For more than two decades, we have helped you achieve student success on Texas tests by providing the highest quality test-prep materials. With STAAR MASTER® Quick Review, we continue our commitment to create research-based content that engages students and makes teaching easier.

✔ Engaging Format  ✔ Varied Practice  ✔ Sound Content
A Brand-New Series for STAAR®

Quick Review

Engaging Format

Varied Practice

Increased Rigor

ecslearningsystems.com

ECS Learning Systems, Inc.
P.O. Box 440 • Bulverde, TX 78163-0440
1.800.688.3224

We make teaching easier!™
Selected pages from

STAAR MASTER®
Quick Review

Mathematics
Grade 4
Teacher Guide

Lori Mammen
Editorial Director

ISBN: 978-1-60539-918-8
Copyright infringement is a violation of Federal Law.

©2016 by ECS Learning Systems, Inc., Bulverde, Texas. All rights reserved. No part of this publication may be reproduced, translated, stored in a retrieval system, or transmitted in any way or by any means (electronic, mechanical, photocopying, recording, or otherwise) without prior written permission from ECS Learning Systems, Inc.

Reproduction of any part of this publication for an entire school or for a school system, by for-profit institutions and tutoring centers, or for commercial sale is strictly prohibited.

Printed in the United States of America. STAAR MASTER is a registered trademark of ECS Learning Systems, Inc.

Disclaimer Statement

ECS Learning Systems, Inc., recommends that the purchaser/user of this publication preview and use his/her own judgment when selecting lessons and activities. Please assess the appropriateness of the content and activities according to grade level and maturity of your students. The responsibility to adhere to safety standards and best professional practices is the duty of the teachers, students, and/or others who use the content of this publication. ECS Learning Systems is not responsible for any damage, to property or person, that results from the performance of the activities in this publication.

STAAR is a registered trademark of Texas Education Agency. STAAR MASTER and ECS Learning Systems, Inc., are not affiliated with or sponsored by the Texas Education Agency or the State of Texas.
Dear Texas Educator,

Since 1982, ECS Learning Systems has created quality K–12 teaching materials, training, and media. As a Texas-based publisher of the highest quality test-prep materials, we have always shared your commitment to lead your students to success on Texas tests—TEAMS, TAAS, TAKS, and now the STAAR®. With STAAR MASTER®, we continue our commitment to create research-based content that engages students and makes teaching easier.

The STAAR MASTER series includes new, challenging content to prepare students for the rigor of the STAAR. It's what you have come to expect from the most trusted source in Texas testing. Check our Web site often for the latest information at ecslearningsystems.com/staarmaster.

As you use STAAR MASTER in your classroom, we hope to hear from you! Send us your story and let us know:

- Why you need our product(s)
- How you use them in your classroom
- What outcomes and results you are experiencing

At ECS, we strive to provide educators like you with easy-to-use and effective materials that make teaching easier. We count it as a privilege to have you as a customer, and we hope that our products continuously exceed your expectations.

Please let us know how well the STAAR MASTER products worked in your classroom. Also, please spread the word—many of our new customers are referred by teachers like you.

Sincerely,

Your ECS Team

p.s. It’s easy to share your story! Visit our Re:Think blog at ecslearningsystems.com/blog and click the Re:Tell button.

Table of Contents

- What’s inside STAAR MASTER® ................................................................. 2
- Quick Review for Math? ................................................................. 3
- Descriptions of STAAR MASTER® .................................................. 5
- Complexity Levels ................................................................. 5
- Organization of Quick Review for Math ........................................ 6
- Suggestions for Using Quick Review for Math .................................... 7
- SSI Plan .............................................................................. 8
- Daily SSI Lesson Plan ................................................................. 9
- Daily SSI Planning Form .............................................................. 10
- Master Skills List ....................................................................... 11
- Correlation Charts ...................................................................... 14
- Answer Key ............................................................................. 18

ECS Learning Systems, Inc. • P. O. Box 440 • Bulverde, TX 78163-0440
ecslearningsystems.com
1.800.688.3224 (t) • 1.877.688.3226 (f) • customercare@ecslearningsystems.com
What’s inside STAAR MASTER® Quick Review for Math?

This STAAR MASTER® Quick Review for Math includes more than 230 grade-specific practice items that reflect the content of the STAAR®-eligible TEKS for Mathematics.

The Teacher Guide includes the following information—
• an overview of STAAR MASTER Quick Review for Math and key characteristics of the State of Texas Assessments of Academic Readiness (STAAR) for Mathematics
• an explanation of Quick Review’s organization by reporting category and standard(s)
• explanations of both rigor and complexity levels as they apply to Quick Review
• an explanation of Webb’s “depth-of-knowledge” model as it relates to complexity levels used in Quick Review
• suggestions for using Quick Review in the classroom, at home, in tutorials/remedial classes/summer school, and in SSI classes
• correlation charts indicating the specific standard(s) addressed in each practice item
• a complete answer key

The STAAR MASTER Quick Review for Math, Grade 4, provides practice and review material for the mathematics portion of the STAAR. In particular, the book includes the following information—
• more than 230 practice items focusing on the grade-specific content of the STAAR-eligible TEKS for Mathematics
• practice items reflecting the kind of problems students might encounter on the actual STAAR
• a real-world context for practice items whenever possible, covering a broad range of topics and ideas of interest to students
• “skills tags” (labels) to identify the TEKS standard(s) addressed in each practice item
• multiple practice items to address each standard/expectation, providing repeated practice in a variety of contexts
• selected practice items with “gridable responses,” reflecting the format used on the actual STAAR
• mathematics reference chart

Mathematical Process Standards: The Mathematical Process Standards are not tested in isolation, nor do they appear in a separate reporting category. Rather, these standards are incorporated into practice items based on content standards from the four reporting categories. Practice items require students to demonstrate understanding of these important mathematical processes within the context of each problem.

Skills Tags: Each practice item includes a “skills tag” (Figure 1) for easy identification of the TEKS-based standard addressed in that item.

![Figure 1](image)
Descriptions of STAAR MASTER® Complexity Levels

The following descriptions provide an overview of the three complexity levels used to align the STAAR MASTER® Quick Review items to the STAAR®-eligible TEKS. Each explanation details the kinds of activities that occur within each level. However, they do not represent all of the possible thought processes for each level.

Low Complexity (L)
Low-complexity items align with the TEKS at Level 1 of the Webb (2002a) model. Items of low complexity involve recall and reproduction. Activities and problems at this level require routine, single-step methods. An item may ask students to recognize or restate a fact, definition, or term. For example, students may need to identify attributes of a geometric figure. Items of this complexity may require students to follow a basic procedure with clearly defined steps. At this cognitive level, students may need to apply a formula or perform a simple algorithm. Some major concepts represented at this level include arithmetic facts, perimeter, and converting units of measure. A low-complexity item may ask students to identify, recognize, use, or measure information and concepts.

Moderate Complexity (M)
Moderate-complexity items align with the TEKS at Level 2 of the Webb model. Items of moderate complexity involve both comprehension and the subsequent processing of information. Activities at this level demand more than one step in the reasoning process; students are asked to determine how to best solve the problem. An item may ask students to generate a table of paired numbers based on a real-life situation. Items may involve using a model to solve a problem. At this cognitive level, students will need to visualize for tasks such as extending patterns and determining nonexamples. Items may involve interpreting information from a simple graph, table, or diagram. Some major concepts represented at this level include classifying geometric figures, determining probability, and using strategies to estimate. Items of this complexity may ask students to classify, organize, observe, collect, display, or compare data. Some items also require students to apply low-complexity skills and concepts.

High Complexity (H)
High-complexity items align with the TEKS at Level 3 and/or Level 4 of the Webb model. Items of high complexity require students to use strategy, multi-step thinking; develop a deeper understanding of the information; and extend thinking. The problems at this level are non-routine and more abstract. Students are asked to demonstrate more flexible thinking, apply prior knowledge, make and test conjectures, and support their responses. High-complexity items may require students to make generalizations from patterns. Items may involve interpreting information from a complex graph, table, or diagram. At this cognitive level, students will need to justify the reasonableness of a solution process when more than one solution exists. Students will use concepts to solve and explain problems, such as how changes in dimensions affect the volume of a figure. A high-complexity item may ask students to plan, reason, explain, compare, differentiate, draw conclusions, cite evidence, analyze, synthesize, apply, or prove. Some items also require students to apply low- and/or moderate-complexity skills and concepts.

*Note: Although state standards may include expectations that require extended thinking, many large-scale assessment activities are not classified as Level 4. Performance and open-ended assessments may require activities at Level 4.
Organization of Quick Review for Math

The STAAR MASTER® Quick Review for Math uses a practical, user-friendly layout designed to streamline its use in a classroom, home, tutorial, or other setting.

<table>
<thead>
<tr>
<th>Reporting Category</th>
<th>Each Quick Review for Math is organized into four reporting categories. These reporting categories are dictated by the STAAR®-eligible TEKS for each grade.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week</td>
<td>Each reporting category is divided into three weeks. (However, the length of time required to complete items is best decided by the teacher.)</td>
</tr>
<tr>
<td>Day</td>
<td>Each week is then divided into five days—one “school week.” (Again, the teacher can use items at his or her own pace.)</td>
</tr>
</tbody>
</table>

The organization of reporting categories, weeks, and days is best represented by the diagram to the right, which provides an example for Reporting Category 1.

If you refer to the correlation charts on pages 14-17 of this teacher guide, you will notice “clustering” of items, depending on the week. Within each reporting category, Week 1 generally focuses on the first half of that reporting category’s standards, while Week 2 generally focuses on the second half of that reporting category’s standards. Finally, Week 3 provides a review “across the board,” offering mixed practice for the standards in that reporting category.
Answer Key

Reporting Category 1
Week 1, Day 1
1. 2. 3. 4.
Week 1, Day 2
1. 2. 3. 4.
Week 1, Day 3
1. 2. 3. 4.
Week 1, Day 4
1. 2. 3. 4.
Week 1, Day 5
1. 2. 3. 4.
Week 2, Day 1
1. 2. 3. 4.
Week 2, Day 2
1. 2. 3. 4.
Week 2, Day 3
1. 2. 3. 4.
Week 2, Day 4
1. 2. 3. 4.
Week 2, Day 5
1. 2. 3. 4.
Week 3, Day 1
1. 2. 3. 4.
Week 3, Day 2
1. 2. 3. 4.
Week 3, Day 3
1. 2. 3. 4.
Week 3, Day 4
1. 2. 3. 4.
Week 3, Day 5
1. 2. 3. 4.

Reporting Category 2
Week 1, Day 1
1. 2. 3. 4.
Week 1, Day 2
1. 2. 3. 4.
Week 1, Day 3
1. 2. 3. 4.
Week 1, Day 4
1. 2. 3. 4.
Week 1, Day 5
1. 2. 3. 4.
Week 2, Day 1
1. 2. 3. 4.
Week 2, Day 2
1. 2. 3. 4.
Week 2, Day 3
1. 2. 3. 4.
Week 2, Day 4
1. 2. 3. 4.
Week 2, Day 5
1. 2. 3. 4.
Week 3, Day 1
1. 2. 3. 4.
Week 3, Day 2
1. 2. 3. 4.
Week 3, Day 3
1. 2. 3. 4.
Week 3, Day 4
1. 2. 3. 4.
Week 3, Day 5
1. 2. 3. 4.
# Table of Contents

**Reporting Category 1** ................................................................. 3
Numerical Representations and Relationships

**Reporting Category 2** ................................................................. 35
Computations and Algebraic Relationships

**Reporting Category 3** ................................................................. 67
Geometry and Measurement

**Reporting Category 4** ................................................................. 99
Data Analysis and Personal Financial Literacy

**Math Reference Chart** ................................................................. 128
4.2G (L)

3. Which fraction is equal to the decimal represented in the place value chart below?

<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
<th>Thousandths</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

A \[ \frac{4}{100} \]
B \[ \frac{4}{1,000} \]
C \[ \frac{41}{10} \]
D \[ \frac{41}{100} \]

4.2G (L)

4. The model below is shaded to show \[ \frac{6}{10} \].

Which decimal does the model represent?

A \[ 0.46 \]
B \[ 4.06 \]
C \[ 4.6 \]
D \[ 46.0 \]
4.2A (M)

1. Vanessa wants to solve the following problem from her math book.

How would moving the decimal point two places to the right change the value of 7 in this number?

607,243.88

Which of the following answers should Vanessa select?

A The 7 would be 100 times less.
B The 7 would be 100 times greater.
C The 7 would be one-hundredth less.
D The 7 would be one-hundredth greater.

4.2G (M)

2. Which model shows \( \frac{8}{100} \) shaded?

A

C

B

D
3. Karla works at a movie theater. On Friday, she sold 346 bags of popcorn. On Saturday, she sold 513 bags of popcorn. How many more bags of popcorn did Karla sell on Saturday than on Friday?

Record your answer in the boxes. Then fill in the bubbles. Be sure to use the correct place value.

4. Which of the following best completes the number sentence below?

\[ x \times 10 = \]

- A 3,024
- B 6,815
- C 1,283
- D 9,714
4.5A (H)  
3. Isa was making bracelets with beads. She had 10 more blue beads than red beads. She had 3 times as many yellow beads as red beads. The beads she had are represented in the diagram below.

<table>
<thead>
<tr>
<th>Color</th>
<th>Beads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>10</td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
</tr>
</tbody>
</table>

Which expression correctly shows how to find the total number of beads Isa had?

A  \( r + 10 + 3r \)
B  \( (10 + r) + 3r \)
C  \( r + 10 + 3 + r \)
D  \( r + (10 + r) + 3r \)

4.5B (M)  
4. Two gallons are equal to 16 pints. Which table correctly shows how many pints are in different numbers of gallons?

A  

<table>
<thead>
<tr>
<th>Number of Gallons</th>
<th>Number of Pints</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
</tr>
</tbody>
</table>

B  

<table>
<thead>
<tr>
<th>Number of Gallons</th>
<th>Number of Pints</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>5</td>
<td>40</td>
</tr>
</tbody>
</table>

C  

<table>
<thead>
<tr>
<th>Number of Gallons</th>
<th>Number of Pints</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
</tr>
</tbody>
</table>

D  

<table>
<thead>
<tr>
<th>Number of Gallons</th>
<th>Number of Pints</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>5</td>
<td>64</td>
</tr>
</tbody>
</table>
**REPORTING CATEGORY 3, WEEK 1**

### DAY 2

**Math, Grade 4**

#### 4.5D (M)

1. Look at the shape below.

What is the area of the rectangle?

- **A** 5 square inches
- **B** 6 square inches
- **C** 10 square inches
- **D** 15 square inches

### 4.6B (M)

2. Adrian wrote his name on a sheet of paper, as shown below.

**ADRIAN**

Which letters appear to have only one line of symmetry?

- **A** Letters A and I
- **B** Letters A and D
- **C** Letters R and N
- **D** Letters D and N
4.7E (M)
3. A fence meets a house at a 75° angle, as shown in the diagram below.

![Diagram of a fence meeting a house at a 75° angle]

Based on the diagram, what is the measure of angle A?
A 105°
B 90°
C 75°
D 60°

4.8B (L)
4. The table below shows several conversions from yards to feet.

<table>
<thead>
<tr>
<th>Yards</th>
<th>Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>15</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>90</td>
</tr>
</tbody>
</table>

If a large classroom is 15 yards long, how long is it in feet?
A 5
B 7.5
C 30
D 45
4.9A (M)
1. Lana’s P.E. teacher measured the height of each student in her class, rounding each one to the nearest half-inch. The dot plot below shows the heights, in inches, of the students in Lana’s P.E. class.

![Dot plot showing student heights in inches]

According to the dot plot, which statement is true?
A. The shortest student in Lana’s P.E. class is 52 inches tall.
B. All of the students in Lana’s P.E. class are between 52 and 57 inches tall.
C. None of the students in Lana’s P.E. class are between 53 and 55 inches tall.
D. More students in Lana’s P.E. class are 55 inches tall than those who are 54.5 and 55.5 inches combined.

4.9A (M)
2. Michelle is drying flowers to press into a scrapbook. The frequency table below shows the number of each type of flower she has.

<table>
<thead>
<tr>
<th>Flower</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hibiscus</td>
<td>III</td>
</tr>
<tr>
<td>Daisy</td>
<td>I</td>
</tr>
<tr>
<td>Periwinkle</td>
<td>IIII</td>
</tr>
<tr>
<td>Daffodil</td>
<td>II</td>
</tr>
<tr>
<td>Buttercup</td>
<td>I</td>
</tr>
</tbody>
</table>

The frequency table shows that Michelle has—
A. 5 more daffodils than buttercups
B. 30 of five different types of flowers
C. more periwinkles than hibiscus and daisies combined
D. more periwinkles than daisies and daffodils combined
4.9A (H)

3. Look at the stem-and-leaf plot below.

<table>
<thead>
<tr>
<th>Stem</th>
<th>Leaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2 3 4 4 5 6 7 8 8 9</td>
</tr>
<tr>
<td>1</td>
<td>5 9</td>
</tr>
<tr>
<td>2</td>
<td>1 2 5 5 7 8 8</td>
</tr>
<tr>
<td>3</td>
<td>0 0 5 8</td>
</tr>
<tr>
<td>4</td>
<td>7 8 9 9</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>1 2 6 6 7 8 9</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Key: 0 | 2 = 2

Which problem situation can best be answered by the data displayed on the stem- and-leaf plot above?

A  How many more times did Randi spend jogging her 2-mile route in under 20 minutes than over 20 minutes?

B  How many more people under the age of 50 visited the butterfly exhibit at the zoo on Sunday than those 50 years or older?

C  What is the difference between the greatest and least number of ounces of milk Trina’s younger sister drank while home on Saturday?

D  What is the difference between the age of the youngest student and the age of the oldest student in Mrs. Monroe’s fourth-grade music class?

4.10A (L)

4. Tabitha sorted her monthly expenses into the two categories below.

Tabitha’s Monthly Expenses

<table>
<thead>
<tr>
<th>variable Expenses</th>
<th>Fixed Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>Internet</td>
</tr>
<tr>
<td>Food</td>
<td>Mortgage</td>
</tr>
<tr>
<td>Utilities</td>
<td>Trash collection</td>
</tr>
</tbody>
</table>

Which expense would Tabitha most likely add to the column for fixed expenses?

A  Cable TV  
B  Entertainment  
C  Savings  
D  Water