

LESSON 5

Objective

Make and interpret a pictograph.

Common Core State Standards

- **1.MD.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.

Measurement and Data

Pictographs

A pictograph is a visually appealing type of graph that children in the early elementary grades can readily construct to display and interpret data. By making pictographs children gain experience with identifying and using symbols to represent real objects and data.

Try It! Perform the Try It! activity on the next page.

Talk About It

Discuss the Try It! activity.

- **Ask:** Which row in your pictograph has the most shapes in it? Which has the least?
- Point out one of the rows on the pictograph. **Ask:** How many shapes are in this row? What does the number of shapes in the row mean? Guide children to understand that each shape represents one tree.
- **Ask:** How is a pictograph different from a bar graph? Could you show the same information on a bar graph? How would you do it?

Solve It

With children, reread the problem. Have children use crayons and blank paper to draw their own pictographs. Have children orient their pictographs horizontally. Remind them to use only one shape or picture to mean “tree,” even though there are four different kinds of trees.

More Ideas

For other ways to teach about making a pictograph—

- As additional pictograph activities, have the whole class do center activities using the 4 × 12 Grid Side of the Graphing Mat. Put classroom objects or photos cut out from magazines on the mat, such as different kinds of leaves, toy animals, and so on. Then have children draw pictures of these objects to make their own pictographs, using the mat.
- Have children come up with a poll or survey question to ask another class. After children collect the data, have them graph the data on the 4 × 12 Grid Side of the Graphing Mat as a class. Then invite children to make their own pictographs on paper.

Formative Assessment

Have children try the following problem.

Lisa’s class made a pictograph of their favorite ice cream flavors. Which flavor had 5 votes?

Vanilla	    
Chocolate	   
Strawberry	   

Try It

20 minutes | Groups of 4

Here is a problem about making a pictograph.

Your class will plant trees in a nearby park for Arbor Day. Your class will plant 1 oak tree, 4 elm trees, and 2 pine trees. How can you make a graph to show how many of each kind of tree your class will plant?

Introduce the problem. Then have children do the activity to solve the problem.

Distribute Pattern Blocks and the Graphing Grid (BLM 8) to each group. Make a tally chart on the board to show the name and number of each type of tree listed in the problem.

Materials

- Pattern Blocks (including at least 7 green triangles per group)
- Graphing Grid (BLM 8; 1 per group)

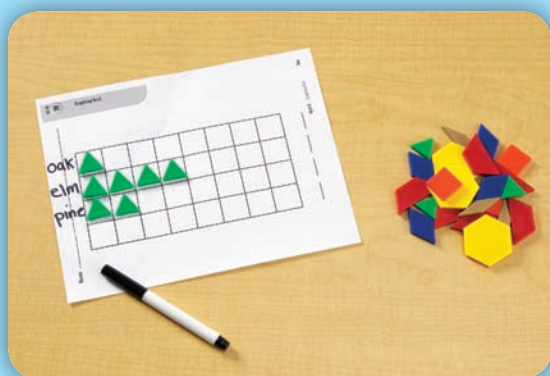


1. Direct children's attention to the blocks. Have children sort out their 7 green triangles.

Ask: *Why would a green triangle be a good shape to use to represent a tree?*



2. Have children label three rows of their grid with the names of the trees written on the board. Make sure children's grids are rotated as shown.



3. **Say:** *Look at the tally marks after each tree name on the board.* Tell children that for each tally mark, they should place a green triangle block in the row of the corresponding tree on their pictographs.

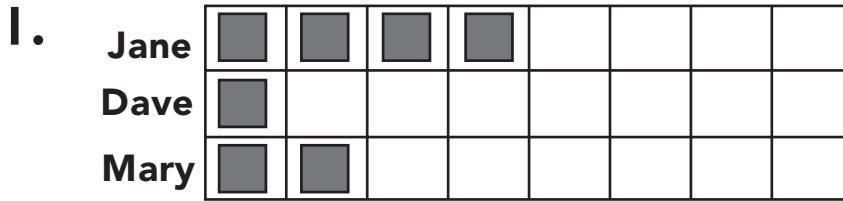
! Look Out!

Look out for children who start making a bar graph instead of a pictograph. Explain that a pictograph uses pictures or symbols—not bars—to represent the numbers on the chart. Show children other examples of pictographs. Reinforce how the pictures help children understand the data in the graph more quickly than if there were just numbers.



Use Pattern Blocks. Make the graph. Tell the number of squares for each person.

(Check students' work.)



Jane 4

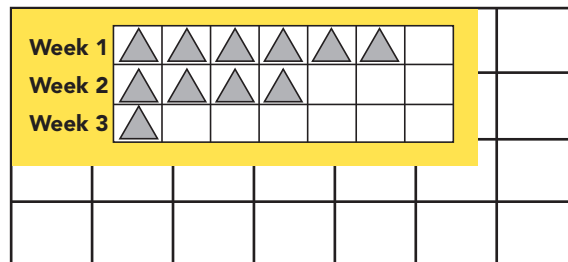
Dave 1

Mary 2

Use Pattern Blocks. Make a graph of the set of data. Draw the graph.

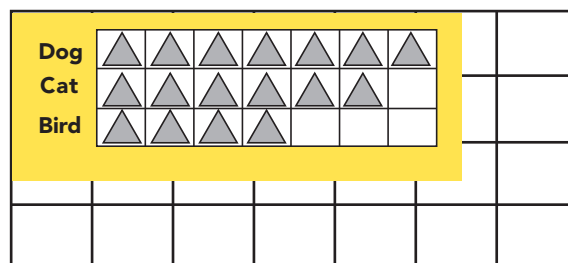
2. Week 1: 6
Week 3: 1

Week 2: 4



3. Dog: 7
Bird: 4

Cat: 6



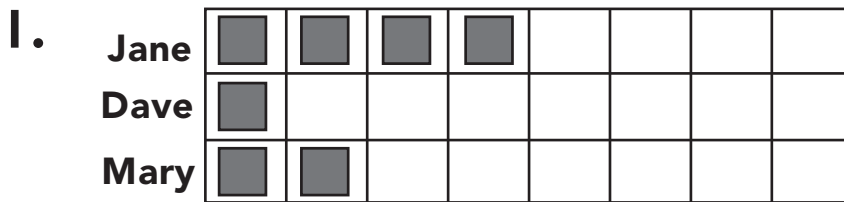
Answer Key

Challenge! What does the graph need on the left side of each row? Why?

Challenge: (Sample) Labels so you know what the numbers refer to.

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Use Pattern Blocks. Make the graph. Tell the number of squares for each person.



Jane _____

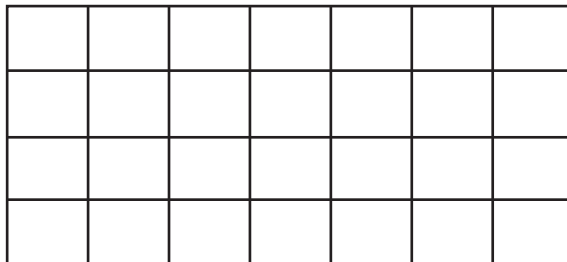
Dave _____

Mary _____

Use Pattern Blocks. Make a graph of the set of data. Draw the graph.

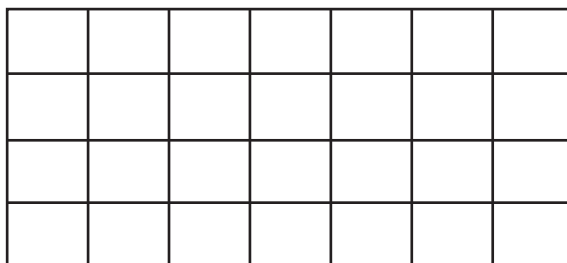
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Name _____

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