1st Grade Math: More Picture Graphs – Collecting and Analyzing Data

In this lesson, we will expand our knowledge of **picture graphs** by learning how to **collect** data and **analyze** it using picture graphs!

- **Data**: Information or facts collected about something.
- **Collect Data**: The process of gathering information.
- **Picture Graph**: A graph that uses pictures or symbols to show data.
- **Analyze**: Looking at the data to understand it and answer questions.

Steps to Collect and Analyze Data Using Picture Graphs:

1. **Collect Data**:
   a. The first step is to gather information. For example, we might want to find out how many students like different types of pets.
   b. Ask the question: "What is your favorite pet?"
   c. Write down the answers: dog, cat, fish, bird, etc.
2. **Organize the Data**:
   a. After collecting the data, we organize it.
   b. Example: If 3 students like dogs, 2 students like cats, and 1 student likes fish, we can write this information down.
3. **Make a Picture Graph**:
   a. Draw a picture graph with a **title** and **pictures** to represent the data.
   b. Don't forget to include a **key** that tells you what each picture represents.

Example: Favorite Pets Picture Graph

We asked 6 students about their favorite pets and here are the results:

- 3 students like dogs 🐕
- 2 students like cats 🐈
- 1 student likes fish 🐟

Now, let's create a picture graph to represent this data:

Pet	Number of Students
🐕 Dogs	🐕 🐕 🐕
🐈 Cats	🐈 🐈
🐟 Fish	🐟

Key: Each picture represents **1 student.**

Analyzing the Data:

Once we have our picture graph, we can **analyze** the data by asking and answering questions. Here are some questions we can ask:

1. **Which pet is the most popular?**
   a. Answer: Dogs (3 students like dogs).
2. **Which pet is the least popular?**
   a. Answer: Fish (only 1 student likes fish).
3. **How many more students like dogs than cats?**
   a. Answer: 1 more student likes dogs than cats (3 students like dogs, 2 students like cats).
4. **How many students like cats or fish?**
   a. Answer: 3 students like cats or fish (2 like cats, 1 likes fish).

Activities

1. **Classroom Survey:**
   a. Choose a topic (favorite fruits, colors, or sports). Have each student give their answer and collect the data.
   b. Create a picture graph together based on the collected data.

2. **Analyzing a Picture Graph**:
    a. Show students a picture graph and ask them questions about the data, such as "Which is the most common?" or "How many in total?"
3. **Make Your Own Picture Graph**:
    a. At home or in class, students can collect data (such as favorite snacks or toys) and create a picture graph to show the results.

Conclusion

Collecting and analyzing data using picture graphs is a great way for students to understand how to organize and interpret information. With simple questions and fun pictures, students can see patterns in data and draw conclusions easily!