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### PROGRAM OVERVIEW

- Classroom Math Intervention Program
- Solve Overview
- Pacing Charts
- Features of a Solve Practice
- Correlation Charts
  - NCTM Focal Points and Connections
  - Common Core State Standards

### PART 1 LESSON PLANS

#### Number and Operations

**Multiplication**

<table>
<thead>
<tr>
<th>Practice</th>
<th>Description</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice 1</td>
<td>Multiplication Properties</td>
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<td>Multiply Mentally</td>
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<td>Multiply by 1-Digit Numbers</td>
<td>27</td>
</tr>
<tr>
<td>Practice 4</td>
<td>Multiply by 2-Digit Numbers</td>
<td>30</td>
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</table>

**Reviews 1–2**

<table>
<thead>
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</tr>
</thead>
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**Division**

<table>
<thead>
<tr>
<th>Practice</th>
<th>Description</th>
<th>Pages</th>
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</thead>
<tbody>
<tr>
<td>Practice 5</td>
<td>Relate Division to Multiplication</td>
<td>36</td>
</tr>
<tr>
<td>Practice 6</td>
<td>Divide Without Regrouping</td>
<td>39</td>
</tr>
<tr>
<td>Practice 7</td>
<td>Divide with Regrouping</td>
<td>42</td>
</tr>
</tbody>
</table>

**Fractions**

<table>
<thead>
<tr>
<th>Practice</th>
<th>Description</th>
<th>Pages</th>
</tr>
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<tbody>
<tr>
<td>Practice 8</td>
<td>Equivalent Fractions</td>
<td>45</td>
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</tbody>
</table>

**Reviews 3–4**

<table>
<thead>
<tr>
<th>Practices 5–8</th>
<th>Pages</th>
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<tbody>
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<td>48</td>
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</tbody>
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The classroom math intervention program integrates assessment, data-driven instruction, and meaningful practice. The program focuses on the critical math concepts and skills that students need to advance to the next grade level. The CAMS®, STAMS®, and STAMS® Solve™ Series work together effectively to ensure that your students gain a solid understanding of key math concepts and skills, helping them become independent problem solvers and succeed on high-stakes state tests.

**CAMS®**

**Books C–H**  
(Grades 3–8)  
**Assessment**

Use the CAMS® Assessment Series for data-driven instruction.
- Pretest
- Benchmarks
- Post Test

**STAMS®**

**Books C–H**  
(Grades 3–8)  
**Instruction**

Use the STAMS® Instruction Series for in-depth teaching of 16 foundational concepts and skills.
- Highly scaffolded lessons with gradual release of responsibility
- Emphasis on errors as opportunities for learning

**STAMS® IWB**

**Levels C–H**  
(Grades 3–8)  
**Interactive Whiteboard Lessons**

Use the STAMS® Interactive Whiteboard Lessons to enhance STAMS® instruction or for reteaching prior to Solve practice.
Use the STAMS® Solve™ Practice Series for meaningful practice and reinforcement of 16 foundational concepts and skills, plus deeper practice with the Common Core State Standards.

- Two-part practices for each concept or skill offer a variety of engaging problems in different formats.
- Problems encourage students to reason—not rely on rote or repetition—to solve them.
- In each part, problems require increasing levels of higher-order thinking and become progressively more difficult.
- Supportive teacher guides make it easy to assign, correct, and review each practice.

Addresses Transition to Common Core State Standards

- Solve addresses all grade-level Common Core State Standards (CCSS)
- Builds conceptual understanding and procedural fluency, as emphasized by CCSS
- Helps students make connections between related concepts and skills
Each level of the *Solve* Practice Series provides students with meaningful practice of 16 foundational math concepts and skills to reinforce conceptual understanding and procedural fluency and help students achieve mathematical proficiency. Following classroom instruction on each concept or skill, assign the corresponding *Solve* practice for reinforcement.

**Student Book**

Designed to motivate struggling students, each *Solve* practice clearly presents 20 engaging problems in a variety of formats. These carefully crafted problems develop students’ reasoning and problem solving skills.

**Practices**

Each two-part *Solve* practice focuses on one concept or skill. Part One provides practice with the simpler aspect of the concept or skill, while Part Two provides practice with another more complex aspect of the same concept or skill to increase students’ depth of knowledge. Each part begins with an example, typical for the concept or skill, which provides a model for students as they solve the problems independently. As each part progresses, the problems become less scaffolded, more challenging, and require higher levels of reasoning.

**Reviews**

Following each group of four practices are two *Solve* reviews. Each 10-problem review provides mixed practice of the preceding four concepts or skills, including problems that require students to make connections between topics and apply multiple concepts and skills.

**Additional Practices and Reviews for the Common Core State Standards**

The Common Core State Standards (CCSS) present some math concepts and skills at different grade levels than the NCTM Focal Points and state standards have recommended. To address that discrepancy in grade-level content and differences in timelines for implementing the CCSS, *Solve* offers Additional Practices and Reviews at the back of each student book, C–G, plus Reproducible Mini-Practices at the back of each teacher guide, C–H.

- *Solve* Additional Practices and Mini-Practices for CCSS are organized in the same topic groupings as the 16 foundational grade-level practices.
- Refer to the Suggested Pacing Chart on page 13 for when to use each Additional Practice, Review, or Mini-Practice.
**Teacher Guide**

Comprehensive support for each *Solve* practice or review helps teachers check student progress, anticipate difficulties, and provide effective remediation.

- An overview of each practice or review quickly prepares teachers by identifying objectives, vocabulary, correlations to the Common Core State Standards, and optional *STAMS®* instruction.
- Facsimiles of the student pages with correct answers noted are a visual answer key for each practice or review.
- For each part of the practice or review, common pitfalls help teachers pinpoint student difficulties and instructional tips guide teachers to redirect students.
- Reproducible Mini-Practices ensure coverage of all grade-level Common Core State Standards.
- Reproducible Individual Tracking Chart helps teachers monitor student performance and make remediation decisions.

**Interactive Whiteboard (IWB) Lessons**

Interactive Whiteboard Lessons are available for each *Solve* practice in the student books. The IWB lessons offer students opportunities to question and explore mathematical concepts in greater depth.

- IWB lessons can be used to review the concept or skill prior to assignment of each *Solve* practice.
- Features, such as cloning and dragging objects, and whiteboard tools, such as highlighters, keep students actively engaged in learning.
- Teacher notes help maximize the instructional impact, more fully preparing students to complete the related *Solve* practice independently.

To download your Interactive Whiteboard Lessons and a User Guide, go to CurriculumAssociates.com/STAMS/IWB.

Use the password STAMSIWB to access your grade-level lessons. Promethean software is required to present these lessons. A free download of ActivInspire Personal Edition is available at http://support.prometheanplanet.com.
### Implementing Solve with the Classroom Math Intervention Program

#### Option 1: Data-Driven Instruction

1. **Diagnose with CAMS® Pretest**
   - Use the CAMS® Pretest to place students in the STAMS® Series. Results identify which STAMS® lessons and corresponding Solve practices students need.

2. **Instruct with STAMS® Lessons**
   - Pinpoint a specific lesson in the STAMS® student book to remediate an area that needs improvement.

3. **Reinforce with Solve Practices**
   - Assign the corresponding practice in the Solve student book to provide reinforcement for the STAMS® lesson you just taught.

4. **Monitor Progress with CAMS® Benchmarks**
   - Assess progress in all 16 foundational topics with the four 16-item CAMS® Benchmarks at four points during the year.

5. **Assess Mastery with CAMS® Post Test**
   - Use the CAMS® Post Test to assess students’ mastery of the 16 math concepts and skills following instruction with STAMS® and practice with Solve.

#### Option 2: Comprehensive Instruction

For implementation of CAMS® and all 16 STAMS® lessons and the corresponding Solve practices, follow this suggested pacing chart. Allocate 21 weeks, with each STAMS® lesson spanning 5 days and the related Solve practice being completed simultaneously. (See the Week at a Glance on page 11 for more details.)

### Suggested Pacing Chart

<table>
<thead>
<tr>
<th>Day(s)</th>
<th>Lesson and Practice</th>
<th>STAMS® Instruction and Solve Practice</th>
<th>CAMS® Assessment</th>
<th>Time (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–5</td>
<td>CAMS® Pretest</td>
<td>30–45/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6–10</td>
<td>1</td>
<td>Multiplication Properties</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>11–15</td>
<td>2</td>
<td>Multiply Mentally</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>16–20</td>
<td>3</td>
<td>Multiply by 1-Digit Numbers</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>21–25</td>
<td>4</td>
<td>Multiply by 2-Digit Numbers</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>26–27</td>
<td>Solve Reviews 1–2</td>
<td>15/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>CAMS® Benchmark 1</td>
<td>30–45/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29–33</td>
<td>5</td>
<td>Relate Division to Multiplication</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>34–38</td>
<td>6</td>
<td>Divide Without Regrouping</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>39–43</td>
<td>7</td>
<td>Divide with Regrouping</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>44–48</td>
<td>8</td>
<td>Equivalent Fractions</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>49–50</td>
<td>Solve Reviews 3–4</td>
<td>15/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>CAMS® Benchmark 2</td>
<td>30–45/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52–56</td>
<td>9</td>
<td>Simplify Fractions</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>57–61</td>
<td>10</td>
<td>Decimal Place Value</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>62–66</td>
<td>11</td>
<td>Compare and Order Decimals</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>67–71</td>
<td>12</td>
<td>Relate Decimals to Fractions</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>72–73</td>
<td>Solve Reviews 5–6</td>
<td>15/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>CAMS® Benchmark 3</td>
<td>30–45/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75–79</td>
<td>13</td>
<td>Angles</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>80–84</td>
<td>14</td>
<td>Understand Area</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>85–89</td>
<td>15</td>
<td>Area of Rectangles</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>90–94</td>
<td>16</td>
<td>Line Plots</td>
<td>30–45/day</td>
<td></td>
</tr>
<tr>
<td>95–96</td>
<td>Solve Reviews 7–8</td>
<td>15/day</td>
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<td></td>
</tr>
<tr>
<td>97</td>
<td>CAMS® Benchmark 4</td>
<td>30–45/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>98–102</td>
<td>CAMS® Post Test</td>
<td>30–45/day</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Allocate 15 minutes more per day if STAMS® additional activities are used in conjunction with each lesson and practice.
Week at a Glance

The *STAMS® Instruction Series* and the *Solve Practice Series* are companion programs—instruct with the *STAMS®* lessons and reinforce with the *Solve* practices.

### Suggested STAMS® and Solve Pacing Chart

<table>
<thead>
<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
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<tr>
<td><strong>STAMS® Instruction Series</strong></td>
<td>modeled and guided instruction</td>
<td>modeled and guided practice</td>
<td>independent practice</td>
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<td></td>
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<tr>
<td>Part One</td>
<td>Direct Instruction with STAMS® Lesson</td>
<td>Part Two</td>
<td>Part Three</td>
<td>Part Four</td>
<td>Part Five</td>
</tr>
<tr>
<td></td>
<td>30 minutes</td>
<td>30 minutes</td>
<td>30 minutes</td>
<td>30 minutes</td>
<td>30 minutes</td>
</tr>
<tr>
<td></td>
<td>(Optional Additional Activity)</td>
<td>(Optional Additional Activity)</td>
<td>(Optional Additional Activity)</td>
<td>(Optional Additional Activity)</td>
<td>(Optional Additional Activity)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Solve Practice Series</strong></td>
<td></td>
<td></td>
<td>independent practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part One</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reinforcement with Solve Practice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Students practice the skill by solving a variety of problems. Correct and review answers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Reinforcement with Solve Reviews</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After every 4 weeks, assign first review for cumulative practice of 4 lessons. Correct and review answers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Using STAMS® and Solve Together*
**Implementing Solve Independently**

### 1 Reinforce Foundational Concepts and Skills with Solve Practices

- Have students complete the 16 practices in the Solve student book as independent work to reinforce conceptual understanding of all grade-level foundational math concepts and skills. See the Suggested Pacing Chart to the right.

### 2 Build Connections Among Topics with Solve Reviews

- Solidify students’ understanding of the 16 foundational topics with the eight cumulative reviews—two reviews for each group of four topics.

### Optional

**Introduce Additional CCSS Concepts and Skills with Solve Additional Practices and Reviews (see page 13)**

- To ensure coverage of all grade-level Common Core State Standards (CCSS), have students complete the additional practices, reviews, and mini-practices.

---

**Suggested Pacing Chart for Solve Book D**

For implementation of all 16 Solve practices, follow this suggested pacing guide. Allocate 16 weeks, with one practice being completed per week and one pair of reviews at the end of every fourth week.

<table>
<thead>
<tr>
<th>Week</th>
<th>Practice</th>
<th>Solve Practice</th>
<th>Solve Review</th>
<th>Time (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Multiplication Properties</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Multiply Mentally</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Multiply by 1-Digit Numbers</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Multiply by 2-Digit Numbers</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reviews 1–2</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Relate Division to Multiplication</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Divide Without Regrouping</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Divide with Regrouping</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>Equivalent Fractions</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reviews 3–4</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>Simplify Fractions</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Decimal Place Value</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>Compare and Order Decimals</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>Relate Decimals to Fractions</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reviews 5–6</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>Angles</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>Understand Area</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>Area of Rectangles</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>Line Plots</td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reviews 7–8</td>
<td></td>
<td>30/week</td>
</tr>
</tbody>
</table>
Using Solve to Support Your Transition to the Common Core State Standards

- The Common Core State Standards (CCSS) present some math concepts and skills at different grade levels than the NCTM Focal Points and state standards have recommended. To address this discrepancy in grade-level content and differences in timelines for implementing the CCSS, Solve offers Additional Practices and Reviews at the back of each student book, C–G, plus Reproducible Mini-Practices at the back of each teacher guide, C–H.

- Each additional practice or review has the same length and depth as each of the 16 foundational practices or reviews.

- Each mini-practice provides a short practice, designed to familiarize students with a new grade-level CCSS concept or skill.

- If you are transitioning to the CCSS, use all the extra resources provided with Solve. This Suggested Pacing Chart highlights when to use these resources in conjunction with the 16 foundational practices and cumulative reviews.

### Suggested Pacing Chart for Solve Book D—All CCSS Standards

Allocate 25 weeks for full implementation of Solve.

<table>
<thead>
<tr>
<th>Week</th>
<th>Practice</th>
<th>Solve Practice</th>
<th>Solve Review</th>
<th>Extra Practice or Review</th>
<th>Time (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Multiplication Properties</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Multiply Mentally</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Multiply by 1-Digit Numbers</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Multiply by 2-Digit Numbers</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reviews 1–2 (Practices 1–4)</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>5</td>
<td>17</td>
<td>Multiply 3-Digit Numbers</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>Relate Division to Multiplication</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>7</td>
<td>20*</td>
<td>Multiplicative Comparisons</td>
<td></td>
<td></td>
<td>15/week</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>Divide Without Regrouping</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>Divide with Regrouping</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>10</td>
<td>18</td>
<td>1-Digit Divisors</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>11</td>
<td>8</td>
<td>Equivalent Fractions</td>
<td></td>
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<td>30/week</td>
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<tr>
<td></td>
<td></td>
<td>Reviews 3–4 (Practices 5–8)</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>12</td>
<td>9</td>
<td>Simplify Fractions</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>13</td>
<td>19</td>
<td>Add and Subtract Like Fractions</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reviews 9–10 (Practices 17–19)</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>14</td>
<td>10</td>
<td>Decimal Place Value</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>15</td>
<td>11</td>
<td>Compare and Order Decimals</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>16</td>
<td>12</td>
<td>Relate Decimals to Fractions</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reviews 5–6 (Practices 9–12)</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>17</td>
<td>13</td>
<td>Angles</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>18</td>
<td>21*</td>
<td>Measure Angles</td>
<td></td>
<td></td>
<td>15/week</td>
</tr>
<tr>
<td>19</td>
<td>22*</td>
<td>Angle Measures</td>
<td></td>
<td></td>
<td>15/week</td>
</tr>
<tr>
<td>20</td>
<td>23*</td>
<td>Symmetry of Plane Figures</td>
<td></td>
<td></td>
<td>15/week</td>
</tr>
<tr>
<td>21</td>
<td>14</td>
<td>Understand Area</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>22</td>
<td>24*</td>
<td>Changing Units of Length</td>
<td></td>
<td></td>
<td>15/week</td>
</tr>
<tr>
<td>23</td>
<td>25*</td>
<td>Measurement Word Problems</td>
<td></td>
<td></td>
<td>15/week</td>
</tr>
<tr>
<td>24</td>
<td>15</td>
<td>Area of Rectangles</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td>25</td>
<td>16</td>
<td>Line Plots</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reviews 7–8 (Practices 13–16)</td>
<td></td>
<td></td>
<td>30/week</td>
</tr>
</tbody>
</table>

*Reproducible Mini-Practices
This 4-page section guides teachers through a sample lesson plan from the Solve teacher guide, which shows facsimiles of the student book practice. Numbered boxes call out and describe the key features in both the teacher guide and the student book.

**OVERVIEW**

### OBJECTIVES

In Part One, students will:
- Write in simplest form fractions that are equivalent to decimals.
- Use reasoning to analyze and correct errors in writing decimals and fractions shown by models.

In Part Two, students will:
- Write in simplest form fractions that are equivalent to decimals.
- Write decimals that are equivalent to fractions.
- Use reasoning to solve problems involving equivalent fractions and decimals.

### VOCABULARY

**Part One**
- **decimal:** a number that has a whole-number part and a part less than 1
- **tenths:** in a decimal number, the place immediately to the right of the decimal point
- **fraction:** a number that names part of a whole
- **simplest form:** a fraction in which the numerator and denominator can both be divided evenly only by the number 1

**Part Two**
- **hundredths:** in a decimal number, two places to the right of the decimal point

### CORRELATION TO COMMON CORE STATE STANDARDS

**Number and Operations—Fractions**
- Extend understanding of fraction equivalence and ordering—4.NF.1
- Understand decimal notation for fractions, and compare decimal fractions—4.NF.6

**Mathematical Practices**
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
6. Attend to precision.

### RELATED STAMS® INSTRUCTION

For instruction that supports this practice, go to:

STAMS®, Book D, Lesson 12, Relate Decimals to Fractions, pp. 114–123

STAMS® Interactive Whiteboard Lessons, Level D, Visualize Relating Decimals to Fractions

Use features such as interactive fraction models to deepen students’ understanding of relating decimals to fractions.
**Objectives:** Identifies skill- and process-related goals for students.

**Vocabulary:** Lists key math terms from the practice, with definitions.

**Correlation to Common Core State Standards:** Correlates the CCSS content standards and mathematical practices to the practice.

**Related STAMS® Instruction:** Identifies optional instruction that supports the practice, including corresponding lessons from the STAMS® Instruction Series and the STAMS® Interactive Whiteboard Lessons.

Some lesson plans also include a Related Additional Practice and Review or Related Mini-Practice feature, which identifies optional practice on a new grade-level CCSS concept or skill.

**Tips for using the Interactive Whiteboard Lessons:**
- Review the skill practiced in Part One and Part Two of Solve with the Interactive Whiteboard Lessons before students begin solving the practice problems.
- Alternatively, reteach the skill using the Interactive Whiteboard Lessons if students are struggling to complete the problems.
- You may also wish to access Interactive Whiteboard Lessons from previous levels to quickly address gaps in students’ background knowledge.
- Click on and preview the teacher notes before teaching the lesson. Print out these notes for easy reference.
- Encourage student participation. Allow plenty of time for students to use the interactive whiteboard features to work out problems and present solutions.
- Rename, save, and print out the work done on the interactive whiteboard to share with students.

To download the Interactive Whiteboard Lessons and a User Guide, go to CurriculumAssociates.com/STAMS/IWB. Use the password STAMSIWB.

**Best Practices**

**Math Vocabulary**
Knowledge of math terminology is critical to students’ understanding of concepts and skills and their ability to apply them to problem solving. To master math vocabulary and effectively communicate mathematical ideas, students must see and use the words in context frequently.

- Review vocabulary used in a practice before students begin solving the problems.
- Have students underline or highlight vocabulary as they encounter it in the practice.
- Encourage students to reference the Glossary at the back of their books when they do not understand a term.
- Suggest that students add their own terms and definitions to the Glossary, along with examples and illustrations.
- Remind students to use math terms whenever a practice problem asks for an explanation.
Solve Problems 2–5

If students answer $\frac{4}{10}$ for problem 3, they may have forgotten to reduce the fraction to its simplest form.

Remind students to use the definition of a fraction with a denominator of 10 and 100.

Example problem 1: Provides students with a model for solving practice problems 2–10.

Solve problems: Build flexibility, asking students to solve problems in different formats.

Mental Math: Builds fluency, challenging students to solve problems in their heads, without pencil and paper or calculator.

Reasoning: Develops high-order thinking, requiring students to analyze, evaluate, justify, or explain.

Some practices also include Connections activities where students apply or extend their learning or make connections between concepts and skills.
Using Solve Practice Features for Differentiation

Solve practices include several features that support differentiating practice to meet the needs of students with varying levels of proficiency.

**Highly scaffolded example**

In the example, most problem-solving steps are provided to the student. With support from the text, the student completes the remaining steps and writes the solution. This example serves as a model for the remaining 9 problems.

**Tips for struggling students and ELL students**

- Preview math vocabulary (see page 15) used in the example.
- Read aloud the example to ensure students understand the problem.
- Demonstrate how to complete the example by guiding students through each step.
- Review the concept or skill visually with the STAMS® Interactive Whiteboard Lesson.

**Progressively more difficult problems**

Problems 2 through 10 become gradually less scaffolded, progressively more difficult, and require increasing levels of higher-order thinking.

**Tips for struggling students and ELL students**

- Provide manipulatives and other tools, when appropriate, to give students another more concrete approach to problem solving.
- Model how to solve the Mental Math and Reasoning problems by thinking aloud step by step through a few examples.

**Multiple problem types**

Practice problems include fill-in-the-blank, matching, multiple-choice, short-response, and extended-response formats.

**Tips for struggling students and ELL Students**

Use the following tips to support students when they write answers to short-response and extended-response problems:

- Pair students to share their thinking before they write to help them reason and communicate mathematically.
- Encourage students to think aloud quietly as they write their explanations.

**Best Practices**

### Reasoning and Communicating About Math

The Mental Math and Reasoning problems are ideal opportunities for students to develop problem-solving skills.

- Pair or group students with varying levels of proficiency to read a problem, identify what the problem is asking, and brainstorm strategies for solving it.
- Have students choose a few strategies and use them to solve the problem collaboratively. Encourage students to record and discuss their work.
- After students have solved the problem, have a representative from each pair or group share their strategies and solutions with the class.
- Discuss the various strategies. Ask students to consider which strategies worked best and how they could apply the strategies to other problems.
**Teacher Guide Features**

**PART ONE**

1. **Solve Problems 2–5**
   - If students answer \( \frac{4}{10} \) for problem 3, they may have forgotten to reduce the fraction to its simplest form.
   - Then Ask students to give the definition of *simplest form* and use the definition to decide whether their answer is in simplest form.

2. **Mental Math, Problems 6–8**
   - If students answer problem 6 incorrectly, they may not understand how to think of a decimal as a fraction.
   - Then Ask students to read the decimal aloud. Point out that reading a decimal aloud can help them understand the fraction it represents.

**PART TWO**

3. **At a Glance**
   - Students solve problems by writing decimals with tenths as equivalent fractions in simplest form. If students have difficulty, check for these common pitfalls and use the related tips to provide help.

4. **Reasoning, Problems 9–10**
   - If students have difficulty finding the error in problem 9, they may not realize that \( \frac{5}{10} \) is not written in simplest form.
   - Then Remind students that to write this fraction in its simplest form, they must divide both the numerator and denominator by their greatest common factor (5).

---

**Annotated student book pages:** Provide a visual answer key for correcting student work.

**At a Glance:** Sums up the concept or skill students are practicing in each part of the practice.

**If:** Identifies a common pitfall—an error, misconception, or other difficulty—that may be leading students to an incorrect answer.

**Then:** Recommends a quick instructional tip for addressing the error or misconception and redirecting students.
Using Solve Features to Monitor Student Work

**Helpful teacher support**
Each part of a practice has three or four sets of similar problems. Each set has a common pitfall **(If)** and a related instructional tip **(Then)** designed to help teachers monitor students’ work.

- Have students solve the practice problems independently, but correct and review their work to make sure they are on track.
- Use the common pitfalls and related instructional tips to recognize and correct errors and misconceptions as they arise.
- If you notice that students are making the same mistake with problems in a set, intervene promptly to prevent them from repeating the error with other problems.

**Using the Results of Solve to Remediate**

Use the reproducible Individual Tracking Chart on page 106 of this teacher guide to record each student’s performance in Solve. After correcting each student’s practice or review, record the number of correct responses and the percent correct. Then use this data to make decisions about remediation.

If students are unsuccessful in solving the problems in a particular Solve Practice, use the Related STAMS® Instruction recommendations in this Solve teacher guide.

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**Individual Tracking Chart**

Use the student’s corrected practices or reviews to fill in the chart below. Record the number of correct responses and the percent correct for each practice or pair of reviews.

<table>
<thead>
<tr>
<th>Practice or Review</th>
<th>Score</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Multiplication Properties</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>2. Multiply Mentally</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>3. Multiply by 1-Digit Numbers</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>4. Multiply by 2-Digit Numbers</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>Reviews 1–2 (Practices 1–4)</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>5. Relate Division to Multiplication</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>6. Divide Without Regrouping</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>Reviews 3–4 (Practices 5–8)</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>9. Simplify Fractions</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>10. Decimal Place Value</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>11. Compare and Order Decimals</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>Reviews 5–6 (Practices 9–12)</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>13. Angles</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>14. Understand Area</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>15. Area of Rectangles</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>Reviews 7–8 (Practices 13–16)</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>Total</td>
<td>400</td>
<td>50%</td>
</tr>
</tbody>
</table>

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Correlation Charts

**NCTM Focal Points and Connections** The chart below indicates the practices in *Solve Book D* that provide instruction for the NCTM Focal Points and related Connections for grade 4.

<table>
<thead>
<tr>
<th>NCTM Focal Points and Connections for Grade 4</th>
<th>Solve Book D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOCAL POINTS</strong></td>
<td></td>
</tr>
<tr>
<td><em>Number and Operations and Algebra:</em> Students develop quick recall of basic multiplication facts and related division facts, and apply appropriate methods to multiply multidigit whole numbers.</td>
<td>Practices 1, 2, 3, 4, 17</td>
</tr>
<tr>
<td><em>Number and Operations:</em> Students develop an understanding of decimals, including the relationship between fractions and decimals.</td>
<td>Practices 10, 11, 12</td>
</tr>
<tr>
<td><em>Measurement:</em> Students develop an understanding of area and then determine the areas of two-dimensional shapes.</td>
<td>Practices 14, 15</td>
</tr>
</tbody>
</table>

| **CONNECTIONS**                             |              |
| *Measurement:* Students classify and measure angles. | Practice 13 |
| *Data Analysis:* Students analyze line plots and use them to solve problems. | Practice 16 |
| *Number and Operations:* Students develop understandings of strategies for multidigit division. | Practices 5, 6, 7, 18 |
| *Number and Operations:* Students develop their ability to recognize equivalent fractions and their understanding of techniques for generating and simplifying equivalent fractions. | Practices 8, 9 |

**Common Core State Standards** The chart below correlates the practices in *Solve Book D* with the Common Core State Standards for grade 4 mathematics. For correlations to the Mathematical Practices, see the overview page of each *Solve* practice in this teacher guide.

<table>
<thead>
<tr>
<th>Common Core State Standards for Grade 4 Mathematics</th>
<th>Solve Book D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operations and Algebraic Thinking</strong></td>
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</tr>
<tr>
<td>4.OA.1</td>
<td>Practice 1</td>
</tr>
<tr>
<td>4.OA.4</td>
<td>Practices 2, 9</td>
</tr>
<tr>
<td><strong>Number and Operations in Base Ten</strong></td>
<td></td>
</tr>
<tr>
<td>4.NBT.1</td>
<td>Practices 2, 3, 4, 6, 7, 17, 18</td>
</tr>
<tr>
<td>4.NBT.4</td>
<td>Practices 6, 7</td>
</tr>
<tr>
<td>4.NBT.5</td>
<td>Practices 2, 3, 4, 5, 17</td>
</tr>
<tr>
<td>4.NBT.6</td>
<td>Practices 5, 6, 7, 18</td>
</tr>
<tr>
<td><strong>Number and Operations—Fractions</strong></td>
<td></td>
</tr>
<tr>
<td>4.NF.1</td>
<td>Practices 8, 9, 12</td>
</tr>
<tr>
<td>4.NF.2</td>
<td>Practices 8, 9</td>
</tr>
<tr>
<td>4.NF.3</td>
<td>Practice 19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Common Core State Standards for Grade 4 Mathematics</th>
<th>Solve Book D</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.NF.4</td>
<td>Practice 19</td>
</tr>
<tr>
<td>4.NF.6</td>
<td>Practices 10, 12</td>
</tr>
<tr>
<td>4.NF.7</td>
<td>Practice 11</td>
</tr>
</tbody>
</table>

| **Measurement and Data**                            |              |
| 4.MD.3                                              | Practices 14, 15 |
| 4.MD.4                                              | Practice 16   |
| 4.MD.5                                              | Practice 13   |

| **Geometry**                                        |              |
| 4.G.1                                               | Practice 13   |
| 4.G.2                                               | Practice 13   |
OBJECTIVES

In Part One, students will:
• Use place value and partial products to multiply two 2-digit numbers.
• Multiply by multiples of 10.

In Part Two, students will:
• Learn a quicker way for recording the partial products when multiplying two 2-digit numbers.
• Regroup ones as tens and tens as hundreds.

VOCABULARY

Part One
• multiplier: the number of groups in a multiplication
• partial product: the result of multiplying a digit of one factor by one or more digits of another factor
• product: the result of multiplying numbers together

Part Two
• regroup: to use place value to trade amounts of equal value in a number, such as ones for tens or tens for ones; does not change the value of the number

CORRELATION TO COMMON CORE STATE STANDARDS

Number and Operations in Base Ten
• Use place value understanding and properties of operations to perform multi-digit arithmetic—4.NBT.5

Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.

RELATED ADDITIONAL PRACTICE

After students have completed Practice 4, assign Practice 17: Multiply 3-Digit Numbers, pp. 83–85, to ensure coverage of Common Core State Standards related to multiplication.

RELATED STAMS® INSTRUCTION

For instruction that supports this practice, go to:

STAMS®, Book D, Lesson 4, Multiply by 2-Digit Numbers, pp. 34–43

STAMS® Interactive Whiteboard Lessons, Level D, Visualize Multiplying by 2-Digit Numbers
http://www.curriculumassociates.com/STAMS/IWB/

Use features such as drag and drop to deepen students’ understanding of multiplying by a 2-digit number.
At a Glance

Students solve a variety of multiplication problems by finding partial products. If students have difficulty, check for these common pitfalls and use the related tips to provide help.

Solve Problems 2–5

If If students write an incorrect product for problems 4 and 5, they may have written incorrect partial products and/or added the partial products incorrectly.

Then Remind students to use the place value of the digit in the factors for each partial product. Suggest that they write a multiplication sentence next to each partial product as shown in problems 1 and 2.

Solve Problems 6–8

If If students cannot match all their answers to the numbers in the box, they may not understand how to multiply two 2-digit numbers.

Then Check students’ work. Then work with students to correct their errors.

Solve Problems 9–10

If If students write an incorrect answer for problem 9, they may not have included all the partial products.

Then Clarify for students that if there are two 2-digit factors, there should be four partial products.
Let’s solve this together.

1. What is $24 \times 63$?

Here is a quicker way to multiply a number by a 2-digit number. Follow the steps.

Step 1 Multiply by ones. Regroup, if needed.

\[
\begin{array}{c}
24 \\
\times 63 \\
\end{array}
\]

\[282 \leftrightarrow 4 \times 63
\]

\[1,512
\]

Solution: $24 \times 63 = 1,512$

Solve each problem. Multiply. Show your work.

2. $42 \times 19$

3. $64 \times 35$

4. $38 \times 23$

5. $35 \times 27$

6. $58 \times 58$

7. $32 \times 700$

8. $768$

9. Refer to number 6. Two students in the class are unable to attend. What is the total cost of tickets for the class and their teacher if an adult ticket costs $45?

Solution:

I found the cost for the students by multiplying: $32 \times 22 = 704$.

Then, I added the price of the teacher's ticket: $704 + 45 = 749$.

10. Suri and Josh solved the same problem: $27 \times 45$. Suri found the product 1,215. Josh found the product 1,212. By only looking at the products, and without calculating, who is incorrect? Explain.

Josh's answer is incorrect. If you multiply 27 by the ones digit in 45, the last digit should be a 5 because $7 \times 5 = 35$.

At a Glance

Students solve a variety of problems by using a multiplication algorithm. If students have difficulty, check for these common pitfalls and use the related tips to provide help.

**Solve Problems 2–4**

If students write an incorrect product for problem 3, they may not have found the correct partial products.

Then Review with students that each partial product is the result of a 2-digit number times a 1-digit number.

**Solve Problems 5–8**

If students choose C for problem 8, they may have incorrectly multiplied 45 by 12.

Then Clarify that there are 16 ounces, not 12 ounces, in a pound.

**Reasoning, Problems 9–10**

If students who write an incorrect product for problem 9 may have had difficulty understanding the problem.

Then Reread both problems 6 and 9 with students. Ask some guided questions, such as: How many students are going to the park in problem 9? How can you include the cost of the teacher's ticket? Help students understand that this is a multi-step problem in which they must use addition and multiplication. Then help them articulate their thinking.
OBJECTIVES

In Review 1, students will:
- Use basic facts and patterns to mentally multiply 1-digit numbers by multiples of 10.
- Use mental math to multiply multiples of 10 by multiples of 10.
- Use a quicker algorithm for recording the partial products when multiplying a 2-digit number by a 1-digit number.
- Use a quicker algorithm for recording the partial products when multiplying two 2-digit numbers.
- Regroup ones as tens and tens as hundreds.

In Review 2, students will:
- Understand and apply the Commutative and Associative Properties of Multiplication.
- Use mental math to multiply 1-digit numbers and multiples of 10 by multiples of 10.
- Use quicker algorithms to multiply 2-digit numbers by 1- and 2-digit numbers.

VOCABULARY

Review 1
- multiplication: an operation used to find the total number of items in equal-sized groups

Review 2
- Commutative Property of Multiplication: a rule that states you can multiply factors in any order; the product is the same
- Associative Property of Multiplication: a rule that states you can change the grouping of 3 or more factors; the product is the same
- factors: the numbers you multiply to get a product
- product: the result of multiplying numbers together

CORRELATION TO COMMON CORE STATE STANDARDS

Number and Operations in Base Ten
- Use place value understanding and properties of operations to perform multi-digit arithmetic—4.NBT.5

Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
Review 1: Practices 1–4

Mental Math

Match the multiplication problem with the correct answer. Solve as many problems as you can using mental math. Then solve the rest on paper. Show your work.

5. \(9 \times 32\)
   - \(A\) 280
   - \(B\) 288
   - \(C\) 2,580
   - \(D\) 2,700
   - \(E\) 2,800
   - \(F\) 2,262

6. \(90 \times 30\)
   - \(G\)

7. \(58 \times 39\)
   - \(H\) 2,162

8. \(7 \times 400\)
   - \(I\)

9. \(8 \times 35\)
   - \(J\)

10. \(60 \times 43\)
    - \(K\)

**At a Glance**

Students solve a variety of multiplication problems by using mental math and multiplication algorithms. If students have difficulty, check for these common pitfalls and use the related tips to provide help.

**Solve Problems 1–4**

If students choose A, C, or D for problem 2, they may not fully recall the steps involved to multiply a 2-digit number by a 1-digit number.

Then Review the multiplication algorithm in Practice 3 Part Two with students. Remind students to include the regrouped 4 tens in the final answer. If students are still struggling, have them use the partial products method shown in Practice 3 Part One.

**Mental Math, Problems 5–10**

If students choose incorrect answers for problems 8 and 9, they may have forgotten the importance of place value in the multiplication process.

Then Review with students how to multiply with multiples of 10 (Practice 2) and how to multiply a 2-digit number by a 1-digit number (Practice 3). Emphasize the importance of place value in both methods.
Review 2

REvIEw 2: PRACTICES 1–4

Students should show their work for numbers 1 and 4.

Mental Math

Solve each problem using mental math or pencil and paper. Show your work if you do not use mental math.

1. A case of soup has 24 cans. Greg unpacked 7 cases in the store. How many cans of soup did he unpack?

Solution: 168

2. Alisha made 5 cans of soup for a group. The soup in each can has a mass of about 300 grams. About how many grams of soup did she make in all?

Solution: 1,500

3. How many minutes are there in 20 hours? (1 hour = 60 minutes)

Solution: 1,200

4. A store ordered 36 boxes of crayons. There are 48 crayons in each box. How many crayons are there in all?

Solution: 1,728

Solve the problem. Fill in the blanks with numbers or with words from the box.

<table>
<thead>
<tr>
<th>Associative</th>
<th>Commutative</th>
<th>Distributive</th>
</tr>
</thead>
<tbody>
<tr>
<td>grouping</td>
<td>number</td>
<td>order</td>
</tr>
</tbody>
</table>

5. Using the ________ Property of Multiplication, you can change the ________ of the factors and the product is still the same.

Problem: 83 × 19 = 19 × 83

Product: 1,577 × 1,577

Using the ________ Property of Multiplication, you can change the ________ of the factors and the product is still the same.

Problem: 2 × [5 × 47] = [2 × 5] × 47

Product: 470 × 470

At a Glance

Students solve multiplication problems by using mental math, multiplication properties, and multiplication algorithms. If students have difficulty, check for these common pitfalls and use the related tips to provide help.

Mental Math, Problems 1–4

If If students write an incorrect product for problem 4, they may not recall how to multiply two 2-digit numbers.

Then Remind students of the meaning of partial products. Help them see that the sum of the partial products is the final answer.

Solve Problem 5

If Students who write an incorrect word in any of the blanks may not fully recall the properties of multiplication.

Then Review both properties. Refer students to problem 1 in each part of Practice 1 for visual explanations.

Solve Problems 6–7

If Students who choose A for problem 6 may have added instead of multiplied.

Then Encourage students to be observant of which operation is used. Point out the multiplication symbol in the problem.

Reasoning, Problems 8–10

If If students cannot find the solution for problem 10, they may not be approaching the problem strategically.

Then To help students get started, guide them to think of multiples, especially a multiple with 3 in the ones place.