

Virginia

Standards of Learning Guided Practice Suggestions

For use with the Grade 8 Science
Practice Items in TestNav™ 8

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Change Log

Updates to this document will be reflected in the table.

Change Log		
Version	Date	Description
V.3	10/21/2016	General information updated.
V.2	09/16/16	Update available tools.
V.1	07/08/2016	Original Document Posted

Introduction to TestNav™ 8: MC/TEI Document

The [Introduction to TestNav 8: MC/TEI](#) document serves as an introduction to the new online navigation, online tools, accessibility features, and overall functionality and appearance of TestNav 8. It is highly recommended that teachers (or other adults) read the *Introduction to TestNav 8: MC/TEI* document prior to reading this guide, the *Guided Practice Suggestions* for the Grade 8 Science practice item set.

Reading the *Introduction to TestNav 8* document will give teachers an understanding of the features of TestNav 8 prior to working with students. In part, the document provides information on-

- the system requirements for TestNav 8,
- opening the practice item sets within the required TestNav 8 Application (App),
- navigating through the practice item sets;
- answering technology-enhanced items (TEI) and multiple-choice items;
- using the online tools, and
- using the accessibility features available in TestNav 8.

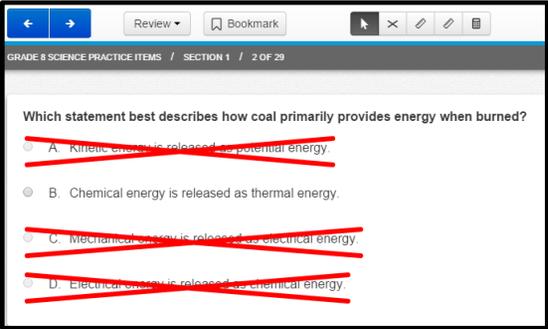
This important information should be used in conjunction with the information found in this guide.

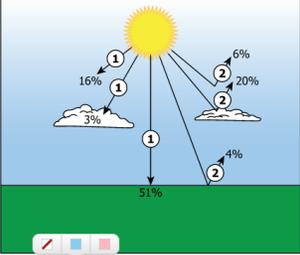
Guided Practice Suggestions

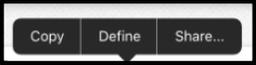
This guide provides specific item information for each question in the Grade 8 Science practice item set, in table format. Along with the item information in the table, there is a column titled “Guided Practice Suggestions.” This column contains information for teachers as they guide students through the practice items. For instance, guided practice suggestions can state, “Use the eliminator tool to place a red ‘X’ on the answers that are not correct,” or, “Make sure students know how to select draggers and place them in the empty boxes using their mouse, keypad, or touchscreen.” Following the suggestions in the table will ensure that students are exposed to all of the different tools within TestNav 8, the different features of TEI, and common messages that may appear as students complete TEI.

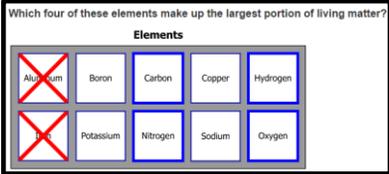
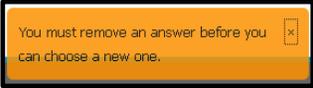
Grade 8 Science Practice Item Information and Recommended Guided Practice Suggestions

Question	Item Type	Answer Key	Guided Practice Suggestions
1	TEI Bar Graph	The bar heights, from left to right, should be: 7, 9, 11, 12, 14, and 16.	<p>Throughout the practice item set, move to the next or previous screen in a section by selecting an arrow in the top left corner of the screen. An arrow with a blue background indicates the button is active and can be selected.</p>  <p>Have students practice dragging each bar to the desired height.</p> <p>Once one bar has been moved, the item will appear as “Answered” even if all of the bars are returned to the original heights.</p>

Question	Item Type	Answer Key	Guided Practice Suggestions
2	MC	B	<p>Have students select the eliminator tool located in the toolbar and then place a red "X" on the answers that are not correct.</p>  <p>To remove an "X" keep the eliminator tool active and select the "X" to remove it. Have students practice removing an "X."</p>  <p>Tell students: Multiple-choice items must be answered in TestNav 8 by selecting the letter of the answer option or the option itself using the mouse, keypad, or touchscreen. On multiple-choice items, once an answer is selected, the item cannot be returned to an unanswered state (no answer selected) unless the student uses the eliminator tool to place an "X" over the selected answer and then selects the "X" again to remove it.</p> <p>Remind students that placing an "X" on the incorrect answer choices does not complete the item. A selection must be made with the pointer tool in order for the item to be considered "Answered."</p>

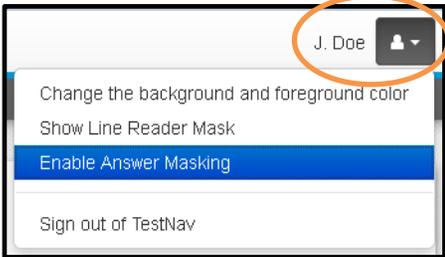
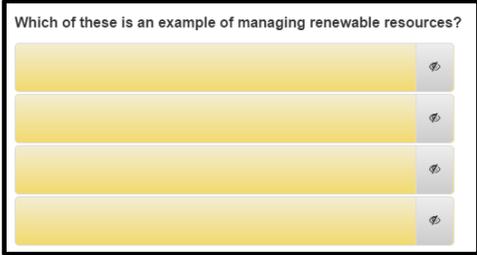
Question	Item Type	Answer Key	Guided Practice Suggestions
3	MC	B	<p>Next, have students use the highlighter tool to highlight the phrase “two processes do the arrows labeled 1 and 2 best represent” in the question.</p> <p>To highlight using a keyboard, place the pointer next to the first word, left click, hold down, and drag over the text. Then select the highlighter color.* To remove the highlight, left click, hold down, and drag over the text. Then select the white box on the left with the red line.</p> <p>On a touchscreen, hold down on the phrase with a finger, and adjust the area to be highlighted with the blue anchors. Then select the highlighter color.* To remove the highlight, hold down on the phrase with a finger, then select the white box on the left with the red line.</p> <div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">Incoming Solar Radiation</p>  <p>The diagram shows the sun at the top. Arrows labeled '1' represent incoming solar radiation: 16% to a cloud on the left, 3% to a cloud on the right, and 51% to the ground. Arrows labeled '2' represent outgoing radiation: 6% from the sun, 20% from the clouds, and 4% from the ground. A small toolbar with a highlighter icon is visible at the bottom left of the diagram.</p> <p>Which two processes do the arrows labeled 1 and 2 best represent in this diagram?</p> <ul style="list-style-type: none"> <input type="radio"/> A. 1: absorption and 2: convection <input type="radio"/> B. 1: absorption and 2: reflection <input type="radio"/> C. 1: conduction and 2: reflection <input type="radio"/> D. 1: conduction and 2: convection </div>

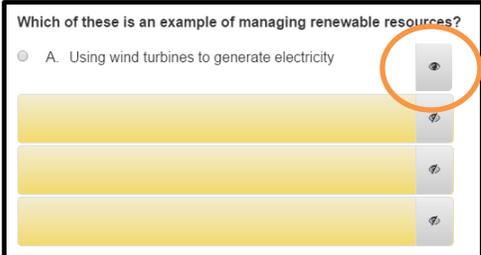
Question	Item Type	Answer Key	Guided Practice Suggestions
3 (Cont.)			<p>On a touchscreen, the following message may appear when students highlight text.</p>  <p>In the practice items, selecting one of the options listed will open a new window and direct students to the internet. This will not occur in the actual testing environment; selecting an option will not direct the students to another screen.</p> <p>*Pink and blue are the two highlighter colors available when the foreground and background settings are set to the default (black text on white background). These colors may change when the foreground and background setting is changed. Practice with changing the foreground and background colors is included on a later question in this practice item set.</p> <p>Tell students that the highlighter tool will only work on text. It will not work on art (images/pictures).</p>

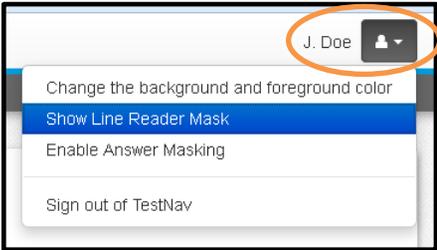
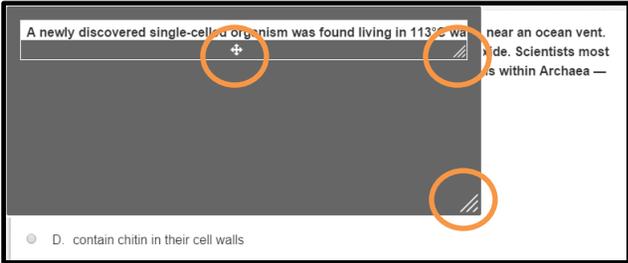
Question	Item Type	Answer Key	Guided Practice Suggestions
4	TEI Hot Spot	All four elements must be selected: <i>Carbon, Hydrogen, Nitrogen, and Oxygen</i>	<p>To answer this question correctly, the four correct answers in the gray box must be selected. A blue box outlines the answer choice when it is selected, indicating a student has chosen that response as an answer.</p>  <p>To deselect an answer and remove the blue box, the answer choice must be selected again. Have students practice selecting and deselecting an answer. Students may also use the answer eliminator on this item. Have students select the eliminator tool located in the toolbar and then place a red “X” on the answers that are not correct.</p> <p>Remind students that placing an “X” on the incorrect answer choices does not complete the item. A selection must be made with the pointer tool in order for the item to be considered “Answered.”</p> <p>This item specifies the number of answers a student must select. If a student tries to select more than the number of answers indicated, a message appears in the top right corner of the screen. This message will remain for approximately five seconds unless the “X” is selected to close the message. Have students try to select an additional answer so that they can see this message appear.</p> 

Question	Item Type	Answer Key	Guided Practice Suggestions
5	TEI Drag and Drop	Air temperature tool: <i>Thermometer</i> ; Air pressure tool: <i>Barometer</i> ; Humidity tool: <i>Hygrometer</i>	<p>Have students select draggers and place them in the empty boxes using the mouse, keypad, or touchscreen.</p> <p>As soon as a dragger is selected and moved, each receptacle box turns light blue and is outlined by a dotted line. This indicates that the dragger can be placed in any box—whichever location the student chooses as the correct location. However, sometimes a restriction is placed on where a dragger can be placed. A selected dragger, once selected and moved, can only be placed in the boxes that shade light blue.</p> <p>Selecting a dragger and moving it to the empty box may cause the remaining draggers to shift location in the answer option area.</p> <p>Have students practice moving draggers back to the gray box. Draggers will go back to their original location when returned to the gray box.</p> <p>This item will not be considered “Answered” until each box has an answer in it.</p>

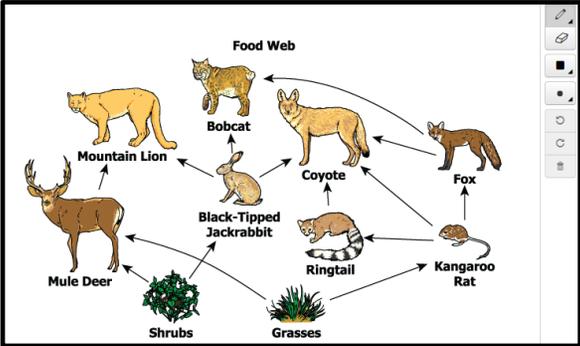
Question	Item Type	Answer Key	Guided Practice Suggestions
6	TEI Drag and Drop	Box 1: <i>Spring</i> ; Box 2: <i>Summer</i> ; Box 3: <i>Autumn</i> ; Box 4: <i>Winter</i>	<p>Have students select and drag answers from the gray box to the correct locations. In order for the item to be considered “Answered,” a season name must be placed in each box.</p> <p>If a student changes his mind and wishes to replace a season name, he should select the name and drag it back to the gray box. The gray box will expand as names are added back to it. Please make sure students are aware of the functionality of this item.</p> <p>Once a dragger has been placed into each location of diagram, the item will be considered “Answered.” If a student changes his mind about the answers and returns all draggers to the gray box, the question will appear as “Unanswered.”</p>

Question	Item Type	Answer Key	Guided Practice Suggestions
7	MC	A	<p>Have students practice using the Answer Masking accessibility feature with this item. Select the user drop-down menu in the top right corner of the screen and select <i>Enable Answer Masking</i> from the menu.</p>  <p>The answer options on multiple-choice items will now be masked as shown in the screenshot</p> 

Question	Item Type	Answer Key	Guided Practice Suggestions
7 (Cont.)			<p>Students may show or hide each option by selecting the “eye.”</p>  <p>Answer Masking will remain on in each multiple-choice item until it is turned off. To turn off Answer Masking, select the user drop-down menu and select <i>Disable Answer Masking</i>.</p>
8	TEI Hot Spot	All of these answers and only these must be selected: <i>Cell Membrane, Cytoplasm, Mitochondrion, and Nucleus</i>	Tell students that when there are an unspecified number of answers, the question will be considered “Answered” when one answer has been selected. This is so no clue or hint is given as to how many answers are correct.

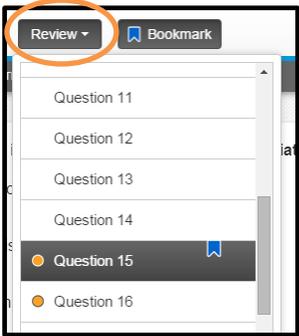
Question	Item Type	Answer Key	Guided Practice Suggestions
9	MC	A	<p>Have students practice using the Line Reader Mask accessibility feature with this item. Select the user drop-down menu and <i>Show Line Reader Mask</i> from the menu.</p>  <p>The Line Reader Mask will appear over the item. Have students use the diagonal line areas to practice resizing the area covered by the line reader and the window through which content can be seen. Have students use the cross to move just the window through which content can be seen. Hold down on any part of the gray area and drag the tool to move the entire tool.</p>  <p>To turn off the Line Reader Mask, select the drop-down menu and select <i>Hide Line Reader Mask</i>. If the student does not turn off the Line Reader Mask, it will automatically turn off when the student navigates away from the item.</p>

Question	Item Type	Answer Key	Guided Practice Suggestions
10	MC	C	
11	TEI Hot Spot	All of these answers, and only these answers, must be selected: <i>Horseshoe Crab, Spider, and Millipede</i>	Tell students that when there are an unspecified number of answers, the question will be considered “Answered” when one answer has been selected. This is so no clue or hint is given as to how many answers are correct.
12	TEI Drag and Drop	1 – Precipitation – should be placed just below the cloud on the left. 2 – Evaporation – should be placed in the arrows pointing up from the ocean to the cloud on the right. 3 – Condensation – should be placed inside the cloud on the right. 4 – Surface Runoff – should be placed next to the arrow on the side of the mountain.	Each process in the water cycle should be represented in the diagram with its associated number. The draggers (the numbers) that students need to place in the diagram are located below the diagram in the gray box. As students select a dragger, all of the locations in the image where a dragger can be placed, will shade light blue. In order for this question to be considered “Answered” all boxes must contain a number.

Question	Item Type	Answer Key	Guided Practice Suggestions
13	TEI Fill-in-the-Blank	3	<p>This question has the Drawing Interaction Tool. The Drawing Interaction Tool is a boxed area that exists on certain mathematics questions. The pencil may be used to make marks, notations, straight lines, or dots on or around artwork or graphs inside the Drawing Interaction area. The student selects the specific tool he/she wants to use, and uses it to help answer the question.</p>  <p>The top tool is the pencil or straight line tool. The arrow in the bottom right corner expands the tool so a student may select free draw or the straight line. A dot may be placed if a student uses their mouse, keypad, or touchscreen. The student would select free draw and use their mouse or keypad to click and release to place a point. If using a touchscreen, the student would use their finger to place a point.</p>  <p>The second tool is used to erase selected lines or writing.</p> 

Question	Item Type	Answer Key	Guided Practice Suggestions
13 (Cont.)			<p>The third tool allows the markings to be black or green. The arrow in the bottom right corner expands the tool so a student may select the color.</p>  <p>The fourth tool allows the students to select the thickness of the markings. The arrow in the bottom right corner expands the tool so a student may select the size.</p>  <p>The fifth and sixth tools are to Undo or Redo the most recent markings.</p>  <p>The last tool allows all markings to be eliminated at the same time.</p>  <p>Have students practice drawing markings and removing them to help answer the question.</p> <p>This item is a fill-in-the-blank item. Have students attempt to enter a character that cannot be used as part of the answer (e.g., a decimal point). A message will appear that states:</p> <p style="text-align: center;">You cannot use that character.</p> <p>This message will remain on the screen for approximately three seconds.</p>

Question	Item Type	Answer Key	Guided Practice Suggestions
13 (Cont.)			<p>Tell students that the answer does not need to be as long as the response box and a blank space can never be entered into a response box.</p> <p>Also, tell students that answers with four or more digits will be scored as correct with or without the use of commas. If a comma is used, it must be in the correct location within the number.</p> <p>Though this question requires a whole number answer, a question may specify that the answer must be given in a particular format (e.g., rounded to the nearest tenth). Make sure to remind students to read the question carefully so they know how to answer the question.</p>
14	MC	D	

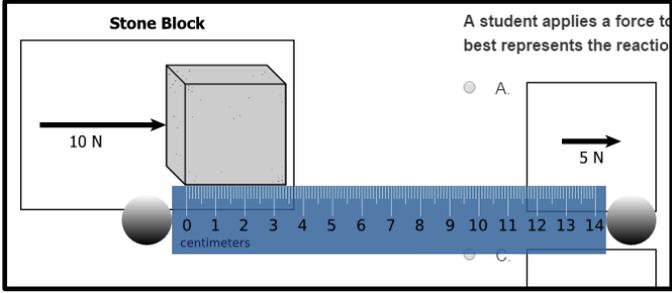
Question	Item Type	Answer Key	Guided Practice Suggestions
15	MC	C	<p>Have students select the <i>Bookmark</i> button and tell them that when they select the <i>Bookmark</i> button, it will turn dark gray. This button would be used to mark a question for review at a later time.</p>  <p>Then have students select the <i>Review</i> button. A drop-down menu will appear. All of the questions in the current section will be listed. The question that the student is viewing on the screen will be shaded dark gray. This question has an orange circle next to it because it has not yet been answered. This question will also have a blue flag next to it because it was just bookmarked.</p>  <p>Have students practice using the scroll bar to see the status of each question in the drop-down menu.</p> <p>Have students close the <i>Review</i> drop-down menu and deselect the <i>Bookmark</i> button. Then, tell them to look at the <i>Review</i> drop-down menu again to see that the question no longer has a blue flag.</p>

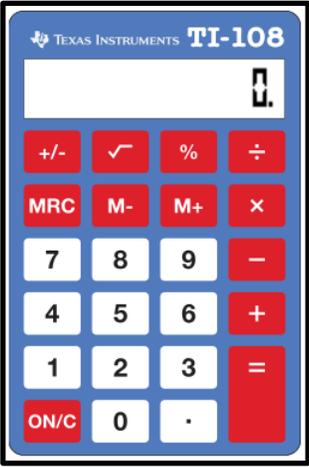
Question	Item Type	Answer Key	Guided Practice Suggestions
16	TEI Drag and Drop	3.6×10^6	
17	TEI Fill-in-the-Blank	173.5 g	<p>This question does not require the use of the ruler tool, but have students practice measuring the diameter of Spinner A using the centimeter ruler. This provides them the opportunity to practice manipulating the tool.</p> <p>There are two ruler tools on the top of the screen (). The icon on the left should be used to access the inch ruler and the icon on the right should be used to access the centimeter ruler. Have students select the appropriate ruler for this question, the centimeter ruler. To move the ruler, select and drag the ruler over to the object to be measured. To rotate the ruler, select and drag an end with the circle. Have students practice moving and rotating the ruler. Selecting the ruler tool icon again will put the ruler tool away; or, select the pointer tool to put it away. Students will use the pointer tool to select the answer after measuring.</p>
18	MC	A	<p>Have students highlight the words “sodium chloride (NaCl)” in the stem.</p> <p>Then have them try to highlight any of the observations on the notebook paper. Students will not be able to highlight the observations on the notebook paper because that is an image and is not text. Tell students that the highlighter tool will only work on text. It will not work on art (images/pictures).</p>

Question	Item Type	Answer Key	Guided Practice Suggestions
19	TEI Hot Spot	These four elements, and only these elements must be selected: <i>He, Ar, Xe,</i> and <i>C</i>	<p>A blue box outlines the answer choice when it is selected, indicating a student has chosen that response as an answer. In order to deselect an answer and remove the blue box, the answer choice must be selected again. Have students practice selecting and deselecting an answer.</p> <p>Tell students that this item will be considered “Answered” once one element has been selected so no clue or hint is given as to how many elements should be selected.</p>

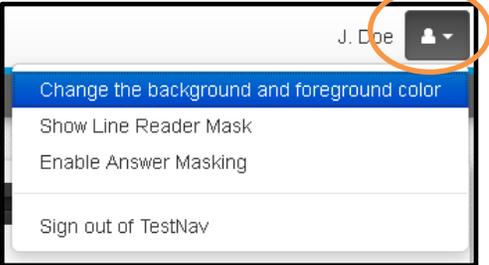
Question	Item Type	Answer Key	Guided Practice Suggestions
19 (Cont.)			<p>Have students practice zooming in to look at the Periodic Table of the Elements on the screen, and then have them zoom out.</p> <p>On a PC or Chromebook, press the CTRL and + keys at the same time to zoom in. Press the CTRL and – keys at the same time to zoom out. Press the CTRL and 0 (zero) keys at the same time to return to the default screen setting.</p> <p>On a Mac, press the CMD and + keys at the same time to zoom in. Press the CMD and – keys at the same time to zoom out. Press the CMD and 0 (zero) keys at the same time to return to the default screen setting.</p> <p>On a touchscreen, have students touch two points on the screen and then move their fingers away from each other to zoom in. Touch two points on the screen and then move those fingers toward each other to zoom out.</p> <p>As students are practicing how to zoom in and out, make sure they are doing so within reason. If students zoom in too far, they may not be able to see all of the information necessary to answer the question. If students zoom out too far, they may not be able to clearly see details of the question on the screen. It should also be noted that zooming in and out on the screen may cause the text wrapping to change. Remind students that they should only use this feature when necessary.</p> <p>Before students go to the next question, make sure they return to the default screen.</p>
20	MC	C	

Question	Item Type	Answer Key	Guided Practice Suggestions
21	TEI Drag and Drop	The correct coefficients, from left to right, are 2, 3, 4, and 3.	Remind students that each number may be used more than one time in the chemical equation.
22	MC	A	
23	TEI Drag and Drop	<i>Crest</i> in the top left box, <i>Amplitude</i> in the top right box, <i>Trough</i> in the bottom left box, and <i>Wavelength</i> in the bottom right box	Have students select and drag answers from the gray box to the correct locations. In order for the item to be considered "Answered," a label must be placed in each box. If a student changes his mind and wishes to replace a label, he should select the label and drag it back to the gray box. The gray box will expand as labels are added back to it. Please make sure students are aware of the functionality of this item.
24	MC	C	
25	MC	D	

Question	Item Type	Answer Key	Guided Practice Suggestions
26	MC	D	<p>This question does not require the use of the ruler tool, but have students practice measuring the length of the stone block using the centimeter ruler. This provides them the opportunity to practice manipulating the tool.</p> <p>There are two ruler tools on the top of the screen (). The icon on the left should be used to access the inch ruler and the icon on the right should be used to access the centimeter ruler. Have students select the appropriate ruler for this question, the centimeter ruler. To move the ruler, select and drag the ruler over to the object to be measured. To rotate the ruler, select and drag an end with the circle. Have students practice moving and rotating the ruler. Selecting the ruler tool icon again will put the ruler tool away; or, select the pointer tool to put it away.</p> <p>The width of the stone block is approximately 3.4 cm.</p> 

Question	Item Type	Answer Key	Guided Practice Suggestions
27	MC	B	<p>Have students practice using the online calculator by selecting the calculator icon.</p>  <p>Once selected, the calculator will appear on the screen. Students can move the calculator on the screen by holding down inside the top of the calculator and dragging it to a new location.</p> <p>Make sure students familiarize themselves with knowing how to select and use the calculator if needed. Have students enter the calculations for this particular question on the calculator to help them determine the answer.</p>  <p>Selecting the calculator icon again will put the tool away; or, select the pointer tool to put the calculator away.</p>

Question	Item Type	Answer Key	Guided Practice Suggestions
28	TEI Drag and Drop	From left to right: <i>Iron bar, the longest coil, the picture with four batteries</i>	<p>Have students select the wood bar. As they move this dragger, only the box on the left shades blue, indicating this is the only box that will accept this dragger. Tell students that the box labeled “Bar” will only accept an image of a bar. Likewise, the box labeled “Wire Coil” will only accept an image of a coil. The box labeled “Batteries” will only accept an image of batteries. Sometimes a restriction is placed on where a dragger can be placed to limit errors.</p> <p>This item will not be considered “Answered” until each box has an answer in it.</p>

Question	Item Type	Answer Key	Guided Practice Suggestions
29	MC	C	<p>Have students practice using the accessibility feature that allows them to change the background and foreground color. Select the user drop-down menu and <i>Change the background and foreground color</i> from the menu.</p>  <p>The screenshot shows a user profile 'J. Doe' with a dropdown arrow. The dropdown menu is open, showing four options: 'Change the background and foreground color' (highlighted in blue), 'Show Line Reader Mask', 'Enable Answer Masking', and 'Sign out of TestNav'.</p> <p>There are six different options other than black on white, which is the default setting. Have students select a contrast setting and then the <i>Continue</i> button to enable this feature. This feature could be used by students who would benefit from the use of color contrasting to make text more distinct.</p> <p>This setting will remain enabled until turned off. To turn off this setting, select the user drop-down menu, select <i>Change the background and foreground color</i>, and then select the button next to the default setting. Then select the <i>Continue</i> button.</p> <p>Information for Teachers: This is the end of the practice item set. See the <i>Introduction to TestNav 8: MC/TEI</i> document for information on closing TestNav.</p>