

2nd Grade Math: Real-World Problems: Picture Graphs

Introduction

Picture graphs (or pictographs) are useful tools for representing data visually. They can help students solve real-world problems by organizing information in an easy-to-understand format. In this lesson, students will learn how to interpret picture graphs and use them to answer questions about real-life situations.

Key Concepts
















- **Picture Graph:** A graph that uses pictures or symbols to represent data.
- **Data Interpretation:** The process of analyzing information presented in a graph to answer questions.
- **Scale:** The value that each picture represents (e.g., one picture = one item, or one picture = two items).


Steps to Solve Real-World Problems Using Picture Graphs

1. **Read the Picture Graph:** Look at the graph to understand what it represents and identify the scale.
2. **Analyze the Data:** Count the pictures to determine the total for each category.
3. **Answer Questions:** Use the data from the graph to solve problems related to the information it presents.

Example of a Picture Graph

Example Graph: Favorite School Subjects

Subject	Picture
Math	   
Science	  
Art	      (6)
Reading	 

Scale: Each book () represents 1 student.













Interpreting the Graph

1. **How many students chose Math as their favorite subject?**
 - **Answer:** 4 students chose Math.
2. **How many students chose Art?**
 - **Answer:** 6 students chose Art.

3. **Which subject is the most popular?**
 - **Answer:** Art is the most popular subject, with 6 students.
4. **Which subject is the least popular?**
 - **Answer:** Reading is the least popular subject, with 2 students.
5. **How many more students preferred Science than Math?**
 - **Answer:** 1 more student preferred Science (3 students) than Math (4 students).

Practice Problems

1. **Problem 1:** A picture graph shows the number of pets owned by students in a class.





Pet Type	Picture
Dogs	   
Cats	    
Birds	 
Fish	

Scale: Each pet symbol represents 1 pet.

Questions:

- a. How many dogs are there?
- b. How many cats are there?
- c. Which pet type is the most popular?
- d. How many more cats than birds are there?

2. **Problem 2:** A picture graph shows how many books students read last month.

Genre	Picture
Fiction	
Non-Fiction	
Mystery	 (7)
Fantasy	

Scale: Each book symbol represents 1 book.

Questions:

- How many mystery books were read?
- Which genre had the least number of books read?
- How many more fiction books than fantasy books were read?

Practice Activity

- Group Activity:** In pairs, students choose a topic (e.g., favorite snacks, colors, or games), collect data from classmates, and create a picture graph. They will then present their graph to the class and answer questions based on the data.
- Individual Activity:** Students will create a picture graph based on their own interests or recent activities, such as how many hours they spent on different hobbies. They can use symbols to represent their data and answer questions about their graph.

Conclusion

Picture graphs are powerful tools for visualizing data and solving real-world problems. By learning to create and interpret these graphs, students enhance their ability to analyze information, make comparisons, and communicate findings effectively!