

LESSON PLANS: ONTARIO

Grade 5: Data Management and Probability Creating, Reading, and Interpreting Line Graphs

 50 MINS

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 Mathletics

Overall Curriculum Expectations:

- Collect and organize discrete or continuous primary data and secondary data and display the data using charts and graphs, including broken-line graphs.

Specific Curriculum Expectations:

- Collect and organize discrete or continuous primary data and secondary data and display the data in charts, tables and graphs that have appropriate titles, labels and scales.
- Read, interpret, and draw conclusions from primary and secondary data.

Introduction to Lesson

 10 MINS

Teacher Background:

Students should have prior knowledge of line graphs and broken-line graphs from Grade 4. Conducting surveys and recording data in line graphs should have been taught prior to this lesson. This lesson's main focus is reading, interpreting data, and drawing conclusions from graphs. It also includes, correctly labelling, using proper scales, and choosing titles for specific types of graphs.

To introduce how to properly read and interpret data from a line graph. Show students the video "Introducing Distant Time Graphs." Log in to your **Teacher Console > Toolkit**. Type line graphs into your search bar. Click **Presentations** tab on the left side. Choose "Introducing Distant Time Graphs." This video will introduce students to a line graph and how to set up vertical and horizontal axes with a proper scale. Pause during the video to discuss what is being shown on the line graph.

Ask students

- Why do we use this scale for time?
- Is there another range we could use?
- Where is the highest point on the graph?
- Why do you think they chose this measurement?
- Tell a story about how this data could have been collected?

NOTE: There are a variety of other videos related to interpreting graphs, scatter plots, and other areas of data management you can explore with your students.

ITEMS NEEDED

- ✓ Interactive whiteboard
- ✓ Mathletics teacher login
- ✓ Laptops
- ✓ eBook worksheet printed
- ✓ Graph paper for practice

ASSESSMENTS

- ✓ Group work
- ✓ Oral presentation
- ✓ Review graphs

ACCOMMODATIONS/ MODIFICATIONS

- ✓ Create ability or leveled groups.
- ✓ Data disaster problem could be done individually and assessed.
- ✓ Give students the option to submit their work or do an oral presentation.
- ✓ Have students watch the video at the beginning of class together, allow students to formulate questions. Lead your lesson by following their inquiries.

EXTENSION OF LEARNING

- ✓ Mathletics Grade 5 eBook: Data Representation, Types of Graphs 3 activity. This includes line graphs and broken-line graph practice.
- ✓ Assign curriculum activities
- ✓ "Rainforest Maths" Grade 4—Data

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The Lesson

 20 MINS

Open-Ended Problem Solving—The Story of a Graph

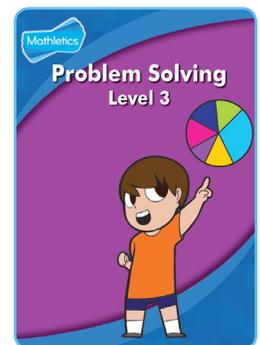
- Display open-ended problem on the interactive whiteboard.
- Log in to your **Teacher Console > eBooks > Problem Solving > Problem Solving Level 3 Book**.
- Click on **Open ended**, Open-ended problem solving, Worksheet 5.
- Review the line graph with students. Ask prompting questions like, Why is this an appropriate scale to measure water on? What information can you tell from this graph? Why was a line graph chosen to organize the data? How could we graph all months of the year? What would be different about that graph?
- Have students work in their table groups or with partners to brainstorm and explore various ideas for the line graph and pie graph. Ask students prompting questions like, What would be an appropriate title? How could this data have been collected? What data would not work on these graphs? Discuss various responses from different groups.

eBook—Data Disaster

- Divide your students into leveled groups. Print the "Data Disaster" eBook problem sheet so each group can work collaboratively on this section. Teacher can read aloud the "Getting Ready" section of the worksheet.
- Students should then begin entering data, labels, and titles in their graphs and working collaboratively to determine possible solutions for the graphs.

Extra-time/cross-curriculum activity:

- Have students collect data prior to this lesson about some aspect of their community, an experiment, an issue in the school, or another subject. Have students record their observations or measurements over time.
- Students can then use a line graph to represent the data and show a trend over time.



Consolidating the lesson

 20 MINS

Oral Presentation

- Give students time at the end of the lesson to prepare a quick one-minute share-aloud.
- Have students present their stories related to the graphs. Formulate class discussion based on student responses.



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