

5E Lesson Plan

Lesson Title: Data Graphs

Lesson Duration: 45 min

NAME: Daniela Muradas	SUBJECT: MATH
SCHOOL: Oscar F. Loya Elementary School	GRADE LEVEL: 1 st grade
Class Description: There are 23 students in the classroom. 11 students are girls and 12 students are boys. 2 students have IEPs. 9 students in the classroom are English Learners with their primary language being Spanish. 14 students speak English Only at home.	

Background Knowledge	-Students have been introduced to different types of data graphs and how they may look differently. Students understand the different parts of a data graph like for example students know graphs contain categories and also contain numbers to determine how many of something are in each category.
Standards <ul style="list-style-type: none">● Content● English Language Development (ELD)	<p>-1.MD.C.4. Organize, Represent, and Interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p> <p>-1.1.B.5. Listening actively to spoken English in a range of social and academic contexts.</p>
Standards for Mathematical Practice	MP6 Attend to precision; MP7 Look for and make use of Structure
Central Focus/Learning Target	-The focus of this lesson is for students to understand the concept of data tables and graphs. Students already know that data graphs can look differently, and they understand graphs have categories and numbers to determine how much of something. However, this is students first time organizing, representing, and interpreting data on their own. The goal for the lesson is for students to look at a data table on their own and be able to answer questions about it to help them understand how looking at data works.
Lesson Learning Objective/ Target	-Students will be able to Organize, Represent, and Interpret data with up to three categories by asking and answering questions about the total number of data points, how many in each category, and how many more or less are in one category than in another during a group activity and on an exit ticket.
Academic Language Objective <ul style="list-style-type: none">● Demands● Functions● Forms	-Students will be able to listen actively to spoken English in a range of social and academic contexts about data graphs and will be able to contribute to the class discussion when answering questions about the data as instructed by their teacher.
Assessment Plan, Rubric, and	-During the lesson, students will be Informally assessed during the Exploration and Explanation part of the lesson. Students will be Formally assessed in the Evaluation

<p>Feedback Procedures After Student Work Analysis</p>	<p>part of the lesson.</p> <p>Formative #1: When students are working with their partners, I will be walking around and assessing students on a checklist (a sample of the checklist is included at the end of the lesson). They will receive a checkmark if they are successfully contributing to the group discussions and have knowledge of how to insert data on a bar graph.</p> <p>Formative #2: When students are sharing out answers, comments, and I will be informally assessing their knowledge of the concept by writing down on the notes section of the checklist of who still needs extra support or who is still confused on this concept. Additional notes or observations will be recorded about the students if needed.</p> <p>Summative: I will use an Exit Ticket to check for their understanding of data graphs and how to organize, represent, and interpret them.</p> <p>See Rubric Matrix at the end.</p>	
<p>Materials</p>	<p>-Poster Paper -Markers -Pencils -Colors -Worksheets (numbered at the end)</p> <ul style="list-style-type: none"> o #1-Favorite Flower (Exploration) o #2-Favorite Color (Elaboration) o #3-Favorite Sports (Evaluation Exit Ticket) 	
<p>Instruction and/or ENGAGEMENT Activity (Identify necessary supports/scaffolding/modifications)</p> <p><i>[Time Allotted: 10min]</i></p> <p>Scaffolds are in Bold</p>	<p>Teacher Does:</p> <ol style="list-style-type: none"> 1. Have students sit on the carpet at the front of the room. Display poster paper in front of the students. Draw a bar graph to display to the students. Label the Bar Graph “Favorite Cake”. Label and color code all the parts of the graph for students to visually see the different parts. Write questions on poster as well. 2. Introduce activity to the students. “Class, today we will be talking about data and will be looking at data in bar graphs. This bar graph is going to be on Favorite Cake Flavors. We will be answering some questions about this graph that is shown on the poster”. 3. Explain directions to students. “We will first look at the data that is on the poster, then we will do a think-aloud where I will call on students who have the answer to the questions about the data we see on students favorite Cake Flavor”. 	<p>Students Do:</p> <ol style="list-style-type: none"> 1. Students will sit on the carpet and will look at the poster that is displayed in front of them. 2. Students will listen to what they will be doing as an activity. 3. Students will listen to directions for the poster that is in front of them.

	<p>4. Read the questions from the poster out loud to the students so they are able to know what questions they need to answer.</p> <p>5. Check for students understanding of the data as they are answering the questions being asked of them. Write answer next to each Cake Flavor. Questions include: - How many people like chocolate cake? - How many people like marble cake? -What is the least popular cake? -What is the most popular cake?</p> <p>6. Call on several students to see if students think the same or if there is a variety of answers.</p> <p>7. After students are done thinking-aloud, go over the questions with them to repeat what was talked about in the data and confirm answers to see if students were correct.</p>	<p>4. Students will listen to what questions need to be answered based on the bar graph displayed.</p> <p>5. Students will answer questions about the bar graph in a think-aloud by looking at the categories of cake flavors, then looking at the amount of people who chose that cake flavor as their favorite.</p> <p>6. Students will raise their hands to answer questions based on the data graph they see.</p> <p>7. Students will listen to the correct answer to the questions and will consider the reasoning behind the answers based on the data.</p>
<p>Formative (Informal) Assessment</p>	<p>-Teacher will check for understanding by students thinking-aloud to the instruction. -Teacher will check if students are answering questions correctly, and if they know how to find the appropriate data for each category.</p>	
<p>Instruction and/or EXPLORATION Activity</p> <p>(Identify necessary supports/scaffolding/modifications)</p> <p><i>[Time Allotted: 10min]</i></p> <p>Scaffolds are in Bold</p>	<p>Teacher Does:</p> <ol style="list-style-type: none"> 1. Start next activity by passing out a “Favorite Flower” bar graph worksheet for the students to work on. 2. Introduce assignment by saying, “For this worksheet, you will be working with a partner”. Pair students into partners. 3. Give students the directions. “I want you all to work with your partner and you will be looking at the data for different students favorite flower. I want you to color in the amount and make a bar graph. Then, answer the questions at the 	<p>Students Do:</p> <ol style="list-style-type: none"> 1. Students will receive a worksheet. 2. Students will listen to directions and listen to who their partner will be. 3. Students will listen to the directions being said.

	<p>bottom”.</p> <ol style="list-style-type: none"> 4. Read questions at the bottom for the students that way they know what they are answering. 5. Allow students to work collaboratively with their partner to complete the worksheet together. 6. Walk around to observe students and help those who need guidance or have questions. 	<ol style="list-style-type: none"> 4. Students will listen to the questions they need to answer. 5. Students will begin working with partners going through the worksheet. 6. Students will ask questions and ask for guidance if needed.
<p>Formative (Informal) Assessment</p>	<p>- Partner work allows Teacher to walk around the room and observe the contributions students are making with their partner and how well they are working collaboratively. -Teacher will walk around with a checklist. Students will receive a checkmark if they are successfully contributing to the group discussions and have knowledge of what they are supposed to do on their worksheet.</p>	
<p>Instruction and/or EXPLANATION Activity</p> <p>(Identify necessary supports/scaffolding/modifications)</p> <p><i>[Time Allotted: 5min]</i></p> <p>Scaffolds are in Bold</p>	<p>Teacher Does:</p> <ol style="list-style-type: none"> 1. Call everyone’s attention to discuss the activity. 2. Teacher will call on a partner group to share out and demonstrate their bar graph to the class. Display the worksheet on the board so everyone can see. Make corrections as needed. 3. Begin to review the different parts of the bar graph to the class by asking students to raise their hands to answer: <ul style="list-style-type: none"> -What are the different flower categories -How many students voted for roses? -How many students voted for Daisies? -How many students voted for Sunflowers? 4. Ask the class the questions from the worksheet that draws from the data which include: <ul style="list-style-type: none"> -Which flower got the most votes? -Which flower got the least votes? -How many more votes did the rose have 	<p>Students Do:</p> <ol style="list-style-type: none"> 1. Students will stop what they are doing and will give their attention to the teacher. 2. A partner group will share out the work they completed. The others will also follow along on the paper being displayed to add or make corrections to their papers. 3. Students will raise their hand if they know the answer. 4. Students will share out their answers to the class while the rest of the students

	<p>then the daisy? -How many votes were there in all?</p> <ol style="list-style-type: none"> 5. Ask student to repeat what they heard the others share out. 6. Ask the class if they have any questions or comments about what they heard being shared out. Make note of students who are confused on the checklist. 7. Conclude this activity by complimenting students on how well they were working collaboratively with their partners. And explaining the main takeaways to the students, “Bar graphs show data for different categories. For this activity we input our data into a graph so we can see how many votes each flower had”. 	<p>are checking their work.</p> <ol style="list-style-type: none"> 5. A student shares out what they heard being presented. 6. Students may share out any questions or comments they may have about what was talked about. 7. Students will listen as teacher concludes activity and reviews the main takeaways of the activity.
<p>Formative (Informal) Assessment</p>	<p>-As students are sharing out their work, I will be informally assessing their knowledge of the concept on the checklist. -Students will be asked to share out questions or comments about this topic and this will be another chance to support students who may still be confused. This will be noted on the notes section of the checklist to be aware of who is struggling with the concept.</p>	
<p>Instruction and/or ELABORATION Activity Pose Purposeful Questions to Elicit Student Thinking (Identify necessary supports/scaffolding/modifications)</p> <p><i>[Time Allotted: 10min]</i></p> <p>Scaffolds are in Bold</p>	<p>Teacher Does:</p> <ol style="list-style-type: none"> 1. Have students practice doing a bar graph and filling in data 2. Show a blank bar graph of “Favorite Colors” to the students on the projector to get them thinking. Have students look at this bar graph and take a minute to look at the categories of the different colors. 3. Explain directions to students by saying, you will each create a group bar graph for you to collect data on your own based on each student in your groups favorite color. 4. Explain more of the directions by saying, “I want you to figure out how many students in your group like each color and you will shade that in your bar graph”. 	<p>Students Do:</p> <ol style="list-style-type: none"> 1. Students will wait for directions for next activity. 2. Students will look up on the projector and examine the bar graph they will have to complete. 3. Students will listen to the directions. 4. Students will listen to directions on what to do with the graph.

	<ol style="list-style-type: none"> 5. Give students time to talk with their group and collect data. Have students count from the graph to be able to share out their answers. 6. When students are done, take responses from each group by displaying their data bar graphs on the projector to the class. 	<ol style="list-style-type: none"> 5. Students will talk in their groups and will collect their group data. 6. Students will go up to projector to display their data bar graphs for the class to see.
<p>Closure with Outcomes Assessment or EVALUATION Activity</p> <p><i>[Time Allotted: 10min]</i></p> <p>Scaffolds are in Bold</p>	<p>Teacher Does:</p> <ol style="list-style-type: none"> 1. Pass out bar graph worksheet with questions that students need to complete as an exit ticket. 2. Give students directions by saying, “This worksheet will contain a bar graph color coded with different categories about “Favorite Sports” and you will answer questions about the data”. 3. Allow students to take a look at the exit ticket. Read questions out loud for students to hear what they will be answering. 4. Have students work individually and quietly on their Exit Ticket. 5. Walk around and address any concerns or need to clarify something for the students. 6. Have students turn in worksheet to you and have students line up once they have finished their exit ticket. 7. Student papers will be checked and returned for accuracy the following day. 	<p>Students Do:</p> <ol style="list-style-type: none"> 1. Students will receive exit ticket worksheet. 2. Students will listen to the directions that are given by the teacher. 3. Students will listen to questions being read aloud to them to know what they need to answer. 4. Students will quietly work on their Exit Ticket. 5. Students will ask questions or voice concerns. 6. Students will turn in their worksheet when they are finished. 7. Students will receive their exit ticket the following day.

Informal Checklist

Student's Name	Working collaboratively with partner	Understands how to insert data on a bar graph	Notes/ Observations
1.			
2.			
3.			
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21.			
22.			
23.			

Rubric

	Needs Development (1)	Understanding (2)	Complete Understanding (3)
Working Collaboratively	Student is not working collaboratively with their partner.	Student is somewhat working with their partner.	Student is working collaboratively with their partner.
Inserting data on graph	Student does not know how to insert data on a bar graph.	Student is able to insert some data to graph.	Student is able to insert all data to the bar graph.
Knowledge of Math Standard	Student is not able to answer questions about total number of data points, how many in each category, and how many more or less are in one category than in another.	Student is able to answer some questions about total number of data points, how many in each category, and how many more or less are in one category than in another.	Student is clearly able to answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

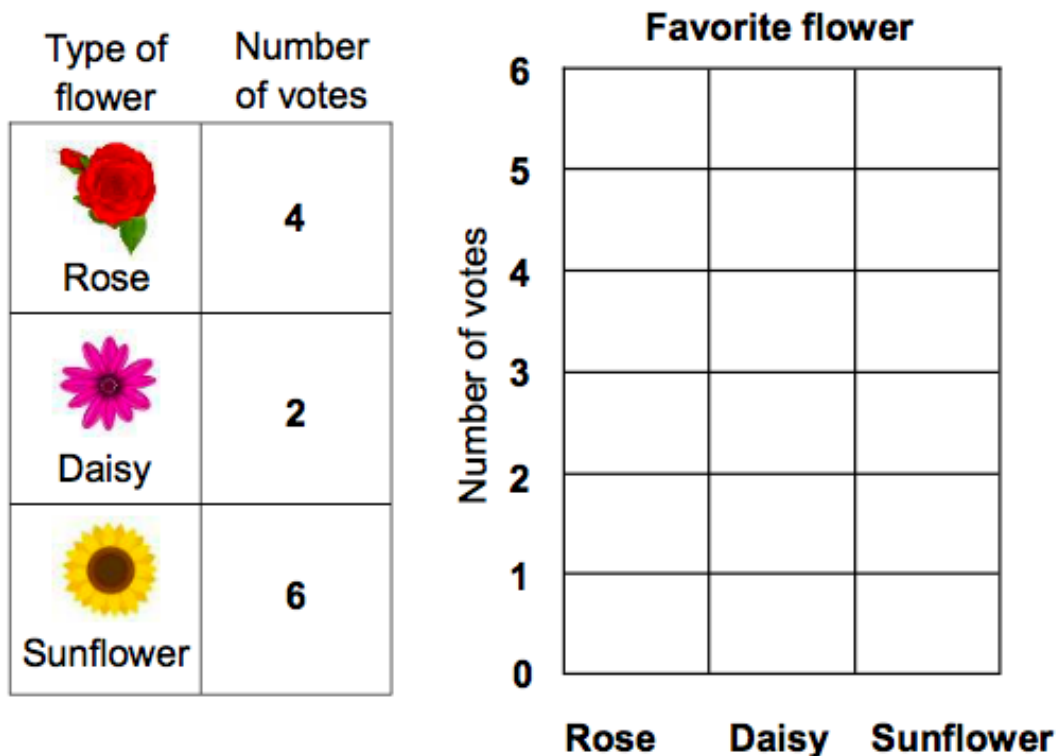
Worksheet #1



Favorite flower bar graph

Data and Graphing Worksheet

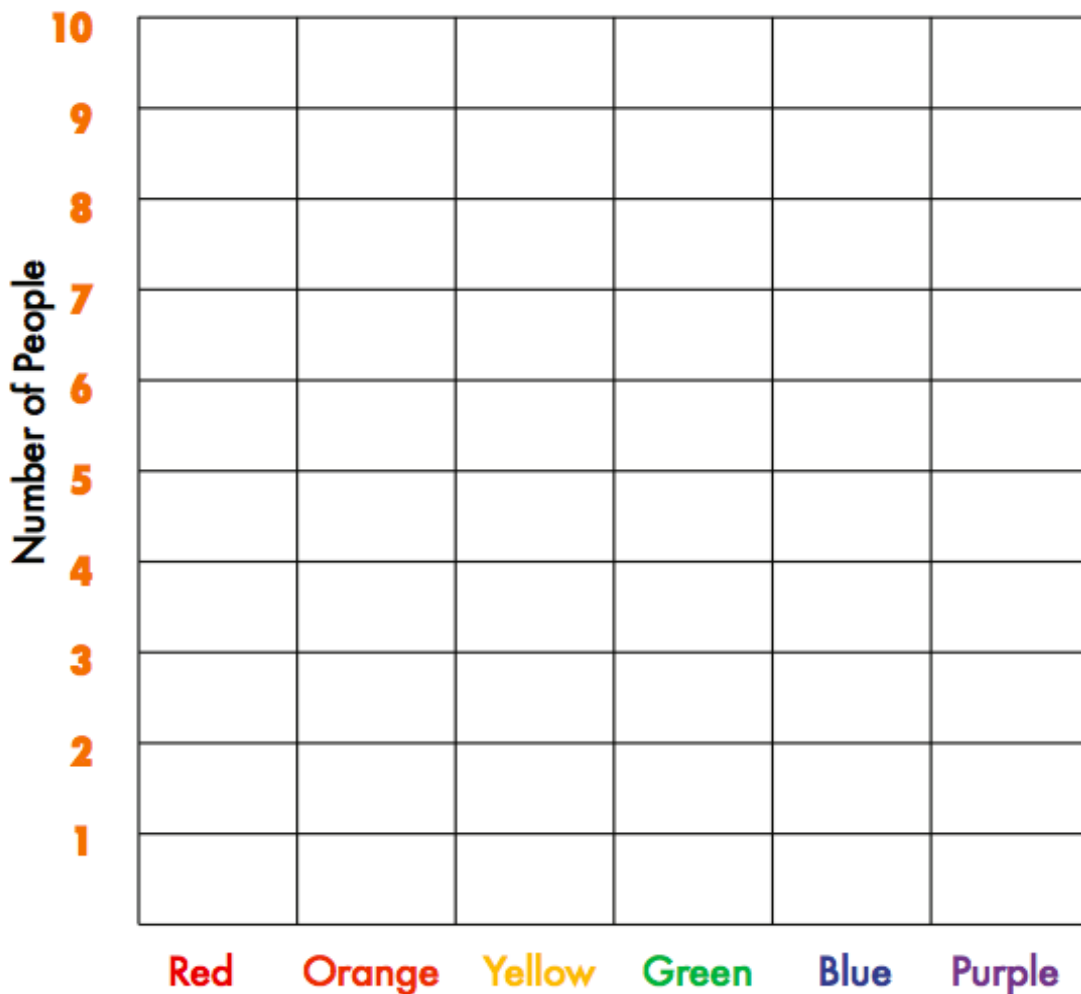
A group of kids voted for their favorite flowers.
Create a bar graph and answer the questions.



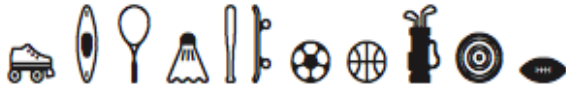
1. Which flower got the most votes? _____
2. Which flower got the least votes? _____
3. How many more votes did the rose have than the daisy? _____
4. How many votes were there in all? _____

Favorite Colors

Use the bar graph below to fill in your own data! Ask your friends and family to tell you what their favorite color is from the choices below.



Worksheet #3 (EXIT TICKET)



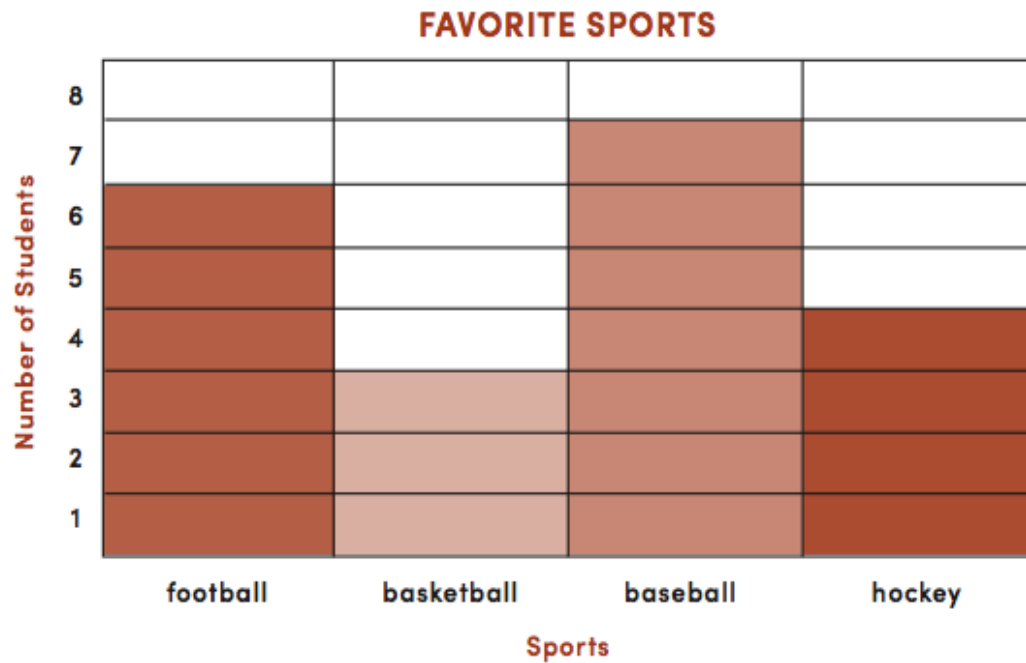
Name: _____

Date: _____

BEGINNING BAR GRAPHS:

Favorite Sports

Use the bar graph to answer the questions.



1. How many students like football? _____

2. How many students like baseball? _____

3. How many students like basketball? _____

4. How many students like hockey? _____