

Bar Graph Builder

Choose the scale, label the axes and draw the data.

GRADE 3 • 3.PS.1.d

3.PS.1.d "Organize and represent a data set using bar graphs with a title and labeled axes, with and without the use of technology tools. Determine and use an appropriate scale (increments limited to multiples of 1, 2, 5 or 10)."

NAME _____

DATE _____

BUILD A READABLE BAR GRAPH

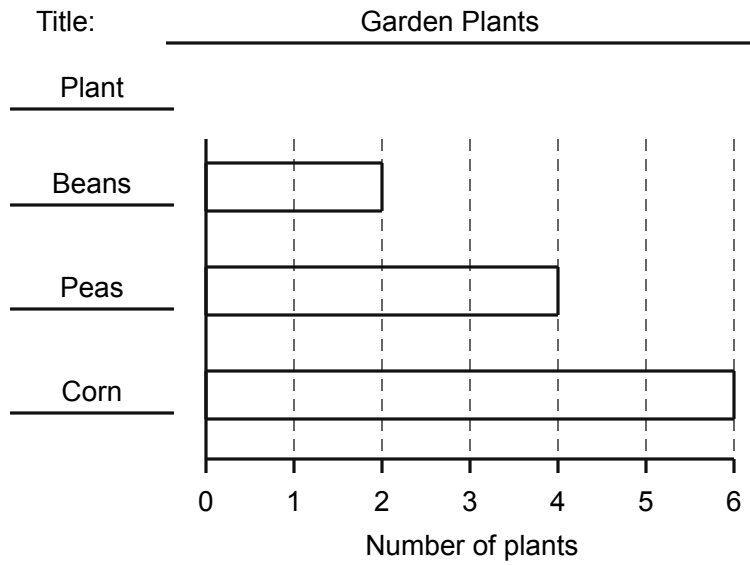
Equal spaces on a number axis must show equal steps. Start at 0. Choose a step large enough for the greatest count. A bar graph needs a title, category names, both axis labels and equal-width bars with gaps.

WORKED EXAMPLE

Garden counts are Beans 2, Peas 4 and Corn 6. Choose the smallest step from 1, 2, 5 or 10 that fits six spaces. Build the graph.

1. Step 1 reaches 6 and fits the greatest count.
2. Label 0, 1, 2, 3, 4, 5, 6. Draw the three bars and add the title and labels.

Answer: The completed graph uses step 1 and shows all three counts.

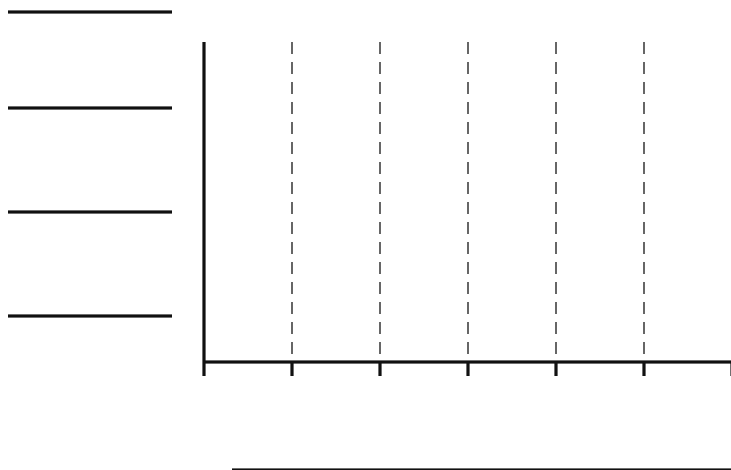


PRACTICE 4 problems

- 1** Team points: Owls: 4; Foxes: 8; Bears: 12. Choose the smallest step from 1, 2, 5 or 10 that fits the largest count in six spaces. Label the scale from 0. Add a title, both axis labels and category names. Draw equal-width, separated horizontal bars.

ANSWER _____

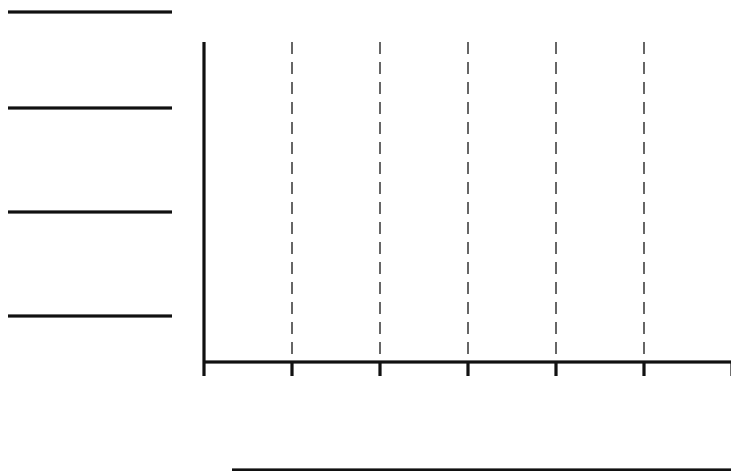
Title: _____



- 2** Book donations: A: 10; B: 20; C: 30. Choose the smallest step from 1, 2, 5 or 10 that fits the largest count in six spaces. Label the scale from 0. Add a title, both axis labels and category names. Draw equal-width, separated horizontal bars.

ANSWER _____

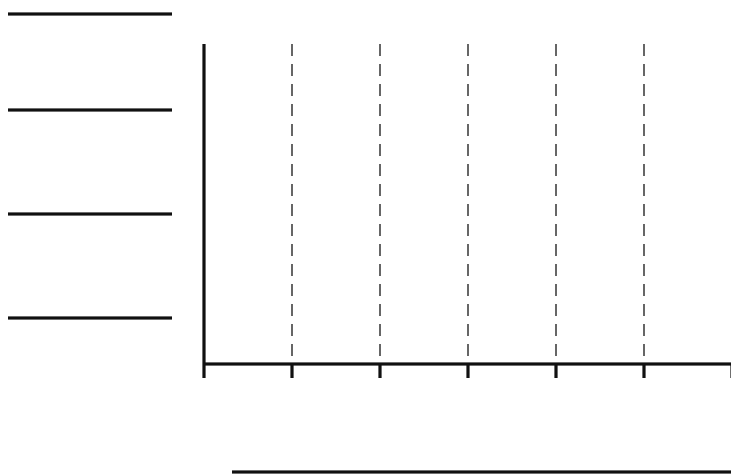
Title: _____



- 3** Fair tickets: Art: 20; Games: 40; Food: 60. Choose the smallest step from 1, 2, 5 or 10 that fits the largest count in six spaces. Label the scale from 0. Add a title, both axis labels and category names. Draw equal-width, separated horizontal bars.

ANSWER _____

Title: _____



- 4** A student labels four equally spaced ticks 0, 2, 5, 10. Explain the error. Write the seven correct labels for Team points.

APPLY IT Show your work

- 1** With an adult, enter the Book donations data into a classroom graphing tool. Create a horizontal bar graph with a title, both axis labels and a scale counting by 5 from 0 to 30. Compare it with your paper graph. Write three features you checked.

2

Compare your paper Team points graph with the digital Book donations graph. What number does the third space after zero represent in each? Explain why the same number of spaces can show different amounts.

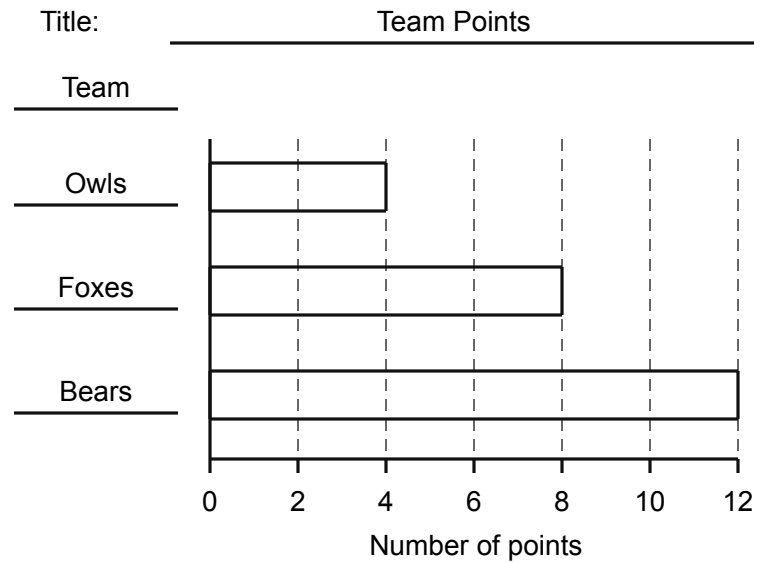
CHALLENGE One step up

For Fair tickets, a partner chooses step 5. What is the greatest label on a six-space scale? Explain why that scale cannot show all the data and name a suitable step.

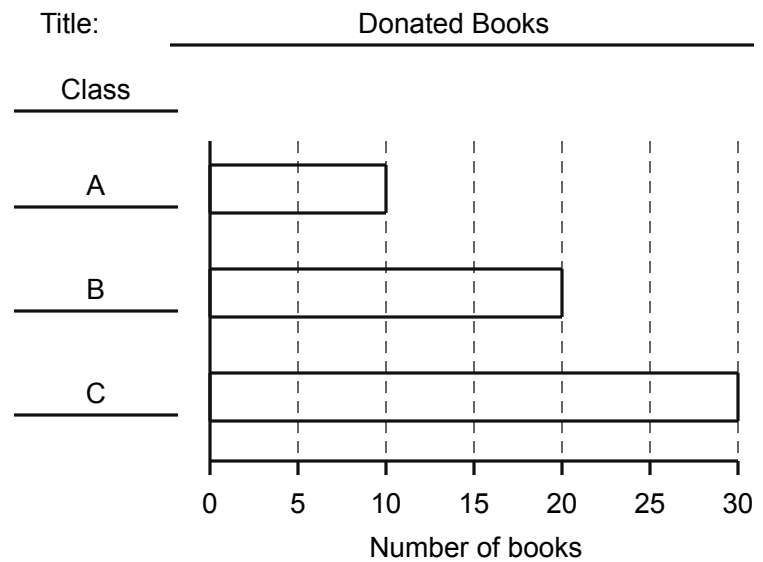
Provide a ruler, pencil and an adult-supported classroom graphing tool. Students construct three paper graphs and one digital graph. Check uniform scales, zero origins, separated equal-width bars, exact endpoints, title and both labeled axes. The blank axes have six spaces; choosing the smallest allowed step makes each scale choice definite. Accept sensible titles and equivalent axis wording. No numerical labels or completed bars appear on student canvases.

PRACTICE 1

Use step 2, from 0 to 12. Example title: Team Points; axes: Team and Number of points. Bars show Owls 4, Foxes 8, Bears 12.

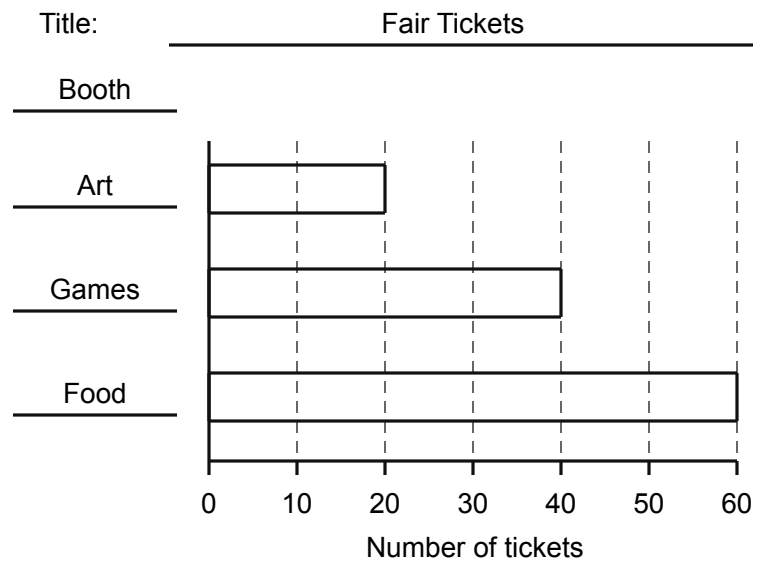
**PRACTICE 2**

Use step 5, from 0 to 30. Example title: Donated Books; axes: Class and Number of books. Bars show A 10, B 20, C 30.



PRACTICE 3

Use step 10, from 0 to 60. Example title: Fair Tickets; axes: Booth and Number of tickets. Bars show Art 20, Games 40, Food 60.

**PRACTICE 4**

The steps are unequal: 2, 3 and 5. Team points needs 0, 2, 4, 6, 8, 10, 12.

APPLY IT 1

The digital graph shows A 10, B 20 and C 30. Check matching counts, a uniform 0-30 scale by 5, and clear title/axis/category labels.

Use a bar chart, not a line chart. Teacher checks the actual digital graph; written checks alone do not replace creating it.

APPLY IT 2

Team points: 6 points at step 2. Book donations: 15 books at step 5. The scale determines the value of each space.

Three groups of 2 is 6; three groups of 5 is 15.

CHALLENGE

Step 5 reaches 30, less than the largest count 60. Step 10 reaches 60 and fits every bar.