MDi Using MDI Data

LESSON PLAN	OBJECTIVE(S) Students will:	MATERIALS	ALIGNMENT ⇄
1 MATH & MDI	✓ Create bar graphs to represent data, including proper labeling of axes and titles. ✓ Use real-world data to understand local children's well-being. ✓ Gather and organize data to be represented in bar graphs. ✓ Analyze and interpret data presented in bar graphs.	✓ Math & MDI lesson slides ✓ Math & MDI lesson handout(s)	**BC Curriculum** Data Literacy Interdisciplinary Learning Social & Emotional Development **Core Competencies** Core Competencies Critical thinking Communication, personal and social responsibility
2 PHYSICAL HEATH EDUCATION & MDI	✓ Understand the connection between physical activity and emotional well-being ✓ Recognize how different types of movement can affect mood and energy levels ✓ Recognize the recommended daily physical activity duration for children (60 minutes of energetic play)	✓ Physical Health Education & MDI lesson slides ✓ Physical Health Education & MDI lesson handout(s)	**BC Curriculum** BC Curriculum Physical Literacy Mental Well-being **Core Competencies** Personal and social core competency Thinking core competency
3 SOCIAL STUDIES & MDI	✓ Analyze MDI data for the local community to understand children's well-being ✓ Identify strengths and areas for improvement in the community based on the MDI data ✓ Propose ideas to enhance child well-being in the community	✓ Social Studies & MDI lesson slides ✓ Social Studies & MDI lesson handout(s)	**BC Curriculum** Global Issues and Governance Inquiry-Based Learning **Core Competencies** Communication & Collaboration Development of students as engaged citizens

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OBJECTIVES

Students will be able to:

✓ Create bar graphs to represent data, including proper labeling of axes and titles.

✓ Use real-world data to understand local children's well-being.

✓ Gather and organize data to be represented in bar graphs.

✓ Analyze and interpret data presented in bar graphs.

MATERIALS

✓ Computers with internet access

✓ MDI Data Dashboard (https://mdi.dashboard.earlylearning.ubc.ca)

✓ Graph paper or graphing software

✓ Pencils and rulers

⏱ TIME: 60 - 90 MINS

Summary

Students will learn to create, interpret, and analyze bar graphs using real-world data from the MDI Data Dashboard for their neighbourhood or school district.

Preparation

» Review lesson slides and customize for students.

» Familiarize yourself with the MDI data dashboard (about 10 minutes) at https://mdi.dashboard.earlylearning.ubc.ca.

» Copy lesson handout, one per student.

Guidance

» This lesson is best delivered in two parts by doing the Introduction and Exploration during one class period (optional scavenger hunt), and then Main Activity and Reflection during another class period.

ALIGNMENT ⇄

BC Curriculum

Data Literacy: This lesson promotes data literacy by giving the students an opportunity to practice creating, interpreting, and analyzing bar graphs using real world data.

Social and Emotional Development: The MDI measures aspects of children's social and emotional development that align with the BC Ministry of Education's K-12 curriculum.

Core Competencies

Cross-Curricular Connections: The lesson integrates mathematics with social studies and health education, aligning with BC's approach to interdisciplinary learning.

The lesson addresses areas of critical thinking, communication, and personal and social responsibility.
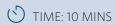
By using MDI data, the lesson supports BC's emphasis on understanding the whole child, going beyond academics to explore well-being and social-emotional factors.

The lesson indirectly supports the BC Mental Health in Schools Strategy by introducing students to data about children's well-being in their province.
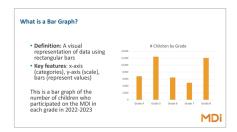

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INTRODUCTION   ⏱ TIME: 10 MINS

Introduce the MDI: 💬

» **Remind students:** *The MDI is a survey that allows children to share their thoughts, feelings, and experiences. It helps us understand the well-being of children in BC.*

» **Tell students:** *Today, we will be using real data from the MDI to create bar graphs.*

Explain to students: 💬

» *Bar graphs are visual representations of data that use rectangular bars to show comparisons between categories.*

Introduce the MDI Data Dashboard: 💬

Tell Students: *The MDI Data Dashboard is a tool that provides information about children's well-being in British Columbia.*

Guide students to the MDI Data Dashboard website:
https://mdi.dashboard.earlylearning.ubc.ca/

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EXPLORATION   🕐 TIME: 20 MINS

Demonstrate how to navigate the dashboard: 👆

» **Tell students:** *We will go through the process together of how to find your data on the MDI Data Dashboard step-by-step.*

Choose School District/Neighborhood: select from the left menu.

Demonstrate how to navigate the dashboard: 👆

- Choose School District/Neighborhood: select from the drop-down menu on the left.
- Choose Year and Grade: click on year and grade you would like to explore.

Choose a relevant measure from the MDI dimensions: 👆

» From the drop-down menu, choose the dimension you would like to explore (e.g., Social & Emotional Development).

» Choose section (e.g., Dimensions Measures).

» Click on the item you want from the orange list (e.g., Happiness).

Tell students: 👆

» *To get the number of students in each bar in your graph, hover over it with your mouse and you will get the number of kids in each bar.*

Tell students: 👆

» *Click on the chart view drop down menu to see different types of data. For example, when I click Outcomes over time, I can see Low, Medium and High levels of Happiness.*

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SCAVENGER HUNT ACTIVITY   TIME: 10 MINS   **(OPTIONAL)**

Activity | MDI Data Dashboard Scavenger Hunt

In groups of 4:
1. Go to the MDI Data Dashboard
   https://mdi.dashboard.earlylearning.ubc.ca
2. Find the percent of students in Grade 5 in the Sunshine Coast school district in 2023-24 who had a high score for eating breakfast
3. Find the percent of students in Grade 8 in Revelstoke school district in 2022-23 who had a high score on optimism

MDi

Assign groups of four students to work together. ✏

- Guide students to the MDI Data Dashboard.
  https://mdi.dashboard.earlylearning.ubc.ca/

- Ask students to find the percent of students in Grade 5 in the Sunshine Coast school district in 2023-24 who had a high score for eating breakfast.

- Ask students to find the percent of students in Grade 8 in Revelstoke school district in 2022-23 who had a high score on optimism.
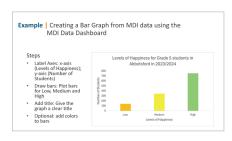
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Example | Levels of Happiness for Grade 5 students in Abbotsford in 2023/2024

Steps:
- Go to MDI Data Dashboard
- Select Abbotsford school district from the drop-down menu on the left
- Click on Grade 5 and 2023/2024
- Click on Dimensions
- Select Social & Emotional Development from the Dimension drop down
- Click on Happiness

Model the process:

- This is an opportunity to go through the steps with students to create the graph on the next slide.
- Follow the steps on the slide and show students how to find data for Levels of Happiness for Grade 5 Student in Abbotsford.
- This is an opportunity to show students how they can complete the main activity and worksheet.

Example | Creating a Bar Graph from MDI data using the MDI Data Dashboard

Steps
- Label Axes: x-axis (Levels of Happiness); y-axis (Number of Students)
- Draw bars: Plot bars for Low, Medium and High
- Add title: Give the graph a clear title
- Optional: add colors to bars

Levels of Happiness for Grade 5 students in Abbotsford in 2023/2024

Have students create a bar graph using the selected MDI data:

- Draw x-axis (categories) and y-axis (frequency scale)
- Plot the data points and draw rectangular bars
- Label axes and provide a title.

Activity | Creating a Bar Graph from MDI data using the MDI Data Dashboard

- Go to the MDI data dashboard to get your data
- Draw and label your x and y axes
- Plot data points and draw bars
- Add title and colors (optional)
- Analyze your graph

Main Activity:

- Instruct students to use the handout Bar Graph Worksheet: Exploring MDI Data.
- Optional: you can assign dimensions to students or allow students to explore a dimension of interest.

Instruct students to analyze their graphs:

- Identify the highest and lowest values
- Calculate the range of the data
- Describe any patterns or trends they observe
- Encourage students to compare data across different grades or years using double bar graphs.

Activity handouts:

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REFLECTION   ⏱ TIME: 15 MINS

How does the MDI data relate to your own experiences in school and community?

Ask students to share their findings and interpretations. 💬

» Discuss how bar graphs help visualize and understand data.

» Explore how the MDI data relates to their own experiences in school and community.

WRAP UP   ⏱ TIME: 5 MINS

Write/say one thing you learned about bar graphs and one thing you learned about the MDI data.

What surprised you or stood out to you?

Tell students: 💬

» *Today you learned about bar graphs and use data from the MDI.*

Ask students: 💬

» *Write/say one thing you learned about bar graphs and one thing you learned about the MDI data. What surprised you or stood out to you?*

Bar Graph Worksheet: Exploring MDI Data

Name: _____ Date: _____

Today's Activity:

We will create and analyze bar graphs using real data from the MDI Data Dashboard.

Part 1: Creating a Bar Graph

Using the MDI Data Dashboard, create a bar graph for one of the measures on the MDI in British Columbia.

Steps to create your bar graph:

1. Go to the MDI Data Dashboard: https://mdi.dashboard.earlylearning.ubc.ca

2. Select data for British Columbia and choose the measure you want to use, the year of data and grade. For example, Optimism for Grade 5 students in 2022-23.

3. On your graph paper:

   » Draw a horizontal line (x-axis) for categories

   » Draw a vertical line (y-axis) for the scale

   » Label both axes

   » Give your graph a title

4. Plot the data and draw rectangular bars

5. Color your bars (optional)

Bar Graph Worksheet: Exploring MDI Data

Part 2: Analyzing Your Graph:

1. What is the highest value in your graph? _____

2. What is the lowest value in your graph? _____

3. Calculate the range of the data (Highest value - Lowest value): _____

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Bar Graph Worksheet: Exploring MDI Data

Part 3: Comparing Data *Extension Activity*

Create a double bar graph comparing your measure (e.g., Happiness) for two different grades or years.

What differences do you notice between the two sets of data?

_____

Bonus Question: How might understanding this data help improve students' experiences at school?

_____

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