

Lesson thirteen - student resource sheet

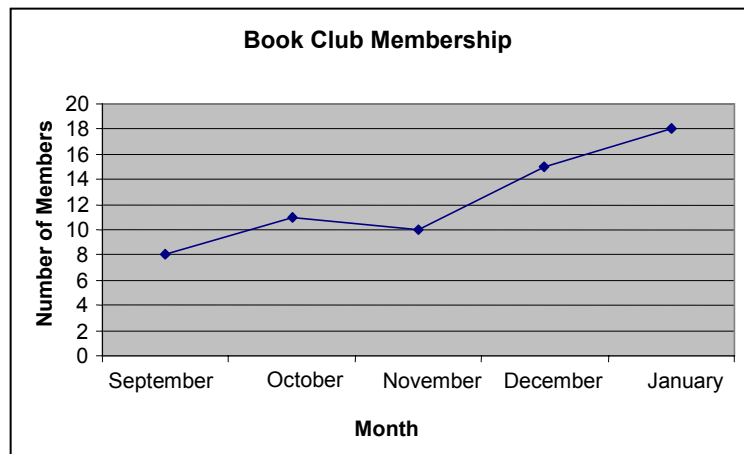
Lesson Objective: Construct and interpret line graphs.

Vocabulary Box

line graph – A graph that uses a line to show how data change over time.
Example: The line graph at the right shows how membership in a book club changed over five months.

scale – A series of numbers written along one side of a graph to show the size of the data. It usually starts at zero and ends at a number higher than the greatest data value on the graph.
Example: The scale on the graph at the right is 0–20.

interval – The difference between each two ordered numbers on a graph's scale.
Example: The interval on the graph at the right is two.





Guided Practice

Directions: Complete the following practice problems with your partner. Your teacher will review the answers. Make sure you show all your work.

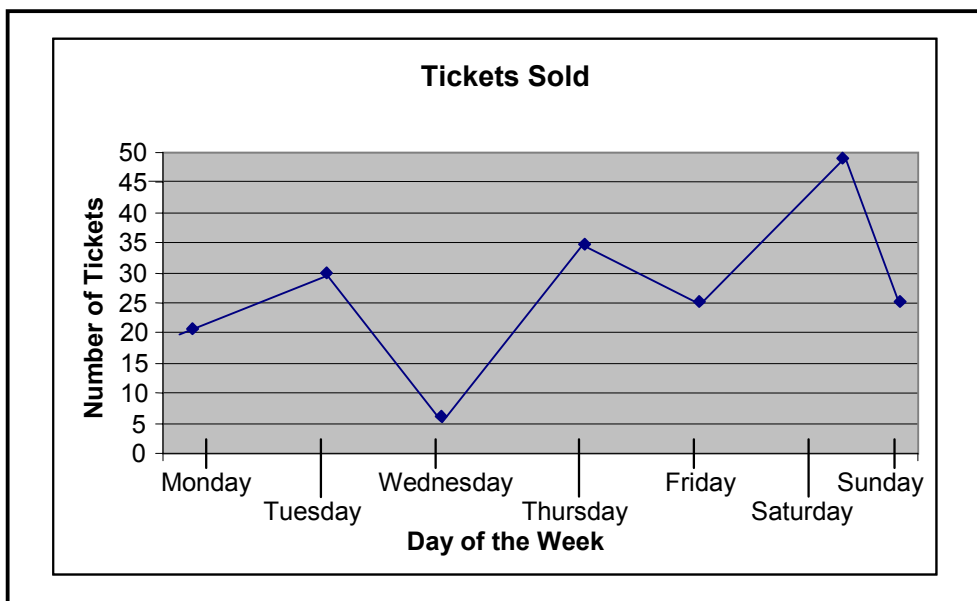
I. Use the line graph below to answer each question.

1. How many tickets were sold on Monday?

2. On which day were the most tickets sold?

3. How many tickets were sold on Thursday?

4. On which day were the fewest tickets sold?

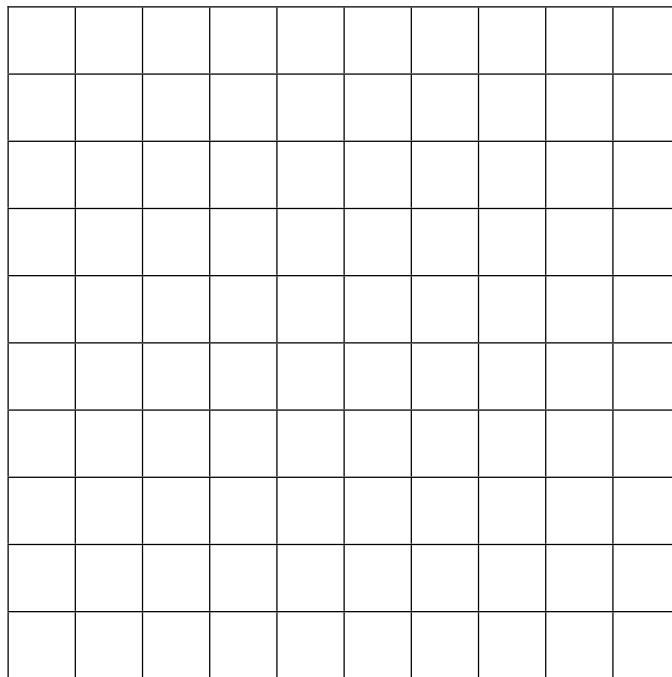


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- II. Display the data in the table below on the blank line graph below it. Be sure to include a title, labels, and a scale on your graph.

PLANT GROWTH

Month	Height (in inches)
March	6
April	9
May	10
June	12
July	17



- III. Use the line graph above to answer the following questions. Please work independently.
1. Did the plant's height increase or decrease between March and July?

2. How many inches did the plant grow in five months?

3. Suppose the plant was 25 inches tall in August. Could you display that height on this line graph? Explain.



Summary/Closure

A. Vocabulary Words

Directions: Circle the letter of the correct answer.

1. A graph that shows how data change over time is called a
 - A. bar graph.
 - B. circle graph.
 - C. line graph.
 - D. pictograph.
2. The left side of a graph is labeled 0, 5, 10, 15, 20, 25, and 30. What is the interval of this graph's scale?
 - A. 1
 - B. 2
 - C. 5
 - D. 10
3. You need to graph the data shown below. What would be the best scale for your graph?

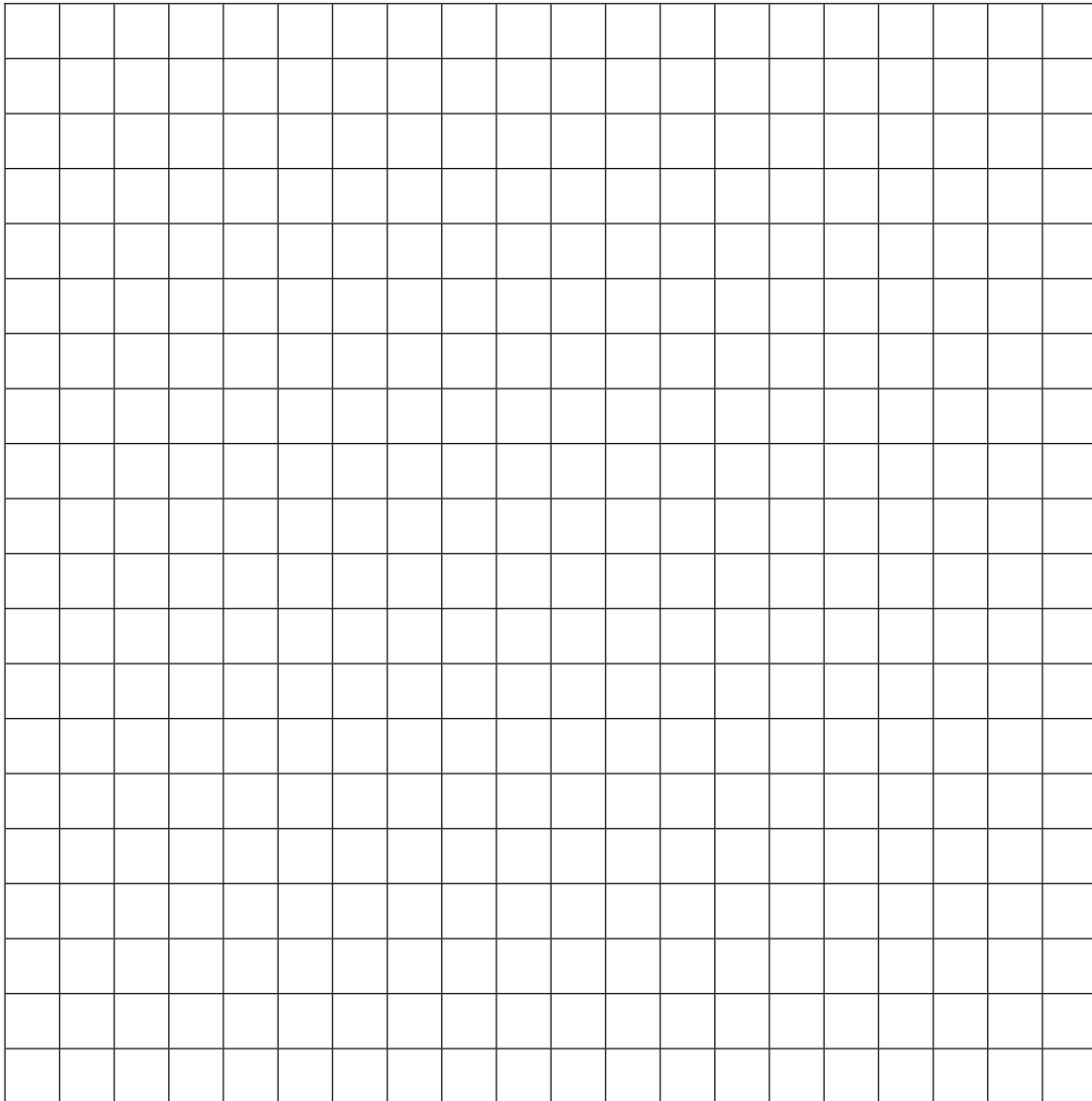
DATA: 23, 16, 9, 37, 18, 14, 5, 20

 - A. 0–20
 - B. 0–23
 - C. 0–40
 - D. 0–100

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B. Summarize What We Learned Today

Make an example of a simple line graph. Write notes around your graph to remind yourself what the parts are called and how you made the graph. Then, write one question that can be answered by reading your graph. Answer the question, and explain how you used the graph to find the answer. You will use these notes and explanations as a personal reminder.



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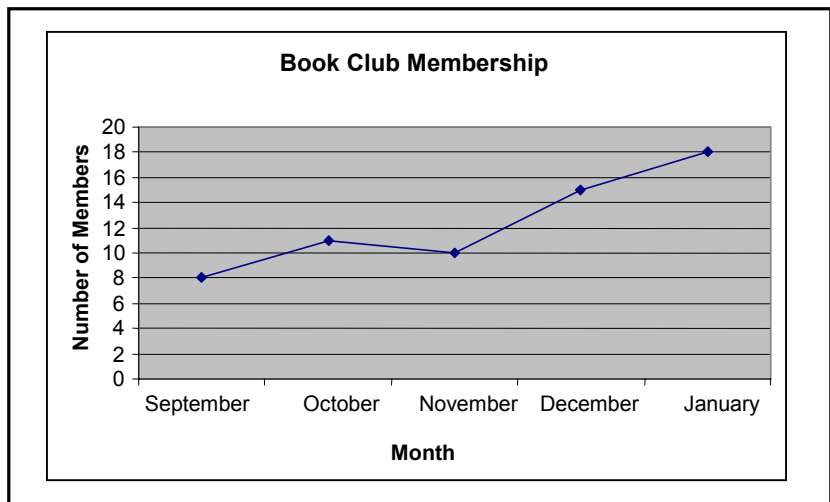
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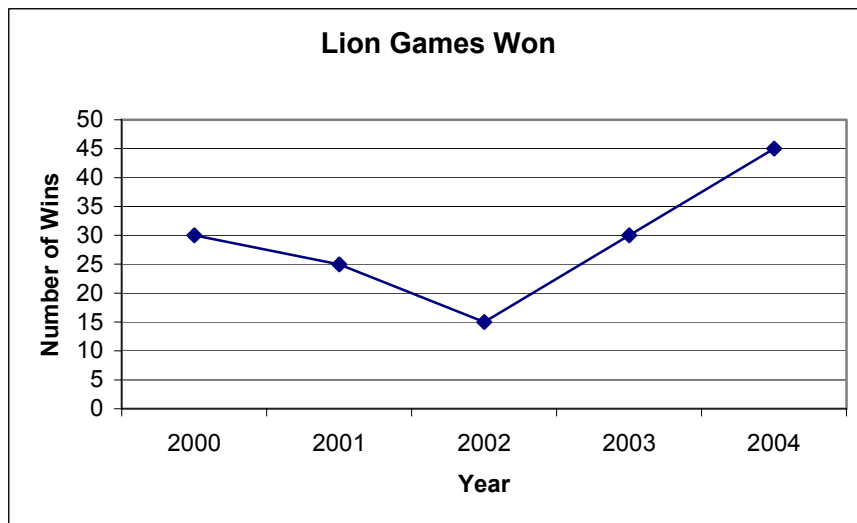


Independent Practice

Directions: Complete the following practice problems on your own. Your teacher will review the answers.

I. Use the line graph at the right to answer each question.

1. How many games did the Lions win in 2000?
2. In which year did the Lions win the fewest games?
3. In which two years did the Lions win the same number of games?
4. How did the number of games the Lions won change from 2001 to 2002?





Directions: Write three questions about the temperature line graph in part III of the Independent Practice section. Then use the graph to answer each question.

1. Question:

Answer:

2. Question:

Answer:

3. Question:

Answer:

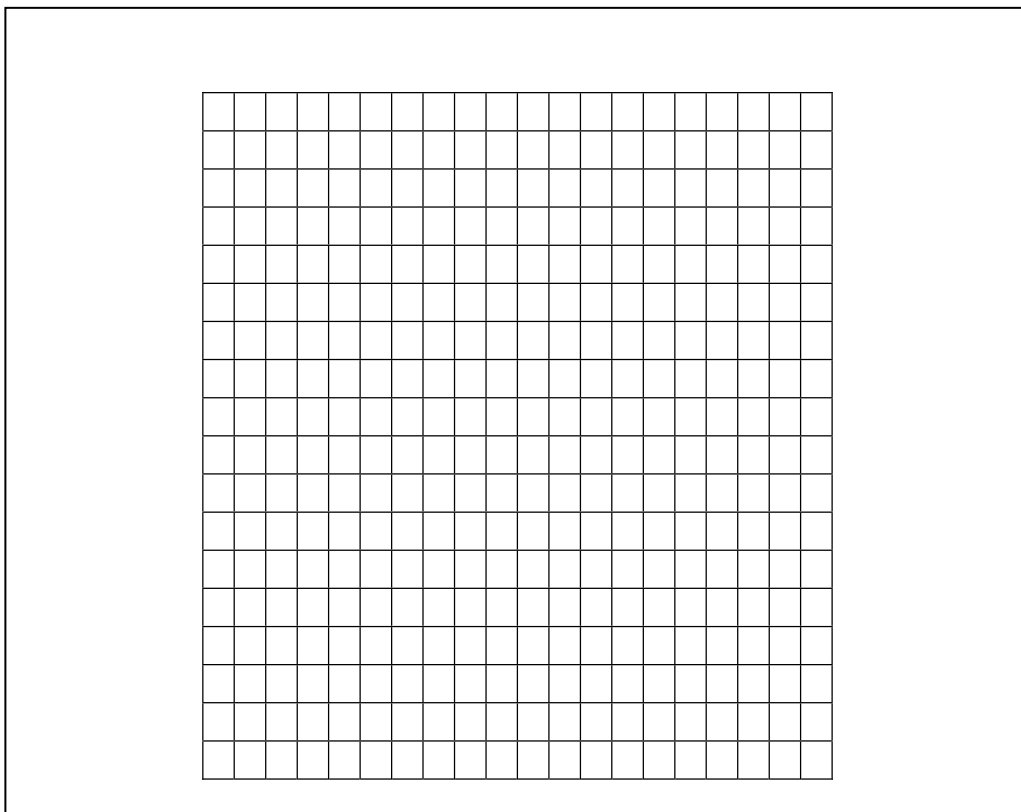
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Problem Solving

Angela lives in Seattle, Washington. It is one of the rainiest cities in the United States. Angela just finished her project for the science fair. She measured how much rain fell at her house each day for six months. Then she found the average amount of rain that fell each month. Her results are shown in the table below.

AVERAGE RAINFALL IN SEATTLE						
Month	Dec.	Jan.	Feb.	Mar.	Apr.	May
Rain (in inches)	6.0	5.5	4.0	4	2.5	2.0

1. Angela wants to display the data on a line graph. What would be a good scale to use for her graph?
2. Angela wants to use a decimal for her scale interval. What would be the best scale interval for her to use?
3. Make a line graph to show the data that Angela collected.



4. Study the data that Angela collected for December through May. What can you predict about the amount of rain Seattle will get in June? Explain.



1. A line graph is a graph that uses a line to show how data _____.
2. To read a line graph, I use the points and line on the graph and its title, labels, and _____.
3. To make a line graph, I need to choose a good _____ for its scale.

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Lesson Objective: Choose and use an appropriate problem-solving strategy.



Guided Practice on Problem Solving Strategies

Directions: Complete the following practice problems with your partner. Your teacher will review the answers. Make sure you show all your work, check your answers, and write your answers in complete sentences.

1. Devon bought decorations for the class party. He bought 12 bags of balloons. Each bag contained 14 balloons. How many balloons did Devon buy for the party?

Step 1: What do you want to know? _____

Step 2: What do you know?

Devon bought _____ bags of balloons.

Each bag had _____ balloons in it.

Step 3: Choose a strategy to solve the problem. Plan how to use it.

Strategy: Make a model.

I will use one tile to represent two _____ in my model.

I will make a pile of _____ tiles to model each bag of balloons.

I will make _____ piles of tiles to model all the bags Devon bought.

I will combine all my piles and count all the tiles to find the total number of balloons.

Step 4: Use the strategy to solve the problem.

My model has a total of _____ tiles.

Each tile represents _____ balloons.

So, my model shows a total of _____ balloons.

Step 5: Check your answer. Write the answer in a complete sentence.

Multiply to check: $12 \times 14 =$ _____

Estimate to check: $12 \times 14 \approx 10 \times 14$ _____

Answer: _____

2. Sarah made 164 cookies for the class party. She put the cookies in five boxes. She put the same number of cookies in each box. After she filled the boxes, Sarah had fewer than five cookies left. She ate those leftover cookies.

How many cookies did Sarah put in each box? How many cookies did she eat?

Step 1: What do you want to know? _____

Step 2: What do you know?

Sarah made _____ cookies.

She put the cookies in _____ boxes.

She put the same number of cookies in each box.

She ate any leftover cookies.

Step 3: Choose a strategy to solve the problem. Plan how to use it.

Strategy: Make a model.

I will use one tile to represent two _____ in my model.

I will make a pile of _____ tiles to model all the cookies she made.

I will separate all those tiles into _____ equal groups to model how she put the cookies in boxes.

I will count the number of tiles in each group to find how many cookies she put in each box.

I will count any leftover tiles to find how many cookies she ate.

Step 4: Use the strategy to solve the problem.

My model has _____ tiles in each group.

Each tile represents _____ cookies.

So, my model shows a total of _____ cookies in each box.

My model has _____ tiles left.

So, my model shows a total of _____ cookies left.

Step 5: Check your answer, and write the answer in a complete sentence.

Divide to check: $164 \div 5 =$ _____

Estimate to check: $164 \div 5 \approx 150 \div 5$ _____

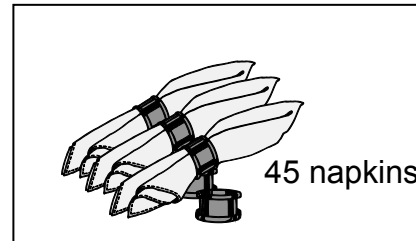
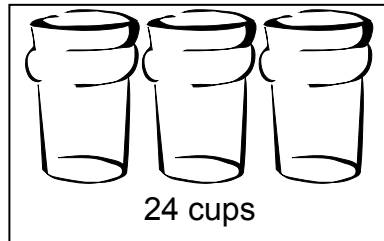
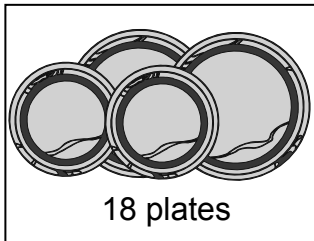
Answer: _____

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Problem Solving

Directions: Complete the following practice problems on your own. Your teacher will review the answers. Make sure you show all your work, check your answers, and write your answers in complete sentences.

Tony bought supplies for the class party. He bought seven packages of paper plates, 13 packages of plastic cups, and five packages of paper napkins. The pictures below show each item that Tony bought and the numbers of supplies in each package.



1. How many paper plates did Tony buy?

What do you need to know? _____

What do you know? _____

What strategy will you use to solve the problem? _____

How will you use that strategy to solve the problem?

How can you check your answer? _____

Answer: _____

2. How many plastic cups did Tony buy? Answer:

3. How many paper napkins did Tony buy: Answer: