

**Practice Item Guide**

**Virginia Standards of Learning**

**Grade 6 Mathematics**

Revised March, 2011  
Pearson

## Table of Contents

<b>OVERVIEW .....</b>	<b>3</b>
<b>NEW TECHNOLOGY-ENHANCED ITEM TYPES.....</b>	<b>4</b>
Drag and Drop.....	4
Hot Spot .....	4
Short Response .....	4
Graphs .....	4
<b>INSTALLING THE ePAT LAUNCHER .....</b>	<b>5</b>
<b>DOWNLOADING VASOL MATH PRACTICE ITEMS .....</b>	<b>8</b>
<b>START THE ePAT LAUNCHER .....</b>	<b>9</b>
Desktop Icon .....	9
<b>MATERIALS NEEDED FOR COMPLETING VASOL PRACTICE ITEMS.....</b>	<b>10</b>
<b>ONLINE TOOLS AVAILABLE FOR COMPLETING ITEMS .....</b>	<b>10</b>
<b>SPECIFIC DIRECTIONS FOR THE SOL GRADE 6 MATHEMATICS PRACTICE ITEMS .....</b>	<b>11</b>
Introduction .....	11

## OVERVIEW

Items measuring the new 2009 *Mathematics Standards of Learning* (SOL) will be field-tested in spring 2011 and will become operational in the 2011-2012 school year. In preparation for the implementation of items measuring the content in the 2009 Mathematics SOL, practice items are being provided to school divisions. These practice items provide examples of the new content and increased rigor represented by the 2009 SOL and illustrate the new Technology-Enhanced Item (TEI) types. Technology-Enhanced Items are items which are presented in various formats that allow students to indicate their responses in ways other than multiple-choice format.

Please note that the practice items are not intended to be a complete test and are not intended to cover all mathematics content for the grade level or course. Furthermore, while the practice items provide examples of some TEI, they are not intended to represent all types of functionality associated with these item types.

Students will have the opportunity to practice these items via an online electronic Practice Assessment Tool (ePAT). The ePAT is a stand-alone program that simulates an online SOL assessment without requiring an internet connection. Except for the process of entering appropriate authentication information (login ID, password, test code), the ePAT application will closely simulate the TestNav™ SOL assessment experience. This practice guide may be used by teachers or other adults to guide students through the practice items for grade 6 mathematics. While the use of this guide with the practice items is not required, it is strongly encouraged, as it will help to ensure that students are familiar with the types of items that they may encounter.

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.

When the student is finished with the practice item set, the student may close it by clicking *Save and Exit* or *Submit* on the bottom of the Item Review screen. Both buttons will produce a series of prompts to close the application. Directions read aloud to the students will tell them to use the *Submit* button. The practice items will not be scored; however, the correct answers are provided in this guide with each question.

## **NEW TECHNOLOGY-ENHANCED ITEM TYPES**

The SOL practice items for grade 6 mathematics will introduce four new Technology-Enhanced Item types: drag and drop, hot spot, short response, and graphs. A brief description of each is provided.

### **Drag and Drop**

Drag and drop items contain draggers and drop zones.

- Draggers are the answer options that are moved to drop zones in response to the question.
- Drop zones 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 drop zone(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.

### **Hot Spot**

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

- Hot spot zones are answer options which may be objects, graphic elements, or text labels which are selected in response to a question.
- Unlike a traditional multiple-choice item where only one answer option is correct, hot spot items will require the student to select one or more hot spot zones (answer options) in order to correctly answer the item.

The student selects a hot spot by clicking on it. There will be an indication on the screen, such as the zone being outlined in orange or a red star, which confirms that a hot spot zone has been selected.

### **Short Response**

Short response items contain a text entry field. For this item type, the student responds to a question by typing a response into a blank box that is 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.
- A response typically is no more than six characters long.
- Students should carefully follow directions on short response items, such as providing an answer in simplest form, or rounding a number as indicated.

### **Graphs**

Graphing items require students to create or complete some type of graph. The graphs presented will vary by grade or course level. Bar graph items allow students to set the height or length of a bar. The student's response is indicated by the height or length of the bar(s) in relation to the image/graph. If the orientation of the bar is vertical, the student can click above or below a location to change the height of the bar. If the orientation of the bar is horizontal, the student can click to the left or right of a location to shorten or lengthen the bar. The bar will move to the location where the student clicks.

Some items require the student to graph point(s) on a line, grid, or image. The student's response is the location of the point(s) in relation to the line, grid, or image. These types of items may include graphing points on a number line, graphing ordered pairs on a grid, or graphing inequalities.

## INSTALLING THE ePAT LAUNCHER

If the computer being used to take the SOL practice item set already has the ePAT Launcher installed, please proceed to page 8. For computers without the ePAT Launcher previously installed or if you are unsure whether the ePAT launcher has been installed, continue with the steps below. Work with your technology staff in your school division if you are unable to install software on a computer in your school. Administrative access to the computer may be needed. Further instructions for installing the ePAT Launcher can be found under the “Resources” tab on the PearsonAccess website listed in step 1.

1. Go to the Virginia PearsonAccess website:  
<http://www.pearsonaccess.com/cs/Satellite?c=Page&childpagename=Virginia/vaPALLayout&cid=1175826755281&pagename=vaPALPWrapper>
2. Under the “ePAT Launcher” heading, click the “Install Launcher (Windows)” or “Install Launcher (Mac Intel)” link depending on the type of computer workstation being used.

**Practice Assessment Tools**  
**ePat Launcher**  
Make sure you download and install the ePat Launcher before using the tools listed below.

- [Install Launcher \(Windows\)](#)

OR

**Practice Assessment Tools**  
**ePat Launcher**  
Make sure you download and install the ePat Launcher before using the tools listed below.

- [Install Launcher \(Mac Intel\)](#)

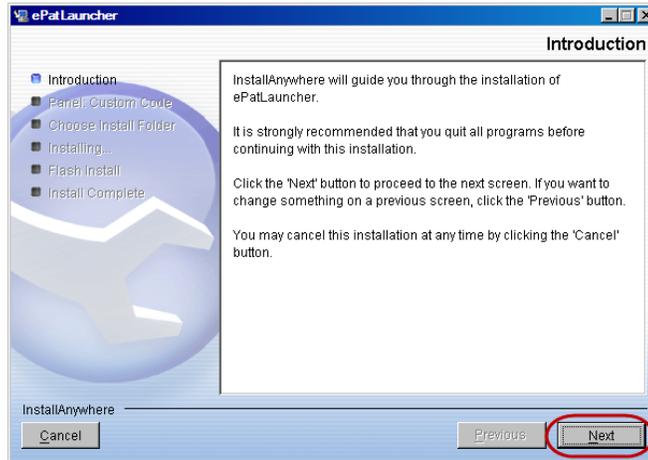
3. Click “Run” to continue. The file will start to download.



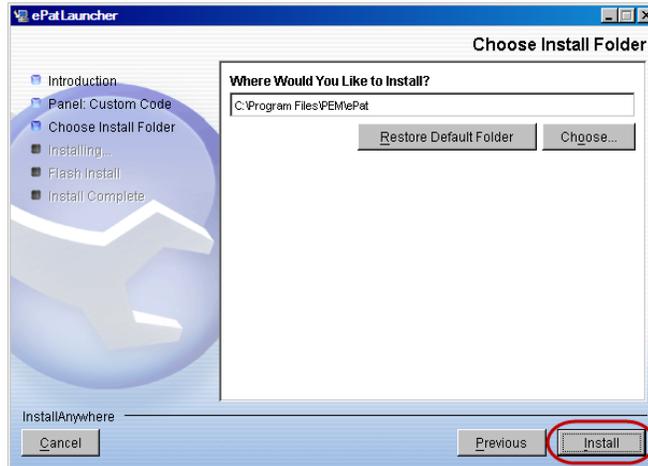
4. When the download is complete, click “Run” to continue.



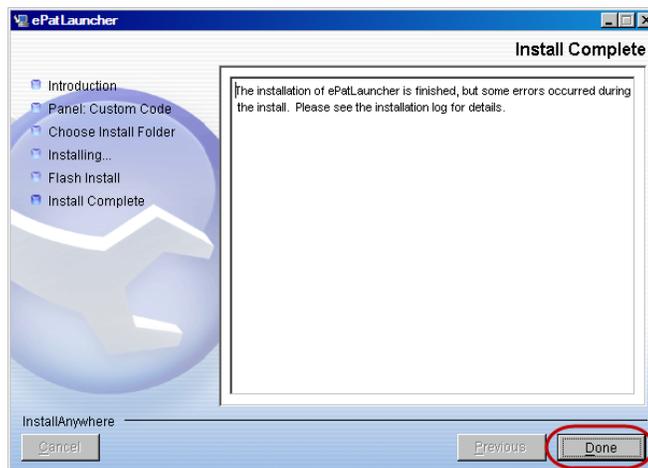
5. The ePAT Launcher installation will begin. Click “Next” to continue.



6. Choose an install folder and then click “Install” to continue.



7. The installation begins. When the install is complete, click “Done.”



## DOWNLOADING VASOL MATH PRACTICE ITEMS

1. Go to the Virginia Department of Education website:  
<http://www.doe.virginia.gov/instruction/mathematics/resources.shtml>
2. Under the heading “Standards of Learning Assessment Resources” click on “SOL Practice Items and Practice Item Guides.”
3. Click on the specific practice item set you wish to download. Download the items compatible with your computer’s operating system.
4. Click “Run” to continue. The file will start to download.
5. When the download is complete, click “Run” to continue.
6. The ePAT installation will begin. Click “Next” to continue.
7. Choose an install folder and then click “Install” to continue.
8. The installation will begin. When the install is complete, click “Done.”
9. If you wish to download additional practice items, return to step 2 above.

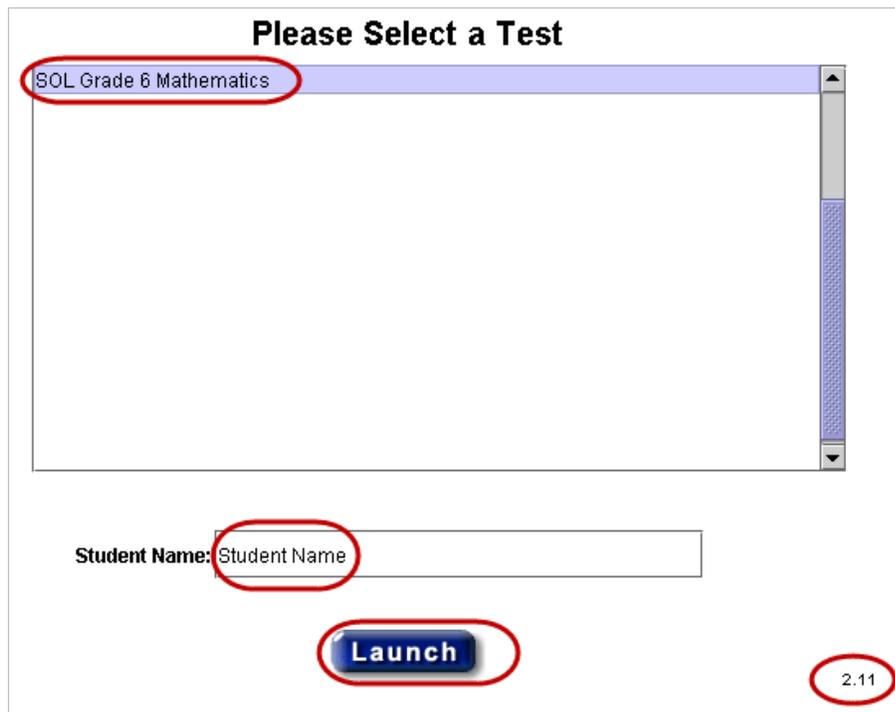
## START THE ePAT LAUNCHER

### Desktop Icon

1. Double-click the ePAT Launcher icon on the workstation desktop to start the program.



2. Check the version number in the bottom right corner of the screen. If the version number is anything other than 2.11, you will need to install the latest version of the ePAT Launcher. Refer to the “INSTALLING THE ePAT LAUNCHER” section on page 5 for instructions on how to do this.
3. Click the “SOL Grade 6 Mathematics” practice item set to highlight it.
4. Complete the Student Name field.
5. Click the “Launch” button.
6. Go to the appropriate section in this guide for the practice item set directions.



## **MATERIALS NEEDED FOR COMPLETING VASOL PRACTICE ITEMS**

Mathematics: Scratch paper and pencil and hand-held scientific calculator.

## **ONLINE TOOLS AVAILABLE FOR COMPLETING ITEMS**

**Eliminate Choice** – Use the eliminate choice tool to mark choices that you do not wish to consider.

**Highlighter** – Use the highlighter tool to highlight text or graphics.

**Straightedge** – Use the straightedge tool to draw straight lines.

**Eraser** – Use the eraser to remove lines or highlights.

**Ruler** – Use the ruler tool to measure something on screen.

**Protractor** – Use the protractor tool to measure angles.

**Exhibits** – Use the Exhibits tool to access the grade 6 formula sheet.

Additional information and demonstrations of each tool on the toolbar can be found by clicking the  question mark symbol located at the top of the ePAT screen. To display help on a specific tool, click the tool name in the drop-down list.

## SPECIFIC DIRECTIONS FOR THE SOL GRADE 6 MATHEMATICS PRACTICE ITEMS

### Introduction

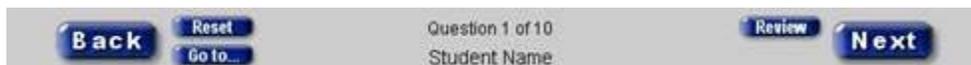
After the practice items are launched, the first practice item will be displayed. Read the following instructions to the students.

**SAY** Today you will be working on some grade 6 mathematics practice items for the Virginia Standards of Learning assessment. There are 10 questions that will show you some of the types of test items that will be administered as part of the new mathematics assessments. Listen carefully as I read the directions for these practice items. I will guide you through each item one at a time. Some questions will be multiple-choice and some questions will require you to show your answer in another way, such as typing your answer in a box or clicking and dragging your answer to a specific location. Please remember that the questions you will see are practice questions. They will not be scored, but I will tell you the answer for each question.

**Do you have any questions before we start?**

Pause to answer questions.

**SAY** Navigation buttons appear at the bottom of the screen for each question. If you do not see the navigation buttons, you need to scroll down to reveal them. A scroll bar will appear on the right side of the window. Notice that the question numbers are also located at the bottom of the screen. For example, the screen with the first question reads “Question 1 of 10.”



**SAY** Notice the buttons located at the bottom of the screen.

Pause to review the buttons in the chart below with the students.

Button	Purpose
<i>Next</i>	Goes to the next screen
<i>Back</i>	Goes back a screen
<i>Reset</i>	Clears your answer choice
<i>Review</i>	Marks the question so you can go back and look at it again
<i>Go To</i>	Goes to a review screen

**SAY** At any time during the administration of the practice items, you may click on the *Review* button located at the bottom of the screen to select that question to review later. When you reach the end of the practice items, there will be a review screen. It will show you which questions you have not answered and which questions you have marked for review.

**Look at question 1 on your screen.**

Check to see that the students are looking at the first question.

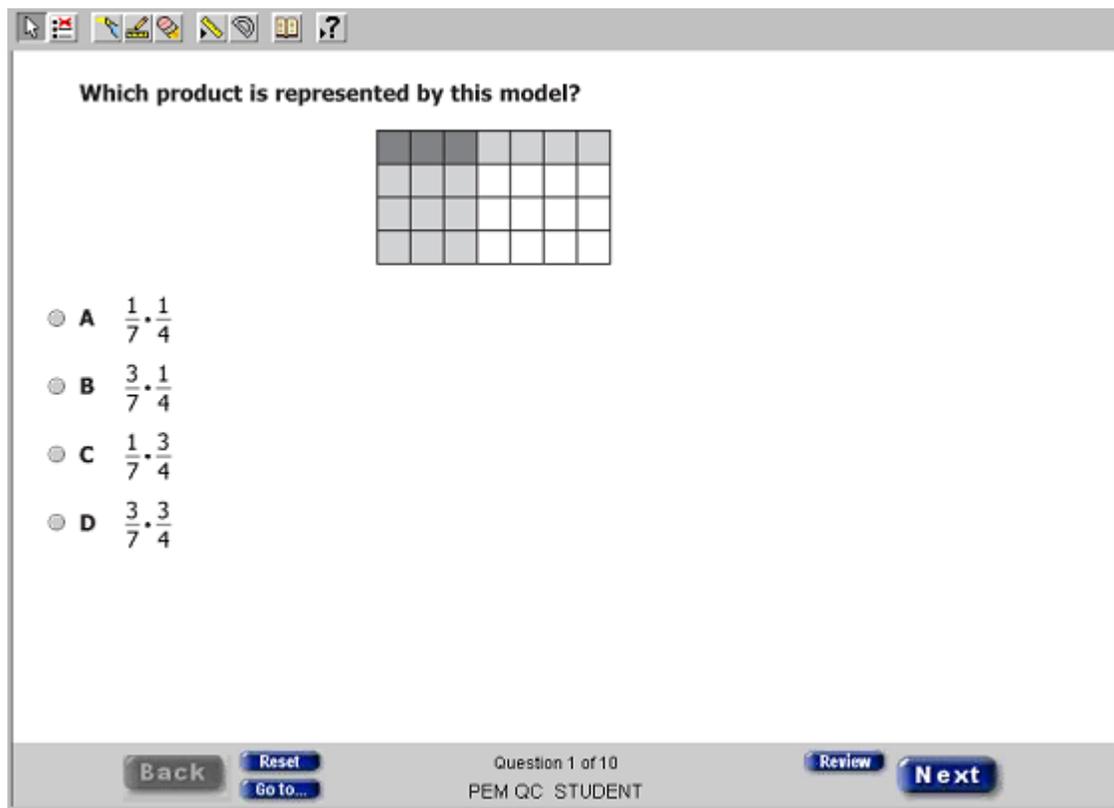
**SAY** Some of the tools you can use are in the toolbar at the top of the screen. Information about each tool on the toolbar is available by clicking the question mark symbol (  ). Click on the question mark symbol now. To display help on a specific tool, click the tool name in the drop-down list. Take a moment to click on the different tools. You will have an opportunity to use these tools while you work through the practice items.

Pause while students explore the tools on the toolbar. Offer assistance, as needed.

**SAY** Read question 1 to yourself.

If a student’s IEP provides for a read-aloud accommodation, then all questions should be read to the student.

Pause while students read the question.



The screenshot shows a software interface for a math practice item. At the top, there is a toolbar with several icons, including a question mark icon. The main area contains the question: "Which product is represented by this model?" Below the question is a 4x7 grid. The top row has 3 shaded cells on the left and 4 unshaded cells on the right. The second, third, and fourth rows are entirely shaded. Below the grid are four radio button options:
 

- A  $\frac{1}{7} \cdot \frac{1}{4}$
- B  $\frac{3}{7} \cdot \frac{1}{4}$
- C  $\frac{1}{7} \cdot \frac{3}{4}$
- D  $\frac{3}{7} \cdot \frac{3}{4}$

 At the bottom of the interface, there is a navigation bar with buttons for "Back", "Reset", "Go to...", "Question 1 of 10", "Review", and "Next". The student's name "PEM QC STUDENT" is displayed in the center of the bottom bar.

**SAY** Use your scratch paper to decide which answer is correct. At the top of the toolbar, click on the second button, the one with the red X (  ). This is called the eliminate choice tool. Selecting this tool will change your cursor 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 choice you believe is not correct.

Pause while students practice using this tool.

Which product is represented by this model?


~~A~~  $\frac{1}{7} \cdot \frac{1}{4}$ 
  
 B  $\frac{3}{7} \cdot \frac{1}{4}$ 
  
 C  $\frac{1}{7} \cdot \frac{3}{4}$ 
  
 D  $\frac{3}{7} \cdot \frac{3}{4}$

Back    Reset    Go to...    Question 1 of 10    Review    Next  
 PEM QC STUDENT

**SAY** Click the eliminate choice tool again to put the tool away.

Wait for students to put the tool away.

**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.

Which product is represented by this model?

A  $\frac{1}{7} \cdot \frac{1}{4}$ 
 B  $\frac{3}{7} \cdot \frac{1}{4}$ 
 C  $\frac{1}{7} \cdot \frac{3}{4}$ 
 D  $\frac{3}{7} \cdot \frac{3}{4}$

Back Reset Go to... Question 1 of 10 PEM QC STUDENT Review Next

**SAY** Click on the eraser tool icon to put it away. Now 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,  $\frac{3}{7} \cdot \frac{1}{4}$ . Click on the circle next to choice B to select this as your answer.

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

Answer questions about how to click to select an answer or use the tools. Since these are practice items, it is acceptable to give assistance or discuss how to find the correct answer to any question.

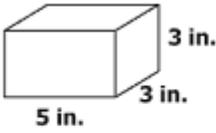
**SAY** Click *Next* at the bottom of the screen to continue to the next question.

Wait for students to click *Next*. Check to see that the students are looking at the correct question.

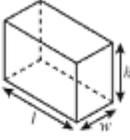
**SAY** Read question 2 to yourself.

Pause while students read the question.

The measurements of a rectangular prism are shown.



5 in.      3 in.      3 in.



$V = lwh$   
 $S.A. = 2lw + 2lh + 2wh$

What is the total surface area of this prism?

- A 39 square inches
- B 45 square inches
- C 66 square inches
- D 78 square inches

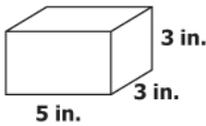
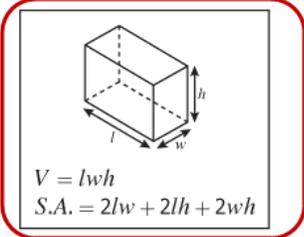
Back
Reset
Go to...

Question 2 of 10  
PEM QC STUDENT

Review
Next

**SAY** Notice that question 2 contains a formula box with a diagram and formulas. Click on the Exhibit tool (  ) on the tool bar to view the grade 6 formula sheet. Notice that the formulas in the box are not on this formula sheet. Any formulas that you need which are not on the formula sheet will be provided in a formula box. Some items will be presented this way in the new mathematics tests.

The measurements of a rectangular prism are shown.

What is the total surface area of this prism?

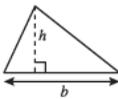
- A 39 sq
- B 45 sq
- C 66 sq
- D 78 sq

Exhibit Window

Formulas

**Grade 6 Mathematics Formula Sheet**

**Geometric Formulas**

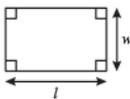


$$A = \frac{1}{2}bh$$



$$p = 4s$$

$$A = s^2$$



$$p = 2l + 2w$$

$$A = lw$$



$$C = 2\pi r$$

$$A = \pi r^2$$

**Pi**

$\pi \approx 3.14$

$\pi \approx \frac{22}{7}$

**SAY** Since you do not need the formula sheet, but will instead use the formula box, click the X in the upper right corner of the Exhibit window to put the tool away.

Wait for students to put the tool away.

**SAY** This particular formula box gives you two formulas. You will need to choose which formula is the correct one to use in order to solve this problem. Sometimes you will not need all of the formulas provided within the box, and will have to choose which formula is useful in order to solve a problem.

Use your scratch paper, calculator, and the formula box to find the answer to this question.

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

**SAY** Now click on the answer you have chosen. Which answer did you choose?

Pause for replies.

**SAY** The correct answer is D, 78 square inches. Do you have any questions about how to select an answer or how use the Exhibit tool?

Answer all questions.

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

Wait for students to click *Next*. Check to see that the students are looking at the correct question.

**SAY** Read question 3 to yourself.

Pause while students read the question.

This line plot shows the number of letters in the names of 7 students.

**Letters in Names**

	X										
	X										
	X	X			X				X		
←	5	6	7	8	9	10	11	→			

**Number of Letters**

Each X represents 1 student.

**What is the balance point for this set of data?**

- A 5 letters
- B 6 letters
- C 7 letters
- D 8 letters

Question 3 of 10  
PEM QC STUDENT

**SAY** Determine which answer is correct. Now 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 C, 7 letters. Do you have any questions?

Answer all questions.

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

Wait for students to click *Next*. Check to see that the students are looking at the correct question.

**SAY** Read question 4 to yourself.

Pause while students read the question.

The screenshot shows a digital interface for a math question. At the top, there is a toolbar with icons for navigation and help. The main content area contains the following text:

**A jar contains these pens that are all the same size and shape.**

- 4 red pens
- 3 green pens
- 5 blue pens
- 4 black pens

**One pen is randomly selected from the jar. After replacing the first pen, a second pen is randomly selected. Randomly selecting the second pen is —**

- A** a dependent event because the outcome of the second pen depends on the outcome of the first pen
- B** a dependent event because the outcome of the second pen does not depend on the outcome of the first pen
- C** an independent event because the outcome of the second pen depends on the outcome of the first pen
- D** an independent event because the outcome of the second pen does not depend on the outcome of the first pen

At the bottom of the interface, there are several buttons: "Back", "Reset", "Go to...", "Question 4 of 10", "Review", and "Next". The text "PEM QC STUDENT" is also visible at the bottom.

**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 D, an independent event because the outcome of the second pen does not depend on the outcome of the first pen. Do you have any questions?

Answer all questions.

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

Wait for students to click *Next*. Check to see that the students are looking at the correct question.

**SAY** Read question 5 to yourself.

Pause while students read the question.

A spinner has four equal sections labeled W, X, Y, and Z. A fair coin has faces labeled heads and tails. Edward will spin the arrow of the spinner and flip the coin one time each. What is the probability the arrow will land on the section labeled Z and the coin will land with heads face-up?

- A  $\frac{1}{8}$
- B  $\frac{1}{4}$
- C  $\frac{1}{3}$
- D  $\frac{1}{2}$

Question 5 of 10  
PEM QC STUDENT

Buttons: Back, Reset, Go to..., Review, Next

**SAY** 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 cursor to an arrow with a highlighter next to it. Practice using the highlighter by highlighting the question above the answer choices. Click again on the highlighter tool icon on the toolbar to put the tool away.

Pause while students practice using the highlighter tool.

A spinner has four equal sections labeled W, X, Y, and Z. A fair coin has faces labeled heads and tails. Edward will spin the arrow of the spinner and flip the coin one time each. What is the probability the arrow will land on the section labeled Z and the coin will land with heads face-up?

- A  $\frac{1}{8}$
- B  $\frac{1}{4}$
- C  $\frac{1}{3}$
- D  $\frac{1}{2}$

Question 5 of 10  
PEM QC STUDENT

Buttons: Back, Reset, Go to..., Review, Next

**SAY** Determine which is the correct answer. Now click on the answer you have chosen. You may use the tools we have practiced: the eliminate choice, eraser, and highlighter.

Pause while students practice using the tools and work to find the answer to the question.

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is A,  $\frac{1}{8}$ . Do you have questions about selecting the correct answer or using the highlighter tool?

Answer all questions.

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

Wait for students to click *Next*. Check to see that the students are looking at the correct question.

**SAY** Let's read question 6 together. The question is located on the left side of your screen. Question 6 says, "Identify each number that has an absolute value of 4." Notice that this is not a traditional multiple-choice item, but one that will require you to select one or more answers.

A directions box is on the right side of your screen. The directions box contains information on how to answer the question and may give you specific information on how to represent your answer. Always read the directions in the directions box before solving the problem.

The answer choices are located within the dark gray box underneath the question.

**SAY** The directions say, “Click on a box to choose each number you want to select. You must select all correct numbers.” There may be one correct answer or multiple correct answers to this item. In order to get the item correct, you must choose all correct answers, and only those answers.

The item asks you to identify each number that has an absolute value of 4. Look at each number in the dark gray box to determine if the absolute value of the number is 4. Be sure to select each number that you want to be considered as correct. To select a number, place the cursor over the white box and then click once.

Pause while students select the correct answer or answers.

**SAY** An orange outline will appear around the box to show that you have selected the number in that box as an answer.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with icons for erasing, highlighting, and other tools. The main question area contains the text: "Identify each number that has an absolute value of 4." To the right of this text is a box with directions: "Directions: Click on a box to choose each number you want to select. You must select all correct numbers." Below the question is a horizontal row of eight boxes containing the numbers: 16, 4, 2,  $\frac{1}{4}$ , 0, -2, -4, and -16. The boxes for the numbers 4 and -4 are highlighted with a yellow border, and a mouse cursor is pointing at the -4 box. At the bottom of the interface, there are navigation buttons: "Back", "Reset Go to...", "Question 6 of 10", "Review", and "Next". The text "PEM QC STUDENT" is also visible at the bottom.

**SAY** If you change your mind about a number, you can click the eraser tool at the top of the screen, then click the number you want to unselect. Or, you can click the *Reset* button at the bottom of the screen to unselect all of your answer choices at one time.

Encourage students to practice changing their answers by using the eraser tool and the *Reset* button.

**Identify each number that has an absolute value of 4.**

Directions: Click on a box to choose each number you want to select. You must select all correct numbers.

16 4 2  $\frac{1}{4}$  0 -2 -4 -16

Back Reset Go to... Question 6 of 10 PEM QC STUDENT Review Next

**SAY** Which answer or answers did you choose?

Pause for replies.

**SAY** The correct answers are 4 and -4.

**Do you have any questions?**

Answer questions about how to click to select an answer or use the tools.

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

Wait for students to click *Next*. Check to see that the students are looking at the correct question.

**SAY** Read question 7 to yourself. Notice that question 7 is not a multiple-choice item, but one that will require you to type in your answer.

The question is located on the left side of your screen. The directions box is on the right side of your screen.

The empty box below the question is where you will type in your answer.

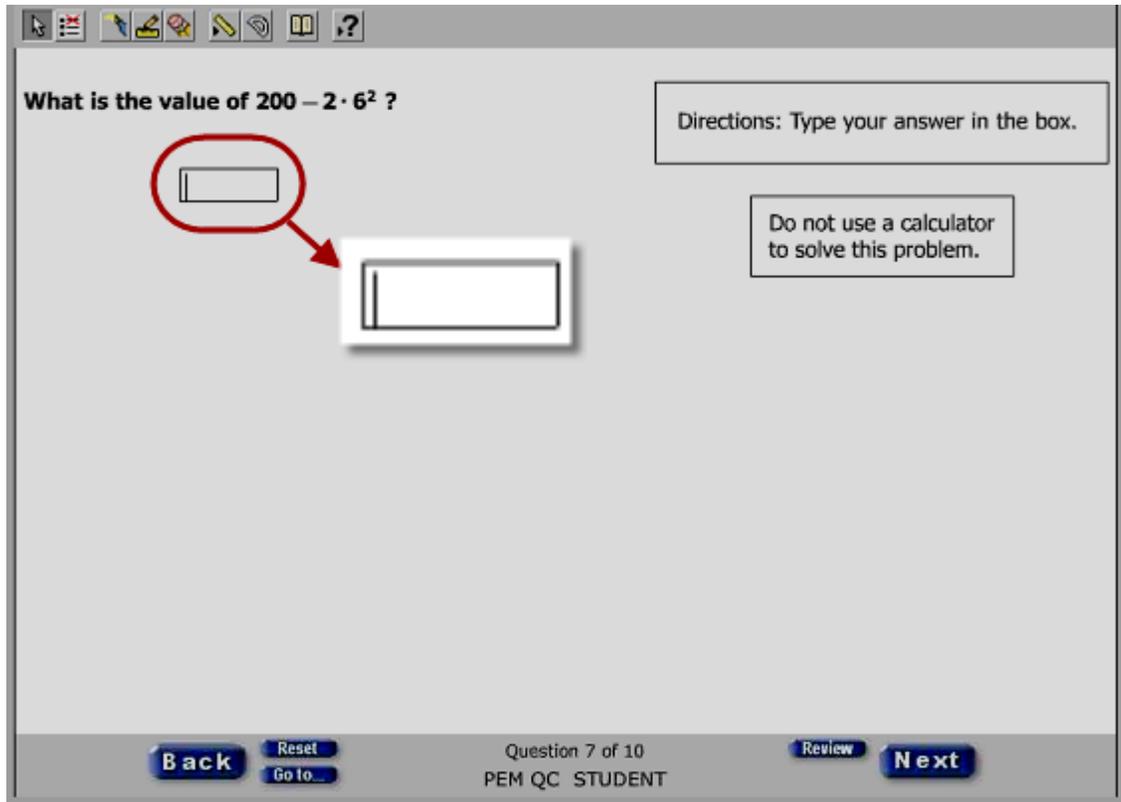
Also notice on this particular item that there is a box that tells you not to use a calculator to solve this problem. That is because items that assess this particular Standard of Learning will need to be solved without the use of a calculator on an actual Standards of Learning test.

Pause while students read the question.

The screenshot shows a digital math test interface. At the top, there is a toolbar with icons for navigation and help. The main question area displays the text "What is the value of  $200 - 2 \cdot 6^2$  ?" followed by an empty rectangular input box. To the right of the question, there is a box containing the text "Directions: Type your answer in the box." Below this, another box is circled in red and contains the text "Do not use a calculator to solve this problem." At the bottom of the interface, there are navigation buttons: "Back", "Reset Go to...", "Question 7 of 10", "Review", and "Next". The text "PEM QC STUDENT" is also visible at the bottom.

**SAY** Use your scratch paper to find the value of the expression. Then place your cursor inside the box and type your answer.

Pause while students work to find the answer and type it in the empty box.



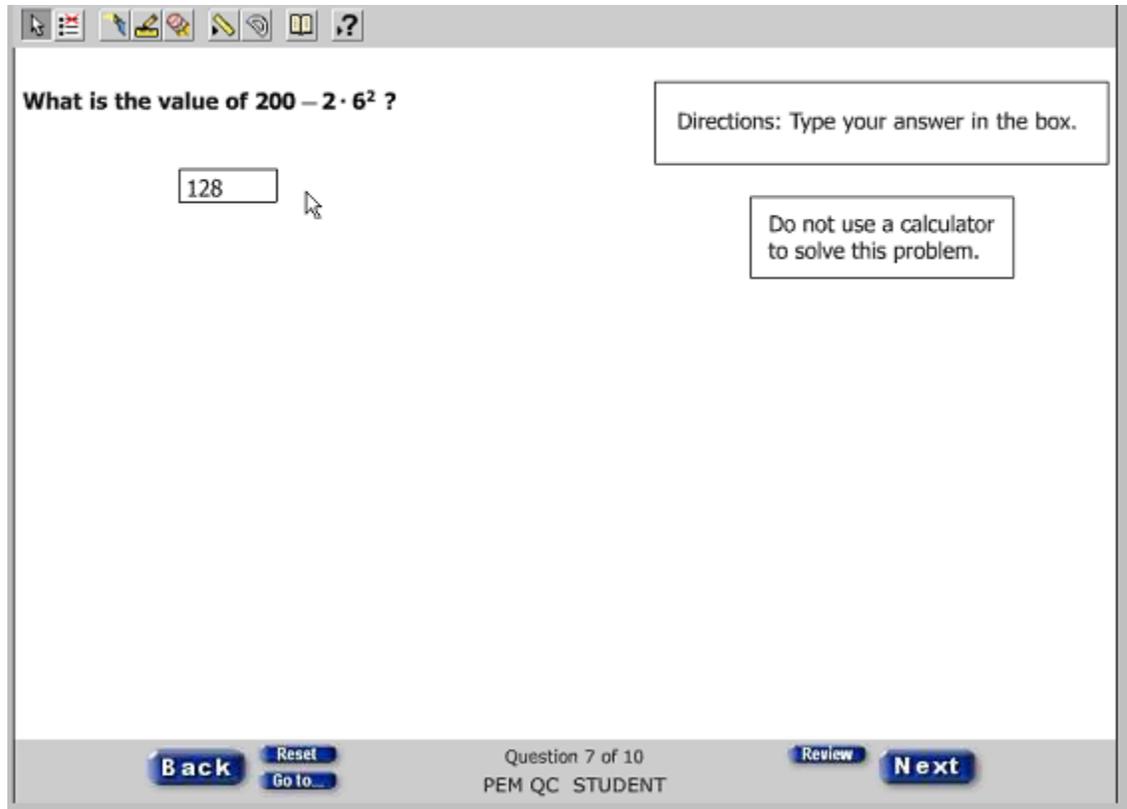
**SAY** What is the correct value of the expression?

Pause for replies.

**SAY** The correct value is 128. Notice that the answer you entered does not need to be the same length as the box.

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

Answer all questions.



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

Pause while students try to enter other characters

**SAY** Notice that the box will only accept numbers and a fraction bar, which is the forward slash symbol (/). If a letter, number or symbol does not appear in the answer box after you've tried to enter it, then you cannot use that symbol in your answer. Make sure you pressed the correct key before deciding the symbol cannot be used.

The fraction symbol is an acceptable character for this item in case a student makes a calculation error and wants to enter a fraction as an answer.

**SAY** On these types of items, where you are typing your answer, fractions may need to be entered. Try typing the number one half into the box by typing the number 1, the forward slash symbol and then the number 2.

Pause while students type 1/2.

**SAY** You can use either the backspace key on the keyboard or the *Reset* button at the bottom of the screen to clear your answer. Clear the answer box now and reenter 128, which is the correct answer to this problem.

Pause while students clear the answer box and retype 128.

**SAY** Do you have any questions about how to type an answer in the box or how to change your answer?

Answer any questions.

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

Wait for students to click *Next*. Check to see that the students are looking at the correct question.

**SAY** Read question 8 to yourself. Notice that this is not a traditional multiple-choice item, but one that will require you to select one or more answers.

Pause while students read the question.

The screenshot shows a digital math interface. At the top is a toolbar with icons for a mouse, list, eraser, highlighter, pencil, eraser, hand, book, and help. The main content area contains the following text:

**Mr. Miller is putting a border around the edges of a rectangular ceiling. The perimeter of the ceiling is 18 meters. Identify the measurements that could be the two dimensions of the ceiling.**

To the right of the question is a box with the following directions:

Directions: Click on a box to choose each measurement you want to select. You must select the two correct measurements.

Below the question is a horizontal row of six boxes, each containing a measurement: "2 meters", "3 meters", "4 meters", "5 meters", "8 meters", and "9 meters".

At the bottom of the interface is a navigation bar with the following elements from left to right: a "Back" button, a "Reset" button with a "Go to..." dropdown, the text "Question 8 of 10" and "PEM QC STUDENT", a "Review" button, and a "Next" button.

**SAY** Let’s look at the directions together. The directions say, “Click on a box to choose each measurement you want to select. You must select the two correct measurements.”

These directions tell you that there are two answer choices that are correct for this item. Sometimes directions will specifically tell you how many answer choices to select. In this case, you must choose only the two correct answer choices for this item in order for it to be considered correct.

Click on the Exhibit tool (  ) on the toolbar to see the formula sheet.

Mr. Miller is putting a border around the edges of a rectangular ceiling. The perimeter of the ceiling is 18 meters. Identify the measurements that could be the two dimensions of the ceiling.

Directions: Click on a box to choose each measurement you want to select. You must select the two correct measurements.

2 meters   3 meters   4 meters   5 meters   8 meters   9 meters

Back   Reset   Go to...   Question 8 of 10   Review   Next  
PEM QC STUDENT

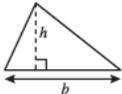
**SAY** After clicking on the formula sheet icon on the toolbar, you will notice the formula sheet now covers the question.

Exhibit Window

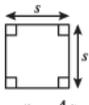
Formula Sheet

**Grade 6 Mathematics Formula Sheet**

**Geometric Formulas**

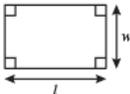


$$A = \frac{1}{2}bh$$



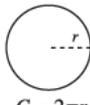
$$p = 4s$$

$$A = s^2$$



$$p = 2l + 2w$$

$$A = lw$$



$$C = 2\pi r$$

$$A = \pi r^2$$

**Pi**

$$\pi \approx 3.14$$

$$\pi \approx \frac{22}{7}$$

Back   Reset   Go to...   Question 8 of 10   Review   Next  
PEM QC STUDENT

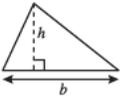
**SAY** The formula sheet can be re-sized and moved on your screen so you can view both the question and the formula sheet. To do this, place your cursor near the lower right corner of the Exhibit window until your cursor changes to a double ended arrow.

Exhibit Window

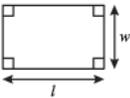
Formula Sheet

**Grade 6 Mathematics Formula Sheet**

**Geometric Formulas**


 $A = \frac{1}{2}bh$


 $p = 4s$   
 $A = s^2$


 $p = 2l + 2w$   
 $A = lw$


 $C = 2\pi r$   
 $A = \pi r^2$

**Pi**

$\pi \approx 3.14$   
 $\pi \approx \frac{22}{7}$

[Back](#)   [Reset](#)   Question 8 of 10   [Review](#)   [Next](#)  
 Go to...   PEM QC STUDENT

**SAY** Drag your cursor towards the center of the exhibit window until the formula sheet is the desired size.

Exhibit Window

Formula Sheet

Grade 6 Mathematics Formula Sheet

Geometric Formulas

$A = \frac{1}{2}bh$   
 $p = 4s$   
 $A = s^2$   
 $p = 2l + 2w$

meters

Directions: Click on a box to choose each measurement you want to select. You must select the two correct measurements.

Back Reset Go to... Question 8 of 10 PEM QC STUDENT Review Next

**SAY** Now you can move the formula sheet by placing your cursor on the Exhibit window task bar. The cursor will change to a hand. Drag the formula sheet to the desired location on the screen. Notice the two scrollbars on the right and the bottom of the formula sheet that can be used to scroll the formula sheet up and down or to the left and right.

Pause while students practice using this tool.

**Mr. Miller is putting a border around the edges of a rectangular ceiling. The perimeter of the ceiling is 18 meters. Identify the measurements that could be the two dimensions of the ceiling.**

Directions: Click on a box to choose each measurement you want to select. You must select the two correct measurements.

Exhibit Window

Formula Sheet

Grade 6 Mathematics Formula Sheet

Geometric Formulas

$A = \frac{1}{2}bh$ 
 $p = 4s$ 
 $p = 2l + 2w$

Back Reset Go to... Question 8 of 10 Review Next

PEM QC STUDENT

**SAY** Use the formula sheet to help you determine the correct answers.

Click the X in the upper right corner of the Exhibit window to put the tool away.

Wait for students to put the tool away.

**SAY** Decide which answer choices are correct and select your answers by clicking on them. An orange outline will appear around each measurement you select.

Pause while students select the correct answers.

**SAY** Remember, if you change your mind about the measurements you selected, you may click the *Reset* button on the bottom of the screen to unselect all of your answers and start over, or click on the eraser tool at the top of the screen to unselect one answer at a time.

**SAY** Which answers did you choose?

Pause for replies.

**SAY** The two correct answer choices are 4 meters and 5 meters. Do you have any questions?

Answer all questions.

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

Wait for students to click *Next*. Check to see that the students are looking at the correct item.

**SAY** Read question 9 to yourself, including the directions. Notice that this item is not a multiple-choice question, but will require you to click and drag your answer choices to the boxes inside the parentheses.

Pause while students read the question and directions.

Use the given numbers to create an ordered pair representing a point located on the  $x$ -axis.

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

(  ,  )

-6 -2 0 3 5

Back Reset Go to... Question 9 of 10 Review Next  
PEM QC STUDENT

**SAY** The numbers that can be used to create the ordered pair are inside the dark gray box.

Notice that there are two boxes which require numbers to make an ordered pair. This ordered pair will be your answer to the question. You will need to click and drag one number into each box.

If you do not click and drag numbers into the boxes, the question will not be answered. If you only drag one number into a box, the question will be considered answered on the review screen, even though you did not completely answer the question, and it will be considered incorrect.

If you change your mind about a number, you can click the *Reset* button on the bottom of the screen, or drag the number back to the dark gray box and select another number to drag into the empty box.

Determine which numbers you want to select for your ordered pair. Then click and drag the numbers into the appropriate boxes inside of the parentheses to create the ordered pair.

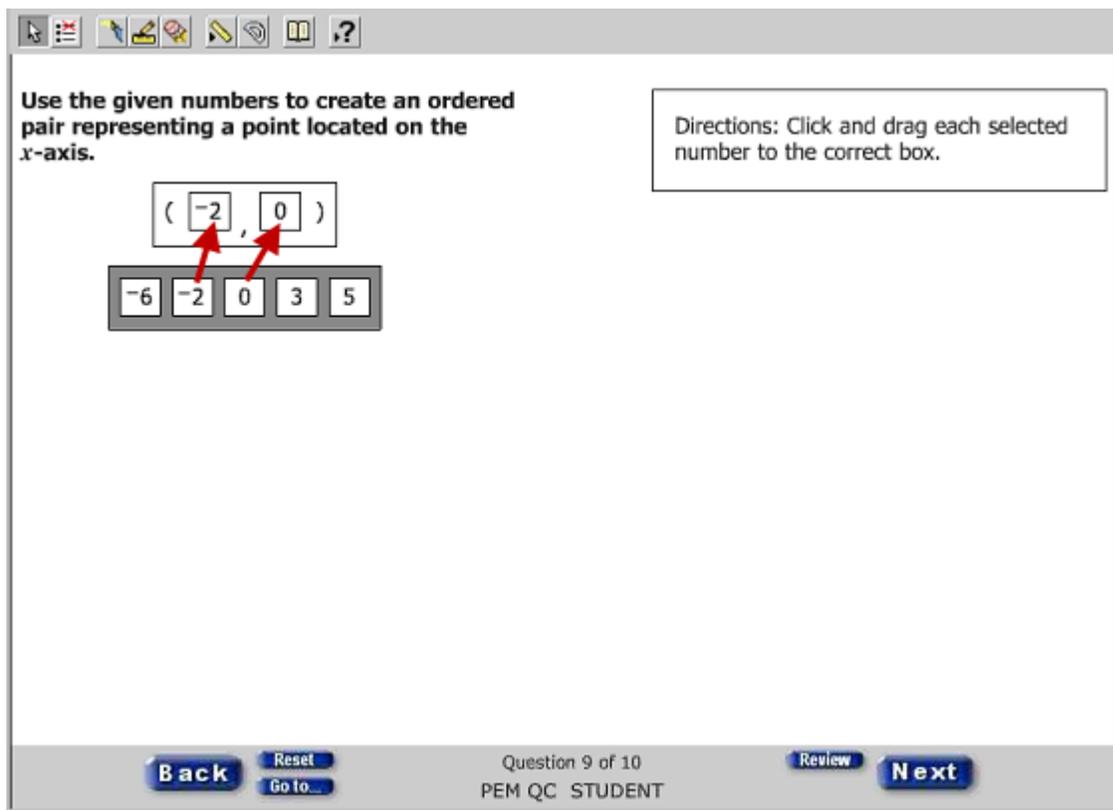
Pause while students solve the problem and practice clicking and dragging answers into the boxes.

**SAY Which ordered pair did you create?**

Pause for replies. There is more than one correct response and all responses should be solicited. The correct responses are  $(-6, 0)$ ,  $(-2, 0)$ ,  $(3, 0)$  or  $(5, 0)$ .

**SAY It is possible to create four ordered pairs that are correct. You only need to create one of the four ordered pairs to get the item correct.**

**The numbers must be placed in the boxes in the correct order to be considered correct. The correct answers are  $(-6, 0)$ ,  $(-2, 0)$ ,  $(3, 0)$  or  $(5, 0)$ .**



**SAY Practice changing your answer to a different correct answer by either using the *Reset* button to reset the numbers back into the dark gray box at the same time, or drag them back to the dark gray box individually. After you have practiced, click and drag the correct two numbers back into the empty boxes.**

Pause while the students practice changing their answers.

**SAY Do you have any questions about how to click and drag an answer choice or how to change your answer?**

Pause to answer all questions.

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

Wait for students to click *Next*. Check to see that the students are looking at the correct question.

**SAY** Read question 10 to yourself, including the directions. Notice this item is not a multiple-choice question, but requires you to create a bar graph.

Pause while students read the question and directions.

The screenshot shows a digital math practice interface. At the top, it says "Cindy surveyed 60 students about their favorite type of movie. This circle graph represents the results of the survey." Below this is a pie chart titled "Favorite Movies" with four segments: Action (orange, 15%), Comedy (purple, 30%), Other (yellow, 10%), and Musical (blue, 5%). To the right of the pie chart is a bar graph template titled "Favorite Movies". The y-axis is labeled "Number of Students" and ranges from 0 to 50 in increments of 5. The x-axis has four categories: Action, Comedy, Other, and Musical. A box above the bar graph says "Directions: Click on a location above each bar to show the bar height." At the bottom of the interface, there are buttons for "Back", "Reset", "Go to...", "Review", and "Next". The text "Question 10 of 10" and "PEM QC STUDENT" is also visible.

**SAY** This item asks you to construct a bar graph that represents the same set of data as the circle graph.

Use your scratch paper and calculator to decide the number of students that selected “Action” as their favorite movie type.

Pause for students to work to find the answer.

**SAY** How many students selected “Action” movies?

Pause for students to reply.

**SAY** The number of students that selected “Action” as their favorite movie type is 15. Place your cursor over the bar for “Action” movies. Click on the gridline for 15 students above the “Action” bar.

Pause for students to plot the height of the bar.

Cindy surveyed 60 students about their favorite type of movie. This circle graph represents the results of the survey.

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

**Favorite Movies**

**Favorite Movies**

Construct a bar graph that could represent the same set of data.

Back    Reset    Question 10 of 10    Review    Next  
Go to...    PEM QC STUDENT

**SAY** This bar graph question only allows you to click on the gridlines. Some bar graph questions will allow you to click halfway between the gridlines as well.

Use your scratch paper and calculator to decide the number of students who choose each of the other movie types. Then click on a gridline above each of the other bars to construct the bar graph.

If you change your mind about the height of a bar, you can either click on a different gridline above or below the name of the bar you want to change, or use the *Reset* button to reset all of the bars to the original locations.

Pause while the students complete the bar graph.

**SAY** Do you have any questions on how to move the bars?

Pause for questions.

**SAY** Now finish the bar graph.

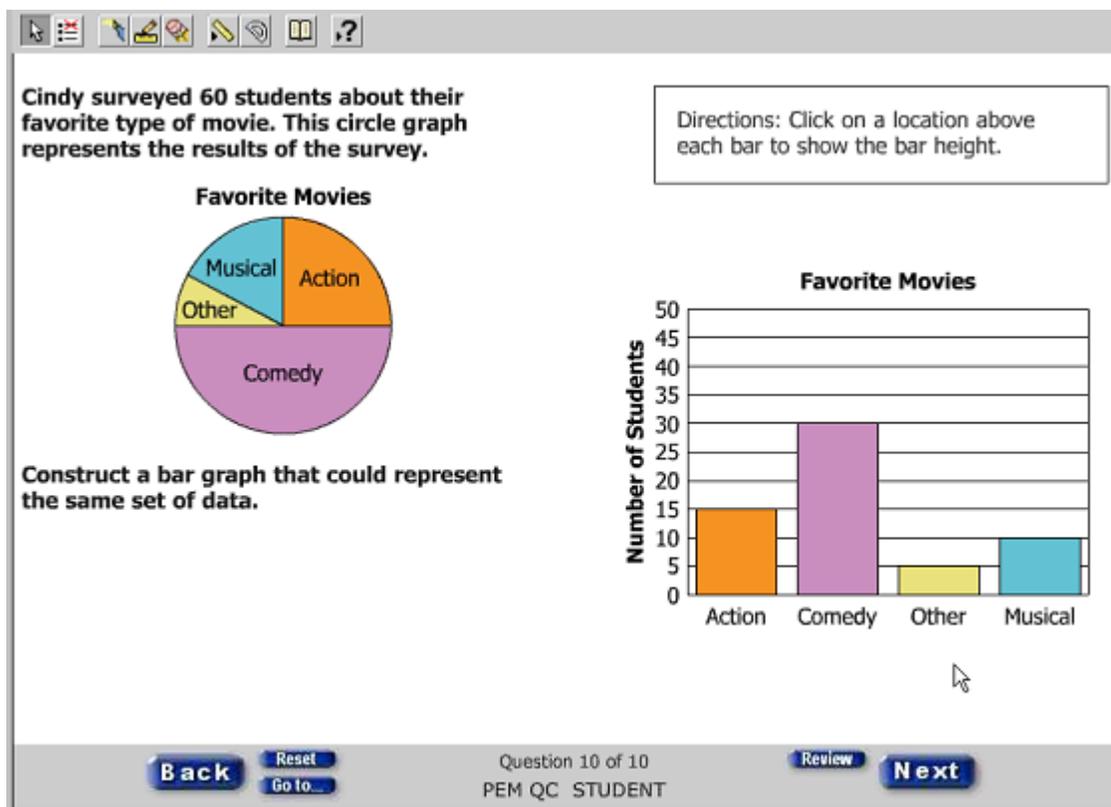
Pause while students work to complete the graph.

**SAY** What are the heights of the other bars in this graph?

Pause for student replies. The “Comedy” bar height should be 30, the “Other” bar height should be 5, and the “Musical” bar height should be 10.

**SAY** The height of the “Comedy” bar should be 30. The height of the “Other” bar should be 5, and the height of the “Musical” bar should be 10. Do you have any questions?

Pause to answer all questions.



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

Wait for students to click *Next* and check to be sure all students are looking at the *Review* screen.

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

Once the practice items are reviewed and completed, click the **Submit** button. Then click “Yes, submit my test.” Then you will see the question, “Do you wish to end the test and submit your answers?” Click “Yes.” This will exit the practice items.

You may now practice navigating between the *Review* screen and the practice items. Then exit the practice items to end this practice session.

Wait for students to practice navigating from the *Review* screen to practice items, and then for them to submit their test.

Note that each student’s review screen may vary, depending upon whether a question was left unanswered or marked for review.

To go to a specific question, click on the question name. Section 

Question Name	Answered?	Review?
<a href="#">Question 1</a>		
<a href="#">Question 2</a>		
<a href="#">Question 3</a>		<a href="#">Review</a>
<a href="#">Question 4</a>		
<a href="#">Question 5</a>		
<a href="#">Question 6</a>		
<a href="#">Question 7</a>		
<a href="#">Question 8</a>	<b>Not Answered</b>	<a href="#">Review</a>
<a href="#">Question 9</a>		
<a href="#">Question 10</a>		

To end the test and submit your answers for final scoring, click on the Submit button.

**TestNav**

**Submit Test for Scoring**

Section 1: 0 unanswered questions.

 You are about to submit your test and send all of your answers for scoring. You will not be able to return to the test once it has been submitted.

Are you sure you want to submit your test?

**TestNav**

**Su**

Do you wish to end the test and submit your answers?

 answers for scoring. You will not be able to return to the test once it has been submitted.

Are you sure you want to submit your test?

To start the practice items again, return to the “START THE ePAT LAUNCHER” section on page 9 for directions if needed.