

**Practice Item Guide**  
**Virginia Standards of Learning**  
**Grade 5 Science**

December 2013  
Pearson

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## OVERVIEW

The practice items available in the Virginia Standards of Learning (SOL) grade 5 science practice set provide examples of the new content and increased rigor represented by the 2010 *Science Standards of Learning*. Additionally, these items illustrate the technology-enhanced item (TEI) types. These practice items do not cover all grade 5 science 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 5 science. 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 5 science 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	03/01/2012	Original document posted.
V.2	04/09/2012	The diagram in question 4 was updated. The correct answer for this item was also updated within the script of the guide and in the appendix.
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; 8 new items added.
V.5	12/06/2013	10 new items 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 5 science 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, the phrase or statement on the hot spot being marked with a strikethrough line, or a red point being plotted on the number line or coordinate plane.

Hot spot items 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 SCIENCE PRACTICE ITEMS**

1. Go to the Virginia Department of Education Web site:  
[http://www.doe.virginia.gov/testing/sol/practice\\_items/index.shtml](http://www.doe.virginia.gov/testing/sol/practice_items/index.shtml)
2. Under the heading “Science Practice Items” click on the grade 5 link. Since this is a web based application, the link will take you directly to the grade 5 science practice items.

**MATERIALS NEEDED FOR COMPLETING VIRGINIA SOL PRACTICE ITEMS**

Scratch paper and pencil

**ONLINE TOOLS AVAILABLE ON THE VIRGINIA SOL SCIENCE 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 the answer, but only the pointer can be used to respond to the question.

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

## SPECIFIC DIRECTIONS FOR THE SOL GRADE 5 SCIENCE 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 5 science practice questions for the SOL test. There are 28 questions that will show you some of the types of test items that you may see on the grade 5 science test. Some questions are multiple-choice, and others are technology-enhanced items. Technology-enhanced items may require you to show your answer in another way, such as typing your answer in a box, clicking and dragging your answer to a specific location, clicking to raise the bars on a graph, or clicking on an answer to select it.

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

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 *Previous* button is not available when viewing the first question but will become available after you have moved to the second question. Question numbers are also located at the bottom of the screen. For example, the screen with the first question reads “Question 1 of 28.”



**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 questions that you want to review at a later time. We will practice using this button when we are working on these 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 each 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.

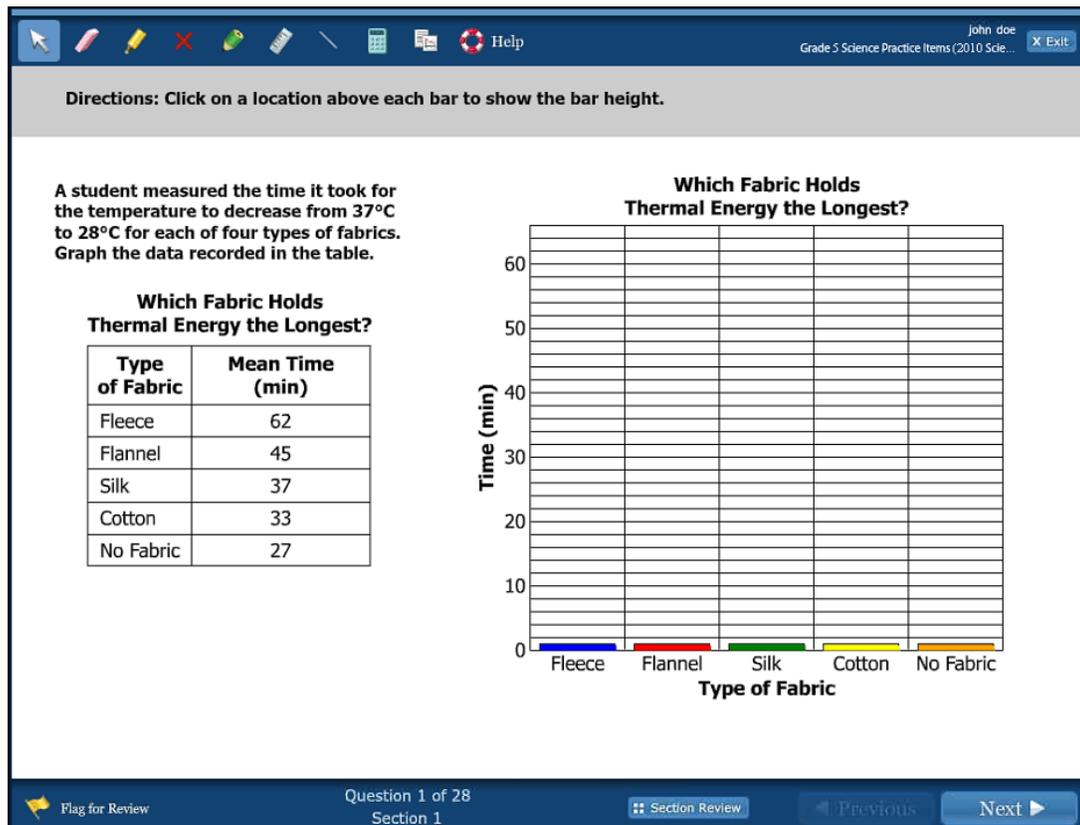
Note that the exhibit window contains information only about the Commonwealth of Virginia copyright. The exhibit icon only appears on the first screen of the practice items.

**SAY Remember that the tools at the top of the screen are there to help you answer a question.**

**The only tool that can be used to mark an answer to a question is the pointer tool (  ).**

**Underneath the toolbar is a gray directions banner. The directions banner is included in every technology-enhanced item, and it tells you how to answer the question. Always read the directions banner before selecting the answer.**

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



The screenshot shows a digital practice item interface. At the top, there is a toolbar with various tools like a pointer, eraser, highlighter, and a help icon. Below the toolbar is a gray banner with the directions: "Directions: Click on a location above each bar to show the bar height." The main content area contains a text prompt: "A student measured the time it took for the temperature to decrease from 37°C to 28°C for each of four types of fabrics. Graph the data recorded in the table." Below this is a table titled "Which Fabric Holds Thermal Energy the Longest?" with the following data:

Type of Fabric	Mean Time (min)
Fleece	62
Flannel	45
Silk	37
Cotton	33
No Fabric	27

To the right of the table is a bar graph with the same title. The y-axis is labeled "Time (min)" and ranges from 0 to 60 in increments of 10. The x-axis is labeled "Type of Fabric" and lists Fleece, Flannel, Silk, Cotton, and No Fabric. The bars are partially drawn, with their heights corresponding to the mean times in the table: Fleece (62), Flannel (45), Silk (37), Cotton (33), and No Fabric (27). At the bottom of the interface, there is a navigation bar with a "Flag for Review" button, "Question 1 of 28 Section 1", a "Section Review" button, and "Previous" and "Next" buttons.

**SAY** The directions say, “Click on a location above each bar to show the bar height.” Underneath the directions, the problem says, “A student measured the time it took for the temperature to decrease from 37°C to 28°C for each of four types of fabrics. Graph the data recorded in the table.”

In order to get the item correct, you must choose the correct bar height for the five experimental conditions, based on the data given to you in the table.

Now finish the bar graph by clicking the location above each bar to show where the bar should go. If you change your mind about a bar height, you can click on another location, and the bar height will change.

Pause while students complete the bar graph. Assist students as necessary.

**SAY** How did you complete the bar graph?

Pause for replies.

**SAY** You should have these bar heights on your graph:

**Fleece:** The height should be at 62 minutes, which is the line above 60 minutes, since the interval on the vertical axis is in increments of 2 minutes.

**Flannel:** The height should be at 45 minutes, which is between the second and third interval line above 40 minutes.

**Silk:** The height should be at 37 minutes, which is between the third and fourth interval line above 30 minutes.

**Cotton:** The height should be at 33 minutes, which is between the first and second interval line above 30 minutes.

**No fabric:** The height should be at 27 minutes, which is between the third and fourth interval line above 20 minutes.

When we finish 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 bar graph questions, once you raise one bar above the original height, it will show as “Answered” on the Section Review screen. If you move each of the bars back down to its original height, the question will be “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 go to question 2.

The screenshot shows a digital testing interface. At the top, there is a toolbar with icons for navigation and help, and a user profile section for 'John doe' with an 'Exit' button. Below the toolbar is a gray banner with the directions: 'Directions: Click on each organism you wish to select. You must select all of the correct answers.' The main content area contains the question: 'Which of these organisms reproduce by making spores?' Below the question is a box titled 'Organisms' containing eight buttons: Oak Tree, Moss, Rosebush, Grass, Fern, Mushroom, Corn, and Bean. At the bottom of the interface is a dark blue navigation bar with a 'Flag for Review' button, 'Question 2 of 28 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY** The directions banner at the top of your screen says “Click on each organism you wish to select. You must select all of the correct answers.” With this item, you will select your answers by clicking on all the correct answer options in the dark gray box on the screen.

Now I will read the question to you. It says “Which of these organisms reproduce by making spores?”

In order to get the item correct, you must click on the names of all the correct organisms in the box on the screen.

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** Before answering this question, let's practice using the pencil tool. Click on the pencil icon () located on the top toolbar. You may use this tool to make marks on the test questions. One of the ways you can use the pencil tool is to narrow down the answer choices. You may want to use the pencil tool to cross out choices on the technology-enhanced items like this one. The eliminator tool () the tool on the upper left side of the screen that is shown as a red "X," can only be used to eliminate answer choices on multiple-choice questions.

Make sure students see the eliminator tool on the toolbar and understand that it can be used on multiple-choice items but not technology-enhanced items.

**SAY** Let's practice making marks on this item to eliminate some choices.

Use your pencil tool to put an "X" over the words you do NOT wish to select, then click on the pencil tool again to put it away.

Pause while students mark an "X" on the words and put the pencil tool away.

**SAY** Now use the pointer tool to answer the question.

Pause while students choose answer(s).

**SAY** Let's go over the answer.

You should have clicked on the boxes that say *fern*, *moss*, and *mushroom*.

Since the number of correct answers was not indicated 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 go to question 3.

Pause.

**SAY** For this question you must type your answer in a box.

John doe  
Grade 5 Science Practice Items (2010 Scie... [Exit](#)

**Directions: Type the correct answer in the box.**

**Based on their roles in this food web, how many carnivores are present?**

**Woodland Food Web**

The diagram illustrates a woodland food web with the following organisms and their interactions:

- Producers:** Grass and Oak Tree.
- Primary Consumers:** Mouse, Fox, Grasshopper, Caterpillar, and Deer.
- Secondary Consumers:** Hawk, Owl, and Chipmunk.

Energy flow is indicated by arrows:

- Grass is eaten by Mouse, Fox, and Deer.
- Oak Tree is eaten by Caterpillar and Deer.
- Mouse is eaten by Hawk and Owl.
- Fox is eaten by Owl.
- Grasshopper is eaten by Owl and Chipmunk.
- Caterpillar is eaten by Chipmunk.
- Chipmunk is eaten by Hawk.

Question 3 of 28  
Section 1

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**SAY** The directions in the gray banner say, “Type the correct answer in the box.” Now read the question, determine the answer, and type it in the box.

Pause while students answer the question.

**SAY** What answer did you type?

Pause for replies.

**SAY** The correct answer is 3. Notice that the answer you entered 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. If you enter an answer but then completely remove that answer from the fill-in-the-blank box, the item will show as “Unanswered” 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 or symbols.**

Pause while students try to enter other characters. In this item, they will not be able to enter any character other than a number. If a fractional answer is required in a technology-enhanced item, the forward slash, (/) symbol is to be used for the fraction bar. If a decimal answer is required, a period (.) is to be used.

**SAY Notice that the box for this question will only accept numbers.**

**For fill-in-the-blank items, if you try to enter a character that you believe is part of the answer and it does not appear in the response box, make certain the CAPS LOCK key is not engaged on the keyboard. Having the CAPS LOCK key on will sometimes prevent a character from being entered. If the CAPS LOCK key is not on, and you still cannot enter a character, then you cannot use that character in your answer. Do you have any questions?**

Answer student questions.

**SAY You can use the backspace key on the keyboard to clear your answer, or you may use the delete key. To use the delete key, place the pointer in front of the character you wish to delete and then press the delete key. Or, highlight the character you wish to delete and press the delete key. Try clearing your answer and retyping it in the box.**

Pause while students clear their answer and reenter it into the box.

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

Answer any questions.

**SAY Before we go to the next question, let's take a moment to practice using the highlighter tool and eraser tool. You can use the highlighter tool on the toolbar to highlight words. To use this tool, click the icon that looks like a picture of a yellow highlighter (). Clicking the highlighter tool will change your cursor to an arrow with a highlighter next to it.**

**Practice using the highlighter by highlighting the phrase, "how many carnivores are present?" Then click again on the highlighter tool on the toolbar to put the tool away.**

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

**SAY Now, let's practice using the eraser tool to erase the highlighter mark we just made. Click the icon with the pink eraser (). Now click on the highlighter mark to make it disappear.**

**Practice highlighting and erasing. When you are finished practicing, make sure both tools are put away.**

Pause while students practice.

**SAY Are there any questions on how to use the highlighter and eraser tools?**

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to the next question. Question 4 requires you to drag answers to the empty boxes in a diagram. The answers that you need to drag are inside the dark gray box.

Directions: Click and drag the name to the correct location in the diagram.

Identify the planets in the diagram of the solar system.

**The Planets of the Solar System**

(not to scale)

**Planets**

- Jupiter
- Mercury
- Neptune
- Earth
- Saturn
- Uranus
- Venus
- Mars

Question 4 of 28  
Section 1

Flag for Review Section Review Previous Next

**SAY** The directions banner says, “Click and drag the name to the correct location in the diagram.” Now read question 4 to yourself.

Pause while students read the question.

**SAY** Notice there are eight empty boxes. To get this question correct, you must drag each of the planet names from the dark gray box into the correct box in the diagram.

Answer options for drag and drop items will typically be within a dark gray box.

**SAY** If you do not click and drag a planet name into each one of the boxes in the diagram, 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.

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

Now answer the question.

Pause while students work to answer the question.

**SAY** In which order did you list the planets?

Pause for replies.

**SAY** To be correct, starting with the planet closest to the sun, the order should be: *Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.*

The order is also the box order from the upper right side of the diagram to the lower left side of the diagram.

**SAY** Do you have any questions about the answer or about how to click and drag the planet names to the correct boxes?

Answer all questions.

**SAY** Before we go onto 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 that you flagged for review will look on the Section Review screen. They will have a picture of a flag next to them.

Pause.

**SAY** Click *Next* at the bottom of the screen to go to question 5. This item requires you to drag answers to the empty boxes.

John doe  
Grade 5 Science Practice Items (2010 Scie... X Exit

**Directions: Click and drag a phase to the correct location in the diagram.**

A student observes the phases of the moon during one month. What phase of the moon belongs in each of these boxes?

**Moon Phases as Seen on Earth at Night During Different Times of the Month**

(not to scale)

**Moon Phases (Out of Order)**

- New Moon
- Full Moon
- Waning Gibbous
- Waxing Gibbous
- Last Quarter
- First Quarter
- Waxing Crescent
- Waning Crescent

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**SAY** Read the directions and the question to yourself, then answer the question.

Pause while students read and answer the question..

**SAY** In which order did you place the phases?

Pause for replies.

**SAY** The correct order is:  
**Box 1: *Waning Crescent*;**  
**Box 2: *Full Moon*; and**  
**Box 3: *Waxing Gibbous*.**

**In order for this question to show as “Answered” on the Section Review screen, all three boxes must contain a phase. 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 go to question 6. This item requires you to drag each leaf label to the correct box on the screen.

**Directions:** Click and drag a label to name each leaf.

Use the classification key to identify these four leaves.

**Classification Key for Leaves**

1a. Veins branch out from one central point . . . . . Go to 2.  
 1b. Veins branch off main vein in the middle of the leaf . . . Go to 3.

2a. Leaf is heart-shaped . . . . . Redbud  
 2b. Leaf is star-shaped . . . . . Sweetgum

3a. Leaf has toothed (jagged) edge . . . . . Birch  
 3b. Leaf has un-toothed (smooth) edge . . . . . Magnolia

**Leaf Labels**

Redbud      Birch  
 Sweetgum      Magnolia

Question 6 of 28  
 Section 1

Section Review      Previous      Next

**SAY** Read the directions and question to yourself.

Pause while students read the directions and question.

**SAY** Now, answer the question by clicking and dragging each leaf label to the correct leaf on the screen.

Pause.

**SAY** How did you answer this question?

Pause for replies.

**SAY** Starting on the top row from left to right, you should have answered *Birch* and *Magnolia*. Now, moving to the second row, from left to right, you should have answered *Sweetgum* and *Redbud*.

In order for this question to show as “Answered” on the Section Review screen, all four boxes must contain a label. 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 go to question 7. This question requires that you click on a number within each picture to answer the question. For this item, there are three pictures, each with three answer choices. You must select one number from each picture to answer the question.

Directions: Click on a number in each picture to select the correct object.

Which object in each picture would most likely make the sound with the lowest frequency?

Objects With Different Frequencies

**1** **2** **3**  
Tapping Glasses Containing Water

**1** **2** **3**  
Blowing Through Instruments

**1** **2** **3**  
Ringing Handbells

Question 7 of 28  
Section 1

Flag for Review Section Review Previous Next

**SAY** The directions say, “Click on a number in each picture to select the correct object.” So for this item, you will be selecting one answer in each of the three boxes. When you click on a number, an orange outline will appear around the number to show that you have selected it as your answer. Only one number may be selected for each picture.

Read the question to yourself, find the answers and click on them.

If you change your mind about an answer after you have selected it, you can click the answer choice again to remove the orange circle that indicates your selection, or you can use the eraser tool at the top of the screen to remove the selection.

Pause while students answer the question.

**SAY** Which numbers did you select as your answers?

Pause for replies.

**SAY** You should have selected:  
1 in the glasses picture;  
2 in the instruments picture; and  
1 in the handbells picture.

In order for this question to show as “Answered” on the Section Review screen, you must select one number from each picture, as indicated in the directions and question. Do you have any questions about 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** 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. To use this tool, click the icon that looks like a slanted line (). Clicking the straightedge tool will change your pointer to an arrow with a blue slanted line next to it. Click and drag to create a line.

Practice using the straightedge by underlining the question. 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 use the straightedge tool?

Answer any questions.

**SAY** Click *Next* at the bottom of the screen to go to question 8.

To answer this question correctly, you will need to drag each label in the dark gray box to the blank box below the correct picture. Read the directions and question to yourself and then answer the question.

Pause while students read and answer the question.

John doe  
Grade 5 Science Practice Items (2010 Scie... [Exit](#)

Directions: Click and drag the correct label to each object.

Which label best describes how light interacts with each of these glass objects?

**Glass Objects**



**Glass Jar of Coins**



**Glass Cookie Jar**



**Stained-Glass Window**

**Labels**

Opaque

Translucent

Transparent

Flag for Review      Question 8 of 28      Section 1      Section Review      Previous      Next

**SAY** How did you label the pictures on the screen?

Pause for replies.

**SAY** The correct answers are:  
**Glass jar of coins should be labeled *Transparent*;**  
**Glass cookie jar should be labeled *Opaque*;** and  
**Stained-glass window should be labeled *Translucent*.**

**In order for this question to show as “Answered” on the Section Review screen, all three boxes must contain a label. 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 go to question 9. Read the directions and question to yourself. Then answer the question.

Pause while students read and answer the question.

John doe  
Grade 5 Science Practice Items (2010 Scie... X Exit

Directions: Click on each you want to select. You must select all of the correct answers.

Which animals shown are invertebrates?

Animals

 Fish	 Grasshopper	 Turtle	 Snail	 Whale
 Goose	 Crab	 Snake	 Octopus	 Spider

Flag for Review Question 9 of 28 Section 1 Section Review Previous Next

**SAY** To answer this question correctly, you had to select all of the invertebrates shown. Which pictures did you select as your answer?

Pause for replies.

**SAY** You should have selected *Grasshopper*, *Snail*, *Crab*, *Octopus*, and *Spider*. As the directions indicate, you must have selected all of these pictures for your answer to be correct.

Since the number of correct answers was not indicated 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?**

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 question 10.

**SAY** To answer this question, you must drag each ocean feature label to the correction location in the diagram. Read the directions and question to yourself. Then answer the question.

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is:

**Box 1: *Continental Shelf*;**

**Box 2: *Continental Slope*;**

**Box 3: *Continental Rise*; and**

**Box 4: *Trench*.**

In order for this question to show as “Answered” on the Section Review screen, all four boxes must contain an ocean feature. Do you have any questions on how to answer the question?

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 11.

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Grade 5 Science Practice Items (2010 Scie... Exit)

### Electromagnet Investigation

**Materials:**

- 1 9 volt battery
- 1 piece of insulated wire
- 1 steel nail
- 50 small paper clips

**Procedure:**

1. Coil the wire around the nail 5 times.
2. Attach the ends of the wire to the battery.
3. Test the electromagnet by seeing how many paper clips are attracted to it. Record results.
4. Repeat steps 1–3 with 10, 15, 20, 25, 30, and 35 coils.

**Results**

Number of Coils	Number of Paper Clips Attracted
5	4
10	10
15	16
20	20
25	26
30	32
35	34

**A student conducted an investigation testing the strength of an electromagnet. The dependent variable in this investigation was the —**

A voltage of the battery

B length of the insulated wire

C number of paper clips attracted

D number of times the wire was coiled

Question 11 of 28  
Section 1

Section Review   Previous   Next

**SAY** Before you answer the question, let's practice using the eliminator tool. 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 on multiple-choice questions. 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.

**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 use your pointer tool to click on the answer you have chosen.

Pause while students select an answer.

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is **C**, *number of paper clips attracted*.

**Do you have any questions?**

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 12.

**Read and answer the question.**

Pause while students read and answer the question.

Which of these shows the correct measurement for the length of the leaf?

A

B

C

D

Flag for Review      Question 12 of 28      Section 1      Section Review      Previous      Next

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is **D**, *2.5 centimeters*. Do you have any questions?

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 13.

**Read and answer the question.**

Pause while the students read and answer the question.

The screenshot shows a software interface for a science practice item. At the top, there is a toolbar with icons for navigation and help. The main content area is titled "Household Objects" and contains a table with two columns: "Group 1" and "Group 2".

Group 1	Group 2
	

Below the table, the question asks: "Which of these statements correctly describes these household objects as conductors or insulators?"

- A Group 1 objects are conductors because they force electricity to flow in the opposite direction.
- B Group 1 objects are conductors because electrical energy can flow easily through them.
- C Group 2 objects are insulators because electrical energy can move around them.
- D Group 2 objects are insulators because electricity is attracted to them.

At the bottom of the interface, there is a navigation bar with buttons for "Flag for Review", "Section Review", "Previous", and "Next". The text "Question 13 of 28 Section 1" is also visible.

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is **B**, *Group 1 objects are conductors because electrical energy can flow easily through them.*

**Are there any questions?**

Answer all questions.

**SAY** Before we move to the next question, let's practice using the ruler tool. You can use the ruler to measure items on the screen. To select this tool, click the icon that looks like a ruler (). From the drop down box, you must select the type of ruler you would like use. Notice that you may measure in inches or in centimeters. For our practice, please use the metric ruler that measures in centimeters to determine the height of the Household Objects chart. Click on "Centimeters Ruler" now to select the metric ruler.

Pause while students select the ruler.

**SAY** To move the ruler, click on it and drag it to another location on the screen. Use the arrows on each side of the ruler to rotate the ruler so that is lined up with the chart. You may need to make some adjustments, by using the arrows to rotate or dragging to move it, before the ruler is in the right location for measuring. Practice moving the ruler now.

Pause while the students move the ruler. Assist students as necessary. During the administration of the actual SOL assessments, examiners and proctors are not allowed to help students use the tools; providing assistance while answering the practice items is encouraged.

**SAY** Now, measure the height of the Household Objects chart to the nearest centimeter.

Pause while the students measure the chart.

**SAY** What is the distance from the bottom of the Household Objects chart to the top?

Pause for replies.

**SAY** The height of the chart to the nearest centimeter is 8 centimeters. Do you have any questions on how to use the ruler tool?

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 14.

**Read and answer the question.**

Pause while students read and answer the question.

**Sound Investigation**

Student 1 Student 2

Which of these best shows how sound travels along the string?

A

B

C

D

Question 14 of 28  
Section 1

Flag for Review Section Review Previous Next

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is B. Do you have any questions?

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 15.

**Read and answer the question.**

Pause while students read and answer the question.

**Objects on a Table**

Fishbowl Cup Pitcher  
Goggles  
Book Rock Supply Box Pencil

**A student picked up two objects from the table. One of the objects was opaque, and the other object was transparent. Which of these could be the objects the student picked up?**

A Book and cup

B Rock and pencil

C Pitcher and supply box

D Fishbowl and goggles

Question 15 of 28  
Section 1

Flag for Review Section Review Previous Next

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is A, *Book and cup*.

**Do you have any questions?**

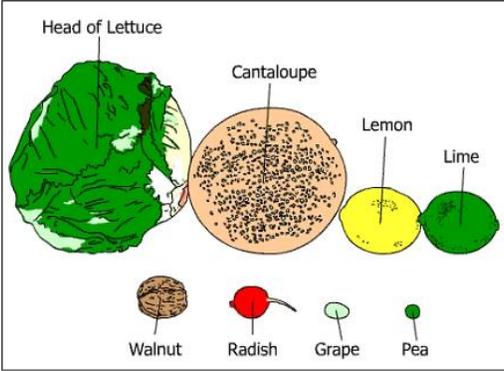
Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 16.

**Read and answer the question.**

Pause while the students read and answer the question.

**Different-Sized Foods**



A student chose food items from her kitchen to model the size of the planets in our solar system. She chose one food item to represent each planet. She used the walnut to represent Earth. Which statement correctly matches the food items with the planets they represent?

A The cantaloupe represents Jupiter, and the grape represents Mercury.

B The radish represents Mars, and the head of lettuce represents Saturn.

C The lemon represents Uranus, and the lime represents Neptune.

D The pea represents Neptune, and the radish represents Venus.

Question 16 of 28  
Section 1

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**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is C, *The lemon represents Uranus, and the lime represents Neptune.*

**Do you have any questions?**

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 17.

**Read and answer the question.**

Pause while the students read and answer the question.

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**Characteristics of Objects in Our Solar System**

Size	Color	Composition
(1) 1/4 of Earth's diameter	(4) Red	(7) Rock
(2) 11 times Earth's diameter	(5) Yellow	(8) Ice
(3) 110 times Earth's diameter	(6) Blue	(9) Gas

**Which numbered characteristics best describe the sun?**

A 1, 5, 7

B 3, 4, 8

C 2, 6, 8

D 3, 5, 9

Flag for Review      Question 17 of 28      Section 1      Section Review      Previous      Next

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is D, 3, 5, 9.

**Do you have any questions?**

Answer all questions.

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

**Read and answer the question.**

Pause while the students read and answer the question.

**Part of the Rock Cycle**

Sedimentary Rock → Igneous Rock

**Which two processes are responsible for sedimentary rock changing into igneous rock?**

- A Weathering and cementing
- B Erosion and pressure
- C Heat and deposition
- D Melting and cooling

Question 18 of 28  
Section 1

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is D, *Melting and cooling*.

**Do you have any questions?**

Answer all questions.

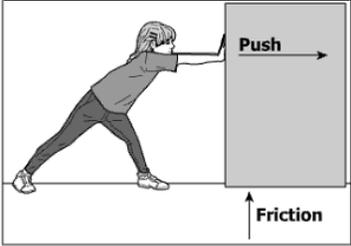
**SAY** Click *Next* at the bottom of the screen to go to question 19.

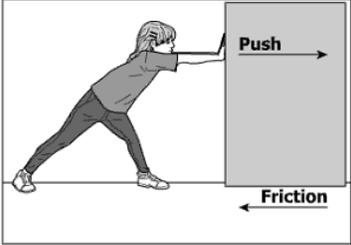
**Read and answer the question.**

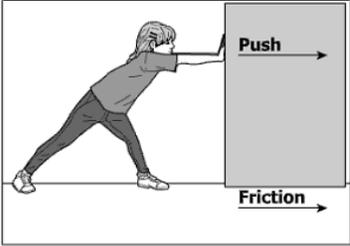
Pause while students read and answer the question.

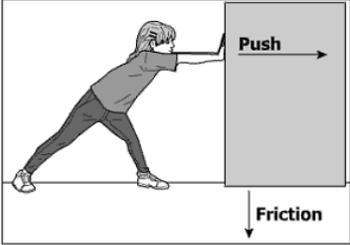
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Which diagram correctly identifies the force of friction on the box?

A 

B 

C 

D 

Flag for Review Question 19 of 28 Section 1 Section Review Previous Next

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer option is B. Do you have any questions?

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 20.

**Read and answer the question.**

Pause while students read and answer the question.

**Model of an Atom**

A student made a model of an atom. The center of the model, shown by the arrow, represents —

- A electrons and protons
- B protons and neutrons
- C neutrons and electrons
- D electrons and molecules

Question 20 of 28  
Section 1

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**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is option B, *protons and neutrons*.

**Do you have any questions about how to answer this question correctly?**

Answer all questions.

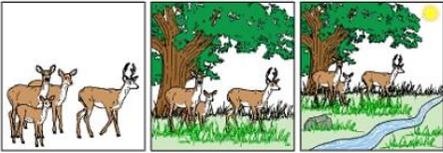
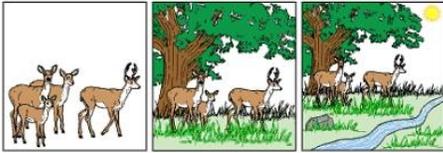
**SAY** Click *Next* at the bottom of the screen to go to question 21.

**Read and answer the question.**

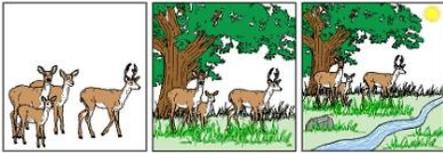
Pause while students read and answer the question.

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Which diagram best shows the organization of ecosystems?

A   C 

**Community      Ecosystem      Population      Population      Community      Ecosystem**

B   D 

**Ecosystem      Community      Population      Community      Population      Ecosystem**

[Flag for Review](#)      Question 21 of 28      [Section Review](#)      [Previous](#)      [Next](#)      Section 1

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is option C.

**Do you have any questions?**

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 22.

**Read and answer the question.**

Pause while the student answers the question.

**A student conducted research about Uranus. Which set of notes describes Uranus?**

**A**

Planet Notes	
•	Terrestrial planet
•	Looks similar to Earth's moon
•	Smallest planet
•	Has many craters

**C**

Planet Notes	
•	Gaseous planet
•	Similar in size to Neptune
•	Blue in color
•	Has 27 moons

**B**

Planet Notes	
•	Terrestrial planet
•	Thin atmosphere
•	Known as the Red Planet
•	Has two moons

**D**

Planet Notes	
•	Gaseous planet
•	Second largest planet
•	Has 62 moons
•	Known for its rings

Question 22 of 28  
Section 1

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**SAY** Which answer did you choose?

Pause for replies.

**SAY** To answer this question correctly you should have chosen option C.

**Do you have any questions?**

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 23.

**Notice the gray directions banner underneath the toolbar. The directions say, “Click on all the correct answers.”**

**Underneath the directions, the question says, “Students found an unusual rock on the playground. They recorded the properties of the rock. Which data for the rock are quantitative?”**

**To answer the question correctly, you must click on all of the correct answers within the dark gray box.**

**Now select your answers.**

Pause while students answer the question.

Directions: Click on all the correct answers.

Students found an unusual rock on the playground. They recorded the properties of the rock. Which data for the rock are quantitative?

**Rock Data**

Mass of 7 g	Shiny Surface	Hardness of 5.5	Black Color	Feels Smooth
----------------	------------------	--------------------	----------------	-----------------

Question 23 of 28  
Section 1

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**SAY** How did you answer this question?

Pause for replies.

**SAY** You should have chosen *Mass of 7g* and *Hardness of 5.5*. You must have selected those two answers, and only those two answers, for your answer to be correct.

Since the number of correct answers was not indicated 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?**

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 question 24.

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**Directions: Click and drag the answers to the correct boxes.**

**A student investigated which recipe would make a loaf of bread dough rise the most. The table shows the results. Classify all five parts of the investigation.**

**Student Investigation**

Recipe Number	Amount of Flour (g)	Amount of Yeast (g)	Amount of Water (mL)	Amount of Sugar (g)	Dough Height (cm)
1	230	3.5	240	5	6
2	230	3.5	240	10	8
3	230	3.5	240	15	13

Independent Variable	Dependent Variable	Constants

Amount of Flour   Amount of Yeast   Amount of Water   Amount of Sugar   Dough Height

Flag for Review   Question 24 of 28   Section 1   Section Review   Previous   Next

**SAY** Notice the gray directions banner. The directions say, “Click and drag the answers to the correct boxes.”

**Now read the question.**

Pause while students read the question.

**SAY** To answer this question completely, you must click and drag all five parts of the investigation to one of the three empty boxes labeled *Independent Variable*, *Dependent Variable*, and *Constants*.

**Now answer the question.**

Pause while students answer the question.

**SAY** What did you drag to the first box, *Independent Variable*?

Pause for replies.

**SAY** You should have placed *Amount of Sugar* into the first box.

**Do you have any questions?**

Answer all questions.

**SAY** You should have placed *Dough Height* in the second box labeled *Dependent Variable*. You should have placed *Amount of Flour*, *Amount of Yeast*, and *Amount of Water*, in any order, in the last box labeled *Constant*.

Since the question told you to classify all five parts, this item will show as “Answered” on the Section Review screen only when each of the five parts are placed in a box. Do you have any questions on how to answer this question?

Answer all questions.

**SAY** Before we move to the next question, let’s practice with the calculator that is available in the toolbar at the top of your screen. 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 determine the total amount of water used by the three recipes combined.

Each recipe required 240 mL of water, and this amount was used three times. To find the product of 240 and 3, on the calculator you will enter 240, the multiplication sign, and 3, then press the equal sign.

Pause.

**SAY** The calculator should display 720. Now find the red button that says “ON/C” that is located at the bottom left of the online calculator and press that button 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. The online calculator available for use in the toolbar is a four-function calculator. While completing the actual grade 5 science assessment, students will have the option of using a hand-held state approved four-function calculator in addition to the online calculator. Students should be familiar with the calculator they will use prior to testing. Please refer to information regarding approved calculators on the Virginia Department of Education Web site at [http://www.doe.virginia.gov/testing/test\\_administration/index.shtml#ancillary](http://www.doe.virginia.gov/testing/test_administration/index.shtml#ancillary) .

**SAY** Click on the calculator icon or on the pointer tool icon in the toolbar at the top of your screen to put the calculator away.

**Click *Next* at the bottom of the screen to go to question 25.**  
Pause while students put the calculator away and navigate to the next item.

**SAY** The directions banner says “Click on the grid to plot each point. Line segments will connect the points.”

**Now read the question.**

Pause while students read the question.

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Directions: Click on the grid to plot each point. Line segments will connect the points.

Students placed a container of liquid in sunlight for 10 hours. The students recorded the volume of the liquid in the container every two hours on the data table shown. Use the data table to complete the line graph.

**Evaporation Investigation**

Time (h)	Volume (mL)
0	20.0
2	19.0
4	17.5
6	16.0
8	14.5
10	12.0

**Evaporation Investigation**

Flag for Review      Question 25 of 28      Section 1      Section Review      Previous      Next

**SAY** Using the data table, plot the points on the graph. Line segments will connect the points in the order in which you plot them.

Now answer the question.

Pause while students answer the question.

**SAY** How did you answer the question?

Pause for replies.

**SAY** The points should be plotted at these coordinates, from left to right:  $(0, 20.0)$ ,  $(2, 19.0)$ ,  $(4, 17.5)$ ,  $(6, 16.0)$ ,  $(8, 14.5)$ , and  $(10, 12.0)$ .

**SAY** Since you are being asked to plot data from a table, this item will show as “Answered” on the Section Review screen after one point has been plotted. This is so no hint or clue is given as to how to graph the data in the table.

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** Are there any questions?

Answer all questions.

**SAY** Click *Next* at the bottom of the screen to go to question 26

**Read the directions and question to yourself.**

Pause while students read the directions and question.

Directions: Click on all the correct answers.

Which objects are demonstrating kinetic energy?

Basketball Hoop  
Basketball  
Student #1  
Bench  
Student #2  
Slide  
Student #3  
Bird #1  
Bird #2

Question 26 of 28  
Section 1

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**SAY** To answer this question you must click on all of the objects in the picture that demonstrate kinetic energy.

Since the number of correct answers was not indicated in the item, this item will show as “Answered” on the Section Review screen after one object has been selected. This is so no hint or clue is given as to how many objects demonstrate kinetic energy.

**Now answer the question.**

Pause while students answer the question.

**SAY** What answers did you select?

Pause for replies.

**SAY** The correct answers are: *Bird #2*, *Student #2*, and *Student #3*. You must have selected those three answers, and only those answers, for your answer to be correct.

**SAY Do you have any questions?**

Answer all questions.

**SAY Click *Next* at the bottom of the screen to go to question 27. Read the directions and question to yourself.**

Pause while students read the directions and question.

The screenshot shows a digital assessment interface. At the top, there is a toolbar with icons for a mouse, eraser, highlighter, delete, pencil, calculator, and help. The user's name 'John doe' and the page title 'Grade 5 Science Practice Items (2010 Scie...)' are visible. The main content area contains the following text:

**Directions: Click on all the correct answers.**

**In which circuits will the bulb be lit?**

**Circuits**

The circuits are arranged in a 2x3 grid:

- A:** A battery is connected to a bulb. The wire from the positive terminal goes to the top of the bulb, and the wire from the negative terminal goes to the bottom of the bulb.
- B:** A battery is connected to a bulb. The wire from the positive terminal goes to the top of the bulb, and the wire from the negative terminal goes to the top of the bulb.
- C:** A battery is connected to a bulb. The wire from the positive terminal goes to the top of the bulb, and the wire from the negative terminal goes to the bottom of the bulb.
- D:** A battery is connected to a bulb. The wire from the positive terminal goes to the top of the bulb, and the wire from the negative terminal goes to the bottom of the bulb.
- E:** A battery is connected to a bulb. The wire from the positive terminal goes to the top of the bulb, and the wire from the negative terminal goes to the top of the bulb.
- F:** A battery is connected to a bulb. The wire from the positive terminal goes to the top of the bulb, and the wire from the negative terminal goes to the bottom of the bulb.

**Key**

- Bulb
- Battery
- Wire

At the bottom of the screen, there is a navigation bar with the following elements:

- Flag for Review
- Question 27 of 28
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- Section Review
- Previous
- Next

**SAY For this question you may use the key to help understand the pictures of the circuits. To select a circuit, click on its picture. You must select all circuits in which the bulb will be lit. Now answer the question.**

Pause while students answer the question.

**SAY Which circuits did you choose?**

Pause for replies.

**SAY The correct answers are circuits *B*, *D*, and *E*. You must have selected those three circuits, and only those circuits, for your answer to be correct.**

Since the number of correct answers was not indicated 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.

**SAY 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 go to question 28. Read the directions and question to yourself.**

Pause while students read the directions and question.

Directions: Click and drag the answers to the correct boxes.

Sort the organisms from the food web into the chart.

Producers	Consumers	Decomposers

Question 28 of 28  
Section 1

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**SAY There are 3 empty boxes in the chart labeled *Producers*, *Consumers*, and *Decomposers*. To answer this question completely, you must click and drag each organism from the food web into one of the three empty boxes in the chart.**

Now answer the question.

Pause while students answer the question.

**SAY The correct answer has the organisms sorted in this manner:  
Producers: *Grasses*;  
Consumers: *Grasshopper, Rabbit, Bird, Snake, and Fox*; and  
Decomposers: *Bacteria*.**

**SAY** Since the question told you to sort all of the organisms in the food web, this item will show as “Answered” on the Section Review screen only when each of the organisms are placed into the chart. Do you have any questions on how to answer this question?

Answer all questions. If you want your students to practice using the Help tool (as mentioned on page 10), they can do so now.

The screenshot shows the 'Section 1 Review' interface. At the top right is a 'Return to Test' button with a close icon. Below the title, there is a prompt: 'Choose an item below or click CONTINUE to go to the Test Overview.' The main content is a table with four columns: 'All Items', '1 Flagged for Review', '28 Answered', and '0 Unanswered'. The rows list 'Question 1' through 'Question 12'. In the 'All Items' column, 'Question 4' is highlighted. In the '1 Flagged for Review' column, 'Question 4' has a flag icon. In the '28 Answered' column, all questions from 1 to 12 have a green checkmark and the word 'Answered'. At the bottom left is a blue 'CONTINUE TO TEST OVERVIEW' button with a play icon. At the bottom right is the text 'john doe | Grade 5 Science Practice Items (2010 Science SOL)'.

All Items	1 Flagged for Review	28 Answered	0 Unanswered
Question 1		✓ Answered	
Question 2		✓ Answered	
Question 3		✓ Answered	
Question 4	🚩 Flagged for Review	✓ Answered	
Question 5		✓ Answered	
Question 6		✓ Answered	
Question 7		✓ Answered	
Question 8		✓ Answered	
Question 9		✓ Answered	
Question 10		✓ Answered	
Question 11		✓ Answered	
Question 12		✓ Answered	

**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 in the left column.

Practice returning to a question by clicking on question 4, the question we flagged for review. You should see a picture of a flag in the “Flagged for Review” column next to the question. (Pause.) You can then return to this screen by clicking on the “Section Review” button at the bottom of the screen on question 4.

Pause while students practice navigating between question 4 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 have 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 have 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 that 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 28 All Items.”

Pause. The last number in the blank will vary, depending on the column the student filters on last.

**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 5 Science Practice Items (2010 Science SOL)

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

SECTIONS	STATUS	QUESTIONS
Section 1	Opened	1-28

Exit Test X

SUBMIT AND EXIT TEST

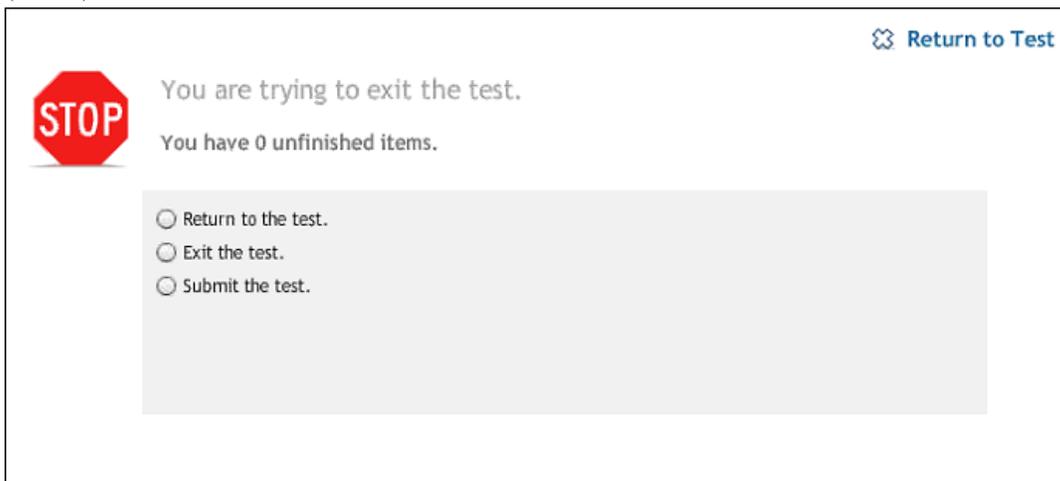
john doe

**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 questions 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 1. During actual SOL testing, students may be directed to choose this option if they are being moved to a different location to complete their test 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 5 science SOL practice items.**

Thank you for reviewing the Grade 5 Science Practice Items with your students.

## APPENDIX A

### Answers to Grade 5 Science Practice Items

#### Question 1

Fleece: The height should be at 62 minutes, which is the line above 60 minutes, since the vertical axis interval is in increments of 2 minutes.

Flannel: The height should be at 45 minutes, which is between the second and third interval line above 40 minutes.

Silk: The height should be at 37 minutes, which is between the third and fourth interval line above 30 minutes.

Cotton: The height should be at 33 minutes, which is between the first and second interval line above 30 minutes.

No fabric: The height should be at 27 minutes, which is between the third and fourth interval line above 20 minutes.

#### Question 2

The correct answer is: *fern, moss, and mushroom.*

#### Question 3

The correct answer is 3.

#### Question 4

The correct order is: *Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.*

#### Question 5

Box 1: *Waning Crescent*

Box 2: *Full Moon*

Box 3: *Waxing Gibbous*

#### Question 6

The correct answer is:

Top row, from left to right: *Birch and Magnolia;*

Second row, from left to right: *Sweetgum and Redbud.*

#### Question 7

The correct answer is: 1 in the glasses picture; 2 in the instruments picture; 1 in the handbells picture.

#### Question 8

The glass jar of coins is *transparent*, the glass cookie jar is *opaque*, and the stained-glass window is *translucent*.

#### Question 9

The correct answers are: *Grasshopper, Snail, Crab, Octopus, and Spider.*

#### Question 10

The correct answer is: Box 1: *Continental Shelf*; Box 2: *Continental Slope*; Box 3: *Continental Rise*; and Box 4: *Trench.*

## APPENDIX A

### Answers to Grade 3 Science Practice Items (continued)

#### Question 11

The correct answer is C, *number of paper clips attracted*.

#### Question 12

The correct answer is D, *2.5 centimeters*.

#### Question 13

The correct answer is B, *Group 1 objects are conductors because electrical energy can flow easily through them*.

#### Question 14

The correct answer is B.

#### Question 15

The correct answer is A, *Book and cup*.

#### Question 16

The correct answer is C, *The lemon represents Uranus, and the lime represents Neptune*.

#### Question 17

The correct answer is D, *3, 5, 9*.

#### Question 18

The correct answer is D, *Melting and cooling*.

#### Question 19

The correct answer is B.

#### Question 20

The correct answer is B, *protons and neutrons*.

#### Question 21

The correct answer is C.

#### Question 22

The correct answer is C.

#### Question 23

The correct answer is *Mass of 7g and Hardness of 5.5*.

#### Question 24

The correct answer is:

In the box labeled *Independent Variable: Amount of Sugar*;

In the box labeled *Dependent Variable: Dough Height*; and

In the box labeled *Constants: Amount of Flour, Amount of Yeast, and Amount of Water*, in any order.

## APPENDIX A

### Answers to Grade 3 Science Practice Items (continued)

#### Question 25

The correct graph has points plotted at these coordinates:

(0, 20.0)  
(2, 10.0)  
(4, 17.5)  
(6, 16.0)  
(8, 14.5)  
(10, 12.0)

#### Question 26

The correct answers are *Bird #2*, *Student #2*, and *Student #3*.

#### Question 27

The correct answers are B, D, and E.

#### Question 28

The correct answer is:

In the box labeled *Producers*: *Grasses*;

In the box labeled *Consumers*: *Grasshopper, Rabbit, Bird, Snake, Fox* (in any order); and

In the box labeled *Decomposers*: *Bacteria*,

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## 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.