Sample Agenda for a Half-Day Workshop

This format is designed for workshops for teachers from several grades and/or schools.

Goals for the half-day workshop:

At the conclusion of this workshop, the participants will be able to:

- Describe MECL's purpose for teaching economics and mathematics.
- Use the standards correlation grids in the book to select appropriate lessons for their own classroom.
- Access the NCEE Web-site support for MECL.
- Participate in at least two demonstration lessons from MECL and take home sample lessons.
- Describe some of the extension activities connected with the demonstrated lesson and know where to find more lessons.
- Describe how MECL lessons can help engage students above and below grade level in mathematics.
- Describe where to get more information from the local Center/Council for Economic Education.

Materials list for demonstration of Lessons 6 and 3:

- One copy of Visuals 6.1, 6.2
- One copy of Activities 6.1, 6.5 and 6.6 for each participant
- One copy of Activity 6.2 for each group (before making the copies, be sure the bookmark resource price list includes all the materials in the resource bags and an estimated price for each resource)
- One envelope of craft materials for making bookmarks for each group
- One copy of Activity 6.3 for each group
- Enough copies of Activity 6.4 to provide three $1.00 bills for each participant
- OPTIONAL: One copy of entire Lesson 6 if you do not plan to distribute MECL as part of the workshop
- Copy of the trade book *Chicken Sundays* by Patricia Polacco, Paperstar Book, Reprint edition, Jan. 1998 (ISBN: 0-69811-615-1) and *The Real McCoy* (a Blue Ribbon Book) by Wendy Towle, Scholastic Paperbacks, Jan. 1, 1995 (ISBN: 0-59048-102-9) to show during discussion
- One copy of Visuals 3.1, 3.2 and 3.3
- Two copies of Activity 3.1. Make one copy of the activity cards on red paper and one copy of the activity cards on blue paper. Cut the cards apart. Make sure you have enough to distribute one card, red or blue (not both), to all participants.
- One copy of Activity 3.2 for each participant
- OPTIONAL: Thermometers if you plan to do the estimation activity

I. Welcome and Ice-Breaker (20 minutes)

- Have nametags made ahead of time, and place them on a table for teachers to pick up as they enter the room.

- As teachers check in, have them select an index card from a basket. On one side of the card, have these instructions: Find four people who can help you make a correct number sentence and form a group; find a table together and put your correct sentence in the middle of the table. On the other side of the card, have one number or math symbol. In order to form groups, five teachers must make a number sentence and put the cards in the correct order in the center of their table. An example would be five cards containing (2 + 3 = 5). Make enough cards to make the math work but only enough = signs for the number of groups you plan to have. Thirty teachers will require six = signs. You can select easy or more difficult numbers. You may want to give candy or small prizes to the groups after they are organized.
- Give the teachers time to introduce themselves, and ask them to make stand-up cards with first names for each group member with larger folded index cards and markers you have placed on each table. This will help you with names and give teachers time to interact. Give a prize for the name card with the best math symbols.

II. Overview of MECL and Its Features (10 minutes)

- Use the PowerPoint overview presentation or your own presentation.
- Explain the importance of math instruction. Point out that having students use math skills outside the math content in other subjects represents the highest levels of learning advocated by NCTM in its standards.
- Show and pass out the math and economics standards correlation grids from MECL. Ask a teacher to indicate if the grids show math skills they are currently teaching.
- Ask the teachers if they currently teach economics concepts in math or social studies. You should have obtained the school/district math curriculum and social studies standards, if possible. Refer to the economics standards grid in MECL. If teachers need further information, link them to http://ecedweb.unomaha.edu/K-12/K-5concepts.cfm or their own state or local Web site for information.
- Hand out the glossary from MECL.

III. Review and Demonstration of Lesson 6, “Bookmark Profits,” and Supporting Web Site (30 minutes)

- Explain that figuring profit is something that entrepreneurs need to do to decide if the risk is worth the reward of introducing new products to the marketplace. This lesson requires students to create a new product and try to sell it to consumers. They then figure out if they made a profit or incurred a loss. Basic math operations are reviewed in this lesson as students create equations.
- Arrange the teachers by grade level into groups of 4-5. Have each group select a leader who will play the role of an entrepreneur. Distribute a large envelope of craft supplies to each group and have them read the instructions in Lesson 6. (Note: Make sure to record the prices of the supplies you have in the envelope on the price list before you make copies of Activity 6.2.) Each group should get the same supplies.
- Review the instructions for the task. Each group will create a sample bookmark, using the supplies in the envelope, and will figure how much the sample will cost

to make, using Activities 6.2 and 6.3 to add the inputs. Give the groups 10 minutes to complete the task and have the entrepreneurs of each group display their bookmarks in front of the room where all can see them. All bookmarks will sell for $3.00.

- Distribute $3.00 to each participant (use Activity 6.4). Have each entrepreneur come to the front and offer the bookmark for $3.00. Count the number of buyers, and take money from each buyer so that each participant can buy only one. Act as the recorder, using Visual 6.2 to figure the income each group gets from the sale of its bookmark.
- The teachers should work out the calculations on their own Activity 6.4, and you should work on the overhead. Ask each group to report if it made a profit or loss.
- Part 2 of the lesson asks the groups to write mathematical equations showing the profit or loss as mathematical equations, using Activity 6.5. Have the groups work through the worksheets together. Have a sample group report if there is time.
- Call the group to attention, and ask the groups to analyze the difficulty of the math in the lesson and describe the students or grades that might be able to use this lesson. Point out that the lessons in MECL can be used for practice following direct instruction or review of a previous day's instructions. The lesson could also be used as a general review of math skills taught in the preceding year or as instruction for students above grade level.
- Project the MECL Web site (http://mathandecon.ncee.net) from the Internet for Lesson 6. Draw attention to the following features: the summary of the lesson, the list of materials and the PDF downloads for Activities and Visuals, the list of Weblinks, the literature connections and *EconEdLink* lessons. Go directly to the links, and show the teachers how to use the Web site to find other activities.
- Show the trade books *Chicken Sundays* and *The Real McCoy*. *The Real McCoy* lesson is listed as an online lesson on http://ecedweb.unomaha.edu under entrepreneurs concept. Distribute this lesson or another sample lesson on entrepreneurs.

IV. Break (20 minutes)

- Have a refreshments table or buffet for teachers. As they take the break, have a display of a variety of NCEE materials for elementary grades. If possible, have several copies of materials to be given away as door prizes at the end of the workshop. If you have local district math textbooks that you have marked to correlate with the lessons in MECL, display them also.

V. Review and Demonstration of Lesson 3, "What's Hot and What's Not," and Supporting Web Site (45 minutes)

- Go to the MECL Web site (http://mathandecon.ncee.net) to review the lesson summary.
- After reviewing the summary with the participants, draw attention to the Notes to Teachers about satisfaction comparison. Point out that information about preparing to teach lessons is one of the features of the MECL Web support.
- If time permits, do the opening of Lesson 3, reviewing the steps in Procedures 1-12 and ending with the estimation of the temperature in the room and outside. If you do not have the time, go directly to step 19.

- Divide the class into two groups. Distribute the red and blue cards, and describe the red and blue zones of the room. Remember to mix up the colors as you distribute one card to each participant. After the two groups have rated their satisfaction with their goods, give them time to trade.
- Allow the groups to trade and record the satisfaction rating on the overhead. Go back to the teacher note on the Web site, and make sure that the teachers understand that the satisfaction rates are ordinal and cannot be compared from one student to another. Emphasize the voluntary nature of trading, and make sure they understand the economic benefits of trade.
- Go to the interactive Web activity for Lesson 3, and demonstrate the estimation activity a few times so that the teachers are familiar with it. Tell them that Lessons 1, 2, 3, 7 and 12 have this interactive feature for student practice.
- Scroll down to the section with the links to other Related Online Lessons. Go to the fourth link, "A Rooster and a Bean Seed," and show the teachers how to download this lesson. Also show them the fifth link, "Economic Spotter: Trade in Colonial Days," to emphasize the connection to the elementary social studies curriculum.
- Pass out copies of Activity 3.2, and explain to the teachers that each MECL lesson has an assessment that checks for understanding of both the mathematics and economics concepts in the lesson.

IV. Wrap-Up (10 minutes)

- Give the teachers a few minutes to review the table of contents and the grids to locate another lesson they feel would be appropriate for their students' math level. Ask a teacher from each group to share one lesson they would use with each grade level.
- Review the key features of the book and Web site. Distribute the books if you are giving them to teachers with a sticker on the front with your Center/Council information, phone number and Web site.
- Distribute the Workshop Evaluation Form and allow time for the participants to complete it.
- Give away a few small prizes or curriculum guides as door prizes.
- Discuss other programs your Council/Center is planning in the future.
- Thank the teachers for coming, and distribute your card to the teachers for future contact.

ACTIVITY 6.1
MONEY MATTERS REVIEW

Directions: Calculate the answers to these questions. Show your work.

A. Suppose you have been saving your money to buy a new bicycle. The price of the bicycle is $175.50. You have saved $75.25. How much more money must you save?

B. You can walk the neighbor's dog for three days. She will pay you $3.00 a day. If you take the job, how much money will you earn? If you put all of your earnings in your savings account, how much will you still need to buy the bike?

C. Your sister is selling lemonade. The price is $0.15 a cup. If she sells four cups, how much money will she have?

D. You bought candy at a store. You paid $0.15 for gooey worms, $0.20 for jelly beans and $0.07 for sour stars. What is the total you spent? If you paid with a $1.00 bill, how much change will you receive?

ACTIVITY 6.2
BOOKMARK RESOURCE PRICE LIST

Resource	**Price**
Space (rent)	$0.25
Worker (wage)	$0.10

ACTIVITY 6.3
COMPUTING UNIT COSTS OF PRODUCTION

Company Name: _____

In Column 1, list each resource you used to produce your sample bookmark.

In Column 2, write the price for each resource, using the Bookmark Resource Price List on Activity 6.2.

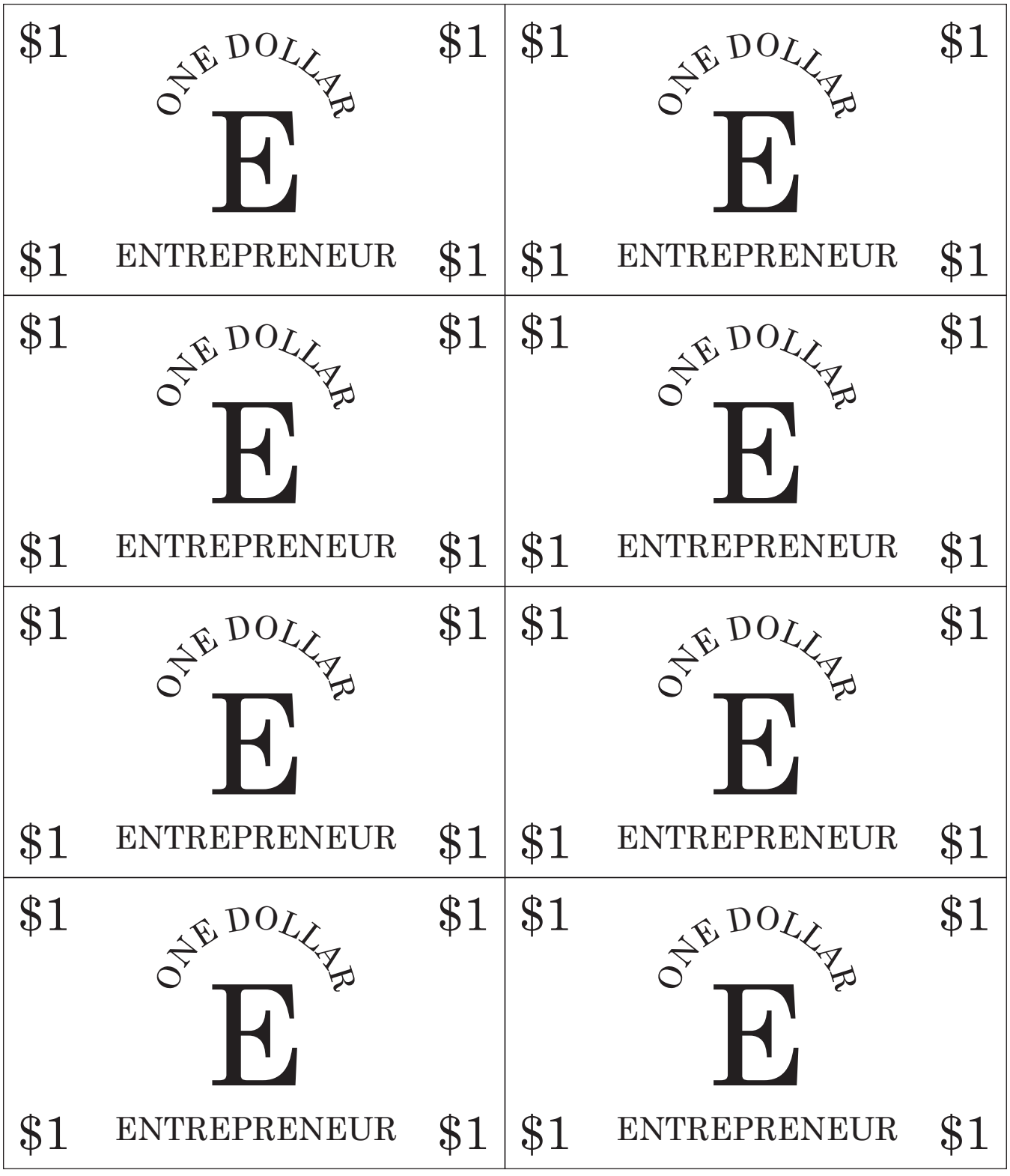
In Column 3, write the number of units of each resource that your company used. (For labor, write the number of students in your group, minus the entrepreneur.)

In Column 4, compute the cost of each resource by multiplying the number in Column 2 by the number in Column 3.

Add the amounts in Column 4 to find the unit costs of producing a bookmark. **Write your unit costs** (total costs of production for one bookmark) in the bottom row of Column 4.

1	2	3	4
Resource	**Resource Price per Unit**	**Number of Units Used**	**Total Resource Cost** (Column 2 x Column 3)
	Total Costs of Production for One Bookmark		

ACTIVITY 6.4
DOLLARS FOR BOOKMARKS



ACTIVITY 6.5
COMPUTING BOOKMARK PROFITS

Company Name:	Entrepreneur:

1. The selling price of your company's bookmark is	**$3.00**

2. How many bookmarks did you sell?	

3. Use this equation to determine your company's total revenue:

Selling Price	**x**	**Quantity Sold**	**=**	**Total Revenue**
	x		**=**	

4. Use this equation to determine your company's total cost:

Unit Cost	**x**	**Quantity Produced**	**=**	**Total Cost**
	x		**=**	

5. Is your company's total revenue > (greater than) its total cost
or is your company's total revenue < (less than) its total cost?

6. If your company's total revenue was greater than its total cost,
use this equation to determine your company's profit:

Profit	**=**	**Total Revenue**	**–**	**Total Cost**
	=		–	

7. If your total cost was greater than your total revenue,
use this equation to determine your company's loss.

Loss	**=**	**Total Revenue**	**–**	**Total Cost**
	=		–	

8. Did your company's entrepreneur earn income (profit)?

ACTIVITY 6.6
ASSESSMENT: LUSCIOUS LEMONADE

Directions: Read the paragraph below. Help Jamal and Sally use this information to figure out whether their lemonade business earned a profit or had a loss. Show your work. (Use the back if you need more room.)

Mrs. Counts talked with Jamal and Sally about their lemonade stand. She learned that they sold 60 cups of lemonade at $0.25 each. She also learned that Jamal's mother charged them for the resources they used to make the lemonade:

- $3.50 for lemonade mix
- $1.00 to rent the table for the lemonade stand
- $0.75 for cups
- $0.75 to rent the pitcher, spoon and measuring cup

1. What were Jamal and Sally's total costs? Show your work.

2. Write the equation for Jamal and Sally's total revenue. What was their total revenue?

3. Was Jamal and Sally's total revenue < or > their total costs?

4. Who are the entrepreneurs in this activity? Why?

5. Did Jamal and Sally earn a profit or have a loss? How much was their profit or loss?

6. If Jamal and Sally's total costs were $16.50, would they earn a profit or have a loss? How much would their profit or loss be?

VISUAL 6.1
COMPUTING UNIT COSTS OF PRODUCTION

Company Name: _____

In Column 1, list each resource you used to produce your sample bookmark.

In Column 2, write the price for each resource, using the Bookmark Resource Price List on Activity 6.2.

In Column 3, write the number of units of each resource that your company used. (For labor, write the number of students in your group, minus the entrepreneur.)

In Column 4, compute the cost of each resource by multiplying the number in Column 2 by the number in Column 3.

Add the amounts in Column 4 to find the unit costs of producing a bookmark. **Write your unit costs** (total costs of production for one bookmark) in the bottom row of Column 4.

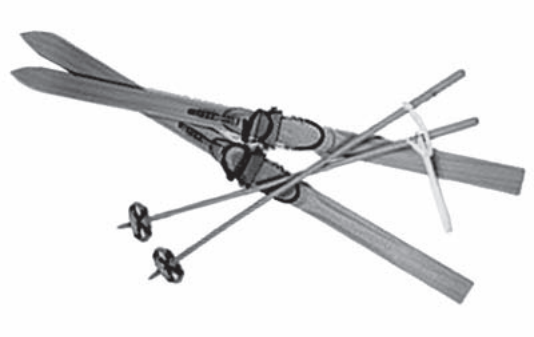
1	2	3	4
Resource	**Resource Price per Unit**	**Number of Units Used**	**Total Resource Cost** (Column 2 x Column 3)
	Total Costs of Production for One Bookmark		

VISUAL 6.2
BOOKMARKS BY THE NUMBERS

1	2	3	4	5
Bookmark Company Name	**Quantity of Bookmarks Sold**	**Total Revenue**	**Total Cost**	**Profit / Loss**

ACTIVITY 3.1
WEATHER-TIME GOODS

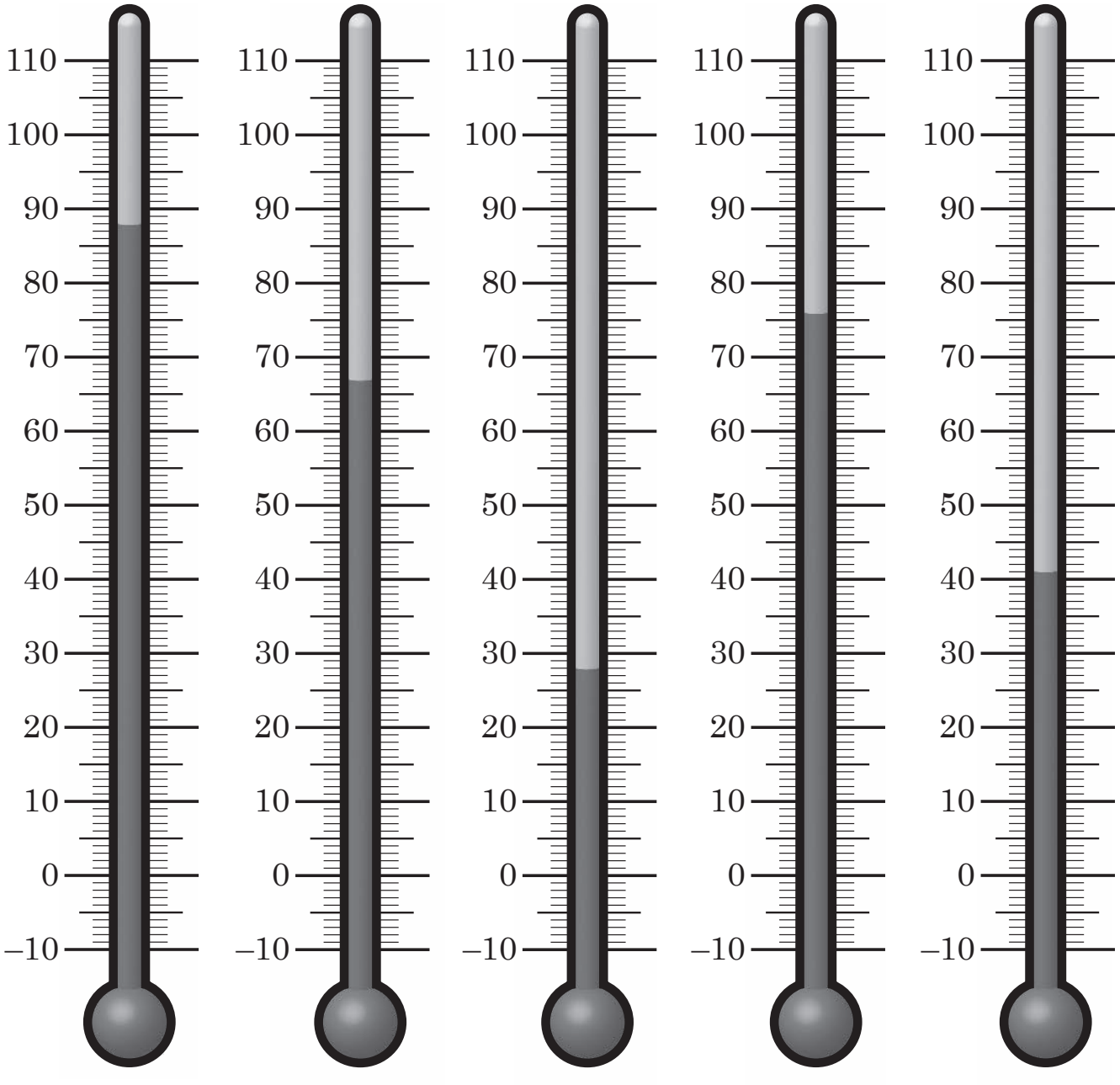
ACTIVITY 3.1 (continued)
WEATHER-TIME GOODS



ACTIVITY 3.2
ASSESSMENT: DO I WANT TO TRADE?

1. Write the temperature shown on each thermometer.

A. _____°F **B.** _____°F **C.** _____°F **D.** _____°F **E.** _____°F



ACTIVITY 3.2 (continued)
ASSESSMENT: DO I WANT TO TRADE?

2. List the temperatures on the thermometers in Question 1 from coolest to warmest.

3. What is the median of these temperatures?

4. Pretend that these five temperatures are from different times of the year in the region where you live. What is the mean temperature for your region?

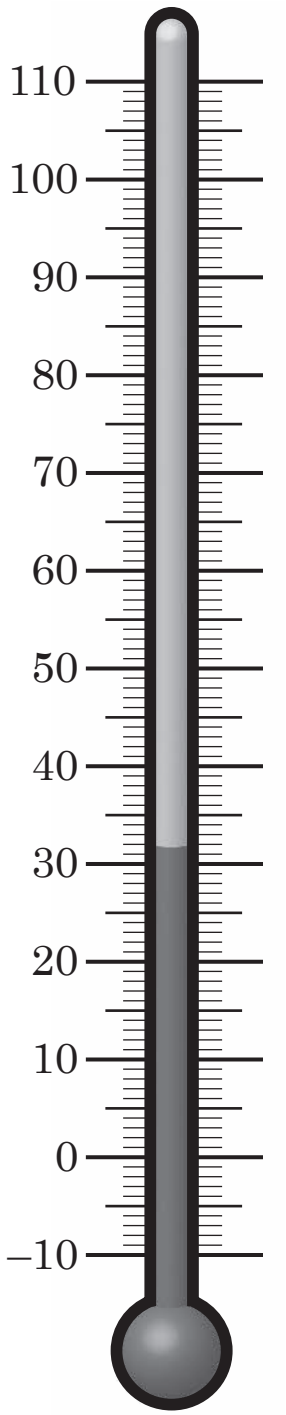
5. Which one of the following goods would you choose to use when the temperature is 70°? Circle this good.

A. Swing Set **B.** Roller Blades **C.** Snow Skis **D.** Bicycle

6. Why did you make this choice?

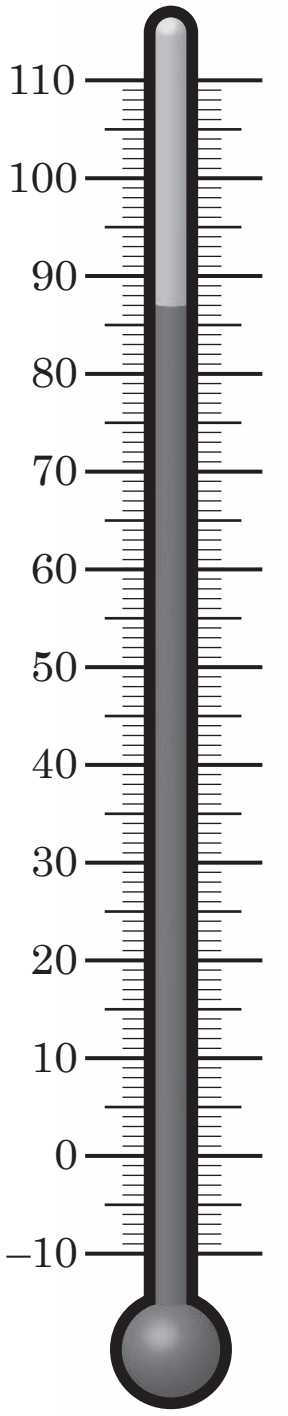
7. How would you rate your satisfaction with the good you chose using a scale of 1 to 10, with 1 meaning not very happy and 10 meaning very happy?

VISUAL 3.1
READING A THERMOMETER

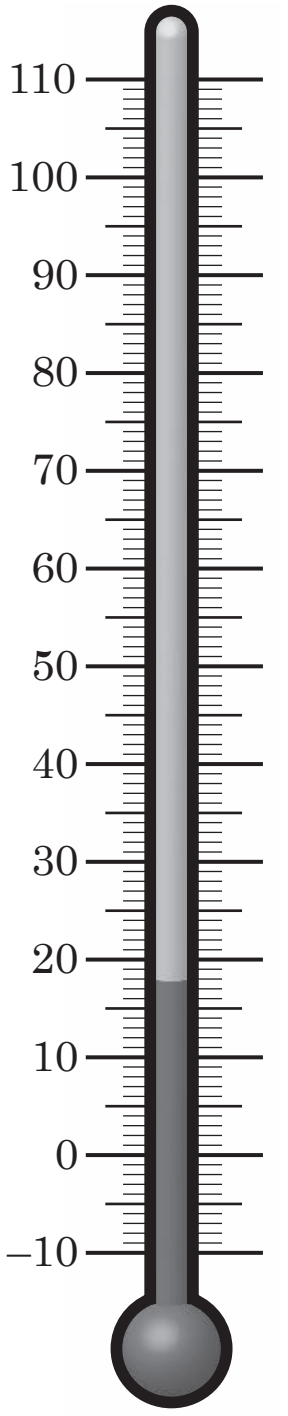


VISUAL 3.2
THREE TEMPERATURE READINGS

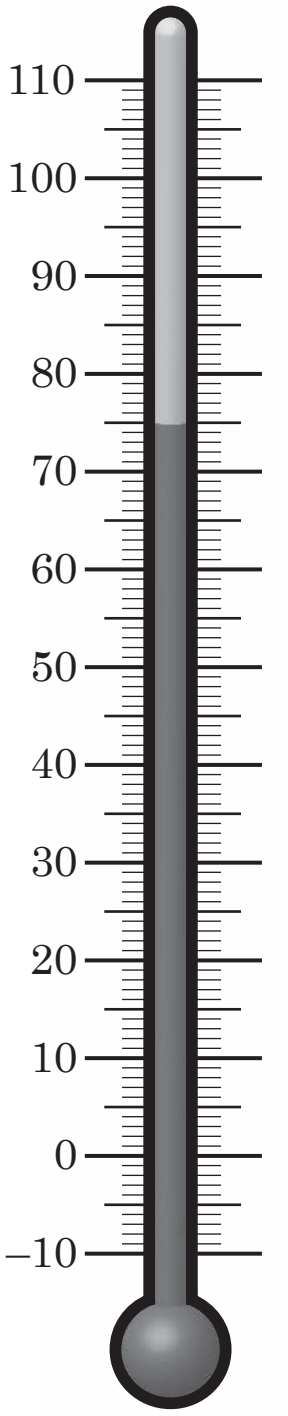
A. _____ºF



B. _____ºF



C. _____ºF



VISUAL 3.3
SATISFACTION TABLE

Blue Zone		
	Rating	
Student Name	Round 1	Round 2
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		

Red Zone		
	Rating	
Student Name	Round 1	Round 2
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		

MATHEMATICS & ECONOMICS

National Council on Economic Education

MATHEMATICS & ECONOMICS GRADES 3-5

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MATHEMATICS & ECONOMICS GRADES 3-5

developed by NCEE and sponsored by 3M, helps to bring economics and personal finance into the mathematics classroom.

NCEE

National Council on Economic Education

3M

MATHEMATICS & ECONOMICS

National Council on Economic Education

Why teach Econ and Math together?

- 48 states have elementary standards in economics
- Economics is usually found in social studies
- NCTM has made math instruction a high priority
- Great opportunity for math teachers since economics uses the language of math.

MATHEMATICS & ECONOMICS

NCEE National Council on Economic Education

"Recent research on mathematics education continues to confirm that teaching mathematics in the context of an application is highly effective and that significant, worthwhile and grade level appropriate content can have considerable influence on student learning"

Weiss, Iris R. and Joan D. Pasley,
"What is High-Quality Instruction", Educational Leadership, February, 2004

MATHEMATICS & ECONOMICS

NCEE National Council on Economic Education

MECL: MATHEMATICS & ECONOMICS CONNECTIONS FOR LIFE

- Produced by the National Council on Economic Education
- Funded by the 3 M Foundation
- Completes the series of MATHEMATICS & ECONOMICS CONNECTIONS FOR LIFE
  - 9-12 available
  - 6-8 available
  - 3-5 available

MATHEMATICS & ECONOMICS

NCEE National Council on Economic Education

About: MATHEMATICS & ECONOMICS GRADES 3-5

- Written by teams of classroom teachers and content specialists.
- Lessons field tested in both Omaha and Little Rock in different grades.
- Revised with pilot teacher suggestions.
- Edited by mathematics educator and economist.

MATHEMATICS & ECONOMICS

NCEE
National Council on Economic Education

About: MATHEMATICS & ECONOMICS GRADES 3-5

- 12 lessons teaching economics by using mathematical skills
- Each lesson has teacher's instruction, hands-on activities, closing review and assessment
- Economics instruction is included in each lesson.
- Math instruction is not included and needs to be taught first.

MATHEMATICS & ECONOMICS

NCEE
National Council on Economic Education

Web site: mathandecon.ncee.net/35/

- Designed to help teachers prepare to teach lesson
- Downloadable PDF of Visuals and Activities
- Manipulative for student practice in 5 of the lessons
- Literature and language arts connections
- Links to other lessons and resources

Glossary of Terms

Alternatives: options among which people can make a choice

Barter: direct exchange of goods or services among people without the use of money

Benefits of trade: increase in well-being after the voluntary exchange of goods and services

Budgeting: making a plan for managing income, spending and saving

Capital goods (resources): goods people produce and use to make other goods and services

Choice: a decision made among alternatives

Complementary goods and services: goods or services people typically consume together

Consumers: people whose wants are satisfied by using goods and services

Costs of production: the costs of all the resources a business uses in producing goods or services

Criteria: standards or measures of value that people use to evaluate something

Decision making: a process of choosing among alternatives

Demand: the schedule of the quantity of a good or service that people are willing and able to buy at different prices during a given time period, when income and prices of other items remain the same

Division of labor: jobs are divided among the workers so that each worker specializes in one part of the production process

Economic benefits: improvements in well-being associated with any economic action, good or service; for example, the increase in satisfaction from consuming something

Economic wants: desires that people can satisfy by consuming a good or service

Entrepreneurs: people who take risks to develop new products and services and start new businesses. Profit is income for entrepreneurs and is an incentive that encourages them to risk their money and resources.

Exchange rate: the price of one country's currency in terms of another country's currency

Goods: objects that can satisfy people's economic wants

Human capital: the skills, education and talent a person possesses

Human resources: the quantity and quality of human effort directed toward producing goods or services

Interest: the amount that a borrower of money must pay to the lender for the use of the lender's money

Interest rate: the percentage that a borrower must pay of the money loaned in return for the use of the money, usually expressed over a period of one year

Intermediate goods: materials that are used up in production and become part of the final good

Investment in capital: purchasing capital goods (equipment and buildings) that can assist people in producing goods and services

Law of demand: people are willing and able to buy a lower quantity of a good or service at a higher price and a higher quantity of a good or service at a lower price, when income and prices of other items remain the same.

Medium of exchange: a good that people generally accept in exchange for other goods or services

Money: anything widely accepted as final payment for goods and services (a medium of exchange)

Natural resources: "gifts of nature" that are present without human intervention

Opportunity cost: the next best alternative people give up when they make a decision

Productive resources: natural resources, human resources and capital goods available to make goods and services

Productivity: a measure of output compared to inputs during some time period

Profit and loss: difference between the total revenue a business receives and the total costs it pays for resources. If this number is positive, it is called profit; and if it is negative, it is called loss.

Revenue: total amount a business receives for selling a product or service

Savings: income people have not spent on consumption or taxes

Services: actions that can satisfy people's economic wants

Specialization: each worker focuses on one part of the production process

Trade/Exchange: voluntarily trading goods and services with people for other goods and services or for money

Mathematics and Economics: Connections for Life, Grades 3-5
Workshop Evaluation Form

<Insert Center/Council Name>

In our effort to continuously improve our programming, we would appreciate your comments on our workshop. Looking back over your experience, please comment on the following questions.

Date _____ Location _____

1. Did this MECL workshop meet your expectations? _____yes _____no

2. Did you feel that you were presented with enough information about MECL to be able to go back into your classroom and use the curriculum? _____yes _____no

3. Were the materials and teaching strategies presented appropriate for your students? _____yes _____no

4. Did you have ample opportunity to ask questions and express your opinions? _____yes _____no

5. Please write your suggestions for improving future MECL workshops.

6. Please write any additional comments or recommendations.