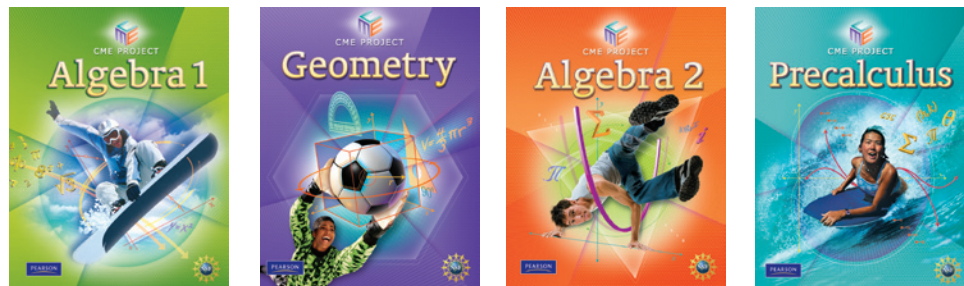




## Components

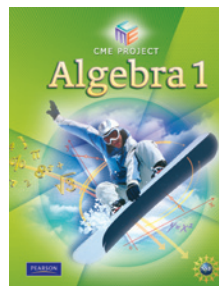
### Introduction

The CME Project is a high school mathematics program that is funded by the National Science Foundation's research. It was developed by the Center for Mathematics Education, which is part of the Education Development Center. This program is structured around mathematics courses that include Algebra I, Geometry, Algebra II, and Precalculus—all of which are traditionally taught in high school grades.



The CME Project helps teachers convey mathematical concepts through problem-based, student-centered, and organized mathematical themes. This guide introduces features of the Student and Teacher's Editions, as well as introduces print and digital ancillary products. These additional products include the Practice Workbook, Assessment Resources, and other valuable teaching resources.

### Student Edition



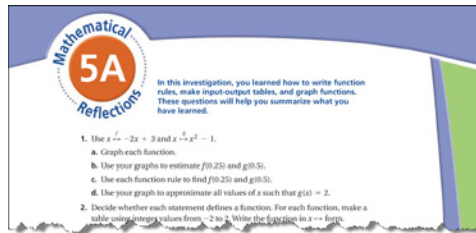
Each Student Edition contains eight chapters. Chapters focus on large mathematical themes and consist of three or four Mathematical Investigations. Mathematical Investigations develop the chapter theme, and each Investigation consists of three to six lessons. The first lesson of each Investigation is called Getting Started. This exploratory lesson helps students activate prior knowledge needed to complete other lessons within the Investigation. The remaining lessons focus on specific exercises that further develop investigation and chapter themes.



Figure 1: Algebra I—Chapter Structure

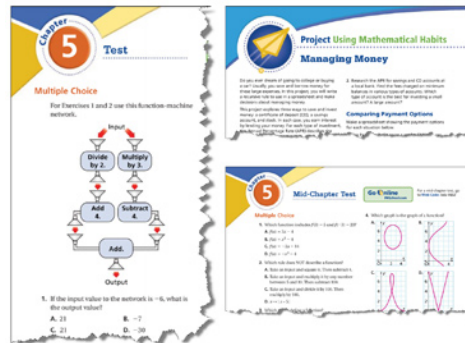
### Mathematical Reflections

Investigations conclude with a Mathematical Reflections exercise. This exercise helps students summarize what they learned in the Investigation. Teachers may use Mathematical Reflections as the basis for math notebook entries or a class wrap-up discussion.



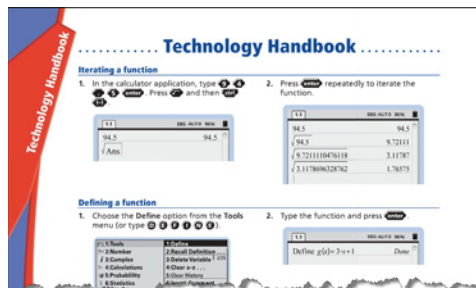
### In-Text Assessment

Each chapter includes a Mid-Chapter Test, Chapter Review, Chapter Test, and Chapter Project. Even numbered chapters end with a Cumulative Review.



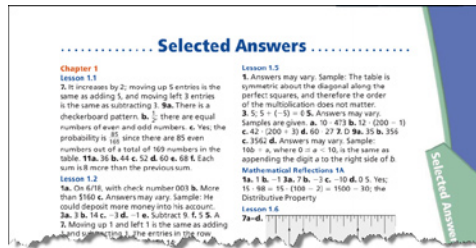
### End of Book Materials

Teachers can optimize the Technology Handbook located at the back of the student edition to help students learn to use a TI-Inspire™, a math



handheld device. By working through specific text examples in the handbook, students learn to program their devices.

Answers to selected student exercises are also located at the back of the Student Edition. Students may use these to check their answers, or use the answers to work backwards in order to arrive at a solution.



## Teacher's Edition

The Teacher's Edition provides detailed mathematics background material for each chapter, investigation, and lesson.

**Mathematics Background**

So, what is a function?

One way for students to develop function intuition is to look at examples of rules that define functions and rules that do not.

In this chapter, students see two examples early on:

1. Add 4 to the input and square the result.
2. Find a number that is less than the input.

Students should check that the first rule yields exactly one output for any input; it defines a function. The second rule yields more than one output for a given input. It is not a function.

IM7 Project Algebra 1 introduces domain and range, but only to give structure to the concepts of "set of inputs" and "set of outputs." In Algebra 1, the focus of domain is on the inputs that a function can accept. Algebra 2 makes the role of domain in a function's definition much more precise.

This course plants the seed that domain is context dependent. For instance, it may make sense to talk about a function that computes distance only if the input of time is nonnegative.

This course also exposes students to examples of function rules written in different forms, including closed form and recursive form.

A closed-form rule describes how to take an input and directly find the output. For example, take the input, add 4 to it, and square the result, or

$$f(x) = (x + 4)^2$$

A recursive rule gives an initial output. Then it describes how to get an output from a previous output. For example, in the following function the first output is 1. To get another output, take the previous output and add 2.

$$f(n) = \begin{cases} 1 & \text{if } n = 1 \\ f(n-1) + 2 & \text{if } n > 1 \end{cases}$$

It also includes a daily planner for pacing suggestions and lesson materials.

DAILY PLANNER DAILY PLANNER DAILY PLANNER		
Pacing Suggestion and Materials		
Investigation 5A Functions—The Basics		
DAY	LESSON	HOMEWORK
1	5.1 Getting Started Core: 1, 2, 3, 4, 5 Optional: none	Core: 7, 8, 9, 10 Optional: 6, 11, 12, 13
2	5.2 Building Functions Core: 1, 2, 3 Optional: 4, 5	Core: 6, 7, 8, 12, 14 Optional: 9, 10, 11; Extension: 13
3	5.3 Is it a function? Core: 2, 3, 4 Optional: 1	Core: 5, 6, 8, 10, 11, 12 Optional: 7, 9, 13, 14
4	5.4 Naming Functions Core: 2, 3, 4 Optional: 1, 5	Core: 6, 8, 9, 10, 11, 12 Optional: 7
5	5.5 Function Inputs and Outputs Core: 1, 3, 4 Optional: 2; Extension: 5, 6	Core: 7, 8, 9, 10, 12 Optional: none; Extension: 11
6	5.6 Graphing Functions Core: 2, 3, 4, 5, 6 Optional: 1, 7	Core: 8, 9, 12, 13, 16, 17, 18 Optional: 10, 14, 15; Extension: 11

## Lesson Model

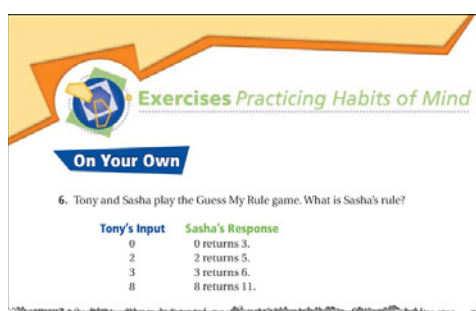
Each daily lesson plan consists of three lesson phases: Launch, Explore, and Wrap-Up. In the Launch phase, the teacher conducts discussions or activities that help students activate prior knowledge. Teachers can also take the time to explain game rules or experiment instructions at this point in the lesson. During the Explore phase, students conduct experiments, play games, or complete other activities. Teachers can assign the For You to Explore exercises at this

time. Conclude the lesson with a Wrap-Up or sharing activity. During this time, students share their solutions or summarize what they learned during the lesson.



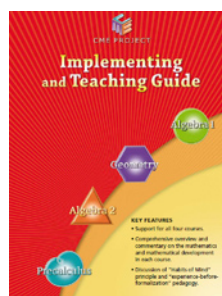
## Student Exercises

After the Wrap-up, assign students exercises that ask them to demonstrate understanding and to apply what they learned in the lesson.



## Implementing and Teaching Guide

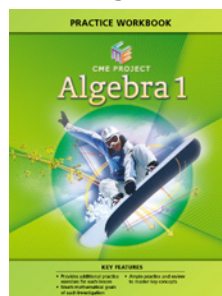
The Implementing and Teaching Guide provides an overview of the CME Project.



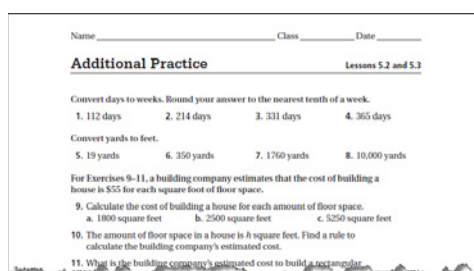
In addition to presenting the program philosophy and research base, this guide also outlines the Mathematical Habits of Mind and the Mathematical Approaches that are unique to each course.

## Practice Workbook

A Practice Workbook is also available for this program, which provides additional practice for most teaching lessons.

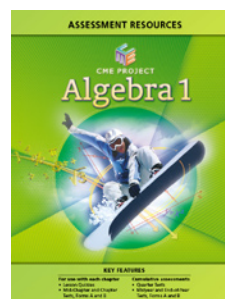


These pages are also available on Pearson SuccessNet.



## Assessment Resources

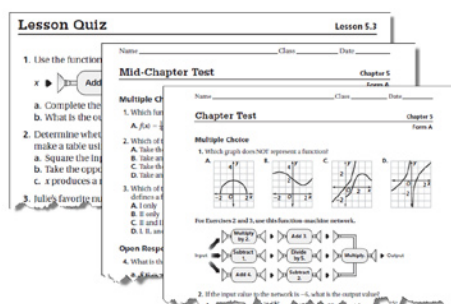
Assessment Resources are available via workbook or on-line at Pearson SuccessNet.



These resources include the following components:

- Lesson Quizzes
- Mid-Chapter Tests
- Chapter Tests
- Quarter of the Year Tests
- Mid-Year Test
- End of Year Test

All tests are available in Form A and Form B.

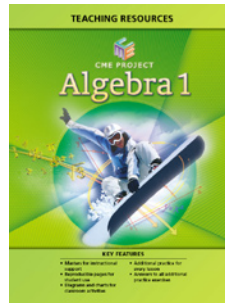


## ExamView

ExamView software is also available for the CME Project. This software allows teachers to quickly create practice worksheets. They can use these worksheets to create leveled quizzes or for targeted intervention and practice.

## Teaching Resources Booklet

The Teaching Resources booklet, which is also available on Pearson SuccessNet, includes pages that teachers can use as blackline masters, transparencies, or class handouts.



The booklet also contains the answers to the Practice Workbook Exercises.

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

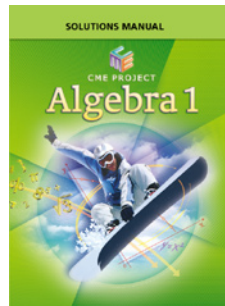
**Roof Plan** Blackline Master 5.7

Roof Plan

Distance From End (in.)	Length of Board (in.)
16	5
32	
48	
60	
72	

## Solutions Manual

The Solutions Manual contains worked out solutions for particular exercises in the Student Edition.



The manual includes solutions for the following sections:

- For You to Explore
- Check Your Own Understanding
- On Your Own
- Maintain Your Skills
- Mathematical Reflections
- Mid-Chapter Test
- Chapter Review
- Chapter Test
- Cumulative Review

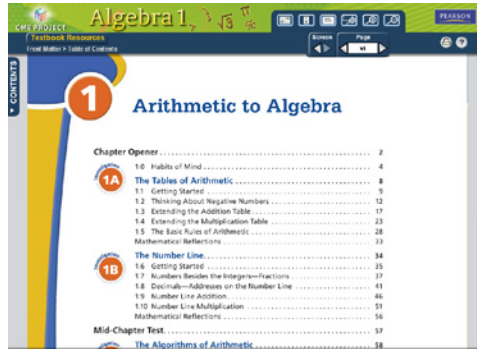
## Digital Resources

Two digital resources are available with the CME Project: Pearson SuccessNet and TeacherEXPRESS.

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**Pearson  
SuccessNet**

Pearson SuccessNet provides online teacher and student resources. The Student and Teacher’s Editions, as well as practice, assessment, and teaching resources are all available online. Visit [myPearsonTraining.com](http://myPearsonTraining.com) for additional training on how to use this online tool.



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**Teacher  
EXPRESS**

Many of these same digital resources are available via the TeacherEXPRESS CD-ROM. This software includes lesson planning and teaching resources.

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**Review**

The CME Project has many valuable resources for teachers and students. Teachers will benefit from professional resources located in the Implementing and Teaching Guide, as well as the mathematical background and resources included in the Teacher’s Edition. Students will benefit from the variety of practice and assessment opportunities available via the Practice Workbook, ExamVIEW software, and student text and resources on Pearson SuccessNet.