

## AMP Math: Teaching a Lesson

### Introduction

This tutorial examines the process of teaching a typical unit with AMP Math. Take a minute to gather the AMP Math materials. This guide references different sections of the Teacher's Guide, Student Guide, Assessment Masters, and AMP Link magazines.

Before beginning this tutorial, become familiar with the components and organization of the program. Check out the *Program Overview* and the *Get Ready for Instruction* tutorials on this Web site. The *Get Ready for Instruction* tutorial discusses Unit 1 of AMP Math, which lays the foundation for the way the entire course is taught. It's very important to understand Unit 1 before moving on to teach the rest of the program.

### Math Placement Survey

AMP Math is designed for middle- and high-school students who are performing below grade level. As mentioned in the other tutorials on this Web site

- Level 1 covers 3rd- and 4th-grade content;
- Level 2 covers 5th- and 6th-grade content; and
- Level 3 covers 7th- and 8th-grade content.

On page 5 of the Assessment Masters booklet are the typical scores of students on norm-referenced tests. AMP Math is for students who fall into this range.

Students' scores on norm-referenced tests	Students' scores on the Math Placement Survey
15th – 35th percentile	Level 1 Math Placement Survey 30 or less
15th – 35th percentile	Level 2 Math Placement Survey 30 or less
15th – 35th percentile	Level 3 Math Placement Survey 30 or less

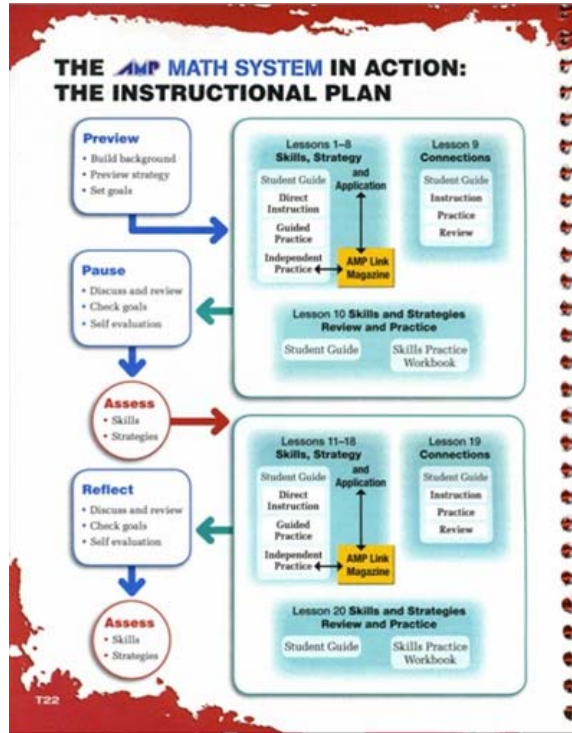
Before teaching with AMP Math, use the Math Placement Survey, found on pages 9 and 10 in the Assessment Masters booklet, to assess what students know.

The results will provide a better idea of what type of individual help each student needs.

There are also mid-unit and end-of-unit assessments available in the Assessment Masters booklet. Those are reviewed later in this guide.

**The Instructional Plan**

Turn to page T22 of the Teacher's Edition.



This is the Instructional Plan for AMP Math. The Instructional Plan is broken out as follows:

- Preview
- Pause
- Assess
- Reflect
- Assess

For each unit in AMP Math, start by building background knowledge with the students. This is usually accomplished by asking open-ended questions. Next, preview the strategy, and finally, students will set goals for the lesson.

**Unit 1 Review**

The *Get Ready for Instruction* tutorial explained that the first unit of AMP Math lays the foundation of the entire program. It introduces the four-step problem-solving approach: read, plan, solve, and check.

Within Unit 1, students will learn the six problem-solving strategies they will use to solve problems in the program. Remember, the six strategies are the following:

- Draw a picture or use a model
- Find a pattern
- Make a list
- Try a simpler form of the problem
- Make a table or chart
- Guess, check, and revise

<p><b>Teaching a Unit</b></p>	<p>In Units 2–7, students will apply these six problem-solving strategies from Unit 1.</p> <p>This guide only references Unit 2 in the Level 1, Volume 1 textbook for AMP Math; however, the material will be helpful for teachers using any level or volume.</p>
<p><b>Unit Overview</b></p>	<p>Start by looking at the Unit Overview on page 21A of the Teacher’s Edition.</p> <div data-bbox="685 516 1208 1218" data-label="Image"> </div> <p>The Instructional Focus of every unit of AMP Math will break down the reading comprehension strategy (in this case, it’s summarizing), the problem-solving strategies that will be used (remember there are six total), the vocabulary used within the unit, the independent reading, the independent problem-solving activities, and any useful resources.</p> <p>Turn to page 99A in Unit 3 or 179A in Unit 4 to see the same breakdowns as Unit 2.</p>
<p><b>Preview</b></p>	<p>In the Preview for the lesson, start to build background for the unit. To introduce the unit, follow these three steps:</p> <ol style="list-style-type: none"> <li>1. Engage students. Start by asking them questions that relate to the unit topic.</li> <li>2. Introduce the unit goals. In this unit, students will learn how to multiply and divide whole numbers.</li> <li>3. Help students set goals.</li> </ol> <p>To help students set goals for the unit, use the Goal-Setting form on page 297 of the Teacher’s Edition.</p>

Name \_\_\_\_\_

## GOAL-SETTING

Unit Goals	Mid-Unit Check	End-Of-Unit Check
<b>My Problem-Solving Goal:</b>	How I have improved so far:  What I need to work on:	How _____ has helped me to become a better problem solver:
<b>My Reading Comprehension Goal:</b>	How I have improved so far:  What I need to work on:	How _____ has helped me to become a better reader:
<b>What I want to learn from the AMP Link Magazine:</b>	The most interesting or important thing I have learned so far:  What I want to learn more about:	The most interesting or important thing I learned:  What I want to find out more about:
<b>My Math Skills Goal</b>	How I have improved so far:  What I need to work on:	I now feel proficient in the following math skills:
<b>My Math Vocabulary Goal</b>	Words I now understand when I read them:  Words I can now use in speaking and writing:	Words I now understand when I read them:  Words I can now use in speaking and writing:

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Goal-Setting Form 297

Other helpful topics are covered in the Teacher's Edition, such as the common misconceptions about teaching the topic addressed in this unit (which are found on page 21).

**COMMON MISCONCEPTION**

Understanding place value is an integral step when multiplying and dividing numbers. In this unit students will multiply one-digit numbers by other one-digit numbers and two-digit numbers. It is important that students not confuse how to hold place value during multiplication problems. In order to overcome misconceptions about place value, this unit includes lessons on expanded notation and place value itself. Having students build a strong base in this area of knowledge is key as they move on to two-digit by two-digit multiplication and division.

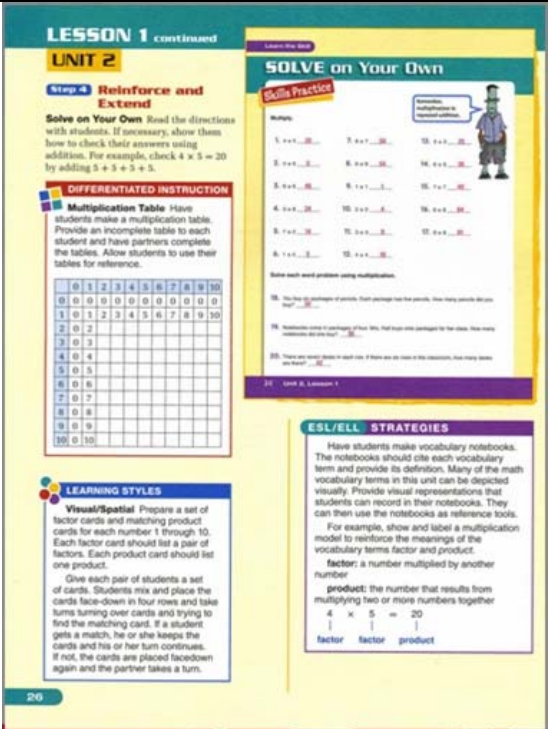
For instance, the common misconception pointed out in this example is place value. Understanding this concept is an important part of learning multiplication and division.

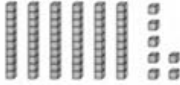
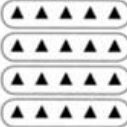
**Summarizing**

Now students are ready to take out their Student Edition and start Unit 2. They'll begin with the reading comprehension strategy for the unit, which is summarizing.

In the example on pages 22 and 23, students will read about food allergies and answer questions that ask them to summarize what they've read.

<b>Unit 2 Lesson 1</b>	<p>Notice how the three pages of Lesson 1 for Unit 2 are broken down for students:</p> <ul style="list-style-type: none"> <li>• Learn the Skill</li> <li>• Your Turn <ul style="list-style-type: none"> <li>○ Choose the Right Word</li> <li>○ Yes or No?</li> <li>○ Show That You Know</li> </ul> </li> <li>• Solve on Your Own</li> </ul>
<b>Learn the Skill</b>	<p>Use an example to get students thinking about multiplication. The example used in the Teacher’s Edition is bags of celery. Tell the students that Jane often brings a bag of celery for lunch each day. Prepare five bags of celery with four celery sticks each.</p> <p>Ask a volunteer to tell how many sticks are in each bag. Then, have students pair up to determine the total number of celery sticks in all five bags.</p> <p>After students have solved the problem, have them turn to page 24 in their Student Guide. Look at the vocabulary words for the lesson, and let them know they’ll be highlighted on the page.</p> <p>The first example asks students the following question: <i>If a box of mini muffins feeds four people, how many people will three boxes feed?</i></p> <p>Ask students how many people a box of mini muffins feeds. Tell students that the answer could be found in a couple of ways, such as by adding 4 three times or by multiplying 3 by 4. After students find the answer, have them write an example of the same concept.</p>
<b>Your Turn</b>	<p>After working through the additional problems on page 24, have students turn to page 25 and start with the Choose the Right Word section.</p> <p>Have students fill in the blank with the vocabulary words shown in the box at the top.</p> <p>Move on to the Yes or No section, asking students to answer multiplication questions.</p> <p>Finally, in the Show That You Know section, write out the problems on the board and model how to find the answers.</p>
<b>Skills Practice</b>	<p>Now have students turn to page 26 in their Student Guide to reinforce and extend their learning. Read the directions to the students. Show them how to check their answers if desired.</p> <p>There are examples for differentiated instruction, learning styles, and ESL/ELL Strategies for this lesson on page 26 of the Teacher’s Edition.</p>

	 <p><b>LESSON 1</b> continued <b>UNIT 2</b></p> <p><b>Step 4 Reinforce and Extend</b> <b>Solve on Your Own</b> Read the directions with students. If necessary, show them how to check their answers using addition. For example, check <math>4 \times 3 = 20</math> by adding <math>5 + 3 + 3 + 3</math>.</p> <p><b>DIFFERENTIATED INSTRUCTION</b> <b>Multiplication Table</b> Have students make a multiplication table. Provide an incomplete table to each student and have partners complete the tables. Allow students to use their tables for reference.</p> <table border="1" data-bbox="727 470 899 642"> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>1</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>2</td><td>0</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>0</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td>0</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td>0</td><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td>0</td><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td>0</td><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td>0</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td>0</td><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td>0</td><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table> <p><b>LEARNING STYLES</b> <b>Visual/Spatial</b> Prepare a set of factor cards and matching product cards for each number 1 through 10. Each factor card should list a pair of factors. Each product card should list one product. Give each pair of students a set of cards. Students mix and place the cards face-down in four rows and take turns turning over cards and trying to find the matching card. If a student gets a match, he or she keeps the cards and his or her turn continues. If not, the cards are placed facedown again and the partner takes a turn.</p> <p><b>ESL/ELL STRATEGIES</b> Have students make vocabulary notebooks. The notebooks should cite each vocabulary term and provide its definition. Many of the math vocabulary terms in this unit can be depicted visually. Provide visual representations that students can record in their notebooks. They can then use the notebooks as reference tools. For example, show and label a multiplication model to reinforce the meanings of the vocabulary terms factor and product. <b>factor:</b> a number multiplied by another number <b>product:</b> the number that results from multiplying two or more numbers together <math>4 \times 5 = 20</math>            factor factor product</p>	0	1	2	3	4	5	6	7	8	9	10	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	3	4	5	6	7	8	9	10	2	0	2									3	0	3									4	0	4									5	0	5									6	0	6									7	0	7									8	0	8									9	0	9									10	0	10								
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<b>Skills Workbook</b>	<p>If students still need a little work on multiplication, they can also get additional practice in their Skills Practice workbook.</p> <p>For this lesson, there are two worksheets on pages 5 and 6. Use these pages as homework or for additional practice for multiplication. These serve as a great reminder for students of what they've just learned.</p>																																																																																																																																					
<b>Pause and Evaluate</b>	<p>There are twenty total lessons for Unit 2. At the end of Lesson 10, complete the mid-unit review on pages 59 and 60 of the Student Guide with the students.</p> <p>Pass back the Goal-Setting form the students filled out at the beginning of the unit. Ask students to write one or two sentences about how their multiplication skills have improved.</p> <p>Next, have them indicate which vocabulary terms they understand.</p>																																																																																																																																					
<b>Assessment</b>	<p>Now it's time to assess what students know and take the mid-unit assessment. This can be found in the Assessment Masters booklet on pages 12–14.</p>																																																																																																																																					

	<p style="text-align: center;">Name _____ Date _____</p> <h3 style="text-align: center;">Mid-Unit Assessment Unit 2</h3> <p><b>Multiple Choice</b> Circle the correct answer.</p> <p>1. Write the number.</p>  <p>a. 76                      c. 67 b. 57                      d. 73</p> <p>2. What is the place value of the 9 in 692?</p> <p>a. ones b. tens c. hundreds</p> <p>3. What is <math>600,000 + 70,000 + 4,000 + 200 + 50 + 1</math> written in standard form?</p> <p>a. 64,251                  c. 674,201 b. 670,251                  d. 674,251</p> <p>4. What is the place value of the 0 in 764,021?</p> <p>a. tens b. hundreds c. thousands</p> <p>5. What is the place value of the 6 in 736,821?</p> <p>a. hundreds b. thousands c. ten thousands</p> <p>6. Use a pattern to find <math>10 \times 5</math>.</p> <p><math>10 \times 1 = 10</math>      <math>10 \times 3 = 30</math> <math>10 \times 2 = 20</math>      <math>10 \times 4 = 40</math></p> <p>a. 40                      c. 50 b. 45                      d. 60</p> <p>7. Multiply.</p> <p><math>4 \times 12</math></p> <p>a. 36                      c. 42 b. 38                      d. 48</p> <p>8. Use multiplication to show how many objects are in the picture.</p>  <p>a. <math>4 \times 5 = 20</math>      c. <math>6 \times 5 = 30</math> b. <math>5 \times 5 = 25</math>      d. <math>4 \times 4 = 16</math></p> <p>9. Multiply.</p> <p><math>10 \times 2</math></p> <p>a. 20,000                  c. 200 b. 2,000                      d. 20</p> <p style="text-align: center;">12</p> <p style="text-align: right; font-size: small;">© Pearson Education, Inc. or its affiliates. All rights reserved. Level 100</p>
<p><b>Review</b></p>	<p>This guide examined the instructional plan for AMP Math, reviewed the content from Unit 1, demonstrated how to teach an entire lesson from Unit 2, and discussed how to assess student performance using mid- and end-of-unit assessments.</p> <p>To learn more about AMP Math, please visit the other AMP Math tutorials on this Web site.</p>