

# Standards of LearningGuided Practice Suggestions

**For use with the 2018 Science Standards of Learning**

**Practice Items**

**September 2023**

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## Introduction to TestNavTM 8: MULTIPLE-CHOICE/TEI Document

The [*Introduction to TestNav 8*: *Multiple-Choice/Technology Enhanced Item Tests*](https://www.doe.virginia.gov/home/showpublisheddocument/20825/638255443523500000)documentserves as an introduction to the online navigation, 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 Science practice item sets.

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

* opening the practice item sets within the required TestNav 8 Application,
* 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 science practice items for grades 5, 8, and Biology based on the 2018 *Science Standards of Learning*. Along with the item information, there are guided practice suggestions in the Functionality Description column of the table. This column contains information for teachers as they guide students through the practice items. For instance, guided practice suggestions can state, “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 functionality features of TEI, and the common messages that may appear as students complete TEI.

## Online Tools, Features, Icons, and Descriptions of Function

Pointer 

Use to select an answer on screen and to place the cursor in an answer box, plot points, select one or more answers, and drag information from one location to another.

TestNav tools cannot be used to indicate answers to online test items. The Pointer  must be used to:

1. select multiple-choice answers;
2. place the cursor in a box in order to type an answer;
3. plot points on a line, graph, or graphic;
4. select one or more answers; or
5. drag answers from one location to another.

If the student uses a tool other than the Pointer to indicate his/her answer, the Review dropdown will show that question as *Not Answered*. If a student feels that he/she did answer the question, instruct the student to go back to the test item to make sure that the Pointer was used to indicate the answer.

Answer Eliminator 

Use to eliminate (cross off) answer options. This tool functions with multiple-choice questions and certain TEI items.

Inch Ruler 

Use to measure an object on the screen.

Centimeter Ruler 

Use to measure an object on the screen.

Desmos Calculator 

Use for mathematical calculations and graphical representations.

* Grade 5 - Desmos Virginia Four-Function calculator
* Grade 8 - Desmos Virginia Scientific calculator
* End-of-Course (EOC) Science - Desmos Virginia Graphing calculator
* *For additional information on* [*Desmos*](https://www.desmos.com)*, please refer to the* [*Desmos Online Calculator webpage*](https://www.doe.virginia.gov/teaching-learning-assessment/instruction/mathematics/standards-of-learning-for-mathematics/desmos-online-calculator)  *and the* [*Desmos*](https://www.desmos.com) *web page.*

#### Tools Not Located on the Tool Bar

Highlighter 

Use to highlight text. Students cannot highlight art, pictures, images, or text when presented as part of a graphic.

There is no limit to the number of highlights a student can make within the test. To access the highlighter, the student selects text and selects the highlighter color. To remove the highlighted text, the student selects the highlighted text and selects the slash. Pink and blue are the two highlighter colors available when the background and foreground settings are set to the default (black text on white background). These colors may change when the background and foreground setting is changed.

* Exhibits Window 

Located on the right-hand side of the screen. Used to view exhibits such as the Periodic Table of Elements presented in the Grade 8 Science items.

Drawing Interaction Tool 

Some items have the Drawing Interaction Tool available for students to use. The Drawing Interaction Tool is a boxed area that exists on certain mathematics and science questions. The student selects the appropriate tool for the item and uses it to help answer the question.

The tools are located to the right of the drawing interaction area. The individual tools are:

* Pencil or straight line 

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 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 his mouse, keypad, or touch screen. The student would select free draw and use his mouse or keypad to click and release to place a point. If using a touch screen, the student would use his finger to place a point.

* Eraser - used to erase selected lines, markings, or writing 
* Color selector - 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.
* Mark thickness - allows 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.
* Undo or Redo - removes the most recent markings 
* Clear All - allows all markings to be eliminated at the same time 

### Zoom-In and Zoom-Out Feature

#### On a PC or Chromebook:

Zoom in—press the CTRL and + keys at the same time.

Zoom out—press the CTRL and – keys at the same.

Return to default screen size—press the CTRL and 0 keys at the same time.

#### On a Mac:

Zoom in—press the CMD and + keys at the same time.

Zoom out—press the CMD and – keys at the same time.

Return to default screen size—press the CMD and 0 keys at the same time.

#### On a touchscreen device:

Zoom in—touch two points on the screen, and then move your fingers away from each other.

Zoom out—touch two points on the screen, and then move your fingers toward each other.

User Dropdown Menu 

### **Change the Background and Foreground Color**

Selecting this permits the student to choose the background and foreground colors of his/her test. The list of background and foreground colors is shown in the screen shot below:



To return the background and foreground color to the default, the student selects Black on White (Default).

### Enable Magnifier

Use to magnify an area. When selected, a square box appears on the screen that can be moved anywhere to magnify the text/art within the box. The Magnifier retains the previously magnified value until the magnifier is moved again. This tool can be selected for each test item as needed. To remove the tool from the screen, select *Disable Magnifier* in the user dropdown menu.

### **Show Line Reader Mask**

Selecting this will place a mask on the screen that the student may place over text or test questions. The line reader mask has a window, which shows only one line of text. The student must drag the window down over the text in order to read it. The student can resize the mask and the window. This mask must be selected for each passage or question after the student moves backward or forward in the test. To remove the line reader mask, in the dropdown the student selects *Hide Line Reader Mask*. The line reader mask screen shot is below:



### **Enable Answer Masking**

Selecting this will place a mask over each multiple-choice answer option (this is not available on TEI questions). The student may uncover an answer choice by selecting the gray box with the image of an eye. Once enabled, the answer mask will be present on all multiple-choice questions. To stop the answer choice masking, the student opens the dropdown menu and selects *Disable Answer Masking*. The answer masking is shown below:



### Zoom-In and Zoom-Out Feature

Use to enlarge or shrink text or images on the screen. Selecting “+” increases the zoom. Selecting “–” decreases the zoom. Other methods can activate Zoom depending on the device (keyboard shortcuts, pinch to zoom, etc.). Once zoom is set, this setting applies to all test items until it is changed.  This feature appears in the user dropdown menu only when using the TestNav8 app on a laptop or desktop. It will not appear in the browser version of the practice items and it will not appear on an iPad in the TestNav8 app.

### **Sign out of TestNav**

Selecting this will bring up the Exit Test screen. The Exit Test screen permits the student to Exit the Test, or to Cancel the selection and return to the test.

Note-A Help menu for the TestNav tools is not available.

## Additional Tools for Audio Tests

### Audio Tools

Students who are assigned an “audio” test for the 2018 *Science Standards of Learning* will see the audio tools for the text-to-speech reader on the right side of the screen.





#### Grade 5 Science

| Question Number | Item Type | Correct Answer | Functionality Description |
| --- | --- | --- | --- |
| 1 | Multiple Choice | B | Students may see some words that have a dotted line underneath them. Those words have a Pop-up Glossary. The Pop-up Glossary provides definitions, images, or other content for specific words or terms. Have students hover their mouse over the word “dominoes.” A question mark appears. Select the word and the Pop-up Glossary provides a definition of the word.   |
| 2 | Multiple Choice | C | None  |
| 3 | TEI Drag and Drop | From left to right: *Birch, Magnolia*, *Sweetgum,* *Redbud*  | As soon as a dragger is selected and moved, all boxes shade blue. This indicates that the leaf label can be placed in any box- whichever location the student chooses as the correct location. In order for this question to be considered “Answered” all boxes must contain a label.  |
| 4 | Multiple Choice | C | None |
| 5 | TEI Drag and Drop | All answers must be placed in the correct order starting at the top rightmost box: *Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune*  | This question will be considered “Answered” once a planet has been placed in each box. |
| 6 | Multiple Choice | C | None |
| 7 | TEI Hot Spot | *Student #2*, *Bird #2*, and *Student #3* should be selected. | To answer this question correctly, all 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. In order to deselect an answer and remove the blue box, the answer choice must be selected again. 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. |
| 8 | Multiple Choice | B | None |
| 9 | Multiple Choice | B | None |
| 10 | TEI Hot Spot | Circuits *B*, *D*, and *E* should be selected. | This question will be considered “Answered” when one answer has been selected. |
| 11 | Multiple Choice | C | None |
| 12 | Multiple Choice | A | None |
| 13 | Multiple Choice | D | None |
| Science Exploration |  |  | If a Science Exploration is longer than one page, it will scroll. On a desktop or laptop computer, have students practice using the bar along the right side of the Science Exploration to scroll through the passage, as well as the scroll bar on the right side of the screen if necessary. The scroll bar on the far right will only be seen on certain devices and if the computer screen is not in full screen mode. On a touchscreen, use the scroll bar by the passage or move the entire passage with a finger to scroll through it. Science Explorations will not automatically scroll to the beginning for each question associated with the information. When a student navigates through a set of questions, the Science Exploration will remain in the location where the student has scrolled.  |
| 14 | TEI Hot Spot | From top to bottom: *Panel X System*, *Panel Y System*, *Panel X System* | Students must select an answer in each row. This item will not be considered “Answered” until a radio button in each row has been selected.  |
| 15 | Multiple Choice | B | None |
| 16 | TEI In Line Choice | From top to bottom: *electrical*, *radiant* | To see the choices select the down arrow next toTo see the choices select the down arrow next to“Choose. . .” |
| 17 | Multiple Choice | C | None |
| Science Exploration |  |  | Notice on the left side of the screen there are two tabs related to a Science Exploration. Each tab has the name of information located in that tab. The selection that is displayed has a white tab, and the selection that is not being displayed has a shaded tab. |
| 18 | TEI Hot Spot | Both *Place a mass in front of the vehicle for it to push* and *Attach a small load on the back of the vehicle for it to pull* should be selected. | This question references the first science exploration tab, so the first tab will automatically display for this question.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 stating, “*You must remove an answer before you can choose a new one.*” appears in the top right corner of the screen. This message will remain for approximately three 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. |
| 19 | Multiple Choice | A | None |
| 20 | TEI Hot Spot | Both *Trial for Surface 1* and *Trial for Surface 6* should be selected. | This question references the second science exploration tab, so the second tab will automatically display for this question. A check box will indicate that an answer has been selected. This item will show as “Answered” once any two boxes have been selected. If a student tries to select more than two answers, a message stating, “*You must remove an answer before you can choose a new one.*” appears in the top right corner of the screen. This message will remain for approximately three seconds unless the “x” is selected to close the message. |
| 21 | Multiple Choice | B | None |

## Grade 8 Science

| Question Number | Item Type | Correct Answer | Functionality Description |
| --- | --- | --- | --- |
| 1 | TEI Drag and Drop | Counterclockwise from top: 1-*Spring*, 2-*Summer*, 3-*Autumn*, 4-*Winter* | As soon as a dragger is selected and moved, all boxes shade blue. This indicates that the season label can be placed in any box- whichever location the student chooses as the correct location. In order for this question to be considered “Answered” all boxes must contain a label. |
| 2 | Multiple Choice | B | None |
| 3 | Multiple Choice | B | None |
| 4 | Multiple Choice | A | None  |
| 5 | TEI Hot Spot | *Cell Membrane*, *Cytoplasm*, *Mitochondrion*, and *Nucleus* should all be selected. | To answer this question correctly, all 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. In order to deselect an answer and remove the blue box, the answer choice must be selected again. 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. |
| 6 | Multiple Choice | A | None |
| 7  | TEI Hot Spot | *Horseshoe Crab*, *Spider*, and *Millipede* should all be selected. | This question will be considered “Answered” when one answer has been selected. |
| 8 | TEI Drag and Drop | From left to right, top to bottom: *4*, *1*, *3*, *2* | This question will be considered “Answered” once a process has been placed in each circle. |
| 9 | TEI Fill In the Blank | Answer*:* *3* | Tell students that the answer does not need to be as long as the response box. Make sure students understand that a blank space is never an allowable character.Information for teachers and students: Equivalent answers would be scored as correct. |
| 10 | Multiple Choice | D | None |
| Science Exploration |  |  |  |
| 11 | Multiple Choice | C | None |
| 12 | TEI Hot Spot | *Cell*, *Tissue*, and *Organism* should all be selected. | 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 stating, “*You must remove an answer before you can choose a new one.*” appears in the top right corner of the screen. This message will remain for approximately three 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. |
| 13 | Multiple Choice | D | None |
| 14 | Multiple Choice | A | None |
| 15 | TEI Drag and Drop | In the *Animals* box: *Red Blood Cells*, *Muscle Tissue*, *Neuron*, and *Bone Tissue*In the *Protists* box: *Paramecium* and *Amoeba* | Selecting a dragger and moving it to an empty box causes the remaining draggers to shift location in the answer option area. This item will not beconsidered “Answered” until all of the samples have been placed into a biological classification. |
| 16 | Multiple Choice | A | None |
| 17 | Multiple Choice | D | Have students open the Exhibit window located on the right side of the screen to view the Periodic Table of Elements.  |
| 18 | Multiple Choice | C | None |
| 19 | TEI Drag and Drop | From left to right: *2*, *3*, *4*, *3* | This question will be considered “Answered” once a number has been placed in each box. |
| 20 | TEI Hot Spot | *Carbon, Helium, Argon,* and *Xenon* should all be selected. | This question will be considered “Answered” once one element has been selected. |
| 21 | TEI Drag and Drop | From left to right top to bottom: *Crest*, *Amplitude*, *Trough*, *Wavelength* | This question will be considered “Answered” once a label has been placed in each box. |
| 22 | Multiple Choice | C | None |
| 23 | Multiple Choice | D | None |
| 24 | Multiple Choice | B | None |
| 25 | Multiple Choice | C | None |
| 26 | TEI Drag and Drop | From left to right: *Iron*, *Wire Coil with 10 coils*, *4 Batteries* | This question will be considered “Answered” once a component has been placed in each box. |
| Science Exploration |  |  | Notice on the left side of the screen there are two tabs related to a Science Exploration. Each tab has the name of information located in that tab. The selection that is displayed has a white tab, and the selection that is not being displayed has a shaded tab.If a Science Exploration is longer than one page, it will scroll. On a desktop or laptop computer, have students practice using the bar along the right side of the Science Exploration to scroll through the passage, as well as the scroll bar on the right side of the screen if necessary. The scroll bar on the far right will only be seen on certain devices and if the computer screen is not in full screen mode. On a touchscreen, use the scroll bar by the Exploration information with a finger to scroll through it. Science Explorations will not automatically scroll to the beginning for each question associated with the information. When a student navigates through a set of questions, the Science Exploration will remain in the location where the student has scrolled.  |
| 27 | Multiple Choice | C | This question references the first science exploration tab, so the first tab will automatically display for this question. |
| 28 | Multiple Choice | B | This question references both tabs, so the first science exploration tab will display for the student. |
| 29 | Multiple Choice | B | None |
| 30 | TEI Fill in the Blank | Answer: 4 | Have students attempt to enter a character that cannot be used as part of the answer. A message will appear that states: “*You cannot use that character.*”This message will remain on the screen for approximately three seconds.  |
| 31 | TEI In Line Choice | From top to bottom: *Compression*, *Submarines* | To see the choices select the down arrow next to“Choose. . .” |

## Biology

| Question Number | Item Type | Correct Answer | Functionality Description |
| --- | --- | --- | --- |
| 1 | TEI Drag and Drop | From left to right: empty box, 2, 4, empty box, 1, 3 | As soon as a dragger is selected and moved, all boxes shade blue. This indicates that a number can be placed in any box- whichever location the student chooses as the correct location. In order for this question to be considered “Answered” all numbers must be placed on the timeline. |
| 2 | TEI Fill in the Blank | Any of the following would be scored correct: UAA, UAG, UGA, uaa, uag, or uga | Tell students that this question will only allow three characters to be entered. The characters that can be entered are restricted to letters. If a student tries to enter more than three characters or a number or symbol, this message will appear: “*You cannot use that character*.”  |
| 3 | TEI Drag and Drop | Each box will contain an “up” arrow. | This question will be considered “Answered” once an arrow has been placed in each box. |
| 4 | TEI Hot Spot | *Cell Membrane*, *Lysosomes*, and *Vacuoles* should all be selected. | To answer this question correctly, all 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. In order to deselect an answer and remove the blue box, the answer choice must be selected again. 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. |
| 5 | TEI Drag and Drop | From top to bottom: *A disease*, *pathogens*, and *inherited*. | Selecting a dragger and moving it to an empty box causes the remaining draggers to shift location in the answer option area. This item will not beconsidered “Answered” until each box contains a word. |
| 6 | TEI Fill in the Blank | Answer: 35 | Tell students that this question will only allow two characters to be entered. The characters that can be entered are restricted to numbers. If a student tries to enter more than two characters or a letter or symbol, this message will appear: “*You cannot use that character*.” |
| 7 | Multiple Choice | D | None |
| 8 | Multiple Choice | B | None |
| 9 | Multiple Choice | A | None |
| 10 | Multiple Choice | A | None |
| 11 | Multiple Choice | D | None |
| 12 | TEI Drag and Drop | From left to right: *Hypertonic*, *Isotonic*, and *Hypotonic* | This item will not beconsidered “Answered” until each box contains a label. |
| 13 | TEI Drag and Drop | From left to right: *Producers*, *Consumers*, and *Decomposers* | This item will not beconsidered “Answered” until each box contains an answer. |
| 14 | Multiple Choice | A | None |
| 15 | Multiple Choice | B | None |
| 16 | Multiple Choice | D | None |
| 17 | Multiple Choice | C | None |
| 18 | Multiple Choice | D | None |
| 19 | TEI Drag and Drop | From top to bottom: *Evaporation*, *Cohesion*, and *Absorption* | This item will not beconsidered “Answered” until each box contains a process. |
| Science Exploration |  |  | Notice on the left side of the screen there are two tabs related to a Science Exploration. Each tab has the name of information located in that tab. The selection that is displayed has a white tab, and the selection that is not being displayed has a shaded tab.If a Science Exploration is longer than one page, it will scroll. On a desktop or laptop computer, have students practice using the bar along the right side of the Science Exploration to scroll through the passage, as well as the scroll bar on the right side of the screen if necessary. The scroll bar on the far right will only be seen on certain devices and if the computer screen is not in full screen mode. On a touchscreen, use the scroll bar by the passage or move the entire passage with a finger to scroll through it. Science Explorations will not automatically scroll to the beginning for each question associated with the information. When a student navigates through a set of questions, the Science Exploration will remain in the location where the student has scrolled.  |
| 20 | Multiple Choice | D | This question references the first science exploration tab, so the first tab will automatically display for this question. |
| 21 | Multiple Choice | D | None |
| 22 | Multiple Choice | B | This question references the second science exploration tab, so the second tab will automatically display for this question. |
| 23 | Multiple Choice | C | This question references both tabs so the first science exploration tab will display for the student. |
| 24 | Multiple Choice | C | None |
| 25 | Multiple Choice | D | None |
| 26 | Multiple Choice | D | None |
| 27 | TEI Drag and Drop | From top to bottom: *Organism Y*, *Organism W*, *Organism V*, *Organism Z*, *Organism X* | This item will not beconsidered “Answered” until each organism has been categorized. |
| 28 | TEI Drag and Drop | In the left box titled “Autotroph”: *Organism X* and *Organism Y* in any orderIn the right box titled “Heterotroph”: *Organism V*, *Organism W*, *Organism Z* in any order | This item will not beconsidered “Answered” until all organisms have been categorized. |
| Science Exploration |  |  |  |
| 29 | Multiple Choice | D | This question references the second science exploration tab, so the second tab will automatically display for this question. |
| 30 | Multiple Choice | A | This question references the first science exploration tab, so the first tab will automatically display for this question. |
| 31 | Multiple Choice | C | This question references the third science exploration tab, so the third tab will automatically display for this question. |
| 32 | TEI In Line Choice | From top to bottom: *space* and *acorn barnacle* | This question references more than one tab, so the first science exploration tab will display for the student.To see the choices select the down arrow next to“Choose. . .” |
| 33 | Multiple Choice | A | This question references the third science exploration tab, so the third tab will automatically display for this question. |
| 34 | Multiple Choice | D | This question references the third science exploration tab, so the third tab will automatically display for this question. |
| 35 | TEI Drag and Drop | From top to bottom: *Octopus*, *Sea snail*, *Sea anemone*, *Limpet*, *Zooplankton*, and *Phytoplankton* | This question references the third science exploration tab, so the third tab will automatically display for this question.This item will not beconsidered “Answered” until all organisms have been placed. |
| 36 | Multiple Choice | B | This question references the third science exploration tab, so the third tab will automatically display for this question. |
| 37 | Multiple Choice | C | This question references more than one tab so the first science exploration tab will display for the student. |