Technology Integrated Lesson Plan

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Original Lesson Plan

- Organize your data Lesson Plan

https://www.education.com/lesson-plan/organize-your-data/

Organize Your Data

Education.com

Third Grade ***Math***

Collect and graph! In this lesson, your students will practice collecting, organizing, and interpreting data by using real life examples.

Learning Objectives

Students will be able to collect, record, and interpret data. Students will learn to construct bar and picture graphs for data they collect.

Materials and preparation

- Board
- Markers
- Data Collection Book
- Quick Check: Organize Your Data
- Eat Healthy Bar Graph worksheet
- Class set of the Reading Pictographs: Eggplant Cooking worksheet
- Class set of the Reading Pictographs: Tomato Fest! worksheet
- Class set of the Getting Graphs: Gone Fishing! worksheet
- Class set of the Reading a Bar Graph worksheet
- Pencils
- Document Camera

Key terms

- data
- picture graph
- bar graph
- x-axis
- y-axis

Attachments

- Data Collection Book (PDF)
- Quick Check: Organize Your Data (PDF)
- Eat Healthy Bar Graph (PDF)
- Reading Pictographs: Eggplant Cooking (PDF)
- Reading Pictographs: Tomato Fest! (PDF)
- Gone Fishing (PDF)
- Reading a Graph (PDF)

Introduction *(3 minutes)*

- Explain to your students that they are going to learn about representing **data**, or information.
- Ask your students to give an example of a time when they had to collect and use data.
- Take data from your students by asking them to say what they brought for lunch or are planning to have for lunch. Write this on the board in categories. For example, the categories could be salad, sandwich, pizza, and other.

EL

Beginning

- Allow students to use their home language (L1) or new language when sharing.

- Have learners draw visuals to accompany their explanations of their lunch plans.

Intermediate

- Provide a sentence stem/frame for students to use when explaining, such as "I had to collect and use data when ___." and "I am planning to have ___ for lunch."

Explicit Instruction/Teacher modeling *(15 minutes)*

- Display the lunch count data on the board.
- Ask a volunteer to set up a **picture graph**, or a visual representation of data with pictures, and a **bar graph**, or a visual representation of data with rectangles that represent numbers, on the board.
- Explain that numbers are usually on the vertical side (**y- axis**), and what is being measuring is usually on the horizontal side (**x-axis**). For example, in the lunch data graph, food would be on the x-axis, and number of people that brought that food would be on the y-axis.
- Invite someone to illustrate the lunch data on a bar graph. Have her use a different colored marker for each item, such as green for salad and yellow for pizza.
- Ask your students questions about the graph. Potential guiding questions include:
  - What do you think is a favorite food among our class?
  - Least favorite?
  - How many more people want salad compared to pizza?
  - How many fewer people want sandwiches compared to pizza?
- Then, invite another volunteer to represent the data on a picture graph. Explain that for this picture graph, each picture will represent two food items.
- Remind your students how to count by twos, and explain that two pictures with two pizzas represent four pizzas.
- Explain to your students that a half picture represents one item.

EL

Beginning

- Give students vocabulary cards for the key terms from the lesson. Include a student-friendly definition and a visual. If possible, include information in their L1.

Intermediate

- Display sentence frames for students to use as they answer each question about the data.
- Ask students to share how to make a bar graph or picture graph. Allow them to talk to a partner before sharing with the whole group.

Guided Practice *(20 minutes)*

- Explain to your students that they are going to collect data for their favorite types of candy.
- Go around the class and ask each student to name their favorite type of candy.
- Record the responses on the board.
- Direct your students to partner up and draw a bar graph for this data. Have them label the x and y axes.
- Next, go around the class and have each student say their favorite animal.
- Record this data on the board.
- Instruct your students to partner up and draw a picture graph for this data, reminding them that one whole picture represents two animals.
- Ask your students questions about the graph. For example:
  - What is the least favorite candy among our class?
  - How many fewer friends like birds compared to dogs?
- Instruct your students to complete the Eggplant Pictograph worksheet, explaining that one picture represents three items.

EL

Beginning

- Provide options for favorite candy and favorite animal from which students can choose. Include an image of each option.
- Pair students with supportive peers or an EL with the same L1.

Intermediate

- Give students a template for a picture graph and a bar graph, and instruct them to fill in the information.
- Provide sentence frames for students as they answer questions and explain, such as "The answer is ___ because ___."

Independent working time *(15 minutes)*

- Give your students two of the following worksheets to complete: Tomato Pictograph worksheet, Gone Fishing worksheet, Reading a Bar Graph worksheet, Eat Healthy Bar Graph worksheet.

EL

Beginning

- Invite students to work in a small, teacher-led group. Prompt them to discuss the data and their answers before writing them on the worksheet.

Intermediate

- Have students complete the worksheet independently, and then discuss their answers with a partner. Have them share their reasoning by explaining how they arrived at the answer.

Related books and/or media

- Find interactive books for each child's level.

Differentiation

Enrichment:

- Divide your students into groups of 3, and pass out the Data Collection Book and Chart worksheets. Instruct your students to collect data from the other students in the class to make their bar graphs. Have them use the chart to collect data, and then direct them to transfer that information into the graph in the book.

Support:

- Have your students compare only two categories in bar graphs and picture graphs. Instruct your students to only practice one type of graph for the class period.

Assessment *(5 minutes)*

- Distribute the picture graph on the second page of the Organize Your Data Assessment. Have students complete the assessment.

EL

Beginning

- Guide students through the assessment by reading aloud the questions and having them respond on their whiteboards.

Intermediate

- Allow students to use reference materials in their L1 or L2 to determine the meaning of any unfamiliar words.

Review and closing *(2 minutes)*

- Ask students to turn and talk to a partner about the question, "How would you organize data that was collected about students' favorite hobbies?"
- Remind students that collecting data and organizing it helps us have a clear understanding of a situation. Using picture graphs and bar graphs gives us visuals, and we can answer many different questions just by looking at the organized data.

EL

Beginning

- Define the word *hobby* for students by providing a student-friendly definition, several examples, and visuals.
- Pair students with a supportive peer or an EL with the same L1.

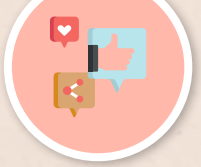
Intermediate

- Provide a sentence stem, such as "I would organize the data by ___."

Original Lesson Strengths & Weaknesses

Strengths

Students will understand how to collect and graph data using real life examples.

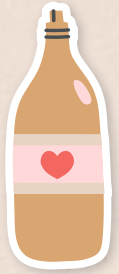


Weaknesses

Provides too much paperwork which will not maintain students attention.

Integrated Technology

Introduction (5-10 min)



- Explain to students that we are going to learn about representing data and information.
- Ask students about a time when they collected data and used data.
- Start taking data from students like what their favorite foods are. Categorize these foods on the board so students are able to see them.

Teacher Modeling (15 min)

- Explain to students that we are going to use the data I just collected from them to organize into a visual graph. We are going to use a bar graph to display the data.
- Explain how the numbers are usually on the vertical side (y-axis) and what is being measured is on the horizontal side (x-asis). Explain to students what is being measured is the food.
- Have a volunteer create a graph on the board using different markers.
- Ask students questions about the graph like “what do you think is the favorite food?”, “How many more people like xxx food than xxx food?”.

Guided Practice (20 min)

- Explain to students that they are going to collect data about their favorite candy.
- They are going to go around the room and ask everyone their favorite candy.
- Record students responses on the board.
- Have students partner up and use Canva to create their graph they can use pictograph on the candy or just a regular bar graph.
- Ask students questions like what was the least favorite candy and what candy they all liked best.

Independent work

- Provide students with a worksheet to complete: Tomato Pictograph worksheet
- Allow them to discuss their answers with partner.

Closing

- Provide students with a ticket outside with socrative app with the answers from their worksheet.

Materials

- Pencil
- Ipad
- Canva (App)
- Socrative (App)
- Tomato Pictograph Worksheet