your prediction to the answer?

   _____

   _____

   _____

   _____

   c) How many of your item would you need to cover the surface of the entire GBR ?

   _____

   _____

4. What surprised you about the size of the Great Bear Rainforest?

   _____

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