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# My Community of Belonging: A Data Adventure!

## Materials Needed:

- Large sheet of paper or whiteboard
- Pencils, colored pencils, markers, or crayons
- Ruler
- Graph paper (optional, but helpful)
- Stickers or small, uniform objects like LEGO bricks or beans (optional)
- A phone or device to contact 5-10 family members or friends (with permission)
- "Data Detective" Worksheet (teacher-made, details below)

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## Lesson Plan Details

**PYP Theme:** Who We Are

**Central Idea:** Our relationships and interactions with others shape our sense of belonging.

**Line of Inquiry:** Exploring what makes people feel connected and part of a group (Relationships and Belonging).

**Key Concepts:** Connection, Form, Perspective

**Subject Focus:** Mathematics (Data Handling)

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## 1. Learning Objectives

By the end of this lesson, Myeda will be able to:

- **Collect and organize data** from family and friends about what makes them feel they belong.
- **Represent the collected data** by creating an accurate pictogram with a key.
- **Translate the same data** into a scaled bar graph with appropriate titles and labels.
- **Interpret the data** to answer questions and draw simple conclusions about her community's perspective on belonging.

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## 2. Introduction: "Tuning In" (10 minutes)

The goal is to connect Myeda's personal experience to the lesson's big idea.

1. **Open with a Question:** "Myeda, what does the word 'belonging' mean to you? When do you feel like you really belong to a group, like our family or your group of friends?"
2. **Brainstorm Web:** On a large sheet of paper, write "Feeling of Belonging" in a circle in the middle.
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As Myeda shares ideas, write them down, creating a web.
3. **Focus on Actions:** Guide the conversation toward specific actions or activities. Ask, "What are some things we do together that make us feel close and connected?" (Examples might be: Eating dinner together, playing a game, sharing a story, getting a hug, celebrating a holiday, working on a project).
4. **Select Categories:** From the brainstorm web, help Myeda choose 4-5 clear, distinct activities. These will become the categories for her data survey. For example:
    - Playing Games Together
    - Sharing a Meal
    - Getting a Hug
    - Reading a Story Together
    - Talking About Our Day

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3. Main Activity: "Finding Out & Sorting Out" (30-40 minutes)

This is the hands-on data collection and representation part.

Part A: Be a Researcher! (10-15 mins)

1. **Frame the Survey Question:** Together, create a simple question. "Which of these activities makes you feel the most connected and like you belong?"
2. **Create a Tally Chart:** On a piece of paper, list the 4-5 chosen categories and create a simple tally chart to record answers.
3. **Collect Data:** Myeda will call, message, or ask 5-10 family members and friends the survey question. She will record their single best answer with a tally mark. (This is a great opportunity to practice communication skills!)

Part B: Tell the Story with Pictures (Pictogram) (10 mins)

1. **Introduce Pictograms:** Explain that a pictogram uses pictures or symbols to show data. It’s a story told with pictures!
2. **Create a Key:** The most important step! Ask Myeda to choose a simple symbol (e.g., a smiley face, a heart, a star) to represent one person's vote. Have her draw the symbol and write what it means. For example: ❤ = 1 person.
3. **Build the Pictogram:** On a new sheet of paper, Myeda will write the title (e.g., "What Makes Our Community Feel Belonging"). She will list the activity categories down the side. Next to each category, she will draw the correct number of symbols based on her tally chart.

Part C: Build it with Bars (Bar Graph) (10 mins)

1. **Introduce Bar Graphs:** Explain that a bar graph uses bars to show the same data, making it easy to compare numbers quickly.
2. **Set up the Graph:** Help Myeda draw the L-shape for the axes.
    - **Label the X-axis (bottom):** Write the activity categories along the bottom. Title this axis "Activities."
    - **Label the Y-axis (side):** Write the numbers (scale). Start with 0 and go up to the highest number of votes she received. Title this axis "Number of People."
    - **Give it a Title:** The graph needs the same title as the pictogram.
3. **Draw the Bars:** For each category, Myeda will draw a bar up to the correct number on the side. She can color each bar differently to make it pop!

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4. Analysis & Discussion: "Going Further" (10 minutes)

This part focuses on critical thinking and interpreting the data, connecting it back to the central idea.

Create a simple "Data Detective" worksheet or just ask these questions aloud:

1. Which activity made the most people feel like they belong? How can you tell just by looking at the bar graph?
2. Which activity received the fewest votes?
3. How many more people chose [most popular activity] than [least popular activity]?
4. Were you surprised by the results? Why or why not?
5. **Big Picture Question:** Looking at your graphs, what did you learn about what helps your family and friends feel connected?

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5. Closure & Reflection (5 minutes)

Bring the learning back to the PYP theme.

- Ask Myeda to complete this sentence: "Today I learned that math can help me understand my relationships by..."
- Praise her for her hard work as a researcher and data analyst. Hang up her beautiful graphs!

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6. Differentiation & Extension

- **For Support:**
  - Provide a pre-made template for the tally chart and graphs with axes already drawn and labeled.
  - Use physical objects like LEGOs to build the bar graph first before drawing it. Each LEGO brick can represent one vote.
- **For a Challenge (Extension):**
  - Introduce a scale in the pictogram (e.g., a heart symbol = 2 people). How would that change the graph?
  - Ask Myeda to survey a different group (e.g., her homeschool co-op friends) and create a second set of graphs. She could then write a few sentences comparing what her family values for belonging versus what her friends value.
  - Ask her to predict what the results would be if she surveyed 20 people.

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7. Assessment

- **Formative:** Observe the process. Is Myeda able to create a tally chart? Does she understand the concept of a key for the pictogram? Is she setting up her bar graph axes correctly? Ask guiding questions throughout.
- **Summative:**
  1. The completed pictogram and bar graph (check for title, labels, key, and accuracy).
  2. Her answers to the "Data Detective" questions, which demonstrate her ability to interpret

the data.
3. Her final reflection statement, which shows her connection of the math concept to the central idea of belonging.

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