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.
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® .......................... 3
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

© ECS Learning Systems, Inc.
What’s inside STAAR MASTER® Quick Review for Math?

This STAAR MASTER® Quick Review for Math includes more than 220 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 8, provides practice and review material for the mathematics portion of the STAAR. In particular, the book includes the following information—

- more than 220 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 “griddable 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)

© ECS Learning Systems, Inc.
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 strategic, 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.

![Diagram of Reporting Category 1]

Week 1
(first half of RC1 standards)

Day 1  Day 2  Day 3  Day 4  Day 5

Week 2
(second half of RC1 standards)

Day 1  Day 2  Day 3  Day 4  Day 5

Week 3
(mixed practice for RC1 standards)

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

---

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
8.2A (M)
1. A student used the diagram below to classify numbers.

**Real Numbers**

In which subset of the diagram should the student classify the number $\sqrt{3}$?
A. Integers  
B. Irrational  
C. Natural  
D. Whole

8.2D (M)
2. Janelle randomly selected the math tiles shown below.

Janelle arranged the tiles in order from least to greatest. Which list shows the numbers in that order?

A. $\frac{350}{100}$, $\sqrt{13}$, $\frac{17}{5}$, 3.75  
B. $\sqrt{13}$, 3.75, $\frac{350}{100}$, $\frac{17}{5}$  
C. $\frac{17}{5}$, $\frac{350}{100}$, $\sqrt{13}$, 3.75  
D. 3.75, $\frac{17}{5}$, $\frac{350}{100}$, $\sqrt{13}$
8.2A (M)

1. The numbers below are both rational numbers.

\[ \frac{1}{8} \quad 10.8 \]

Which diagram shows how these numbers are classified in the real number system?

A  Whole Numbers
    * Rational Numbers

B  Rational Numbers
    * Irrational Numbers

C  Rational Numbers
    * Real Numbers

D  Real Numbers
    * Rational Numbers

8.2D (M)

2. Jack placed five randomly selected math tiles in order from least to greatest, as shown below.

\[ \frac{7}{9} \quad \frac{28}{3} \quad 3\pi \quad 9.824 \quad \sqrt{106} \]

He selected a sixth math tile, shown below.

\[ \sqrt{95} \]

Between which two tiles should Jack place \( \sqrt{95} \) to keep the tiles in order from least to greatest?

A  \( \frac{7}{9} \) and \( \frac{28}{3} \)
B  \( \frac{28}{3} \) and \( 3\pi \)
C  \( 3\pi \) and 9.824
D  9.824 and \( \sqrt{106} \)
**8.5G (M)**

3. Four mappings of ordered pairs appear below. Which mapping represents a functional relationship?

<table>
<thead>
<tr>
<th>A</th>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B</th>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D</th>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

**8.5H (M)**

4. In her math class, Mrs. Jacobson created the table of linear equations shown below.

**Linear Equations**

\[
\begin{align*}
y &= x + 3 \\
x &= y - 5 \\
y &= 4x - 4 \\
x &= 2y
\end{align*}
\]

Each linear equation in the table represents a non-proportional function **EXCEPT**—

A  \( y = x + 3 \)  \ C  \( y = 4x - 4 \)
B  \( x = y - 5 \)  \ D  \( x = 2y \)
8.4C (M)
1. What is the slope of the linear function shown on the graph below?

A -2  C 1  
B -1  D 2

8.5A (M)
2. Laurence can jog 12 miles in 2 hours. Assuming he jogs at a constant rate, which graph below best represents the linear relationship between $x$, the number of hours Laurence jogs, and $y$, the total number of miles he can travel?

A  
B  
C  
D
8.7A (M)
3. John made a toy shaped like the sphere shown in the diagram below.

Using 3.14 for π, what is the volume of the toy?
A 150.72 in.³
B 226.08 in.³
C 452.16 in.³
D 904.32 in.³

8.7B (M)
4. Clint wants to wrap a small gift box like the one shown below.

How many square centimeters of paper will Clint use to wrap the entire box?

Record your answer in the boxes. Then fill in the bubbles. Be sure to use the correct place value.
8.7C (M)
1. Kelly bicycled 4 kilometers due east from her house to Rachel's house. Then Kelly bicycled 3 kilometers due south from Rachel's house to Marty's house, as shown in the diagram below.

What is the shortest distance from Marty's house back to Kelly's house?

A 4.5 km  
B 5 km  
C 6 km  
D 7 km

8.10B (M)
2. The diagram on the grid below shows Figure A.

A student created a transformation of Figure A with the following coordinates: (4, 4), (10, -2), (6, -8), (-6, -8), and (-2, 2). Which statement correctly describes the relationship between Figure A and its transformation?

A The figures are congruent because the transformation was a dilation.
B The figures are congruent because the transformation was a translation.
C The figures are not congruent because the transformation was a dilation.
D The figures are not congruent because the transformation was a translation.
8.5D (L)
2. The scatterplot below shows the relationship between students’ average homework score and their average daily TV viewing time.

If a student has an average homework score of 90, the most reasonable prediction for her average daily TV viewing time is—

A 40 minutes  C 70 minutes
B 60 minutes  D 80 minutes

8.11B (M)
3. Leroy recorded the number of homework problems he solved each night for a week in the table below.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>24</td>
</tr>
<tr>
<td>Tuesday</td>
<td>16</td>
</tr>
<tr>
<td>Wednesday</td>
<td>22</td>
</tr>
<tr>
<td>Thursday</td>
<td>26</td>
</tr>
<tr>
<td>Friday</td>
<td>20</td>
</tr>
</tbody>
</table>

What is the mean absolute deviation (MAD) of this data set?

A 2.88  C 3.44
B 3.12  D 3.50
8.12A (L)
3. Harry needs $8,000 to buy a car. The table below shows auto loan information from four banks.

Auto Loan Information

<table>
<thead>
<tr>
<th>Bank</th>
<th>Interest Rate</th>
<th>Repayment Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.5%</td>
<td>5 years</td>
</tr>
<tr>
<td>2</td>
<td>3.0%</td>
<td>5 years</td>
</tr>
<tr>
<td>3</td>
<td>3.5%</td>
<td>5 years</td>
</tr>
<tr>
<td>4</td>
<td>4.0%</td>
<td>5 years</td>
</tr>
</tbody>
</table>

If Harry wants to pay the least amount for borrowing the money, from which bank should he borrow the $8,000?

A  Bank 1  
B  Bank 2  
C  Bank 3  
D  Bank 4

8.12D (M)
4. The table below shows information about the new savings accounts opened by four different customers.

Savings Accounts

<table>
<thead>
<tr>
<th>Customer</th>
<th>Initial Deposit</th>
<th>Annual Interest Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abigail</td>
<td>$400</td>
<td>6% simple interest</td>
</tr>
<tr>
<td>Clarissa</td>
<td>$600</td>
<td>7% compound interest</td>
</tr>
<tr>
<td>Edward</td>
<td>$300</td>
<td>9% simple interest</td>
</tr>
<tr>
<td>Gregory</td>
<td>$500</td>
<td>8% simple interest</td>
</tr>
</tbody>
</table>

If none of the customers makes any deposits or withdrawals, which customer will have earned the greatest amount of interest after 4 years?

A  Abigail  
B  Clarissa  
C  Edward  
D  Gregory