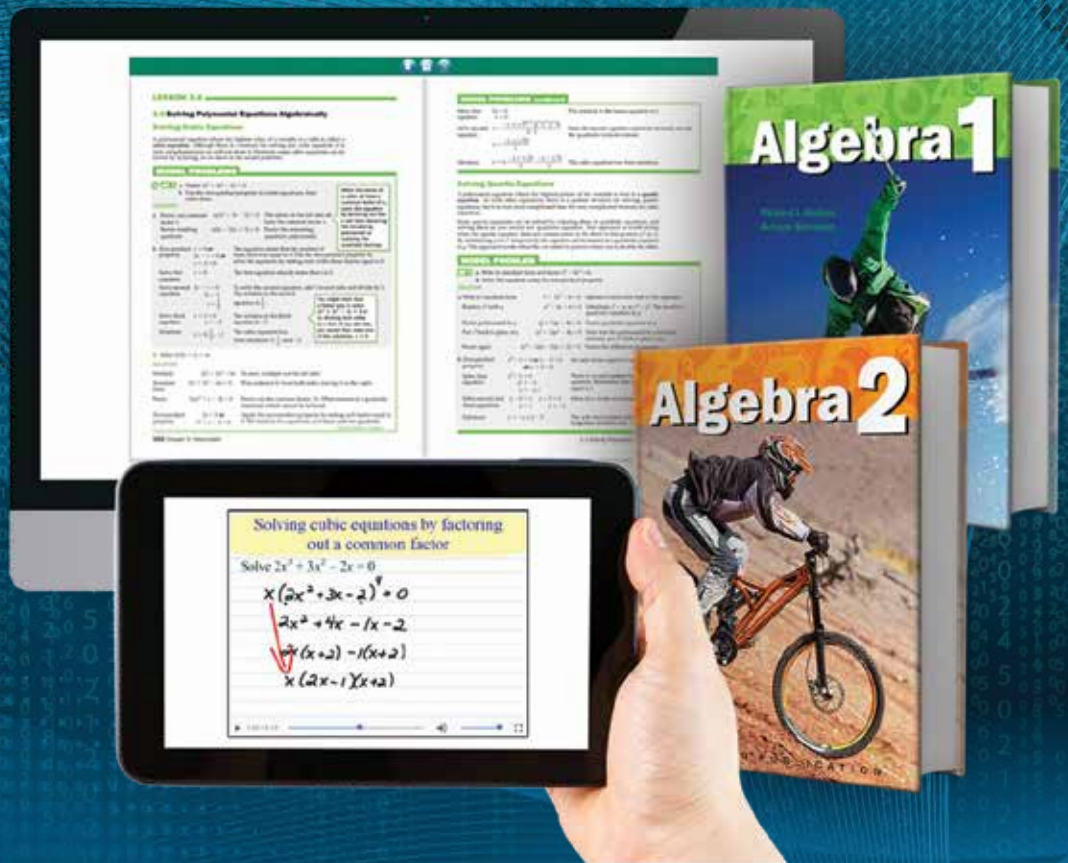




Approved by the  
South Carolina State  
Board of Education



# AMSCO<sup>math</sup>

Build conceptual understanding and mathematical fluency through engaging print and digital instruction, real world problems and practice simulations, and assessment

- **short, focused instruction** aligned to the South Carolina standards
- **step-by-step model problems** move from simpler to more complex tasks and develop conceptual understanding of multi-step problem solving
- **real world problems** prepare students for rigorous assessment
- **extensive problem sets** provide abundant fluency practice, contextual problem practice, and performance task practice

**P** Perfection  
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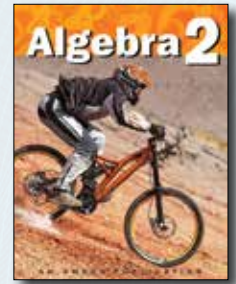
## Algebra 1

- Chapter 1: The Elements of Algebra
- Chapter 2: Writing and Solving Linear Equations and Inequalities
- Chapter 3: Graphing Linear Equations and Functions
- Chapter 4: Inequalities, Absolute Value, Piecewise and Step Functions
- Chapter 5: Systems of Linear Equations and Inequalities
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## Algebra 2

- Chapter R: Review
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- Chapter 8: Sequences and Series
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- Chapter 10: Probability



## Mathematical Practices

- explained in student friendly language
- various questioning techniques develop the eight mathematical practices
- embedded throughout the student edition with accompanying teacher support

Practice Standards	Questions to ask to develop mathematical thinking
<p><b>MP3</b> Construct viable arguments and critique the reasoning of others. Ask questions, defend answers, and/or make speculations using correct math vocabulary.</p> <ul style="list-style-type: none"> <li>• use assumptions, definitions, and previously established results</li> <li>• make conjectures and build a valid progression of statements</li> <li>• use counterexamples</li> <li>• justify conclusions and communicate them to others</li> <li>• determine whether the arguments of others seem right</li> </ul>	<ul style="list-style-type: none"> <li>• How would you describe ...? Use written explanations, equations, inequalities, graphs, tables, and data representations.</li> <li>• Do you think ... or ...?</li> <li>• How sure are you of your answer?</li> <li>• Can you prove your answer with drawings, diagrams, actions, mathematical definitions, and/or previously established results?</li> <li>• How do you know whether your approach worked?</li> <li>• Will that approach always work? Why or why not?</li> <li>• What examples could prove or disprove your argument?</li> <li>• Can you build a valid progression of statements that justify your conclusion?</li> <li>• Does your classmate's conclusion seem accurate to you? Why or why not?</li> <li>• Can you find a counterexample?</li> <li>• What questions do you still have?</li> </ul>
<p><b>MP4</b> Model with mathematics. Show the relevance of math by solving real-world problems. Look for opportunities to use math for current situations in and outside of school in all subject areas.</p> <ul style="list-style-type: none"> <li>• apply mathematics to solve everyday problems</li> <li>• analyze and chart relationships using diagrams, two-way tables, graphs, flowcharts, and formulas to draw conclusions</li> <li>• apply knowledge to simplify a complicated situation</li> <li>• interpret results and consider whether answers make sense</li> </ul>	<ul style="list-style-type: none"> <li>• What are some situations that require math for solutions?</li> <li>• Can you find a number sentence that describes the situation?</li> <li>• What are some ways to visually symbolize the problem?</li> <li>• Is there a formula that might apply in this circumstance?</li> <li>• Can the problem be solved with proportional reasoning?</li> <li>• If you apply approximations to numerical values, will it make the task easier?</li> <li>• Do you see any connections to problems you have encountered in the past?</li> <li>• Would a diagram, graph, or two-way table be helpful?</li> <li>• Do your results make sense?               <ul style="list-style-type: none"> <li>• How would you use ... in your life?</li> </ul> </li> <li>• Does the problem require an exact solution or an approximation? How does that change your course?</li> </ul>

## Problem Sets

Extensive problem sets provide

- abundant fluency practice
- contextual problem practice
- performance task practice

Problem Set 1.1

1. For which equation is the solution set  $\{2, 4\}$ ?

- $x^2 + 3x - 4 = 0$
- $x^2 + 7x - 12 = 0$
- $x^2 + 12x + 7 = 0$
- $x^2 - 6x = 16$

2. For which equation is the solution set  $\{-8, 23\}$ ?

- $x^2 + 4x - 36 = 0$
- $x^2 + 8x - 30 = 0$
- $x^2 - 12x - 44 = 0$
- $x^2 - 16x + 6 = 0$

3. Solve each equation and check your solution.

- $x^2 - 18x + 25 = 0$
- $x^2 + 22x + 37 = 0$
- $x^2 + 14x + 40 = 0$
- $x^2 - 11x + 18 = 0$
- $2x^2 + 9x + 7 = 0$
- $10x^2 - 26x + 9 = 0$
- $3x^2 + 8x - 9 = 0$
- $2x^2 + 32x - 184 = 0$
- $3x^2 + 14x + 8 = 0$

4. In Exercises 14–17, solve each equation and check your solution. For each solution set, write an equation of the form  $x^2 + bx + c = 0$ .

- $\{4, -2\}$
- $\{-5, 8\}$
- $\{-1, 3\}$
- $\{-1, 1, 3\}$

5. In Exercises 18–20, in each of these problems, an equation and one of its roots are given. Find:
 

- the value of  $b$
- the second root

- Is a root of  $x^2 + 7x + k = 0$
- Is a root of  $x^2 - 3x + k = 0$
- Is a root of  $x^2 - 2x + k = 0$

6. A ball is thrown into the air with an initial velocity of 24 feet per second from a height of 4 feet above the ground. The equation that models the motion is  $h(t) = -16t^2 + 24t + 4$ , where  $t$  is the time, in seconds, that the ball has been in the air and  $h(t)$  is the ball's height of  $t$  seconds in feet. After how many seconds is the ball at a height of 14 feet?

7. Three positive consecutive odd integers are represented by  $x$ ,  $x + 2$ , and  $x + 4$ . If 18 is subtracted from twice the square of the smallest number, the result is equal to the product of the other two integers. Find the three positive consecutive odd integers.

8. A baseball is thrown upward from the surface of a certain planet in the solar system. If the height of the ball is modeled by the equation  $y = -2t^2 + 30t + 10$ , where  $t$  is the time, in seconds, and  $y$  is the height, in feet, for what value of  $t$  is the ball exactly 137 feet above the surface?

9. In the figure below, the area of rectangle  $ABCD$  is 104 square inches, and the side of square  $E$  is  $x$ . Using the information in the figure below, what is the length of side  $AD$ ?

10. A ball is thrown upward at an initial speed of 22 feet per second from a platform 10 feet high. If the height above the ground, in feet, is given by the equation  $h(t) = -16t^2 + 22t + 10$ , where  $t$  is time in seconds, when will the ball be the ground? Use a calculator.





## Enrichment Activities

- challenge students to explore topics in greater depth
- perfect for collaborative study or enrichment

**ENRICHMENT ACTIVITY 4.3**

**Graphing Step Functions**


In the city parking garage, the following rates are in effect:  
 $\$4.00$  for the first hour or part of an hour  
 $\$2.00$  for each additional hour or part of an hour  
 The maximum charge for 24 hours is  $\$40.00$ .

a. Complete the following table showing the costs for 12 cars each of which left the parking garage after the given number of hours.

Hours	Cost	Hours	Cost	Hours	Cost
$\frac{1}{2}$		2		$1\frac{1}{2}$	
$\frac{3}{4}$		$2\frac{1}{2}$			
1		6		19	
$1\frac{1}{2}$		$12\frac{1}{2}$		$20\frac{1}{2}$	

b. Complete the following table showing the costs for 8 cars that went in and out of the parking garage at the given times.

Time In	Time Out	Cost	Time In	Time Out	Cost
9:15 A.M.	9:50 A.M.		10:00 A.M.	2:30 P.M.	
9:30 A.M.	10:29 A.M.		10:10 A.M.	10:00 P.M.	
9:30 A.M.	10:35 A.M.		12:15 A.M.	8:00 A.M.	
10:00 A.M.	12:45 P.M.		12:40 A.M.	11:00 A.M.	

c. Draw a graph to show the cost,  $y$ , of parking a car for  $x$  hours ( $0 < x < 24$ ). (Hint: The graph will consist of a series of horizontal segments that look like this: )

d. How would the graph change if, after the first hour, a person was charged a fractional part of  $\$2.00$  for a fractional part of an hour—if, for example, parking for  $1\frac{1}{2}$  hours cost  $\$4.00 + \frac{1}{2}(\$2.00)$ ?

## Companion Websites

- **exploration**—interactive investigation, simulations, and graphing tools
- **student-facing instructional videos** provide
  - additional support for absent or struggling students
  - the tools parents need to help students

Drag out tiles for the variables, constants and operators.

$$5x^2 + 8x + 3$$


Question 1: Factor  $5x^2 + 8x + 3$

Answer:  $(5x + 3)(x + 1)$

Good work! Try another problem.



# AMSCO<sup>math</sup> Digital

powered by 



**LTI and  
OneRoster  
compliant**

Students can view all assignments and their status including

- assigned date
- due date and teacher notification
- assignment type
- score

Point-of-use video instruction for each problem type **closes the learning gap**.

## Guided Practice

**Step-by-step** help provides guided practice. Stepped out interactive fill-in-the-blank problems guide students through the problem-solving process.

**Smart Feedback** helps students identify common errors.

## Personalized Practice and Assessment

**i-Practice** personalized problem generator provides additional practice only on deficient skills.

- automatically differentiates instructional support for each student
- allows students to practice to success
- frees up teacher time for one-on-one interaction
- a real-time counter tells students which skills they have mastered, which need additional practice, and how many problems are yet to be completed

## Assignment Management

Use pre-built assignments or create your own.

- create **custom assignments** from over 2,000 questions aligned by lesson or by standard
- choose problems that
  - deliver a different iteration to each student
  - have video support for students
  - have fill-in-the-blank stepped-out support

## Assignment Types

- **Homework**—students are allowed multiple tries per problem and can access videos or step-by-step help.
- **Quiz**—students are allowed multiple tries per problem but cannot access videos or step-by-step help.
- **Test**—students are allowed one try per problem and cannot access videos or step-by-step help.
- **i-Practice**—students are allowed to keep trying with access to videos and step-by-step help. When a student completes and submits the assignment, Math<sup>x</sup> will create a new assignment consisting of one similar problem for each problem missed.

## Real-Time Progress Monitoring

- determine whether the class or individual students are on track, making strides in their knowledge, or falling behind
- identify the need for more individualized instruction by drilling down to performance on specific problems
- reports include tracking of standards by class or individual student