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Data Management Curriculum Map

The activities introduce students to techniques of interpreting and managing data through graphing and probability studies and presents a sequential program of work. There are 15 graphing and 9 probability worksheets and activities, including surveys, board games, and games of chance, reinforce basic skills, in addition, subtraction, multiplication, and division.

Introduction – Includes Teacher Notes

Answer Key – Includes both graphing and probability

Graphing Activities

- Activity 1 Analyzing Plots
- Activity 2 Analyzing Stem and Leaf Plots
- Activity 3 Analyzing Stem and Leaf Plots
- Activity 4 Analyzing Circle Graphs
- Activity 5 Analyzing Broken Line Graphs
- Activity 6 Analyzing Broken Line Graphs
- Activity 7 Analyzing Line Graphs
- Activity 8 Analyzing Bar Graphs
- Activity 9 Analyzing Pictographs
- Activity 10 Finding the Mean, Median and Mode
- Activity 11 Create a Bar Graph
- Activity 12 Create a Bar Graph
- Activity 13 Television Network Ratings
- Activity 14 Creating a Bar Graph
- Activity 15 Culminating Activity

Probability Activities

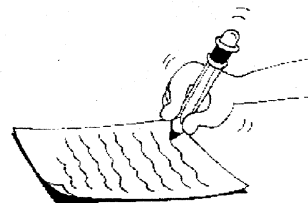
- Activity 16 Likely or Unlikely
- Activity 17 Spinners
- Activity 18 Spinners
- Activity 19 Spinners
- Activity 20 Roll the Dice – Addition & Subtraction
- Activity 21 Magnificent Monopoly
- Activity 22 Heads or Tails?
- Activity 23 Lotto 6/10
- Activity 24 Designing Playing Cards



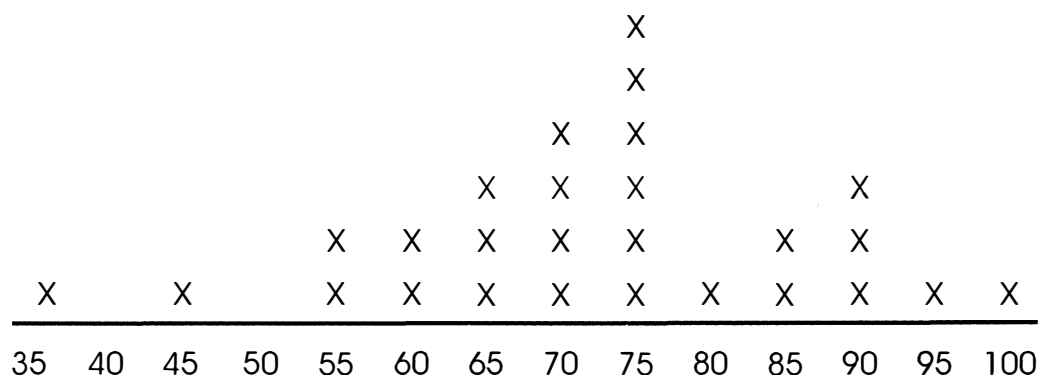
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Analyzing Plots

Activity One



John's class scores on the "Analyzing Data Test" are represented on the following line plot:



1. What is the range of the data? _____
2. What is the mean of the data? _____
3. What is the mode of the data? _____
4. What is the median of the data? _____
5. Describe how the data are distributed?

6. What conclusions can you make based on the data?

7. Did John's class understand the unit? How do you know?

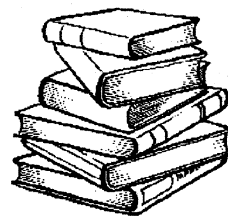
8. Did more students do better or worse than the mean?



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Analyzing Stem and Leaf Plots

Activity Two



Carrie examined the number of pages in several children's books. She discovered the following information and recorded it in a stem and leaf plot.

Number of Pages in Children's Books

Stem	Leaf							
0	6	6	7	8	9	9	9	
1	0	2	5	7	8			
2	1	6	6	9				
3	0	1						
4	5							

Answer each question with a complete sentence answer.

1. What is the range of the data?

2. What is the mean of the data?

3. What is the mode of the data?

4. What is the median of the data?

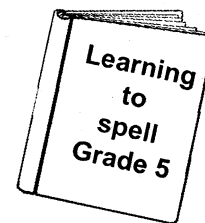
5. Describe how the data are distributed.

6. What conclusion can you make based on the data?

7. If Carrie wanted to write a children's book, how many pages should she put in? Why?



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Analyzing Stem and Leaf Plots

Activity Three

Fatima and Raphael compared their spelling tests scores for the year. They recorded them in a stem and leaf plot.

Fatima's Test Scores	
3	9,
4	
5	
6	2, 6
7	0, 3, 3, 8, 8
8	1, 3, 3, 3, 4, 5, 5, 7
9	2, 4, 6

Raphael's Test Scores	
1,	2
2,	5, 9
3,	5, 7, 8
4,	0
5	1, 2, 5, 7
6	0, 3, 5, 6, 8
7	7
8	1, 2, 3
9	

For each stem and leaf plot, answer the following questions in complete sentences.

1. What is the range of the data?

2. What is the mean of the data?

3. What is the mode of the data?

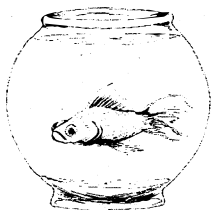
4. What is the median of the data?

5. Describe how the data are distributed.

6. Who scored higher? How do you know?

7. What conclusions can you make based on the data?

8. On another sheet of paper compare the two stem and leaf plots. Record any similarities and differences that you see.



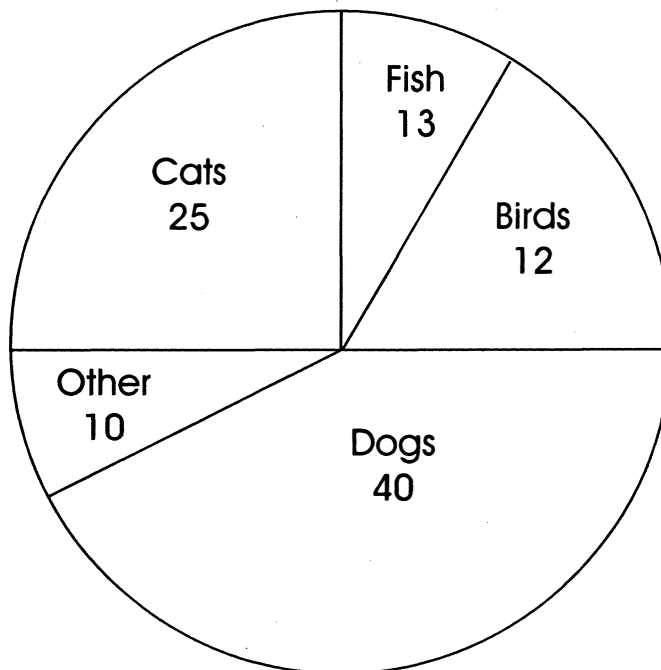
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Analyzing Circle Graphs

Activity Four

Juanita surveyed 100 people about their favorite animal. She recorded her findings in the following circle graph.



Answer each question in complete sentences.

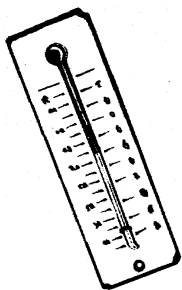
1. What was the favorite type of animal?

2. What percentage of people liked cats?

3. Approximately what fraction of the people liked fish?

4. How many more people liked dogs than birds?

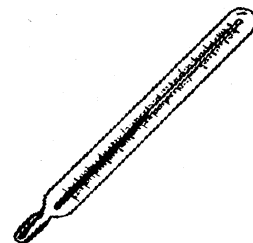
5. If Juanita surveyed 1 000 people, what would her numbers have looked like in each category?



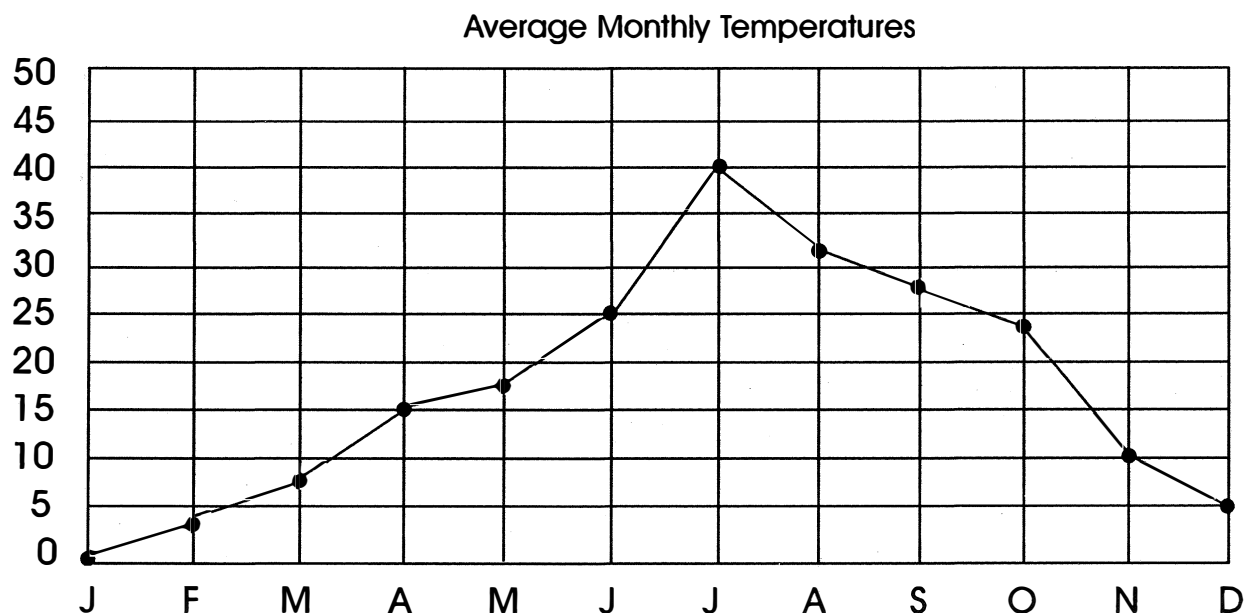
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Analyzing Broken Line Graphs

Activity Five



The weather center released the following data about the average temperatures recorded the previous year. The information was presented in the following broken line graph.



Answer the following questions in complete sentences.

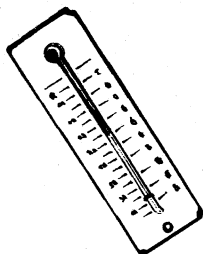
1. What was the highest temperature recorded last year?

2. In what month was the highest temperature recorded?

3. What is the range of temperatures?

4. What was the average yearly temperature?

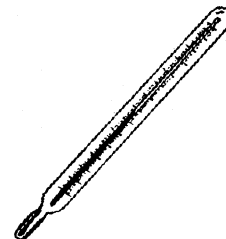
5. What was the median temperature?



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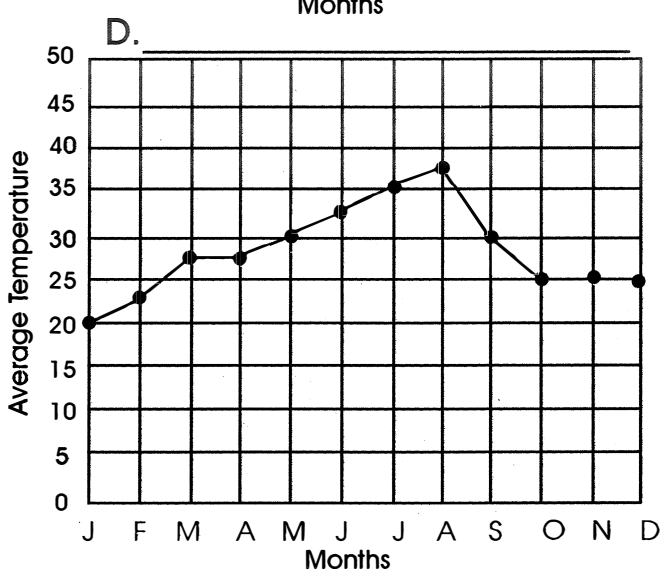
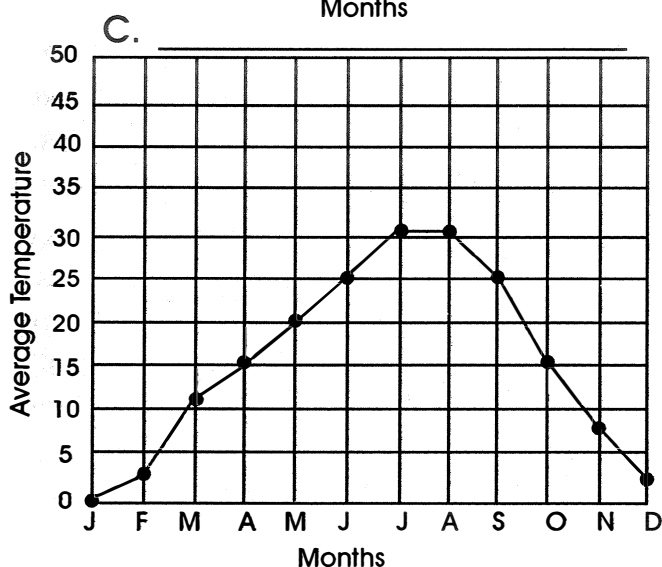
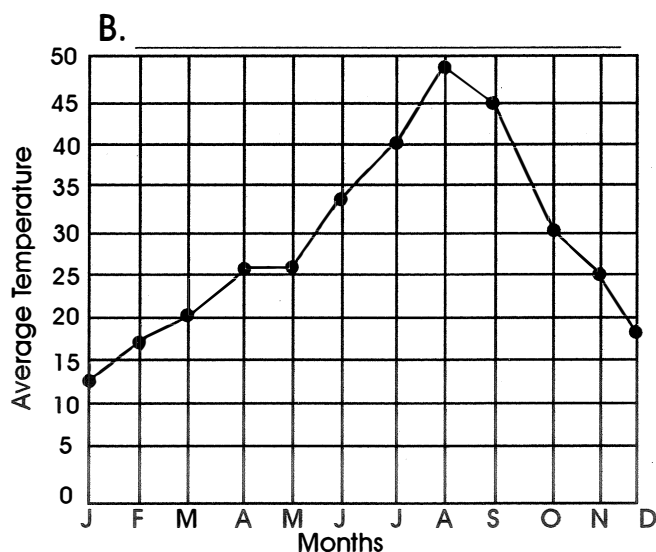
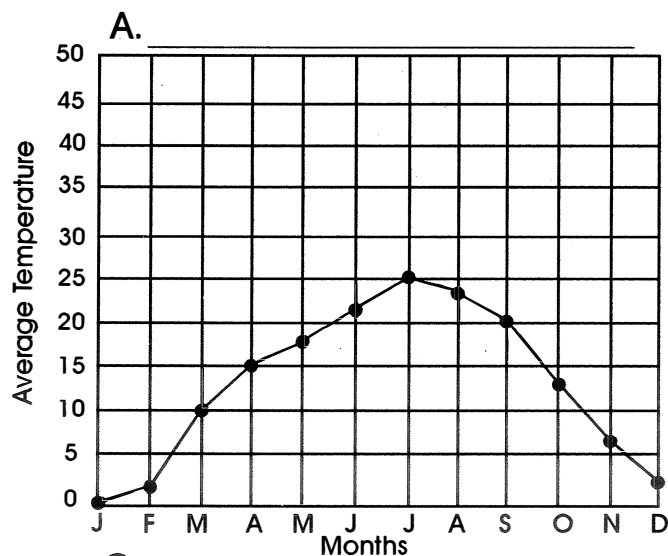
Analyzing Broken Line Graphs

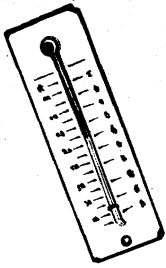
Activity Six



Based on the following information, label the broken line plots with the correct name.

Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Jacksonville, Florida	20	23	27	27	30	32	35	36	30	26	26	26
Phoenix, Arizona	14	16	20	26	26	34	40	48	45	30	25	18
Toronto, Canada	0	3	12	15	20	26	30	30	25	15	7	4
Montreal, Canada	0	2	10	15	17	21	25	24	20	13	6	3

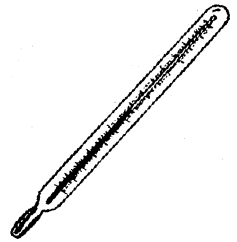




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Analyzing Broken Line Graphs

Activity Six



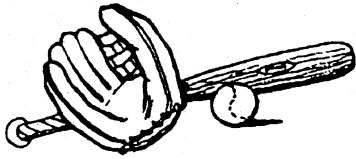
Answer the following questions with complete sentences.

1. Which city recorded the highest temperature?

2. Which city experienced the most cold throughout the year?

3. Why do you think there is such a difference in temperatures?

4. Where would you want to live and why?



Data Management - Level Five

Analyzing Line Graphs

Activity Seven



Use the following baseball game data to create a line plot:

Number of Points Scored by the New York Yankees

6	2	0	1	9	4	3	2	5	0
1	7	2	6	5	4	4	3	1	9

Complete the following activities:

1. Draw a line plot of the data.

2. What is the range of the data?

3. What is the mode of the data?

4. What is the mean of the data?

5. What is the median of the data?

6. Describe how the data are distributed.

7. What conclusions can you make based on the line plot?



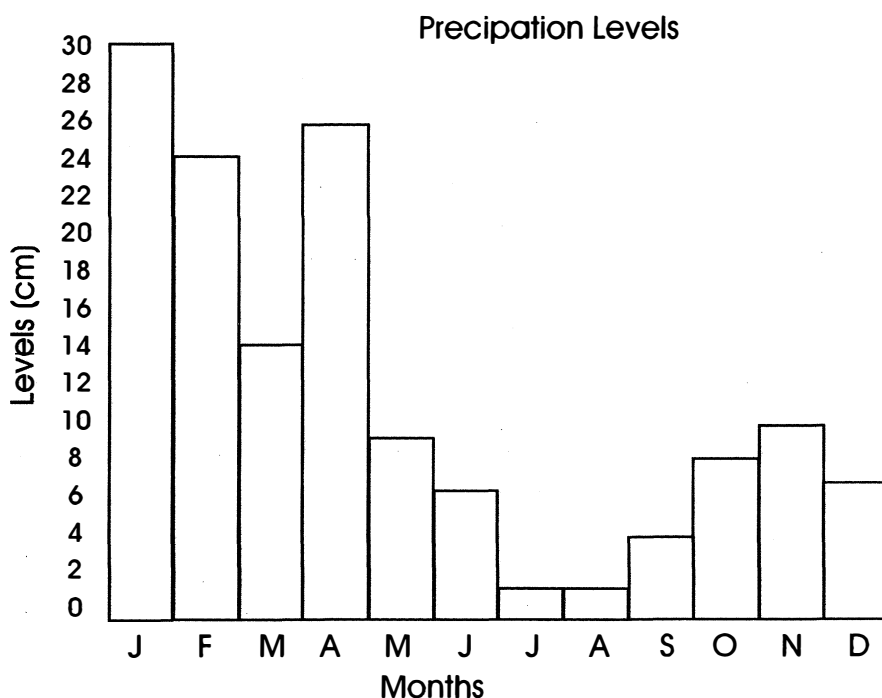
Data Management - Level Five

Analyzing a Bar Graph

Activity Eight



Data on rainfall were collected for one year. The following bar graph is a representation of that information.



Answer the following questions in complete sentences.

1. In which month was the largest amount of precipitation recorded?

2. Describe any trends that you see throughout the year.

3. What is the difference between the month with the highest precipitation and the month with the lowest precipitation? Why do you think that is?

4. What three months of the year recorded the lowest levels of precipitation? Why do you think that is?

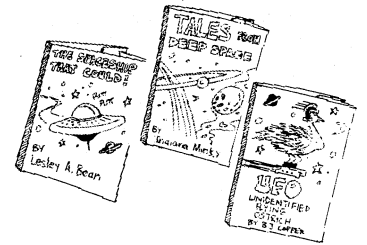
5. Do you think this graph represents a city that gets snow? Explain why or why not.



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Analyzing Pictographs

Activity Nine



Several schools recently participated in a nation-wide Read-a-Thon. The results of four schools are posted below in a pictograph. Answer the following questions based on the data provided.

Read - a - Thon

K.C. Military Academy	  
Joseph Brant Elementary	    
Robertson Public School	  
St. Mary's Public School	     

 = 350

Complete your answers in complete sentences.

1. Which school read the most books?

2. How many books did the students at this school read?

3. Which school read the least books?

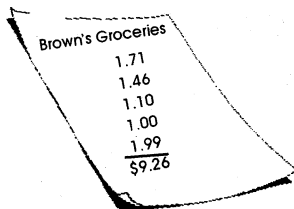
4. How many did these students read?

5. How many books were read in total?

6. What was the mean number of books read?

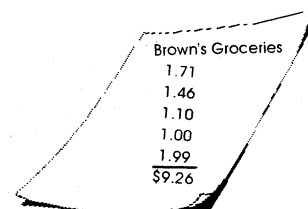
7. What was the range?

8. Which school raised the most money? Why?



Data Management - Level Five

Finding the Mean, Median and Mode



Activity Ten

Find the mean, median and mode for the following data:

	Mean	Median	Mode
1.			
2.			
3.			
4.			
5.			

Put the data in order from lowest to highest.

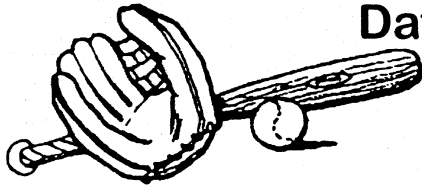
1. 17, 37, 52, 9, 20, 21

2. 575, 574, 229, 983, 574, 339, 229

3. 25.75, 310.5, 472.5, 595.0, 677.25, 26.5, 495.5

4. 27, 51, 103, 493, 27, 42, 687

5. 393, 471, 585, 223, 489, 107



Data Management - Level Five

Create a Bar Graph

Activity Eleven



Survey your class to determine the favorite sports of your classmates.
Include a maximum of five sports.
Record your results in the tally chart provided below.

Sport	Tally

Complete the activities and answer the following questions with complete sentences.

1. Create a bar graph from your data using either colors or patterns.
2. How could your survey have been more fair?

3. What was the favorite sport?

4. What was the range of your data?

5. If you could do this again, what would you do differently?

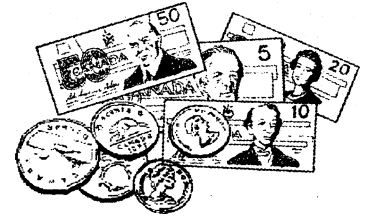
6. If there were more boys than girls in your class, how could this have affected your results?



Data Management - Level Five

Creating a Line Graph

Activity Twelve



Joseph's mom inherited \$10 000 from her Uncle John. She decided to invest the money in a mutual fund for her retirement.

Create a broken line graph to show the growth of the money over a ten year period. Use the information in the chart provided.

Initial	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
\$10 000	\$10 350	\$10 975	\$9 800	\$10 400	\$11 000	\$ 11 250	\$11 800	\$12 100	\$12 500	\$13 250

Answer the following questions with complete sentences.

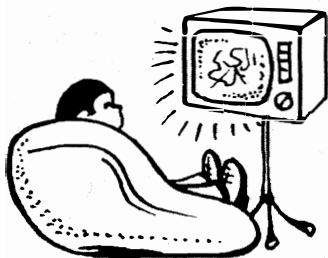
1. Did she gain or lose over the ten year period? How much?

2. What was the largest gain over a one year period?

3. Did she ever lose money? When and how much?

4. What is the range of the data?

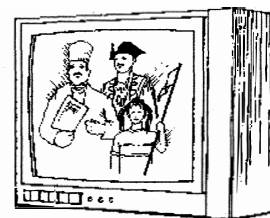
5. Do you think this was a good investment? Why or why not?



Data Management - Level Five

Television Network Ratings

Activity Thirteen



Television stations were recently ranked according to their popularity.

The following results were printed in the local newspaper.

Time of Night	Networks	Percent of People Tuned In
6:00 pm	ABC	46%
	NBC	23%
	CBC	25%
	TSN	6%
7:00 pm	ABC	22%
	NBC	60%
	CBC	8%
	TSN	10%
8:00 pm	ABC	8%
	NBC	35%
	CBC	2%
	TSN	55%
9:00 pm	ABC	42%
	NBC	5%
	CBC	21%
	TSN	32%
10:00 pm	ABC	17%
	NBC	24%
	CBC	39%
	TSN	20%

1. Draw a broken line graph of the data directly below.

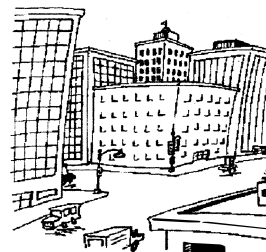
2. Record two conclusions you can make based on the information.



Data Management - Level Five

Creating a Bar Graph

Activity Fourteen



Jane wanted to research the population of her town over the past 100 years. She recorded the following data in her notebook.

Population of Yellowdale

Year	Population
1900	370
1910	1 200
1920	1 000
1930	1 800
1940	2 500
1950	7 600
1960	13 450
1970	26 875
1980	30 540
1990	55 600
2000	60 000

Complete the activity and answer the questions with complete sentences.

1. Using another sheet of paper, plot the information on a bar graph.
2. What decade showed the largest growth? How much?

3. Why do you think the population dropped between 1910 and 1920?

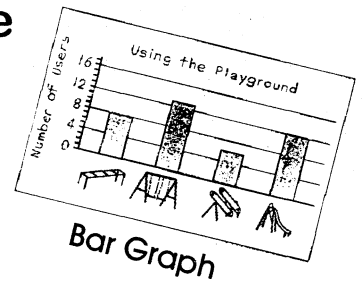
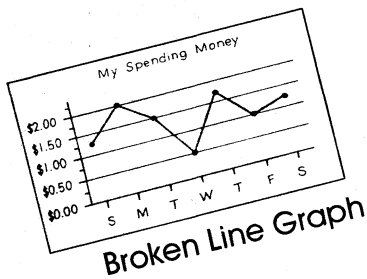
4. By how much did the city grow from 1900 to 2000?

5. Do you think this type of growth is typical of cities in the past 100 years?
Why or why not?

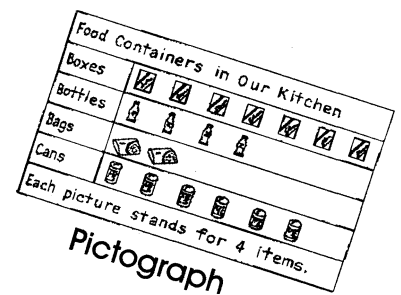
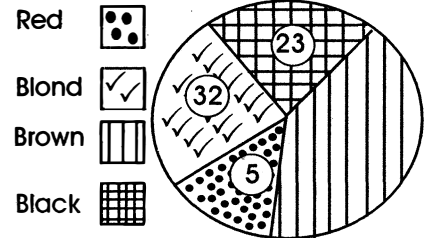
Data Management - Level Five

Culminating Activity

Activity Fifteen



1. Select a topic that interests you.
2. Survey your class on the topic.
3. Make sure that you include at least five choices.
4. Record your data in a tally chart,
5. Record your data in either a stem and leaf plot or a line plot.
6. Construct two graphs. Choose any of the following;
 - a bar graph
 - a broken line graph
 - a circle graph
 - a pictograph.



7. Compare the two graphs that you created.
 - a) Were there problems with the choices that you made?

- b) Is one method of graphing your particular material better than the others?

- c) What would you do differently next time?

8. Record the range, median and mode of your data?
