

Maps and Globes Unit of Study

USING GRAPHS BLACKLINE MASTERS

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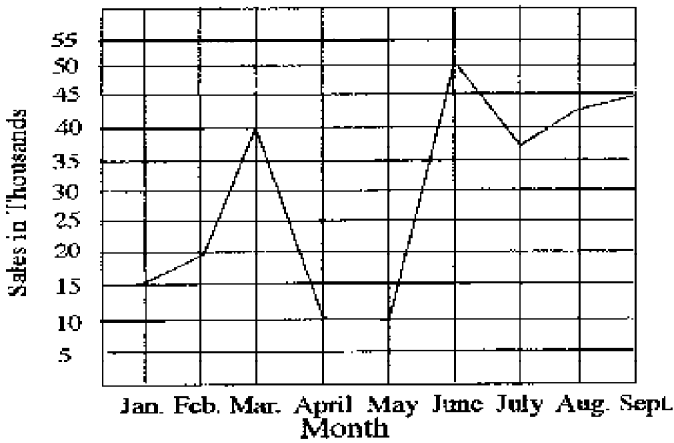
**Using Graphs
PRE-TEST**

DIRECTIONS: Circle the correct answer.

1. A graph that is used to show change over time is the _____ graph. (bar, line, pie, or pictograph)
2. A graph used to compare parts of a whole is the _____ graph. (bar, line, pie, or pictograph)
3. A graph used to compare data using symbols or graphics is the _____. (bar, line, pie, or pictograph)
4. A graph used to compare information is the _____ graph. (bar, line, pie, or pictograph)

Directions: Use the graph to answer the questions that are found next to it.

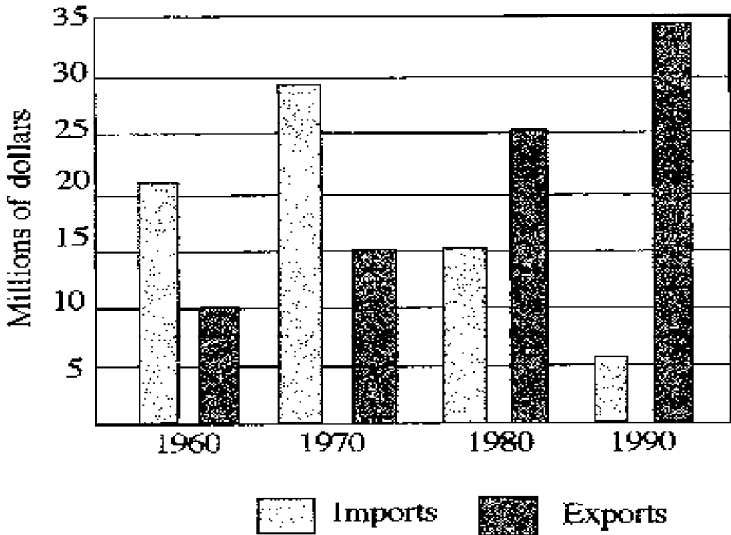
**Record Sales for Rock Records
(in thousands of copies)**



5. What is the title of this graph? _____
6. What kind of graph is this? _____
7. What month had the greatest sales? _____
8. What was the total sales for that month? _____
9. Sales dropped to its lowest in what month? _____
10. How long did this slump last? _____
11. What was the number of sales in August? _____
12. From May to June how much did sales increase? _____

13. What kind of graph is this? _____
14. What is the title of this graph? _____
15. What is the unit of measurement? _____
16. What was the amount of imports in 1960? _____
17. What were imports in 1970? _____
18. What were the number of exports in 1990? _____
19. What was the total of imports in 1990? _____
20. How much greater was the total for 1990 exports compared to 1990 imports? _____

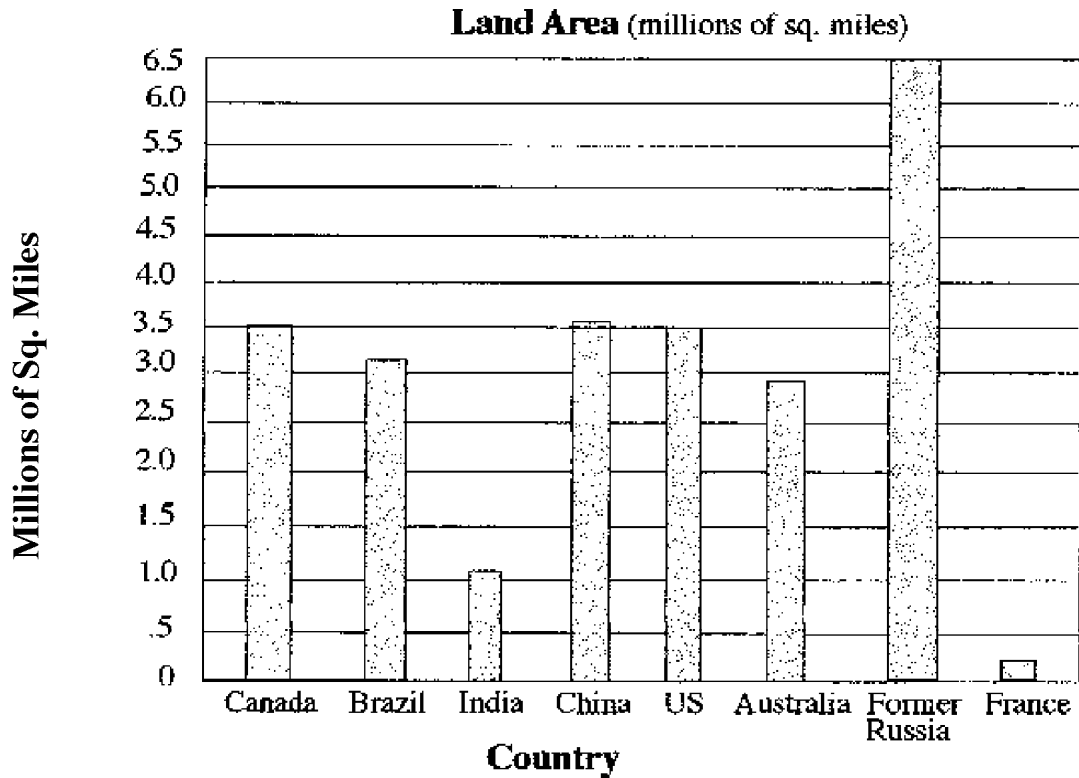
**Imports & Exports
(in millions of dollars)**



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Using Graphs VIDEO QUIZ

DIRECTIONS: At the end of the video production there is a video quiz. You can write the answers on this blackline master.



1. What kind of graph is this?
2. What does this graph show?
3. What does the horizontal axis show?
4. What does the vertical axis show?
5. Which country being compared has the largest land area?
6. Which country from this group has the smallest land area?
7. Which three countries have almost the same land area?
8. What is the land area of Australia?
9. What is the land area of Canada and the US combined?
10. What is the land area of India?

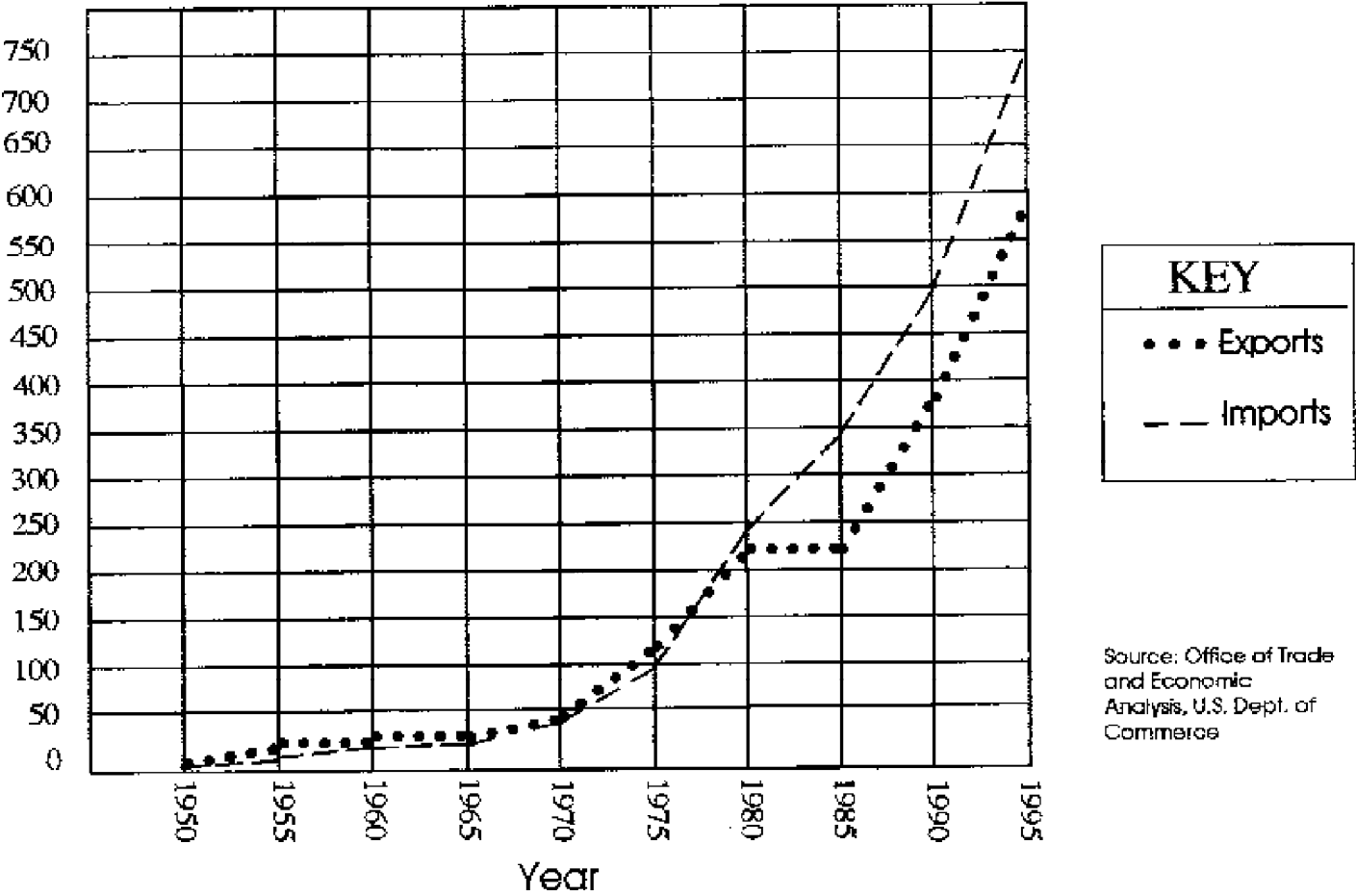
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Using Graphs
LINE GRAPH

DIRECTIONS: Use the line graph at the bottom of the page to answer the questions below.

1. What is the title of this graph?
2. What unit of measurement is being used in this graph?
3. What symbol is used to show imports?
What symbol is used to show exports?
4. Exports use to exceed imports for many years. At what point did this reverse?
5. During what 5 year period was the greatest increase in imports occur?
6. In 1995 what would you estimate the total amount of imports for the United States?
7. In 1995 what would you estimate the total amount of exports for the United States?
8. Between 1970 and 1995 how much did the amount of imports increase?
9. During the same period how much did the amount of exports increase?
10. What is the source of this information?

U.S. Exports and Imports, 1950-1995
(millions of dollars)



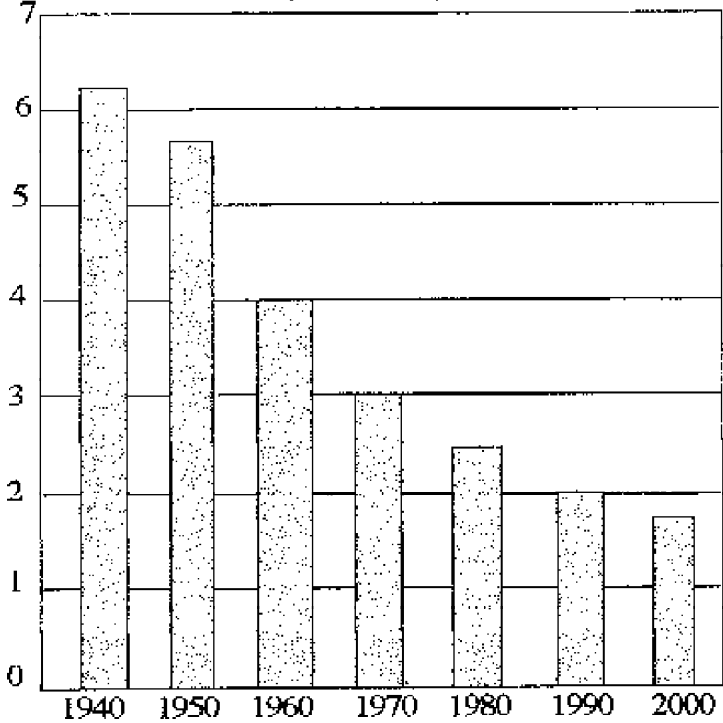
KEY	
•••	Exports
---	Imports

Source: Office of Trade and Economic Analysis, U.S. Dept. of Commerce

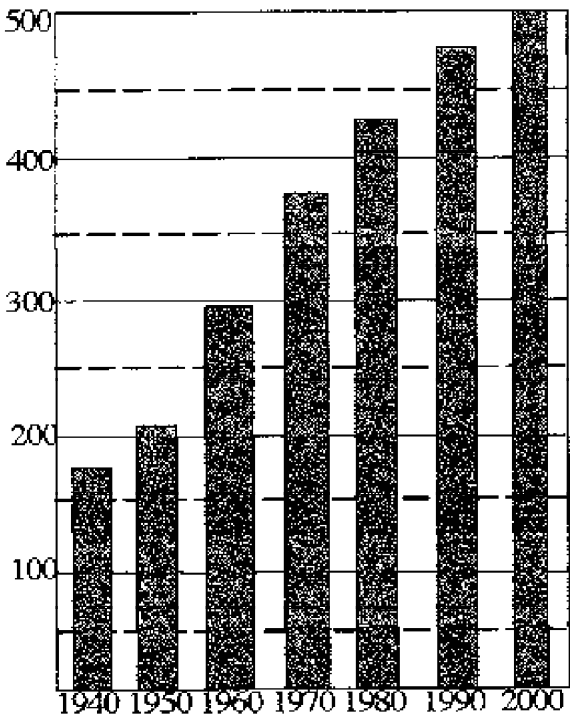
Using Graphs
BAR GRAPH

DIRECTIONS: Use the bar graphs on this page to answer the questions.

Number of Farms in the U.S.
(in millions)



Size of Average Farm
(in acres)



- The two bar graphs on this page provide information about U.S. farms. Identify what each graph is designed to tell about and its unit of measurement.

- The number of farms in 1940 was approximately _____.
- In 1970, thirty years later the number had dropped to _____.
- During which ten year time span did the number of farms in the United States drop the most? _____
- During the ten year span in question #4 how many millions of farms does the graph drop? _____
- What do you notice when comparing these two graphs?

- The answer in question #6 can lead to an assumption about what has been happening to smaller farms over the past sixty years. What general statement can you make about the changes happening to U.S. farms?

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Using Graphs PIE CHART

DIRECTIONS: Follow the steps below to set up a pie chart. Use a calculator to help with the numbers.

1. Identify the data that you will be using for your pie chart. Use the following information from the table below.

Expenditure of Monthly Allowance (Total = \$ 45.00)

Lunch money \$7.00	Arcade Games \$4.00	Movie \$7.50
Clothes \$15.00	Bus Fare \$1.50	Savings \$10.00

2. Notice that the data isn't in percentages. We will need to calculate the percentage that each category represents of the total allowance. Each of the six expenditures items is divided by 45 which represents the total allowance.

lunch money 7 divided by 45 equals .155555556 which is rounded to .16
To calculate the percentage we multiply by 100 which gives us 16%

Arcade Games 4.00 divided by 45

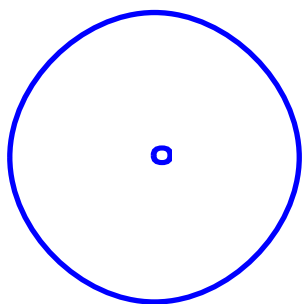
Movie 7.50 divided by 45

Clothes 15.00 divided by 45

Bus Fare 1.50 divided by 45

Savings 10.00 divided by 45

3. Now calculate the degrees for each of the categories. Think of the circle as being divided into 100 equal parts. There are 360 degrees in a circle so if we divide that into 100 equal parts each division will be 3.6 degrees. To calculate the degrees for each category multiply the percentage by 3.6 degrees. This will give the number of degrees the category should occupy in the pie graph.
Example: Lunch money is 16% of the graph so 16 times 3.6 equals 57.6 degrees. Then use the protractor to mark off a 57.6 degree angle on the circle below.

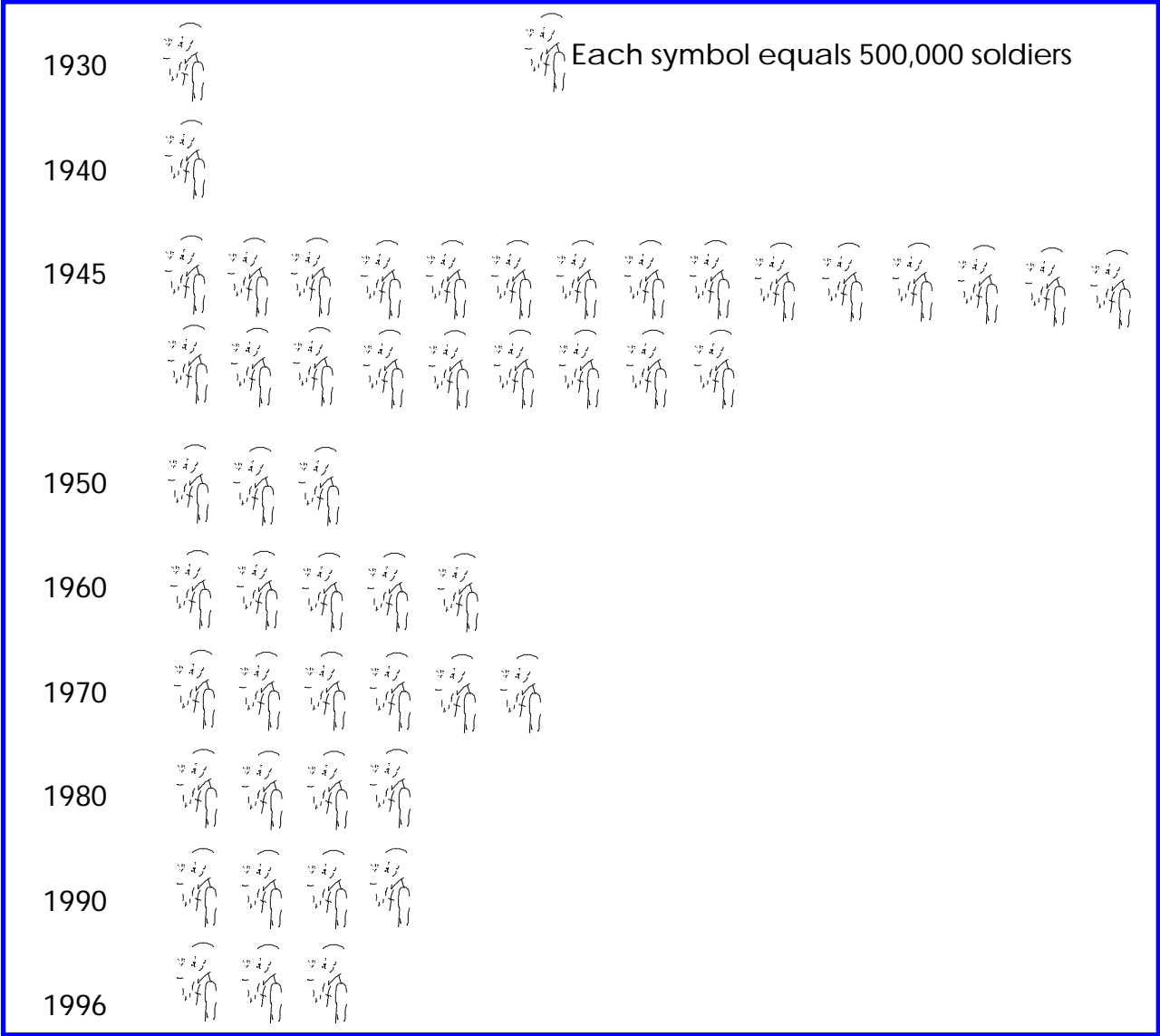


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Using Graphs
PICTOGRAPH

DIRECTIONS: Answer the questions at the bottom of the page by consulting the pictograph below.

U.S. Armed Forces 1930 - 1996



1. What is the title of this graph?
2. What does each symbol stand for?
3. Which year had the greatest number of armed forces?
4. How many armed forces were there in that year?
5. Why do you think the armed forces were so large at that time?
6. The number of armed forces has been declining since 1970. Why do you think that has been happening?
7. The number of armed forces was up during 1960 and 1970. Why?

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Using Graphs
MAKE YOUR OWN PICTOGRAPH

DIRECTIONS: Use the information from the table to design your own pictograph.

U.S. Motor Vehicle Production 1950-1996 (in thousands)

Year	Number	Year	Number	Year	Number
1950	8,006	1960	7,905	1970	8,284
1980	8,010	1990	9,783	1993	10,898
1994	12,263	1995	11,989	1996	11,799

Title: _____

Using Graphs
POST-TEST

DIRECTIONS: Answer the following questions in the space provided.

- Why is the present time in history often referred to as the "information age"?
- What are the four main types of graphs?
- Match the type of graph listed under column A with the description given in column B. (Draw lines from the graph name to the description that matches it.

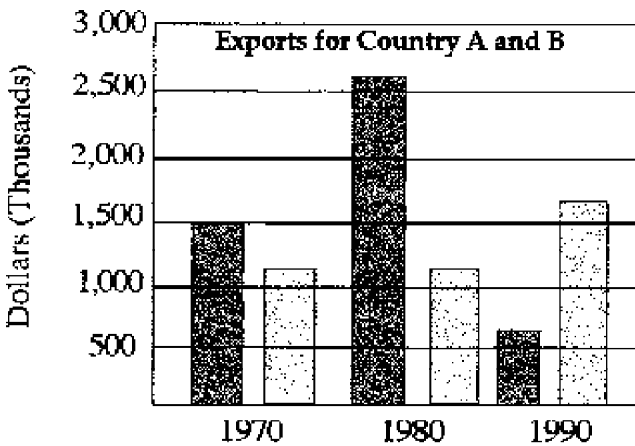
Column A

- Bar graph
- Pie graph
- Line graph
- Pictograph

Column B

- used to compare data using symbols or graphics
- used to show change over time
- used to compare information
- used to compare the parts of a whole

Use the following graphs to answer the questions that are found next to them.



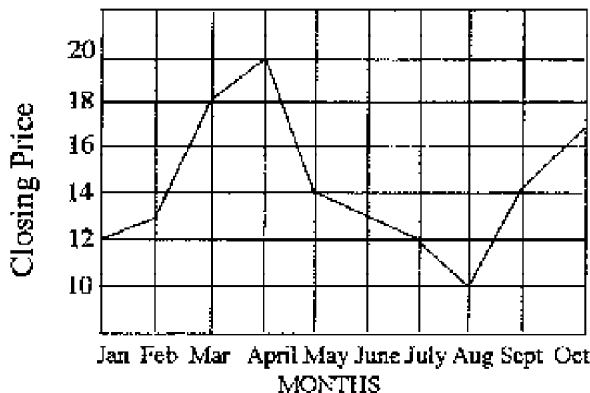
- What kind of graph is shown here? _____
- What does this graph show? _____
- How much was exported in 1980 by country A?

- Which country seemed to hold steady for twenty years?

- How much did country A's exports drop from 1980 to 1990? _____

Country A
Country B

Stock Price for Company A



- What type of graph is shown here? _____
- What does this graph show? _____
- What was the starting price of the stock? _____
- When did the stock reach its highest point? _____
- What was the closing price at that highest point? _____
- What was lowest closing price? _____
- When did the low price hit? _____
- What was the closing price in October? _____
- How much did the stock drop from April to August?

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Using Graphs
ENRICHMENT PROJECT: STOCK MARKET (PAGE ONE)

DIRECTIONS: This is a stock market simulation. Students will be allotted \$5000 to spend on the purchase of stocks of their choice. They will then track the progress of the stock over a one month period and record daily closing prices. After the one month period, results of the stocks' activity will be generated including line graphs of the one month history of each stock purchased. Students may spread their initial stock purchases over more than one company.

If your class has access to computers and a spreadsheet program such as Excel or ClarisWorks then sign up for the lab and consider having the students create an electronic portfolio for this project. If not they can keep records in a notebook. Either way the first step is to set up the structure for keeping records. Consider this an excellent opportunity for the entire class to participate in designing their portfolio. Discuss with the class what type of information they will need and how this information interrelates. Give the students every opportunity to contribute headings for columns and formulas for cells of the spreadsheet.

Here are some things to consider:

The first process is to spend the initial \$5000. This is accomplished by determining what companies to purchase stocks from, establishing how many stocks to buy from each company, and to build in the 2% brokerage fee. It would be a good idea to set up a spreadsheet just for this initial purchase. That way running totals can be established and students will know immediately when they have reached their \$5000 goal.

The spreadsheet might look like the following example. Formulas are included in parenthesis. Let students come up with as much of this as they can. This example is based on 5 companies.

	A	B	C	D	E	F	G
1	COMPANY NAME	DATE OF PURCHASE	COST PER SHARE	NUMBER OF SHARES	COST OF TOTAL SHARES	BROKERAGE FEE 2%	TOTAL COST
2					(=C2*D2)	(=E2*.02)	(=E2+F2)
3							
	TOTALS				(=SUM(E2..E5))	(=SUM(F2..F5))	(=SUM(G2..G5))

The total cost under column G will help students to make choices that come very close to the \$5000 budget.

At the conclusion of the project additional columns will be added to this table.

H	I	J	K	L	M
SELLING PRICE OF STOCK	TOTAL SALES	BROKERAGE FEE 2%	REVENUE MINUS FEE	NET CHANGE	PERCENTAGE GAIN OR LOSS
	(=D2*H2)	(=I2*.02)	(=I2-J2)	(=K2-G2)	(=L2/G2)

Using Graphs
ENRICHMENT PROJECT: STOCK MARKET (PAGE TWO)

Step two is to set up a spreadsheet for each company to record the history of the stock over the one month project. The main information on this sheet will be the closing price for each day and an indication if that is a gain or loss from the previous closing. Here is a sample of what that spreadsheet might look like:

	A	B	C	D	E	F
1	DATE	NUMBER OF SHARES	CLOSING PRICE	TOTAL	Net CHANGE	PERCENT OF GAIN OR LOSS
2				(=B2*C2)		
3					(=D3-D2)	(=E3/D2)

There is a lot of great data to graph and if you are using a computer program like Excel the process of graphing is greatly improved. Here are some ideas for graphs:

1. The basic graph would reflect the closing price history of the stock over the 30 day period. Students would move the Closing Price column C next to column A the Date. This shifts column B over to the right. Now they would highlight columns A and the new B to indicate this is the data to graph. Then they would indicate they want to make a line graph of this data. Following the directions they can establish headings for the x and y axis as well as provide a name or title for the graph.
2. Another graph might be a daily record of gain or loss for the stock. This time column E would be moved between column A and B where it will replace Number of Shares. Then follow steps in #1.
3. A double line graph could be generated with Closing Price and Gain or Loss.
4. Students can easily convert graphs from line graphs to bar graphs using a program like Excel.

