

# MATHEMATICS & ECONOMICS



National Council on Economic Education

CONNECTIONS FOR LIFE

▶ GRADES 3-5

GRADES 6-8

GRADES 9-12

## Part I: Preparing to Host the Workshop

### How the Workshop Leader's Guide Can Help

The purpose of this guide is to help economic educators prepare to host a workshop introducing *Mathematics and Economics: Connections for Life, Grades 3-5* (MECL) to teachers. MECL is an excellent way to connect instruction in basic economics concepts for the upper elementary grades (3-5) with mathematics, a core content area in all elementary classrooms. Elementary teachers spend a great deal of time teaching mathematics concepts. Hosting this workshop will allow you to introduce several new economics and personal finance lessons that reinforce students' use of basic mathematics skills. In other words, it's the perfect way to accomplish two teaching goals at once.

This guide will help you plan a workshop and give you tips on specific lessons to highlight during the workshop. This guide contains checklists for planning, sample agendas and a sample evaluation form. By reviewing this information, you can plan a successful workshop that will appeal to school districts and make new teacher connections for your Council or Center.

In planning your workshop, also use the MECL Web site (<http://mathandecon.ncee.net>), which supports each lesson in the publication. Each lesson's Web page contains an overview of the lesson, Visuals and Activities in PDF format, literature connections, related Web sites and other suggested lessons to support the lesson. Five of the lessons have interactive computer activities that teachers can project for the whole class or use for individual practice of math and economics skills.

## Questions to Consider When Planning the Workshop

When preparing for the workshop, take time to consider the following questions, and organize goals for the program. The answers to this series of questions should give you direction as you start the planning process.

1. Will this be a one-time workshop at a university location or a series of short programs you will offer more than one time in a school district?
2. Will the Center/Council host the workshop alone or will you seek a partner or cosponsor?
3. Do you have a local representative of 3M who you would like to involve?
4. What incentives (e.g., continuing education credit, a light meal, or free or reduced-price MECL books) can you give that will encourage teachers to come to the workshop?
5. What format will you use for the workshop?
  - a half-day workshop
  - a 30-minute presentation as part of a district curriculum-day presentation
  - a “Train-the-Trainers” session for curriculum or math supervisors
  - a one-hour after-school workshop held in central locations over the semester with groups of teachers from neighboring schools
6. Will you give MECL books or sample lessons only to workshop participants?

## Questions You Might Be Asked about Teaching Economics in Grades 3-5

As you contact financial partners, school districts or principals about hosting a MECL workshop, they might ask you the following questions. You will want to have reviewed the answers to these questions or prepare a simple proposal outlining the answers to these questions using your state and school district mathematics and economics standards as examples.

### 1. Why encourage economics instruction in the elementary grades?

As Center/Council Directors, we are often asked why we “waste” time teaching economics to elementary students. The answer is generally because we can and the students are eager to learn these concepts. Children, especially ages 8-12, are very excited about learning about the economic activities surrounding them. They are consumers themselves as well as observers of others participating in both producing and consuming goods and services. Elementary students are prime targets for introducing economics concepts and, more importantly, laying a good foundation for the future economic literacy of students.

Because school districts face an already crowded curriculum of subjects that they must teach, finding a place for economics is often difficult. MECL and this workshop leader’s guide should help you make the case that as teachers devote time and energy to teaching mathematics, they can also teach basic economics concepts to students. Mathematics is the language of economics. The MECL publications show students how to use the mathematical skills they have been learning to solve problems and seek solutions to economic problems in their daily lives.

### 2. Why teach economics and mathematics together?

To answer this question, read the short essay “[Why Teach Mathematics and Economics Together?](http://mathandecon.ncee.net/35/intro.php)” (<http://mathandecon.ncee.net/35/intro.php>) by Neal Grandgenett and Kim Sosin. You may want to make copies of the essay to give to school administrators and funders. Recent research on mathematics education continues to confirm that teaching mathematics through applications is effective, significant and worthwhile. There are economics standards in 48 states. Economics interests students because it is about decisions they make every day. Mathematics is used in economics at the highest levels and improves economic analysis at every grade level. Personal finance and economic decision making is improved when mathematics is used. The importance of understanding mathematics is clearer when it is grounded in familiar activities relevant to the everyday lives of students.

### 3. How can we find the time to fit economics into the curriculum with NCLB?

A common response from teachers new to economic education is there is not enough time to add a new subject to the crowded school day. In the climate of *No Child Left Behind* legislation, there is intense pressure on teachers to improve and maintain math scores every year. You can anticipate these concerns by reassuring teachers that the

lessons in MECL allow students to practice their math skills while learning economics. Applying the math skills to economics and personal finance examples in these lessons will give students practice in higher-level application of the basic math skills they learn during math instruction.

Using these lessons can also allow teachers to add hands-on activities to the common drill and delivery lessons often found in math texts. Students use the language of economics, mathematics, to make economic decisions. All the necessary economics background can be found in the MECL lessons and on the Web site (<http://mathandecon.ncee.net>). Matching math objectives with the appropriate economics lessons is easy thanks to the [grids in the book that correlate the NCTM standards to the lessons and the national economics standards to the lessons](#). All lessons are stand-alone, so teachers can freely match school and district math outcomes. Making the connections for teachers should be a major part of any MECL workshop.

#### 4. Can I tie the MECL lessons to my state and district standards?

[Two grids that correlate economics standards and math standards to the MECL lessons are included in MECL](#). You should also obtain the particular math objectives for your state and the school districts represented in the expected workshop audience. These objectives should be reproduced and copies used in the introductory activities for teachers as part of the workshop agenda. Strengthening these connections for teachers will help them feel more comfortable using the lessons in their classrooms. These correlations will be especially important to assist supervisors to encourage the use of MECL in district classrooms.

If you can borrow ahead of time the school's math textbook, take time to review the text and mark sections of the book with sticky notes where the concepts taught parallel the concepts found in the MECL lessons. Plan to have the marked texts for grades 3-5 on display during breaks at your workshop. This small step may help teachers see the connections to their math curriculum more clearly.

Most states have elementary social studies standards that include economics objectives. Teaching the MECL lessons allows teachers to teach both math and economics together and review important concepts in the social studies curriculum. Emphasizing the productivity of using these lessons should help teachers find time in the day for them. If your state or district includes economics in the social studies standards for elementary grades, make copies of the economics standards to include in the workshop handouts. Highlight strong connections to these standards whenever possible.

#### 5. Can the MECL lessons be used with a variety of students?

The 12 lessons in MECL are arranged in order of their mathematical difficulty. The first lessons are aimed at typical third graders and high-ability second graders. The mathematical skills in the lessons get more difficult; toward the end they use fractions and decimals. The last three lessons would be very appropriate to use with higher-

ability students. Because teachers can easily select the lessons they can use, the MECL authors did not designate grade levels.

The economics concepts used in these lessons are also introduced in order of difficulty. Since each lesson contains background information on the economics concepts introduced, teachers should have all the information they need to prepare for the lesson. **The lessons do not contain math instructions.** It is assumed that the students have been taught the necessary math skills before they participate in the economics activities contained in MECL. Completing these lessons should teach students economics and give them practice in applying their mathematical skills.

Most of the lessons in MECL begin with whole-group instruction and discussion. Small-group hands-on activities follow to reinforce the concepts introduced. Each lesson contains review questions and answers as a closure activity. An assessment for each lesson can be used as homework or as part of a larger assessment.

A quick review of the lesson summaries at the beginning of each lesson should help teachers use the lessons to review the easier math skills or challenge students who may be above grade level. Many of the lessons are also appropriate for use in challenge or gifted instruction.

#### 6. Is there additional support for teachers using MECL?

The MECL Web site (<http://mathandecon.ncee.net>) has excellent support for each of the 12 lessons. Lesson summaries, PDF files of the Visuals and Activities, and instruction tips are included for the lessons. In addition, five of the lessons have an activity planned for computer demonstration that reinforces the economics concepts in the lesson. Teachers can project the activity and work with small groups or whole classes. Literature books that have connections to each lesson are presented on the Web site. Follow-up review in language arts or library activities can be coordinated with the math lessons. Finally, a list of related lessons in other NCEE publications and online is given for each lesson. Teachers can easily find additional activities for reviewing the economics concepts introduced in the lesson. More activities and resources will be placed on the Web site in the coming years, making the Web support current for teachers.