

Practice Item Guide
Virginia Standards of Learning
Grade 4 Mathematics

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Pearson

Table of Contents

OVERVIEW	3
SYSTEM REQUIREMENTS FOR TESTNAV	4
TECHNOLOGY-ENHANCED ITEM (TEI) TYPES.....	5
Drag and Drop	5
Hot Spot	5
Bar Graph or Histogram	6
Fill-in-the-Blank.....	6
OPENING THE VIRGINIA SOL MATHEMATICS PRACTICE ITEMS	7
MATERIALS NEEDED FOR COMPLETING VIRGINIA SOL PRACTICE ITEMS.....	8
ONLINE TOOLS AVAILABLE ON THE VIRGINIA SOL MATHEMATICS PRACTICE ITEMS.....	8
SPECIFIC DIRECTIONS FOR THE SOL GRADE 4 MATHEMATICS PRACTICE ITEMS	9
Introduction	9
APPENDIX A.....	56
APPENDIX B.....	59

OVERVIEW

The practice items available in the Virginia Standards of Learning (SOL) grade 4 mathematics practice set provide examples of the new content and increased rigor represented by the 2009 *Mathematics Standards of Learning*. Additionally, these items illustrate the technology-enhanced item (TEI) types. These practice items do not cover all grade 4 mathematics SOL and should not be used in place of review of the SOL test content.

This practice guide may be used by teachers or other adults to guide students through the practice items for grade 4 mathematics. While the use of this guide with the practice items is not required, it is strongly encouraged, as it will help ensure that students are familiar with the types of items that they may encounter while taking the grade 4 mathematics test. The directions in the guide will also lead students through practice with the online tools, familiarize students with how to navigate through the test, and help students understand how to use the Section Review screen within TestNav™. Appendix B summarizes how student responses for TEI are indicated on the Section Review screen.

Prior to guiding students through the practice items, carefully read this practice item guide and review the practice items to become familiar with them. All directions that must be read aloud to the students are in **bold Arial font** so that they stand out from the rest of the text. All other text is for your information and should not be read to students.

The following Change Log indicates any updates to this document.

Change Log		
Version	Date	Description
V.1	03/05/2012	Original document posted.
V.2	03/06/2012	Calculator usage removed from Sample B.
V.3	10/31/2012	Various changes throughout guide regarding how TEI appear on the Section Review screen. Updated directions and screen shots for exiting TestNav. Added Appendix B.
V.4	03/15/2013	Overview amended; 20 new practice items added.
V.5	03/28/2013	Item #22 amended. New screenshot added.

SYSTEM REQUIREMENTS FOR TESTNAV

The minimum hardware requirements for all workstations used to access TestNav are available at <http://www.pearsononlinetesting.com/TestNav/7/index.html>

TECHNOLOGY-ENHANCED ITEM (TEI) TYPES

There are four types of technology-enhanced items:

- drag and drop,
- hot spot (which includes number line and coordinate plane items),
- bar graph or histogram, and
- fill-in-the-blank.

A brief description of each technology-enhanced item (TEI) type is provided below. The SOL practice items for grade 4 mathematics will introduce each of the TEI types: drag and drop, hot spot, bar graph, and fill-in-the-blank.

Drag and Drop

Drag and drop items contain draggers and bays.

- Draggers are the answer options that are moved to bays in response to the question.
- Bays are areas of an item where draggers will remain once moved there.

Drag and drop items require a student to respond by moving one or more draggers from one place on the screen into a bay(s) elsewhere on the screen.

The student will click on the dragger and keep the button down while moving the dragger to the desired location. Once the button is released, the dragger will be in the new location. Students can still move the dragger once it has been dropped into a bay.

Drag and drop items may be used in reading, writing, mathematics, and science assessments.

Hot Spot

Hot spot items contain hot spot zones which represent student answer options.

- Hot spot zones are answer options which may be part of a graphic, art, numbers, or text, that are selected in response to a question.
- Unlike a traditional multiple-choice item where only one answer option is correct, hot spot items may require the student to select one or more hot spot zones (answer options) in order to answer the item correctly.
- Number line and coordinate plane items require students to respond by clicking on a number line or coordinate plane to plot one or more points. In these items, the points themselves are the hot spot zones. Only points plotted with the pointer tool within TestNav are scorable responses. Points plotted with the dot tool are not scorable responses.

The student selects a hot spot by clicking on it. In some hot spot items, there will be an indication on the screen, such as the zone being outlined in blue, which confirms that the pointer is over a hot spot. After the hot spot is clicked, there will always be an indication that the zone has been selected as an answer, such as the hot spot being outlined in burnt orange, the hot spot being shaded, an asterisk being placed on the hot spot, or a red point being plotted on the number line or coordinate plane.

Hot spot items may be may be used in reading, writing, mathematics, and science assessments.

Bar Graph or Histogram

Bar graph or histogram items require students to graph data by indicating the height (if the bars are vertical) or length (if the bars are horizontal) of one or more bars or intervals. The bar height or length is graphed by clicking on a location within the graph or by dragging the bar to the desired location.

Bar graph and histogram items may be used in mathematics and science assessments.

Fill-in-the-Blank

Fill-in-the-blank items require students to input characters from the keyboard (numbers, letters, or symbols) to answer the question. For this item type, the student responds to a question by typing into a blank box provided in the item.

- Some response boxes may limit the characters that can be entered. For instance, if the response is expected to be numeric, the student will not be able to enter letters.
- Students should carefully follow directions in fill-in-the-blank items, such as providing an answer in simplest form, rounding a number as indicated, or using significant digits.
- Currently, no fill-in-the-blank item requires students to correctly spell a word; however, alphabetic characters or symbols may be used in an answer.

Fill-in-the-blank items are currently used in mathematics and science assessments.

OPENING THE VIRGINIA SOL MATHEMATICS PRACTICE ITEMS

1. Go to the Virginia Department of Education Web site:
http://www.doe.virginia.gov/testing/sol/practice_items/index.shtml
2. Under the heading “Mathematics Practice Items” click on the grade 4 link. Since this is a web based application, the link will take you directly to the grade 4 mathematics practice items.

MATERIALS NEEDED FOR COMPLETING THE VIRGINIA SOL PRACTICE ITEMS

Scratch paper and pencil

ONLINE TOOLS AVAILABLE ON THE VIRGINIA SOL MATH PRACTICE ITEMS

The following tools can be accessed by clicking the appropriate icon on the toolbar at the top of the screen. These tools can be used to assist the test taker in finding answers, and only the pointer can be used to respond to the questions.

Tool Icon	Description
	Pointer – Use the pointer to respond to questions.
	Eraser – Use the eraser to remove lines or highlights.
	Highlighter – Use the highlighter tool to highlight text or graphics.
	Eliminator – Use the eliminator tool to mark choices that you do not wish to consider.
	Pencil – Use the pencil tool to make marks on the test questions.
	Ruler – Use the ruler tool to measure something on screen.
	Straightedge – Use the straightedge tool to draw straight lines and underline text.
	Dot tool – Use the dot tool to plot dots on the screen.
	Calculator – Use the calculator to perform calculations.
	Exhibit – Use the exhibit icon to view information about the Commonwealth of Virginia copyright. The exhibit icon only appears on the first screen of these practice items.
	Help – Use the help tool to display information about a specific tool on the top toolbar.

SPECIFIC DIRECTIONS FOR THE SOL GRADE 4 MATHEMATICS PRACTICE ITEMS

Introduction

After the practice items are launched, the first practice item will be displayed. Read the following instructions to the students.

SAY Today you will be working on some grade 4 mathematics practice items. There are 32 questions that will show you some of the types of items you may see on the SOL mathematics assessment. Some questions are multiple-choice and others are technology-enhanced items. Technology-enhanced items may require you show your answer in another way, such as typing the answer in a box, completing a graph, or clicking and dragging the answer to a specific location.

Listen carefully as I read the directions for these practice items. I will guide you through each item one at a time. Please remember that the questions you see are practice questions. They will not be graded, and I will tell you the correct answer for each item.

Are there any questions before we start?

Pause to answer questions.

SAY *Next* and *Previous* buttons appear at the bottom of the screen for each question. Clicking *Next* takes you to the next question. Clicking *Previous* takes you back to the previous question. Notice that the question numbers are also located at the bottom of the screen. For example, the screen with Sample A reads “Sample.”



SAY At any time, you may click on the *Flag for Review* button () located at the bottom left of the screen. This should be used for any question that you want to review at a later time. We will practice using this button when we are working on the practice items.

Now let's look at the top of your screen.

Pause. The picture below is the toolbar students will see at the top of the screen.



SAY The tools you may use are in the toolbar at the top of the screen. We will practice with some of the tools as we work through the practice questions. If you forget what a tool does, you can click on the Help symbol () to read about the tool.

The Help tool has information about the tools. If you would like your students to explore the Help tool, you can have them do this at the end of the practice items, after they have been exposed to the tools while working these items.

Note that the exhibit window contains information only about the Commonwealth of Virginia copyright. The exhibit icon only appears on the first screen of these practice items.

SAY One thing to remember is that the tools at the top of the screen are there to help you solve a problem. The only tool that can be used to mark an answer to a question is the pointer tool



Let's look at the first item, Sample A.

SAMPLE A

Which digit can be placed in the box to make this statement true?

$$2, \square 96 = 2,496$$

A 2

B 3

C 4

D 5

SAY Read the question to yourself and select the correct answer by clicking the circle next to it.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY You should have selected C, 4.

Click *Next* at the bottom of the screen to go to the next sample item.

Pause while students go to the next sample item.

SAY Sample B has a gray directions banner under the toolbar that tells you how to answer the question. When a question has a directions banner, you should always read it before solving the problem. This directions banner says, “Type your answer in the box. Use ‘.’ for the decimal point.”

This question is an example of a fill-in-the-blank technology-enhanced item. After you find the answer, you will type the answer in the box.

You may use scratch paper to solve for the answer. Type your answer in the box on the screen using the keyboard. Make sure you are using the pointer tool, and then click inside the box before you type your answer.

Pause while students find and enter the answer.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons: a pointer, eraser, highlighter, red X, green checkmark, calculator, and a help icon. The user's name "John doe" and the text "Grade4 Practice Items (2009 Math SOL)" are visible in the top right corner, along with an "Exit" button. Below the toolbar is a gray banner with the text: "Directions: Type your answer in the box. Use \".\" for the decimal point." The main area contains the text "SAMPLE B" followed by the equation $24.4 + 10.3 = \underline{\quad ? \quad}$. To the right of the equation is a rectangular input box. At the bottom, there is a navigation bar with a "Flag for Review" button, "Sample Section 1" text, a "Section Review" button, and "Previous" and "Next" navigation buttons.

SAY What answer did you type in the box?

Pause for replies.

SAY The correct answer is 34.7. Notice that the answer you entered does not need to be the same length as the box.

SAY When we are done looking at the practice items, we will look at a Section Review screen. The Section Review screen shows which questions you have answered and which questions you have not answered. For questions that are fill-in-the-blank, once any character is entered into the response box and remains in the response box, the question will show as “Answered” on the Section Review screen. Do you have any questions about how to type your answer in the box?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to the first practice item.

Pause while students go to the first practice item.

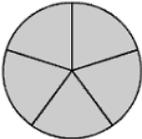
SAY Notice the bottom of your screen now says “Question 1 of 32.” Read question 1 to yourself but do not answer it yet.

Pause while students read the question.

The screenshot shows a math practice item interface. At the top, there is a toolbar with icons for navigation and a 'Help' button. The user's name 'John doe' and the text 'Grade4 Practice Items(2009 Math SOL)' are visible in the top right corner. The main content area contains the following text and diagrams:

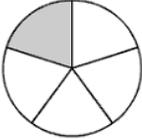
Model 1 is shaded to represent one whole.

Model 1



Look at Model 2.

Model 2



Which decimal and fraction are represented in Model 2 ?

- A 0.1 and $\frac{1}{10}$
- B 0.1 and $\frac{1}{5}$
- C 0.2 and $\frac{1}{10}$
- D 0.2 and $\frac{1}{5}$

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the text 'Question 1 of 32 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY Before you answer the question, let's practice using the eliminator tool. On a multiple-choice question, the eliminator tool will help you mark choices that you do not wish to consider. At the top of the toolbar, click on the button with the red "X" (). Selecting this tool will change your pointer to an arrow with a red "X" next to it. You can use this tool to eliminate as many choices as you want. To eliminate an answer, click the choices you believe are not correct. Then click the eliminator tool again to put the tool away.

Wait for students to eliminate choices and put the tool away. The eliminator tool can only be used on multiple-choice questions, and not on technology-enhanced items.

SAY If you eliminate a choice and then change your mind, use the eraser tool () on the toolbar to erase a red "X". Click on the eraser tool and practice using it to remove a red "X".

Pause while students practice using this tool.

SAY Click on the eraser tool icon to put it away. Now solve the problem and click on the answer you have chosen.

Pause while students work to find the answer to the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, 0.2 and $\frac{1}{5}$. Make sure the circle next to choice D is selected as your answer.

Do you have any questions about how to select an answer, use the eliminator tool, or use the eraser?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Before you read the next question, notice there are several bullets before the graphic. Information you need to answer the question may be presented this way in these practice items and on the actual SOL test. It is important to refer to the bulleted information before answering the question. Now, read question 2 to yourself.

Pause while students read the question.

John doe
Grade4 Practice Items(2009 Math SOL) X Exit

Isaiah has erasers in his pocket.

- There are orange erasers and purple erasers.
- All the erasers are the same size and shape.
- Isaiah is least likely to select a purple eraser when he takes one eraser out of his pocket without looking.

Which letter best represents the probability Isaiah will select a purple eraser?

W X Y Z

← 0 $\frac{1}{2}$ 1 →

A W

B X

C Y

D Z

Flag for Review Question 2 of 32 Section 1 Section Review Previous Next

SAY Now answer the question.

Pause while students work to find the answer to the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is choice A, letter W.

Do you have any questions about selecting the correct answer?

Answer all questions.

SAY Before we go on to the next question, click on the *Flag for Review* button on the bottom left of the screen. If this were an actual SOL test, you would click this button if you wanted to come back and review the question again.

Pause while students click on this icon.

SAY When we reach the end of the practice questions, I will show you how the questions you flag for review will look on the Section Review screen. The questions you flag for review will have a picture of a flag next to them.

Pause.

SAY Click *Next* at the bottom of the screen to go to the next question.

On question 3, there is a gray directions banner.

Make sure students see the directions banner at the top of the screen.

SAY Read the directions and question to yourself.

The actual Grade 4 Mathematics test has a non-calculator and calculator section. Students only have access to a four-function calculator in the second section (calculator section) of the test. However, there are no sections in this set of practice items. Items that would appear in the non-calculator section of a test are flagged with a banner that reads: “Do not use a calculator to solve this problem.” Instructors should ensure that students do not use calculators on these specific items. This banner DOES NOT appear on the actual SOL online test.

John doe
Grade4 Practice Items(2009 Math SOL) X Exit

Do not use a calculator to solve this problem.

Mr. Gary's class has a goal of selling 500 pizzas in three months. The class sold 135 pizzas in the first month and 257 pizzas in the second month. Exactly how many more pizzas does the class need to sell to reach its goal?

A 392

B 382

C 208

D 108

Flag for Review Question 3 of 32 Section 1 Section Review Previous Next

SAY Use your scratch paper to solve the problem and decide which answer is correct. Then click on the answer you have chosen.

Pause while students work to find the answer to the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, 108.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Read question 4 to yourself and select your answer.

Pause while students read the question and work to find the answer to the question.

The screenshot shows a digital interface for a math practice item. At the top, there is a dark blue header bar with various icons (arrow, eraser, pencil, X, calculator, ruler, compass, calculator, help) and the text "John doe", "Grade 4 Practice Items (2009 Math SOL)", and "Exit". The main content area is white and contains the following text: "A game started at the time shown on the clock." Below this is a circular analog clock showing the time 11:45. The hour hand is between 11 and 12, and the minute hand is at 9. Below the clock is the text: "The game ended 2 hours and 35 minutes later. The game ended at —". There are four radio button options: A 1:45 P.M., B 2:20 P.M., C 2:45 P.M., and D 3:20 P.M. At the bottom, there is a dark blue footer bar with "Flag for Review", "Question 4 of 32 Section 1", "Section Review", "Previous", and "Next" buttons.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is B, 2:20 P.M.

Do you have any questions?

Answer all questions.

SAY Before we go to the next question, let's take a moment to practice using the highlighter tool. You can use the highlighter tool on the toolbar to highlight text.

To select this tool, click the icon that looks like a yellow highlighter (). Selecting the highlighter tool will change your pointer tool to an arrow with a highlighter next to it. Practice using the highlighter by highlighting the key words "2 hours and 35 minutes later" in the question. Click again on the highlighter tool on the toolbar to put the tool away.

Pause while students practice using the highlighter tool.

SAY Do you have any questions about how to highlight text?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Read question 5 to yourself.

Pause while students read the question.

John doe
Grade4 Practice Items (2009 Math SOL) X Exit

Which fraction represents "4 divided by 5" ?

A $\frac{9}{5}$

B $\frac{5}{4}$

C $\frac{4}{5}$

D $\frac{9}{4}$

Flag for Review Question 5 of 32 Section 1 Section Review Previous Next

SAY Now answer the question.

Pause while students select the answer to the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is C, $\frac{4}{5}$.

Do you have any questions?

Answer all questions.

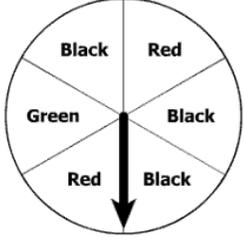
SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

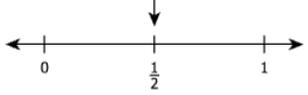
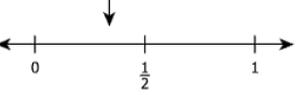
SAY Read question 6 to yourself.

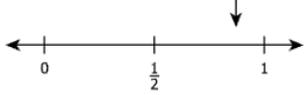
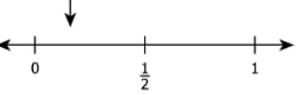
Pause while students read the question.

Wanda will spin the arrow on this spinner one time.



Which number line best represents the probability the arrow will land on a space labeled black?

A 
 C 

B 
 D 

Flag for Review Question 6 of 32 Section 1 Section Review Previous Next

SAY Before you answer the question, let's count how many of the sections are labeled black. We will use the dot tool () to count the sections labeled black in the spinner. Click on the dot tool in the toolbar. It is the circle found to the left of the Help icon. Now move your cursor to the spinner and click on each section labeled black. A blue dot will appear where you click. (Pause.) You should be placing three blue dots on the spinner.

On the SOL test, there may be items that require you to answer by selecting a point on a number line by clicking on that location with your pointer tool. Points plotted with the pointer tool are red, so it is important to note that the dots placed with the dot tool look different than points used to indicate your answer. These large blue dots placed with the dot tool can never be used to indicate an answer. Now click on the dot tool again to put the tool away.

Pause.

SAY You must be very careful on the SOL test not to use the dot tool to answer a question. You must only use the pointer tool to answer the item.

The Section Review screen will indicate that a question is unanswered if the you try to answer a question by using the dot tool, rather than the pointer tool.

Do you have any questions about the difference between correctly plotting your answer using the pointer tool and using the dot tool?

Answer all questions.

SAY Now determine the answer, and then select it on your screen using the pointer tool.

Pause while students work to find the answer to the question. It is important to make sure students know that the dot tool will never be used to answer a question. The dot tool is only to be used to help solve a problem. Points plotted with the dot tool are not scorable responses.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is A, the number line with the arrow pointing to $\frac{1}{2}$.

Do you have any questions about the problem or on the use of the dot tool?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Read question 7 to yourself.

Pause while students read the question.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons: a pointer, eraser, highlighter, red X, green checkmark, calculator, and help. The user's name 'John doe' and 'Grade4 Practice Items(2009 Math SOL)' are visible in the top right corner. The main content area contains the question: 'Which equation shows the use of the associative property of multiplication?' with four radio button options: A: $12 \times (3 + 8) = (12 \times 3) + (12 \times 8)$, B: $12 \times (7 \times 13) = (12 \times 7) \times 13$, C: $12 \times (3 \times 11) = 12 \times (11 \times 3)$, and D: $12 \times (7 \times 1) = 12 \times 7$. At the bottom, there is a navigation bar with a 'Flag for Review' button, 'Question 7 of 32 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY Determine which answer is correct. Click on the answer you have chosen.

Pause while students work to find the answer to the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is B, twelve times the quantity seven times thirteen, close quantity, equals the quantity twelve times seven, close quantity, times thirteen.

Do you have any questions?

Answer all questions.

SAY Before we go to the next question, let's take a moment to practice using the straightedge tool. You can use the straightedge tool on the toolbar to make a straight line or underline text. Look for the straightedge tool icon () at the top of the screen. When you click on the straightedge tool, you will see a drop down box. Select "Tool 2." Your pointer will now have an arrow with a slanted line next to it.

Practice using the straightedge by underlining "the associative property of multiplication". Then click again on the straightedge tool on the toolbar to put the tool away.

Pause while students underline the text and put the tool away. Assist students as necessary.

SAY Do you have any questions about how to underline text?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade4 Practice Items(2009 Math SOL) X Exit

Directions: Click on each number you want to select. You must select all correct numbers. Do not use a calculator to solve this problem.

Identify the numbers that are common factors of 16 and 24.

1 2 3 4 6 8 10 16 24

Flag for Review Question 8 of 32 Section 1 Section Review Previous Next

SAY Question 8 is an example of a hot spot technology-enhanced item.

The gray directions banner at the top of the screen says, “Click on each number you want to select. You must select all correct numbers. Do not use a calculator to solve this problem.” The question says, “Identify the numbers that are common factors of 16 and 24.”

To answer the question correctly, you need to select all the correct answers in the dark gray box by clicking on them. Notice with this type of question, a blue box outlines the answer choice when you move your pointer tool over it. When you click it, the answer option is outlined in orange, indicating you have selected that choice as your answer. If you change your mind, click the orange box to remove the selection, and the orange outline disappears. You can also remove your selection by using the eraser tool.

Now read the question and think about your answer, but do not select any of the answer choices yet.

Pause while students read the question.

SAY Before you answer this question, let’s practice using the pencil tool to narrow down the answer choices. Click the icon on the toolbar that looks like a green pencil (). Draw an “X” over a few of the answer choices that you do not wish to select. Since this is a technology-enhanced item, you cannot use the eliminator tool to eliminate your answer choices. The eliminator tool can only be used on multiple-choice questions.

SAY If you change your mind after eliminating an answer with the pencil tool, you can use the eraser tool to remove the “X”. (Pause.)

Now answer the question, using the pencil tool to eliminate the choices that are not correct. When you are done with the pencil tool, click on the pencil icon again to put the tool away.

Pause while students answer the question.

SAY How did you answer the question?

Pause for replies.

SAY You should have selected all of the following numbers: 1, 2, 4, and 8.

You must have all of those numbers selected, and only those numbers, to get this item correct.

On the actual SOL test, you may see questions that require you to pick one or more answers. Some questions will tell you the number of correct answers to select. Other questions, like this one, will not give you the number of answers to select. You will have to decide how many correct answers there are.

Please make sure students understand this concept, as a traditional multiple-choice question only requires one answer.

SAY Since the number of correct answers was not indicated in the directions or in the question, this item will show as “Answered” on the Section Review screen once one answer is selected. This is so no hint or clue is given as to how many correct answers there are.

Do you have any questions on how to answer the question or how to use the pencil tool?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Question 9 is another technology-enhanced item. Read the directions and the item to yourself but do not answer the question yet.

Pause while students read the directions and the question.

John doe
Grade4 Practice Items (2009 Math SOL) X Exit

Directions: Click on each measurement you want to select. You must select all correct measurements.

Identify each measure that is equivalent to 12 feet.

120 inches	4 yards
36 yards	144 inches

Flag for Review Question 9 of 32
Section 1 Section Review Previous Next

SAY Before you answer this question, let's practice with the calculator that is available in the toolbar at the top of your screen. To use the online calculator, click the icon in the toolbar that looks like a calculator ().

Pause while students click on the calculator.

SAY A calculator will appear on the screen. You will use the pointer to click on the numbers and operations you want to enter in the calculator. Let's use the calculator to multiply 12 x 8.

Enter 12 times 8, then press the equal sign.

Pause.

SAY The calculator should display 96, which is the product of 12 and 8. Now find the red button that says "ON/C" that is located at the bottom left of the online calculator and press it to clear the display. (Pause.) The calculator display should now show zero. (Pause.)

Are there any questions about how to use the calculator?

Answer all questions.

SAY You may use the online calculator to find the answer for the items in this practice set that allow a calculator, such as this item. Now answer the question, using the calculator if you wish. Click on the calculator icon or on the pointer icon in the toolbar at the top of your screen to put the calculator away, then answer the question by clicking on each answer you want to select with your pointer tool.

Pause while students answer the question.

SAY Which answer or answers did you choose?

Pause for replies.

SAY The correct answers are 4 yards and 144 inches.

You must have selected those two measurements, and only those two measurements, to get the item correct.

Once again, the number of correct answers was not indicated in the directions or in the question, so this item will show as “Answered” on the Section Review screen once one answer is selected. This is so no hint or clue is given as to how many correct answers there are. Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause while students navigate to the next question.

SAY Question 10 is an example of a drag and drop technology-enhanced item. The directions banner says, “Click and drag each selected place value to the correct box.” You will click and drag your answers from the dark gray box to the correct location in the place value chart.

If you change your mind after clicking and dragging a place value to a box, you can drag the place value back to the dark gray box and select another place value to drag into the empty box.

Now answer the question.

Pause while students answer the question.

John doe
Grade 4 Practice Items (2009 Math SOL) X Exit

Directions: Click and drag each selected place value to the correct box.

Identify the place value for each digit in the number 3,645.27.

Digit	Place Value
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5	<input type="text"/>
6	<input type="text"/>
7	<input type="text"/>

Hundredths	Thousands
Tens	Ones
Hundreds	Thousandths
Tenths	

Flag for Review Question 10 of 32 Section 1 Section Review Previous Next

SAY How did you answer the question?

Pause for replies.

SAY From top to bottom, the correct order of answers is: Tenths; Thousands; Tens; Ones; Hundreds; Hundredths.

In order for this question to show as “Answered” on the Section Review screen, all boxes must contain a place value. If you do not click and drag a place value into each one of the empty boxes, the question will show as unanswered on the Section Review screen, because you have not completely answered the question.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Question 11 is an example of a graphing technology-enhanced item. The directions say, “Click on a location above each bar to show the bar height.”

Read the information and then answer the question by creating the graph. You will click the location above each bar so the correct height is displayed. Use the data shown in the table on the left side of the screen to determine the correct height for each bar.

As you graph the data, if you change your mind about a bar height, you can click on another location, and the bar height will change.

Pause while students create the graph.

Directions: Click on a location above each bar to show the bar height.

The table shows the number of toothpicks in each of five jars.

Jar	Number of Toothpicks
M	6
N	11
P	7
Q	4
R	13

Create a bar graph that correctly displays all of the data shown in the table.

Toothpicks in Jars

Flag for Review Question 11 of 32 Section 1 Section Review Previous Next

SAY How did you complete the graph?

Pause for replies.

SAY You should have selected the following bar heights:
M = 6; the purple bar should reach the interval labeled 6.
N = 11; the orange bar should reach halfway between intervals 10 and 12.
P = 7; the green bar should reach halfway between intervals 6 and 8.
Q = 4; the pink bar should reach the interval labeled 4.
R = 13; the yellow bar should reach halfway between intervals 12 and 14.

SAY For bar graph questions like this practice item, once you raise one bar above the original height, it will show as “Answered” on the Section Review screen. If you change your mind about the bar heights and return all of the bars to the original heights, the question will show as “Unanswered.”

Do you have any questions on how to graph the data?

Pause to answer questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Question 12 is an example of a fill-in-the-blank item. The directions say, “Type your answer in the box. Do not use a calculator to solve this problem.” The question says, “Find the quotient. Use ‘R’ for remainder.”

You may use your scratch paper if it will help you. Then enter your answer in the blank box using your keyboard.

You may answer the question now.

Pause while students answer the question.

Directions: Type your answer in the box. Do not use a calculator to solve this problem.

Find the quotient. Use "R" for remainder.

$$\begin{array}{r} 7 \overline{)348} \\ \end{array}$$

Input box:

SAY How did you answer the question?

Pause for replies.

SAY The correct answer is 49R5. Notice that the correct answer does not need to be the same length as the box.

If a student asks, 49r5 is also an acceptable answer. Spaces are not allowable characters on this item; this means spaces cannot be entered between the characters in the dividend. For example, 49 R 5 cannot be entered because the box won't allow the spaces to be entered.

SAY For questions that are fill-in-the-blank, once any character is entered into the response box and remains in the response box, the questions will show as "Answered" on the Section Review screen. Do you have any questions about how to type your answer in the box?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as "Answered" on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade4 Practice Items(2009 Math SOL) X Exit

Each of the four models shown have been shaded to represent a fraction.

Model 1 Model 2 Model 3 Model 4

Which two models appear to have an equivalent fraction shaded?

A Model 1 and Model 3

B Model 2 and Model 4

C Model 1 and Model 2

D Model 3 and Model 4

Flag for Review Question 13 of 32 Section Review Previous Next

SAY Read question 13 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, Model 3 and Model 4.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade4 Practice Items(2009 Math SOL) X Exit

What is 82.591 rounded to the nearest whole number?

A 82

B 82.5

C 82.6

D 83

Flag for Review Question 14 of 32 Section 1 Section Review Previous Next

SAY Read question 14 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, 83. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

Directions: Click and drag each selected number to the correct box.

Order the numbers from least to greatest.

Least

Greatest

8.13 8.7 8.698 8.149

Flag for Review Question 15 of 32 Section 1 Section Review Previous Next

SAY Item 15 is an example of a drag and drop technology-enhanced item. The directions banner says, “Click and drag each selected number to the correct box.” You will click and drag your answers from the dark gray box to the correct locations. In order to have a complete answer, you must drag a number into each box.

The item says, “Order the numbers from least to greatest.” You may answer this question now. If you change your mind after clicking and dragging a number to a box, you can drag the number back to the dark gray box and then select another number to drag into the empty box.

Pause while students answer the item.

SAY How did you order the numbers?

Pause for replies.

SAY The correct order, from least to greatest (top to bottom) is: 8.13 , 8.149 , 8.698 , and 8.7 .

You must have each number in the correct location for your answer to be correct. In order for this question to show as “Answered” on the Section Review screen, all boxes must contain a number. Do you have any questions on how to answer the question?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

Model X is shaded to represent a fraction.

Model X

Which fraction and decimal are equivalent to Model X ?

A $\frac{2}{8}$ and 0.25
 B $\frac{2}{10}$ and 2.10
 C $\frac{1}{5}$ and 1.5
 D $\frac{1}{5}$ and 0.2

Flag for Review Question 16 of 32 Section 1 Section Review Previous Next

SAY Read question 16 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, $\frac{1}{5}$ and 0.2. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade 4 Practice Items (2009 Math SOL) Exit

Directions: Do not use a calculator to solve this problem.

The table shows the number of miles a family traveled during vacation on three days.

Miles Traveled

Day	Number of Miles
1	287
2	316
3	295

Based on the table, which is closest to the difference between the total number of miles this family traveled on Day 1 and Day 2 combined and the number of miles traveled on Day 3 ?

A 200 miles
 B 300 miles
 C 600 miles
 D 900 miles

Flag for Review
Question 17 of 32
Section 1
Section Review
Previous
Next

SAY The directions banner for this question says “Do not use a calculator to solve this problem,” so you may need to use your scratch paper to determine the answer. Now read the question to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is B, 300 miles.

Do you have any questions?

Answer all questions.

SAY Before we move to the next question, let’s practice with the ruler tool. Click on the tool at the top of the screen that looks like a ruler (). Notice a drop down box appears. You must select the type of ruler you want to use. For our practice, please click on “Centimeters Ruler.”

Pause while students select the type of ruler they will use.

SAY When the unit of measure is clicked in the drop down box, a ruler will appear on the screen. To move the ruler, click and drag the ruler over to the object to be measured. To rotate the ruler, click and drag the end with the arrows.

Pause while the students practice with the ruler tool.

SAY Now use the ruler to measure the height of the table to the nearest centimeter.

Pause while students position the ruler and measure from the top to the bottom of the table. Assist students as necessary.

SAY What is the height of the table, to the nearest centimeter?

Pause for replies.

SAY The height of the table to the nearest centimeter is 5 centimeters. Do you have any questions about how to use the ruler?

Pause for questions. To the nearest tenth of a centimeter, the table measures 4.8centimeters, which rounds to 5 centimeters.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade4 Practice Items(2009 Math SOL) X Exit

Directions: Do not use a calculator to solve this problem.

$$\begin{array}{r} 715 \\ \times 98 \\ \hline \end{array}$$

A 12,075

B 12,155

C 69,070

D 70,070

Flag for Review Question 18 of 32 Section 1 Section Review Previous Next

SAY Notice the directions banner indicates that you may not use a calculator to answer question 18. Read the question 18 to yourself and then answer the question. Use your scratch paper if it will help you determine the answer.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, 70,070.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade4 Practice Items(2009 Math SOL) X Exit

Directions: Do not use a calculator to solve this problem.

Mrs. Chapman drives 96 miles each week for her job. What is the total number of miles she will drive for her job in 36 weeks?

A 754

B 864

C 3,326

D 3,456

Flag for Review Question 19 of 32 Section 1 Section Review Previous Next

SAY Question 19 has a directions banner that says “Do not use a calculator to solve this problem.” You will need to use your scratch paper for any calculations that are necessary. Now read the question to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, 3,456.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade4 Practice Items (2009 Math SOL) X Exit

Directions: Do not use a calculator to solve this problem.

Which number is a multiple of both 8 and 9 ?

A 1

B 18

C 36

D 72

Flag for Review Question 20 of 32 Section 1 Section Review Previous Next

SAY The directions banner for this question says “Do not use a calculator to solve this problem.” Read question 20 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, 72.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade4 Practice Items(2009 Math SOL) X Exit

Directions: Do not use a calculator to solve this problem. Type your answer in the box. Use "." for the decimal point.

$14.52 - 5.8 = \underline{\quad ? \quad}$

Flag for Review Question 21 of 32 Section 1 Section Review Previous Next

SAY Question 21 is an example of a fill-in-the-blank item. The directions say, “Do not use a calculator to solve this problem. Type your answer in the box. Use ‘.’ for the decimal point.”

Now read and answer this question. Enter your answer in the box.

Pause while students read and answer the question.

SAY How did you answer the question?

Pause for replies.

SAY The correct answer is 8.72, which you should have entered as eight period seven two. Notice the correct answer does not need to be the same length as the box. For questions that are fill-in-the-blank, once any character is entered into the response box and remains in the response box, the question will show as “Answered” on the Section Review screen. Do you have any questions about how to type your answer in the box?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Try entering other characters into the box such as letters, spaces, or other symbols.

Pause while students try to enter other characters. In this item, they will not be able to enter any characters other than numbers and the period.

SAY This box will only accept numbers and the period. If a letter, number, or symbol does not appear in the answer box after you've tried it, then you cannot use that symbol in your answer.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

" data-bbox="183 340 890 759"/>

John doe
Grade 4 Practice Items (2009 Math SOL) X Exit

Directions: Do not use a calculator to solve this problem. Type your answer in the box. Your answer must be a fraction in simplest form. Use "/" for the fraction bar.

Olivia made brownies for her family. Olivia ate $\frac{1}{3}$ of the brownies. Her sister ate $\frac{1}{6}$ of the brownies and her brother ate $\frac{1}{4}$ of the brownies. What fraction of the brownies was left? Your answer must be a fraction in simplest form.

SAY Question 22 is another example of a fill-in-the-blank item. The directions say, "Do not use a calculator to solve this problem. Type your answer in the box. Your answer must be a fraction in simplest form. Use "/" for the fraction bar."

Now read and answer this question. Enter your answer in the box.

Pause while students read and answer the question.

SAY How did you answer the question?

Pause for replies.

SAY The correct answer is one-fourth, which you should have entered as *one forward slash four (1/4)*. Notice once again that the correct answer is not the same length as the box.

Do you have any questions about how to type your answer in the box?

Answer all questions. Since the directions indicated that the response must be a fraction in simplest form, $\frac{1}{4}$ is the only answer that would be considered correct.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade4 Practice Items (2009 Math SOL) X Exit

Directions: Do not use a calculator to solve this problem.

Lenny bought a pair of sunglasses for \$3.35 and a beach towel for \$8.71, including tax. He gave the clerk \$15.00 to pay for these items. What is the amount of change Lenny should receive?

A \$2.94

B \$3.94

C \$11.06

D \$12.06

Flag for Review Question 23 of 32 Section 1 Section Review Previous Next

SAY This question includes a directions banner. The directions say, “Do not use a calculator to solve this problem.”

Read question 23 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is A, \$2.94.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons: a mouse cursor, a pencil, an eraser, a red X, a green checkmark, a calculator, a help icon, and a red circle with a white 'X'. The user's name 'John doe' and the text 'Grade 4 Practice Items (2009 Math SOL)' are visible in the top right corner, along with an 'Exit' button. The main content area displays the question: **45 g = ? kg**. Below the question are four multiple-choice options, each with a radio button: **A 45,000 kg**, **B 450 kg**, **C 4.5 kg**, and **D 0.045 kg**. At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the text 'Question 24 of 32 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY Read question 24 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, 0.045 kg.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

John doe
Grade 4 Practice Items (2009 Math SOL) X Exit

3 pounds = ___ ounces

A 48 ounces

B 36 ounces

C 30 ounces

D 24 ounces

Flag for Review Question 25 of 32 Section 1 Section Review Previous Next

SAY Read question 25 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is A, 48 ounces.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

The Washington family started cleaning their garage one morning at the time shown on the clock.



They stopped for lunch at 1:15 P.M. the same day. What is the total amount of time that passed between the time the Washington family started cleaning and the time they stopped for lunch?

A 4 hours 55 minutes

B 4 hours 5 minutes

C 3 hours 55 minutes

D 3 hours 5 minutes

Flag for Review Question 26 of 32
Section 1 Section Review Previous Next

SAY Read question 26 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is C, 3 hours 55 minutes.

Do you have any questions?

Answer all questions.

SAY Click the *Next* button at the bottom of the screen to go to question 27.

The screenshot shows a software interface for a practice item. At the top, there is a toolbar with icons for a mouse, eraser, highlighter, selection tool, calculator, and help. The user's name 'John doe' and the item title 'Grade4 Practice Items (2009 Math SOL)' are displayed in the top right corner. A gray banner contains the directions: 'Directions: Click on the description you want to select. You must select all correct answers.' The question text is 'Which of these descriptions are true for a rhombus?'. Below the question is a 3x2 grid of six rectangular boxes, each containing a description of a rhombus. The boxes are: 'There are exactly four sides.', 'All angles must be congruent.', 'All sides must be congruent.', 'There must be at least one right angle.', 'There are exactly three vertices.', and 'Both pairs of opposite sides must be parallel.' The bottom of the interface features a navigation bar with a 'Flag for Review' button, 'Question 27 of 32 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY The gray directions banner for this question says, “Click on the description you want to select. You must select all correct answers.” The item says, “Which of these descriptions are true for a rhombus?”

This question is another example of a technology-enhanced item. To answer this question, you must click on each of the correct answers in the dark gray box. Notice with this type of question, a blue box outlines the answer choice when you hover over it. When you click it, the answer option is outlined in orange, indicating you have selected that choice as your answer. If you change your mind, click the orange box to remove the selection, and the orange outline disappears.

Answer the question now.

Pause while students answer the question.

SAY Which answers did you select?

Pause for replies.

SAY To answer this question correctly, you must have selected “There are exactly four sides,” “All sides must be congruent,” and “Both pairs of opposite sides must be parallel.” You must have selected all three of these choices, and only these choices, for your answer to be correct.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Read question 28 to yourself and then answer the question.

Pause while students read and answer the question.

The screenshot shows a math practice interface. At the top, there is a toolbar with icons for navigation and a 'Help' button. The user's name 'John doe' and 'Grade 4 Practice Items (2009 Math SOL)' are displayed in the top right corner. The main content area contains the following text:

Mr. Markham measured the growth of a tree each year for 6 years. He recorded the information in this graph.

Tree Growth

Year	Height (in feet)
Year 1	8
Year 2	10
Year 3	14
Year 4	15
Year 5	15
Year 6	20

According to the information in the graph, the tree grew the least number of feet between —

- A Year 1 and Year 2
- B Year 3 and Year 4
- C Year 4 and Year 5
- D Year 5 and Year 6

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Question 28 of 32 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY Which answer did you choose?

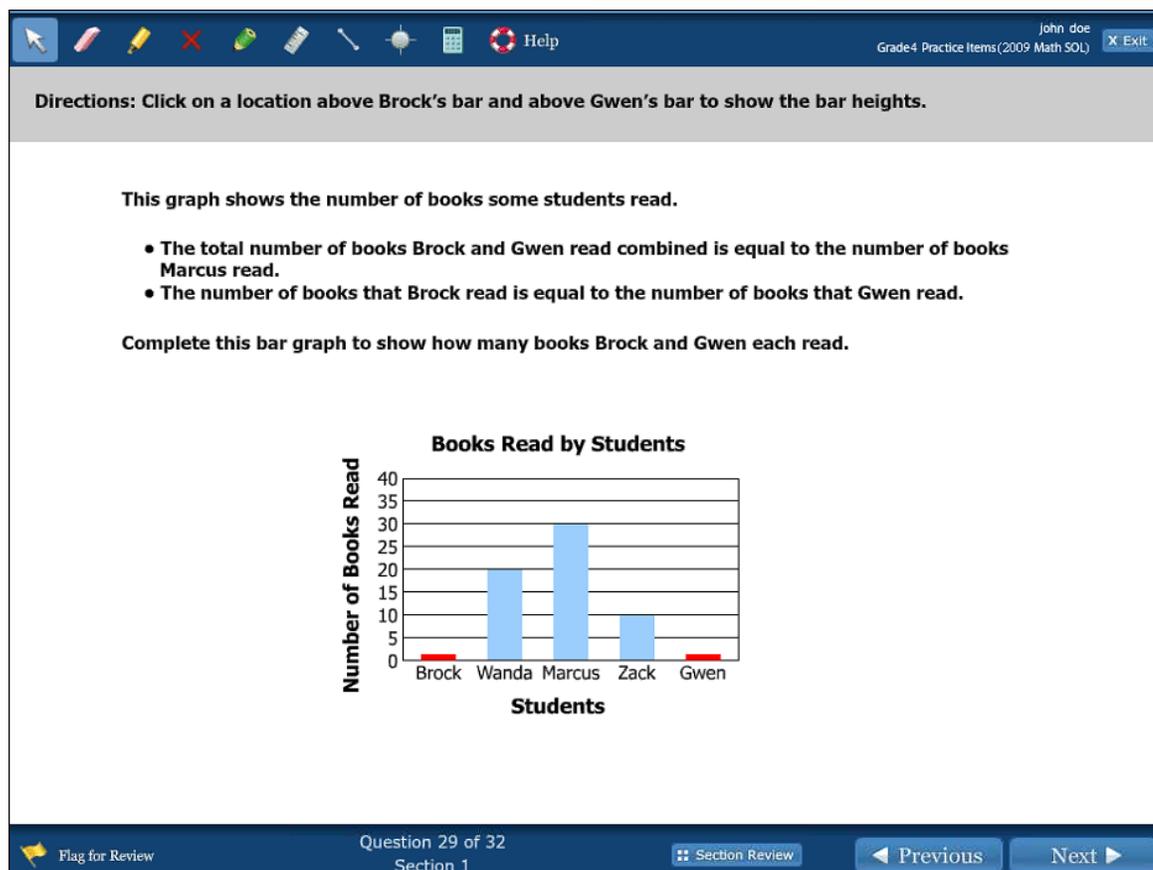
Pause for replies.

SAY The correct answer is C, Year 4 and Year 5. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.



SAY The directions say, “Click on a location above Brock’s bar and above Gwen’s bar to show the bar heights.”

In order to get the item correct, you must click on a location above each bar to graph the correct height. If you change your mind about a bar height, you can click on another location, and the bar height will change. Now go ahead and graph the data.

Pause while students select their answers. Assist students as necessary.

SAY Which heights did you select for each bar?

Pause for replies.

SAY You should have made both Brock’s and Gwen’s bar reach the height of 15 on the graph.

For bar graph questions, if one bar has been raised and remains above its original height, the question will show as “Answered” on the Section Review screen; however, if each of the bars has been returned to its original height, the Section Review screen will identify the question as “Unanswered.”

Do you have any questions on how to graph the data?

Pause to answer questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

The screenshot shows a TestNav interface with a dark blue header and footer. The header contains navigation icons (arrow, eraser, highlighter, X, pencil, calculator, globe, calculator, Help) and user information (John doe, Grade 4 Practice Items (2009 Math SOL), Exit). The main content area is white and contains the following text:

This list of numbers follows a pattern.

14, 23, 32, 41, 50...

The pattern continues in the same way. What will be the 7th number in this pattern?

A 72

B 68

C 59

D 51

The footer contains a 'Flag for Review' icon, 'Question 30 of 32 Section 1', a 'Section Review' button, and 'Previous' and 'Next' navigation buttons.

SAY Read question 30 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is B, 68.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

The screenshot shows a digital interface for a math practice item. At the top, there is a toolbar with icons for a mouse cursor, eraser, highlighter, red X, green checkmark, ruler, pencil, calculator, and a Help button. The user's name "John doe" and the text "Grade4 Practice Items (2009 Math SOL)" are visible in the top right corner, along with an "Exit" button. The main content area displays the question: "What number can be placed in the box to make this equation true?" followed by the equation $39 + 41 = \square + 20 + 41$. Below the equation are four radio button options: A 19, B 21, C 60, and D 80. At the bottom of the interface, there is a navigation bar with a "Flag for Review" button, the text "Question 31 of 32 Section 1", a "Section Review" button, and "Previous" and "Next" navigation buttons.

SAY Read question 31 to yourself and then answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is A, 19.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the last question.

Pause.

Directions: Click and drag the equations you want to select to the appropriate boxes.

Which equations use only the associative property for addition or the associative property for multiplication? You must select two equations for each property.

Associative Property of Addition	Associative Property of Multiplication
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
$3 + (7 + 11) = 3 + (11 + 7)$ $3 + (7 + 11) = (3 + 7) + 11$ $(4 + 8) + 2 = (4 + 2) + 8$ $(4 + 8) + 2 = 4 + (8 + 2)$	$(3 \times 4) \times 5 = 3 \times (4 \times 5)$ $(3 \times 4) \times 5 = (3 \times 5) \times 4$ $2 \times (5 \times 7) = (2 \times 5) \times 7$ $2 \times (5 \times 7) = 7 \times (5 \times 2)$

Question 32 of 32
Section 1

Flag for Review Section Review Previous Next

SAY Item 32 is an example of a drag and drop technology-enhanced item. The directions banner says, “Click and drag the equations you want to select to the appropriate boxes.” You will click and drag your answers from the dark gray box to the correct locations. In order to have a complete answer, you must drag an equation into each box.

The item says, “Which equations use only the associative property for addition or the associative property for multiplication? You must select two equations for each property.” You may answer the item now. If you change your mind after clicking and dragging an equation to a box, you can drag the equation back to the dark gray box and then select another equation to drag into the empty box.

Pause while students answer the item.

SAY How did you answer the item?

Pause for replies.

SAY In the “Associative Property of Addition” box, you must have these two equations, in any order: $3 + (7 + 11) = (3 + 7) + 11$ and $(4 + 8) + 2 = 4 + (8 + 2)$. In the “Associative Property of Multiplication” box, you must have these two equations, in any order: $(3 \times 4) \times 5 = 3 \times (4 \times 5)$ and $2 \times (5 \times 7) = (2 \times 5) \times 7$.

Each equation must be under the correct heading for your answer to be correct; however, the order of the equations does not matter. In order for this question to show as “Answered” on the Section Review screen, all boxes must contain an equation. Do you have any questions on how to answer the question?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

If you want your students to practice using the Help tool (as mentioned on page 9), they can do so now.

SAY Click *Next* at the bottom of the screen to go to the Section Review screen.

Return to Test 

Section 1 Review

Choose an item below or click *CONTINUE* to go to the Test Overview.

All Items	1 Flagged for Review	34 Answered	0 Unanswered
Sample		✓ Answered	
Sample		✓ Answered	
Question 1		✓ Answered	
Question 2	🚩 Flagged for Review	✓ Answered	
Question 3		✓ Answered	
Question 4		✓ Answered	
Question 5		✓ Answered	
Question 6		✓ Answered	
Question 7		✓ Answered	
Question 8		✓ Answered	
Question 9		✓ Answered	
Question 10		✓ Answered	

CONTINUE
TO TEST OVERVIEW
▶

john doe | Grade 4 Practice Items (2009 Math SOL)

SAY The Section Review screen shows which questions have been answered, which questions have not been answered and which questions you have flagged for review. To return to a question, click on the question number.

Practice returning to a question by clicking on question 2, the question we flagged for review. You should see a picture of a flag in the “Flagged for Review” column next to the question. You can then return to this screen by clicking on the “Section Review” button at the bottom of the screen on question 2.

Pause while students practice navigating between question 2 and this screen.

SAY You can also use the Section Review screen to sort the questions. The top row of the Section Review screen tells you how many questions you have flagged for review, answered, or left unanswered. If you want to view only the questions you Flagged for Review, simply click on the column header that says “Flagged for Review.” If you want to view only questions you have answered, click the “Answered” header. If you want to view only questions you left unanswered, click on the header that says “Unanswered.” Move your pointer over each column heading and notice how that section of the heading changes.

Pause while students practice sorting the columns.

SAY If the Section Review screen indicates that a question is unanswered, you have not answered a question completely. If this happens, it is a good idea to return to the question, and read the directions and the question again before making any changes to your answer.

Are there any questions?

Students should check any questions that show as “Unanswered” on the Section Review screen. When the student returns to the question he or she may see that there is an answer, but it may be incomplete. It is important to note, however, that some questions will show as answered once a student responds with a single answer. This is necessary at times to avoid hinting or cluing an answer. For example, hot spot items that require students to “Select all” fall into this category. Please see Appendix B for detailed information.

SAY To get back to the Section Review screen that lists all questions and the status of each, click the top left-hand column header, titled “_ of 34 Total Items”. (Pause.)

The number in the blank will vary, depending on the last column the student has filtered on. The total number of items is 34: two sample items plus the 32 practice items.

SAY We are going to review two more screens. Click on the “Continue to Test Overview” button on the lower left corner of the screen. (Pause.)

Grade 4 Practice Items (2009 Math SOL)

Choose a section below or click *SUBMIT* to submit and exit the test.

SECTIONS	STATUS	QUESTIONS
Section 1	Opened	1-32

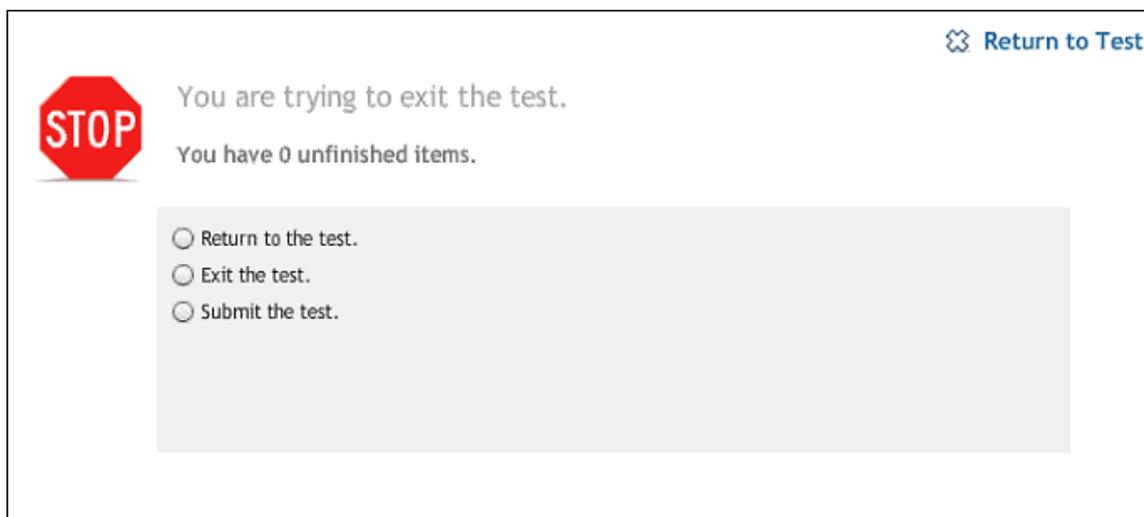
SUBMIT
AND EXIT TEST

john doe

SAY From the Test Overview screen, you can return to the test or move to the final screen. Clicking on Section 1 will take you to the last practice item you were working on or went back to review. Since we have finished with the practice items, we will not return to any question within the section. Clicking on the “Submit and Exit Test” button at the bottom of the screen will move you to the final screen. Are there any questions? (Pause to answer all questions.)

SAY Now click on “Submit and Exit Test.” (Pause.)

You will see a stop sign with three choices. It is important to review these three choices. (Pause.)



SAY Notice this screen indicates the number of unfinished items you have on the test.

The first choice states, “*Return to the test.*” This option allows you to go back to the practice questions. You would click this option if you wanted to return to any of the questions. Selecting this would first take you to the screen we just reviewed, and then you would click on Section 1 to return to the practice items.

The second choice states, “*Exit the test.*” This option should NOT be chosen. This option may be used during actual SOL testing, but should NOT be used for this practice set. If you click on this option, you will lose all of your work. It will not be saved.

Pause and make sure students understand not to choose option 2. During actual SOL testing, students may be directed to choose this option if they are being moved to a different location to complete their tests or if they need to leave the testing environment (while monitored) for a short time.

SAY The third choice states, “*Submit the test.*” This option allows you to submit your answers.

Once you have finished using these practice items, proceed with exiting the application.

SAY Since we have finished with the practice items, please click on the third option, “*Submit the test.*” Next, click on the green button that says “*Final submit.*” When you click this button during actual SOL testing, your test will be submitted for scoring and you will not be able to return to the test.

This completes our review of the Grade 4 Mathematics Practice Items.

Thank you for reviewing the Grade 4 Mathematics Practice Items with your students.

APPENDIX A**Answers to Grade 4 Mathematics Practice Items****Question 1**

The correct answer is D, 0.2 and $\frac{1}{5}$.

Question 2

The correct answer is A, letter W.

Question 3

The correct answer is D, 108.

Question 4

The correct answer is B, 2:20 P.M.

Question 5

The correct answer is C, $\frac{4}{5}$.

Question 6

The correct answer is A, the number line with the arrow pointing to $\frac{1}{2}$.

Question 7

The correct answer is B, twelve times the quantity seven times thirteen, close quantity, equals the quantity twelve times seven, close quantity, times thirteen.

Question 8

The correct answer includes all of the numbers: 1, 2, 4, and 8.

Question 9

The correct answer is 4 yards and 144 inches.

Question 10

From top to bottom: tenths; thousands; tens; ones; hundreds; hundredths.

Question 11

The bar heights should be:

M = 6; the purple bar should reach the interval labeled 6.

N = 11; the orange bar should reach halfway between intervals 10 and 12.

P = 7; the green bar should reach halfway between intervals 6 and 8.

Q = 4; the pink bar should reach the interval labeled 4.

R = 13; the yellow bar should reach halfway between intervals 12 and 14.

Question 12

49R5 or 49r5

Question 13

The correct answer is D, Model 3 and Model 4.

Question 14

The correct answer is D, 83.

Answers to Grade 4 Mathematics Practice Items (Continued)**Question 15**

The correct order, from least to greatest (top to bottom) is: 8.13 , 8.149 , 8.698 , and 8.7 .

Question 16

The correct answer is D, $\frac{1}{5}$ and 0.2.

Question 17

The correct answer is B, 300 miles.

Question 18

The correct answer is D, 70,070.

Question 19

The correct answer is D, 3,456.

Question 20

The correct answer is D, 72.

Question 21

The correct answer is 8.72.

Question 22

The correct answer is $\frac{1}{4}$ (one forward slash four).

Question 23

The correct answer is A, \$2.94.

Question 24

The correct answer is D, 0.045 kg.

Question 25

The correct answer is A, 48 ounces.

Question 26

The correct answer is C, 3 hours 55 minutes.

Question 27

To answer this question correctly, you must have selected “There are exactly four sides,” “All sides must be congruent,” and “Both pairs of opposite sides must be parallel.”

Question 28

The correct answer is C, Year 4 and Year 5.

Question 29

You should have made both Brock’s and Gwen’s bar reach the height of 15 on the graph.

Question 30

The correct answer is B, 68.

Question 31

The correct answer is A, 19.

Answers to Grade 4 Mathematics Practice Items (Continued)

Question 32

In the “Associative Property of Addition” box, you must have these two equations, in any order:

$$3 + (7 + 11) = (3 + 7) + 11 \text{ and}$$

$$(4 + 8) + 2 = 4 + (8 + 2) .$$

In the “Associative Property of Multiplication” box, you must have these two equations, in any order:

$$(3 \times 4) \times 5 = 3 \times (4 \times 5) \text{ and}$$

$$2 \times (5 \times 7) = (2 \times 5) \times 7 .$$

APPENDIX B

An overview of how student responses to technology-enhanced items will appear on the Section Review screen is outlined below:

Fill-in-the-blank (FIB) Items

For all fill-in-the-blank items, when a student enters any character into the response box, the item will show as answered on the Section Review screen. If a student enters an answer, and then completely removes that answer from the fill-in-the-blank box, the item will show as unanswered on the Section Review screen.

Histogram or Bar Graphing Items

For all histogram or bar graphing items, when a student raises any bar, the item will show as answered on the Section Review screen. If the student moves all bars back down to the original heights, the item will show as unanswered on the Section Review screen.

Hot Spot Items

When the number of correct responses is indicated in the directions or in the item itself, the item will show as answered on the Section Review screen only when the student selects that number of hot spots. For example, if the student is directed to select three answers, then the Section Review screen will show unanswered if the student selects one or two answers and will only show as answered once the student has selected three answers. If the number of correct responses is not indicated in the directions or in the question itself, then the item will show as answered on the Section Review screen once the student selects one answer. For example, if the student is required to “Select all correct answers,” the item will show as answered once the student selects one answer option. In this case, it is assumed that the student thought there was only one correct answer. This practice avoids providing information as to how many correct answers there are in the “select all” hot spot items.

Number Line or Coordinate Plane Items

Many number line or coordinate plane items require the student to plot one or more points as the response. When the number of points necessary to answer the item is indicated in the directions or the item itself, the item will show as answered on the Section Review screen only when the specified number of points has been plotted. When the directions or the item do not specify the number of points to plot, the item will show as answered on the Section Review screen once the student plots one point. Only points that have been plotted with the pointer tool are scorable responses. Points plotted with the dot tool are not scorable responses. If a student answers a question with the dot tool, the question will show as unanswered on the Section Review screen.

APPENDIX B (Continued)**Drag and Drop Items**

Drag and drop items contain answer receptacles called “bays” and “dragers” that the student moves into the bays to answer the question. There are many types of drag and drop items, and each item is evaluated individually so that the student is given the most detailed information possible on the Section Review screen, without providing hints as to the correct answer. For items with a specified number of bays, the item will show as answered on the Section Review screen once the student uses that number of dragers. For example, if there are three bays and it is intended for a dragger to be placed into each bay, then the Section Review screen will show the item as answered once three draggers have been input by the student. Or, in another example, if the directions or question indicate that all draggers need to be used to answer the item, then the item will show as answered on the Section Review only when all draggers have been used. If the number of draggers necessary to answer the question is not indicated, such as an item that requires the use of a dragger to complete a model or pictograph, then the Section Review Screen will show the item as answered once the student places one dragger in a bay.