

Name \_\_\_\_\_

## Make Line Graphs

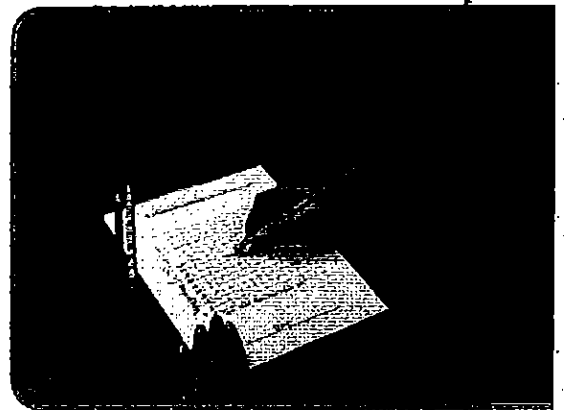
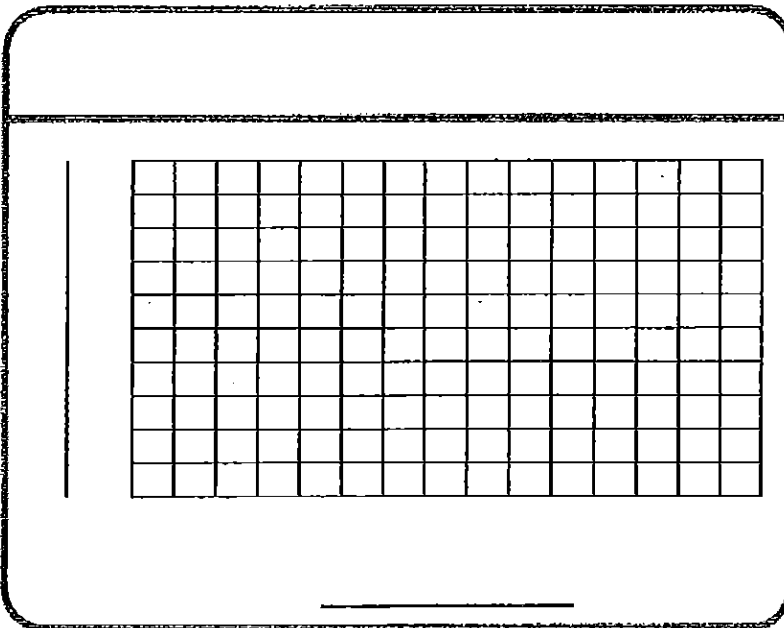
**Essential Question** How can you create and interpret line graphs?

### Investigate

A line graph is used to show continuous data, such as change over time. Create a line graph to display the data in the table.

- A.** Write the title for your line graph above the grid.
- B.** Choose a scale for the temperature. Start with 0. Write each scale number to the left of a horizontal grid line. Write the scale label as *Temperature (in °F)*.
- C.** Write each day along the bottom of the grid under a vertical grid line. The days should be evenly spaced. Label them as *Day*.
- D.** To graph the temperature for Sunday, draw a point on the vertical grid line above *Sunday* at 35.
- E.** Graph a point for each day in the table. Then connect the points with line segments.

Average Daily Temperature in Chicago, IL, January 2009	
Day	Temperature (In °F)
Sun	35
Mon	41
Tue	40
Wed	42
Thu	36
Fri	30



## Draw Conclusions

1. **Synthesize** How is choosing the scale for a line graph like choosing the scale for a bar graph?

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2. Compare your graph with those of your classmates. Are there any differences in your graphs? Explain.

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3. **HOT** Natalie says she can display the changes in her height from age 5 to 9 years on a line graph. Is she right? Explain your reasoning.

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## Make Connections

Some line graphs show a pattern. When a line graph shows a pattern, you can extend that pattern to determine information not shown on the graph.

This graph shows the relationship between your distance from a lightning strike and the number of seconds that pass until you hear thunder.

Describe the pattern you see on the graph.

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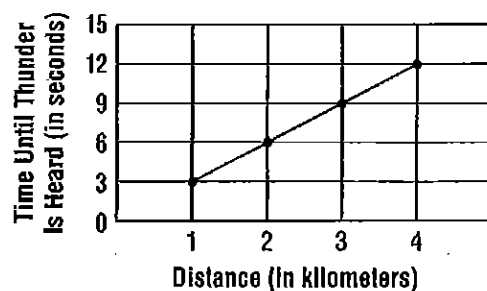
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How far away is the lightning strike if thunder is heard 15 seconds later?

Extend the pattern on the line graph.

If there are 15 seconds until thunder is heard, the lightning strike is \_\_\_\_\_ kilometers away.

**Distance from Lightning**



**Math Talk** Explain why line graphs are useful for showing change in continuous data over time.

Name \_\_\_\_\_

# Share and Show



**Practice: Copy and Solve** Use grid paper and the data in the table to make a line graph.

1. 

Rainfall	
Month	Amount (in inches)
June	3
July	5
Aug	6
Sept	4

2. 

Plant Growth	
End of Week	Height (in inches)
1	6
2	9
3	13
4	15

3. 

Miles Traveled	
Time (in hours)	Distance (in miles)
1	50
2	100
3	150
4	200

Use the line graph for 4–7.

4. How much did the percent of rural population decrease between 1900 and 1980?

\_\_\_\_\_

5. Describe how the line on the graph will look if the trend in rural population continues.

\_\_\_\_\_

6. During which periods of time between 1900 and 2000 did the percent of rural population increase?

\_\_\_\_\_

7. **Hot** Pose a Problem Write a question that can be answered using the line graph. Then answer your question.

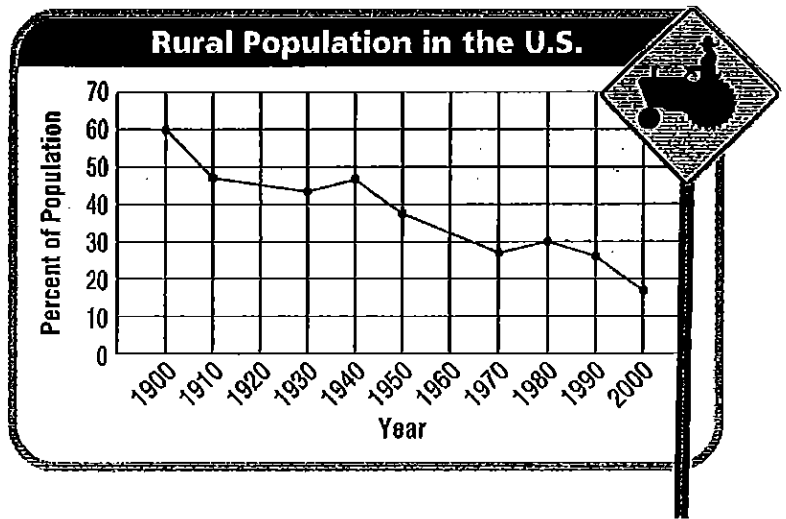
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8. **Write Math** How do you know where to place each point on a line graph?

\_\_\_\_\_

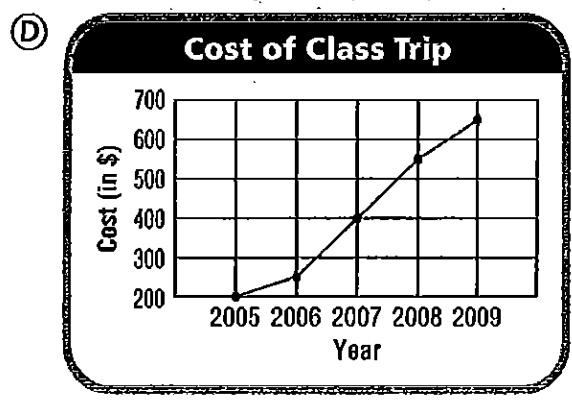
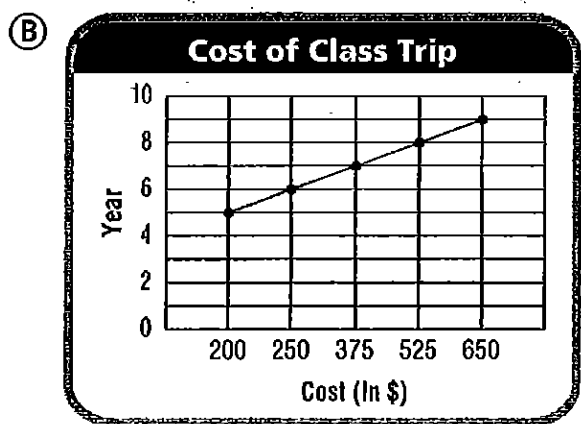
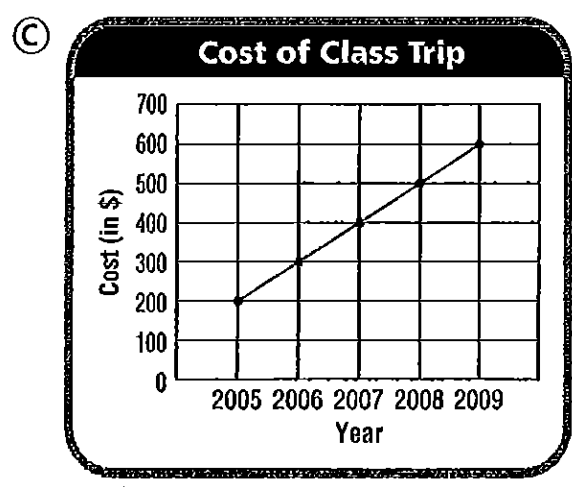
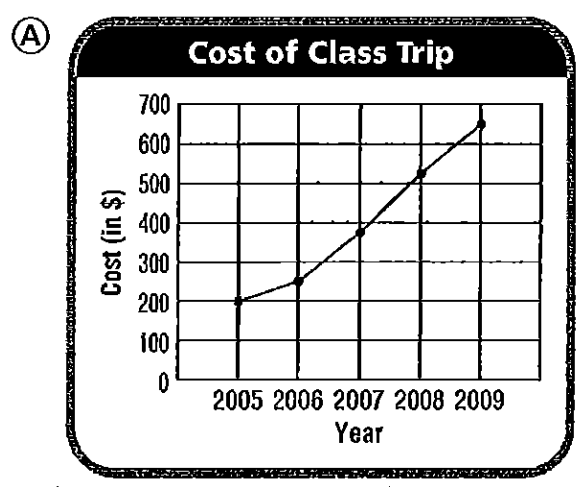
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9. The table shows the amount of money classes have had to raise in past years for a class trip.

Cost of Class Trip					
Year	2005	2006	2007	2008	2009
Cost (in \$)	200	250	375	525	650

Which graph shows these results?



a. What labels should be written at the bottom of the graph?

\_\_\_\_\_

b. What is the first number of every scale?

\_\_\_\_\_

c. Where should the point be for 2006?

\_\_\_\_\_

d. Fill in the bubble for the correct answer choice above.

10. How much more was the cost of the 2006 class trip than the 2005 class trip?

- (A) \$200
- (B) \$75
- (C) \$50
- (D) \$1

11. In what year was the cost of the class trip \$525?

- (A) 2009
- (B) 2008
- (C) 2007
- (D) 2006

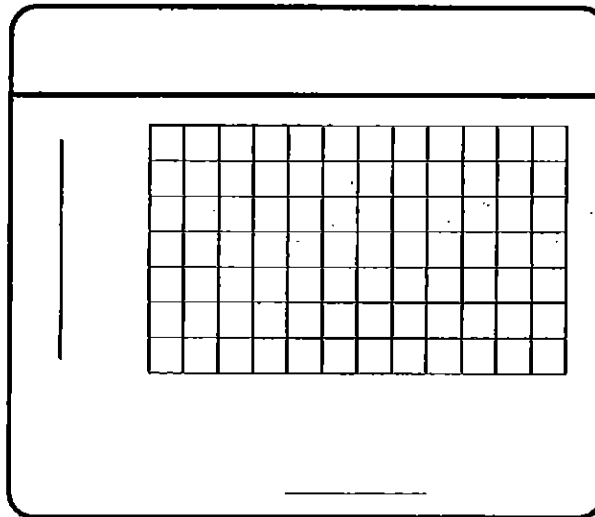
Name \_\_\_\_\_

## Make Line Graphs

Use the table for 1 and 2.

Average Low Temperatures in Flagstaff, Arizona						
Month	Oct	Nov	Dec	Jan	Feb	Mar
Temperature (in °F)	31	22	17	16	19	23

1. What scale would be appropriate for a line graph of the data in the table? **Possible answer: 5**
2. Use the grid below to make a line graph of the data in the table.



## Problem Solving **REAL WORLD**

Use your line graph above for 3–5.

3. How much does the average low temperature decrease between October and January? \_\_\_\_\_
4. Between which two consecutive months does the temperature change the most? \_\_\_\_\_
5. Describe the pattern you see on your line graph.

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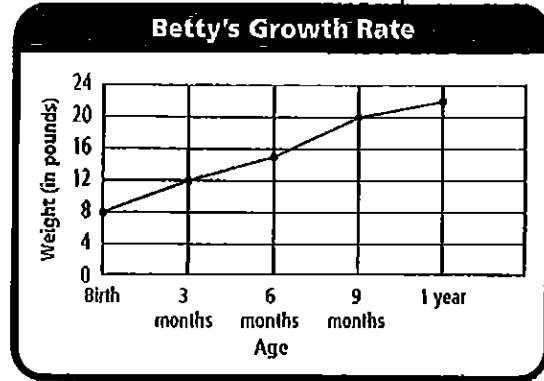


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## Lesson Check

Use the graph at the right for 1 and 2.

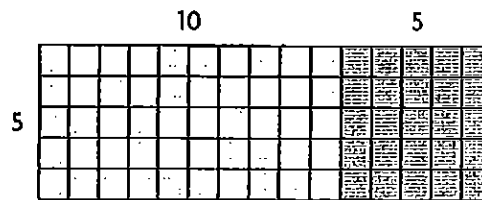
- Between which ages did Betty gain the most weight?
  - birth to 3 months
  - 3 months to 6 months
  - 6 months to 9 months
  - 9 months to 1 year
- How much weight did Betty gain between 3 months and 9 months of age?
  - 3 pounds
  - 4 pounds
  - 5 pounds
  - 8 pounds



## Spiral Review

- What are the partial products of  $18 \times 45$ ?  
(Lesson 5.6)
- The model below shows how Link laid tile on his kitchen floor.

- 450, 40
- 400, 32, 50, 40
- 400, 320, 50, 40
- 400, 40



How many tiles did Link lay? (Lesson 4.4)

- 15
  - 20
  - 55
  - 75
- Which number sentence is in the same fact family as  $8 \times 4 = 32$ ? (Lesson 2.2)
    - $32 - 4 = 28$
    - $32 \div 4 = 8$
    - $32 + 4 = 36$
    - $8 \div 4 = 2$
  - There are 125 members in the marching band. They are split into 5 equal groups during the half-time performance. How many band members are in each group?  
(Lesson 6.10)
    - 20
    - 21
    - 25
    - 625