Dynamic Learning Maps® (DLM®) Alternate Assessment Overview of Mathematics Testlets

The following presentation includes demonstrations of two released testlets for mathematics.

Demonstrated Testlets

Major Claim	Conceptual Area	Essential Element
1—Students demonstrate increasingly complex understanding of number sense	M.C1.3—Calculate accurately and efficiently using simple arithmetic operations	M.EE.HS.N.CN.2.b—Solve real-world problems involving addition and subtraction of decimals, using models when needed.

2

DYNAMIC LEARNING MAPS

Both demonstrated testlets assess a high school Essential Element for Number and Quantity—The Complex Number System, which states, ”Solve real-world problems involving addition and subtraction of decimals, using models when needed.” However, each testlet will assess a different linkage level for this Essential Element.

This Essential Element is within Major Claim 1 for mathematics, which is, “Students demonstrate increasingly complex understanding of number sense,” and the conceptual area M.C1.3, which states, “Calculate accurately and efficiently using simple arithmetic operations.”

Linkage Levels for M.EE.HS.N.CN.2.b

Linkage Levels (Least to Most Complex)	Skills Assessed at Each Linkage Level
Initial Precursor (IP)	Recognize separateness Recognize set
Distal Precursor (DP)	Recognize a unit Explain ten as a composition of ten ones Explain place value for ones and tens
Proximal Precursor (PP)	Add 2 decimals with digits in the tenths place Subtract 2 decimals with digits in the tenths place
Target (T)	Solve word problems involving addition with rational numbers Solve word problems involving subtraction with rational numbers
Successor (S)	Solve multi-step problems with rational numbers

DYNAMIC LEARNING MAPS

Every Essential Element for mathematics includes five linkage levels. The linkage levels help make the academic content accessible to the wide range of students who participate in the assessment. From least to most complex, the linkage levels are Initial Precursor, Distal Precursor, Proximal Precursor, Target, and Successor. However, a single mathematics testlet assesses only one linkage level.

Linkage Level for Demo 1

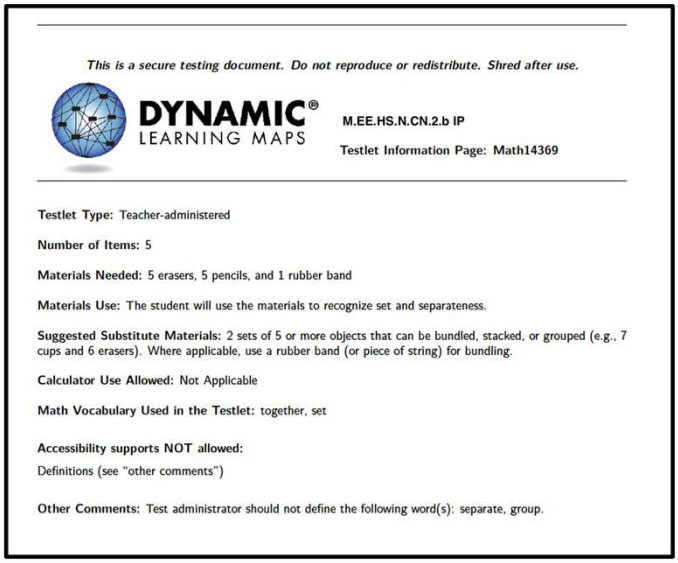
- Initial Precursor
  - Recognize separateness
  - Recognize set

4

DYNAMIC LEARNING MAPS

The first demonstrated testlet assesses the Initial Precursor linkage level skills “recognize separateness” and “recognize set.” The items in the testlet assess those two skills only.

Demo 1—Testlet Information Page (TIP)



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DYNAMIC® LEARNING MAPS

M.EE.HS.N.CN.2.b IP

Testlet Information Page: Math14369

Testlet Type: Teacher-administered

Number of Items: 5

Materials Needed: 5 erasers, 5 pencils, and 1 rubber band

Materials Use: The student will use the materials to recognize set and separateness.

Suggested Substitute Materials: 2 sets of 5 or more objects that can be bundled, stacked, or grouped (e.g., 7 cups and 6 erasers). Where applicable, use a rubber band (or piece of string) for bundling.

Calculator Use Allowed: Not Applicable

Math Vocabulary Used in the Testlet: together, set

Accessibility supports NOT allowed:
Definitions (see "other comments")

Other Comments: Test administrator should not define the following word(s): separate, group.

5

DYNAMIC® LEARNING MAPS

As a reminder, before attempting to administer a testlet with a student in Kite® Student Portal, the testlet's corresponding Testlet Information Page, commonly referred to as a TIP, should be accessed in Kite Educator Portal because Testlet Information Pages provide important preparatory information.

The Testlet Information Page for the following released testlet indicates the testlet will assess the Essential Element at the Initial Precursor linkage level, will be teacher-administered, and will have five items.

The materials needed to administer this testlet include 5 erasers, 5 pencils, and 1 rubber band. The materials will be used for the student to recognize set and separateness. However, if those materials are not readily available or suitable for the student, suggested substitutions include 2 sets of 5 or more objects that can be bundled, stacked, or grouped, such as 7 cups. A piece of string can be used in place of the rubber band for bundling.

Calculator use is not applicable for this testlet.

The mathematics vocabulary used in this testlet are "together" and "set," and the test administrator should not define the words "separate" or "group" for the student.

DEMO 1
M.EE.HS.N.CN.2.b—INITIAL PRECURSOR

6

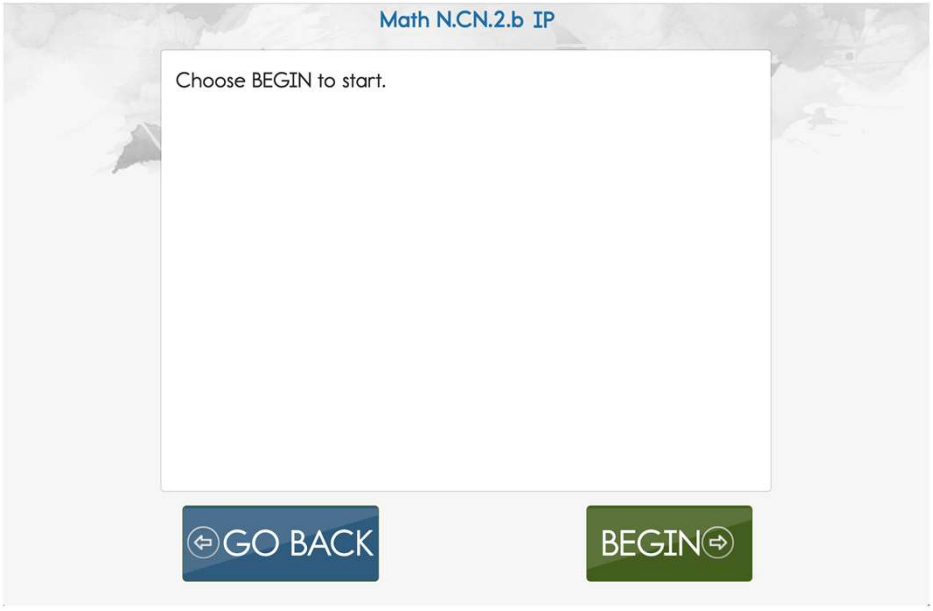
DYNAMIC LEARNING MAPS

Having considered the Testlet Information Page for this released testlet, the testlet will now be demonstrated.

For the purpose of this demonstration, each screen will be read as it appears. Remember, since this testlet is teacher-administered, the educator directions and items are written for the test administrator.

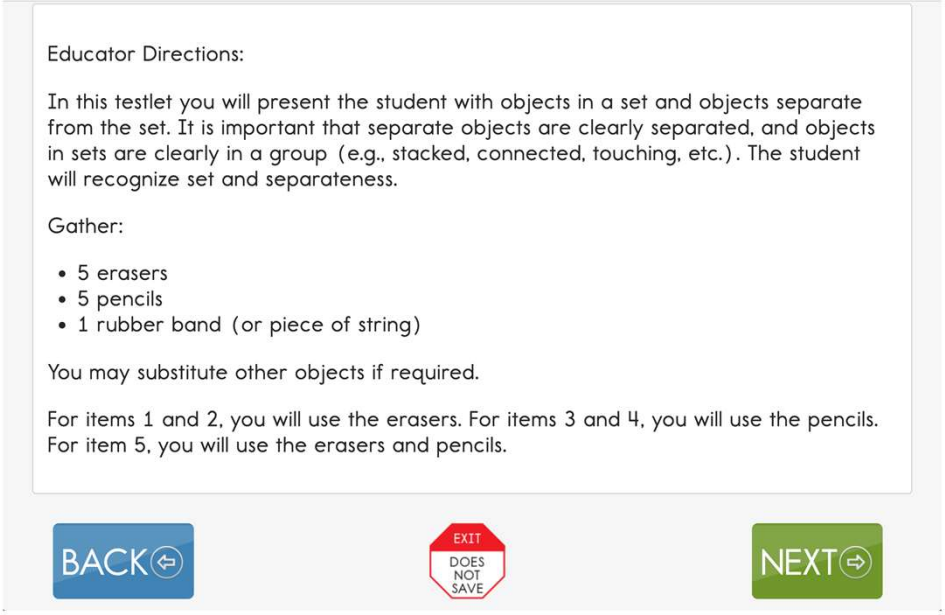
The testlet will be shown without any accessibility supports. Only correct response options will be chosen.

Demo 1, Screen 1



Choose **BEGIN** to start.

Demo 1, Screen 2



Educator Directions:

In this testlet you will present the student with objects in a set and objects separate from the set. It is important that separate objects are clearly separated, and objects in sets are clearly in a group (such as stacked, connected, touching, etc.). The student will recognize set and separateness.

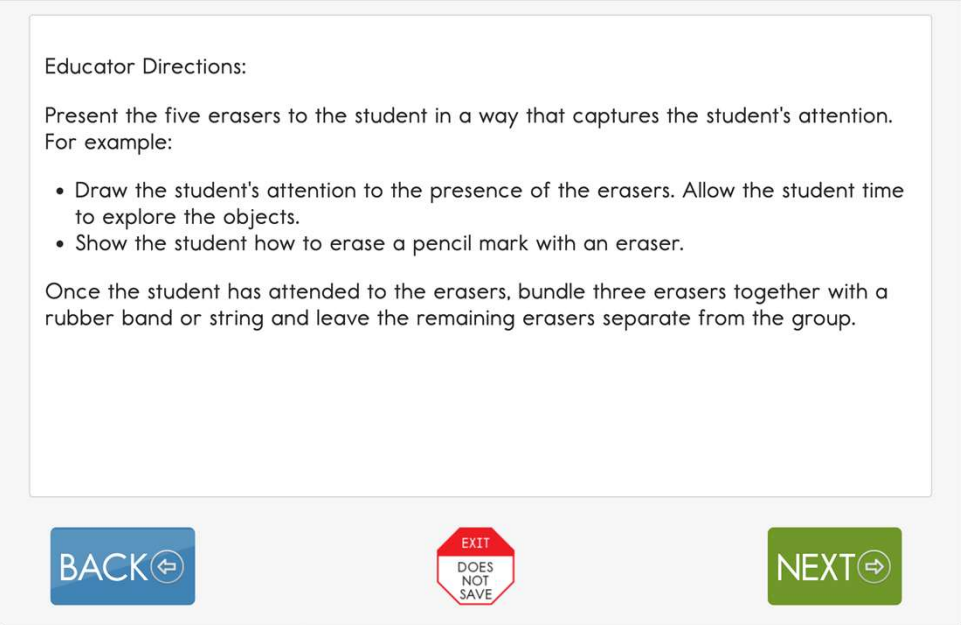
Gather:
- 5 erasers
- 5 pencils
- 1 rubber band (or piece of string)

You may substitute other objects if required.

For items 1 and 2, you will use the erasers. For items 3 and 4, you will use the pencils. For item 5, you will use the erasers and pencils.

NEXT

Demo 1, Screen 3



Educator Directions:

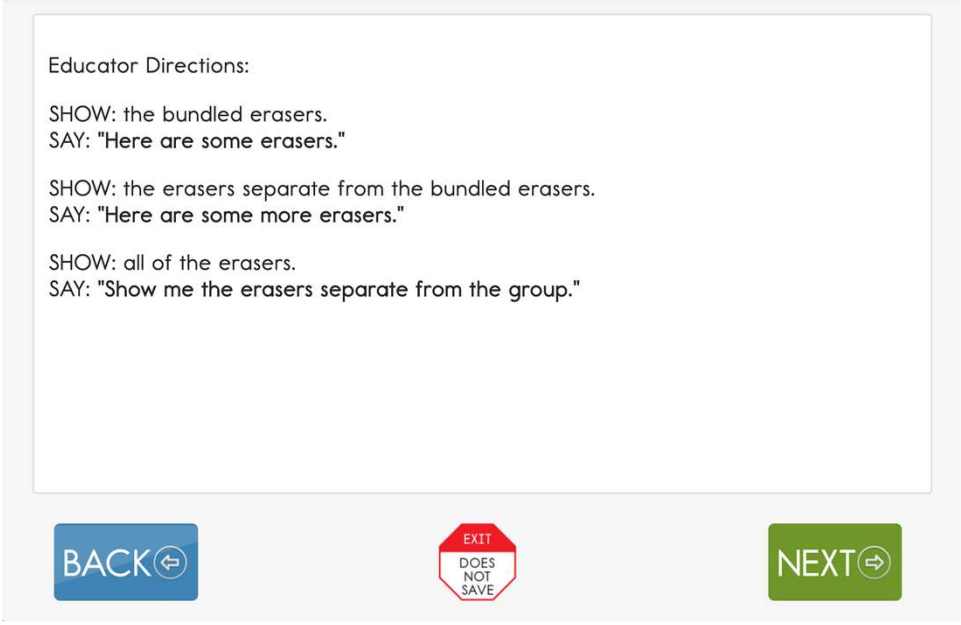
Present the five erasers to the student in a way that captures the student's attention. For example:

- Draw the student's attention to the presence of the erasers. Allow the student time to explore the objects.
- Show the student how to erase a pencil mark with an eraser.

Once the student has attended to the erasers, bundle three erasers together with a rubber band or string and leave the remaining erasers separate from the group.

NEXT

Demo 1, Screen 4



Educator Directions:

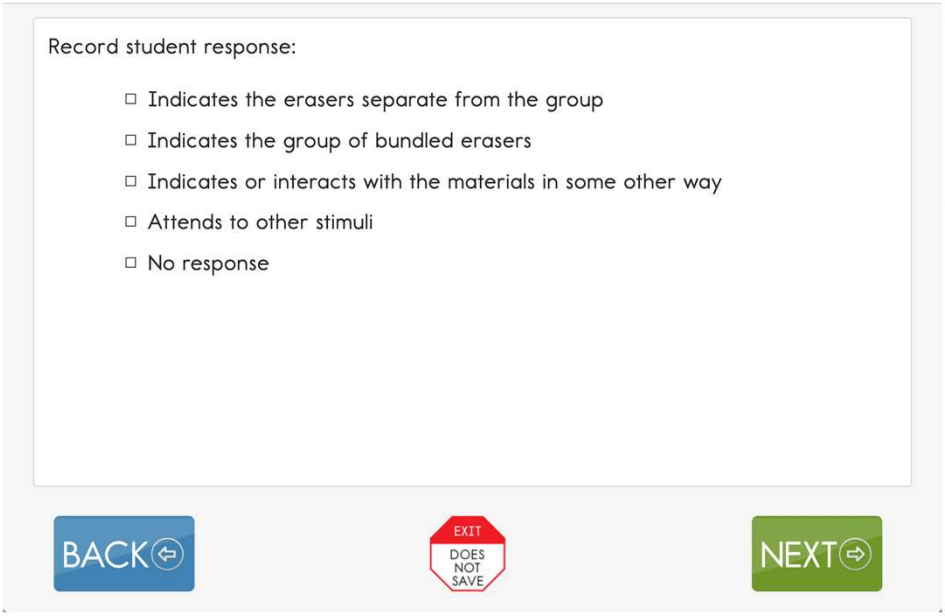
SHOW: the bundled erasers.
SAY: “Here are some erasers.”

SHOW: the erasers separate from the bundled erasers.
SAY: “Here are some more erasers.”

SHOW: all of the erasers.
SAY: “Show me the erasers separate from the group.”

NEXT

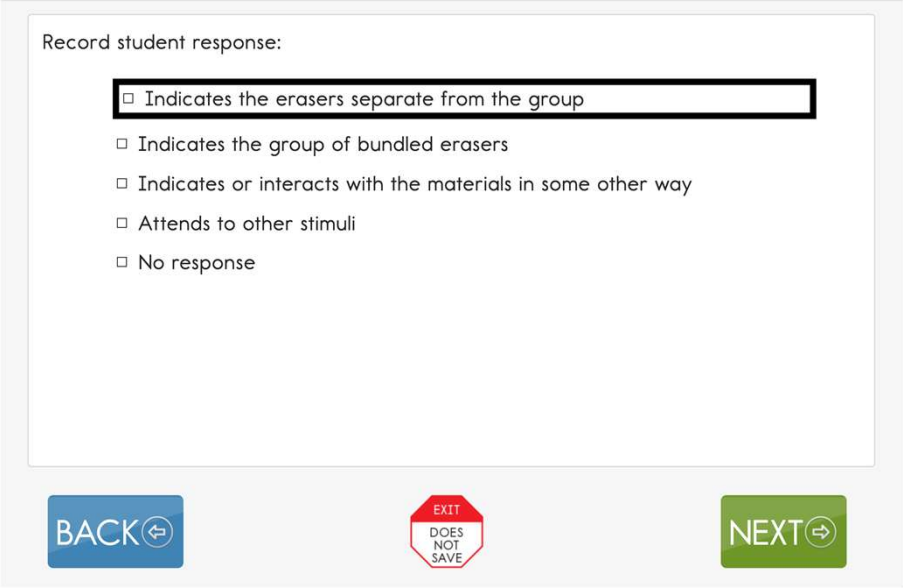
Demo 1, Screen 5—Response Not Selected



Record student response:

- ❑ Indicates the erasers separate from the group
- ❑ Indicates the group of bundled erasers
- ❑ Indicates or interacts with the materials in some other way
- ❑ Attends to other stimuli
- ❑ No response

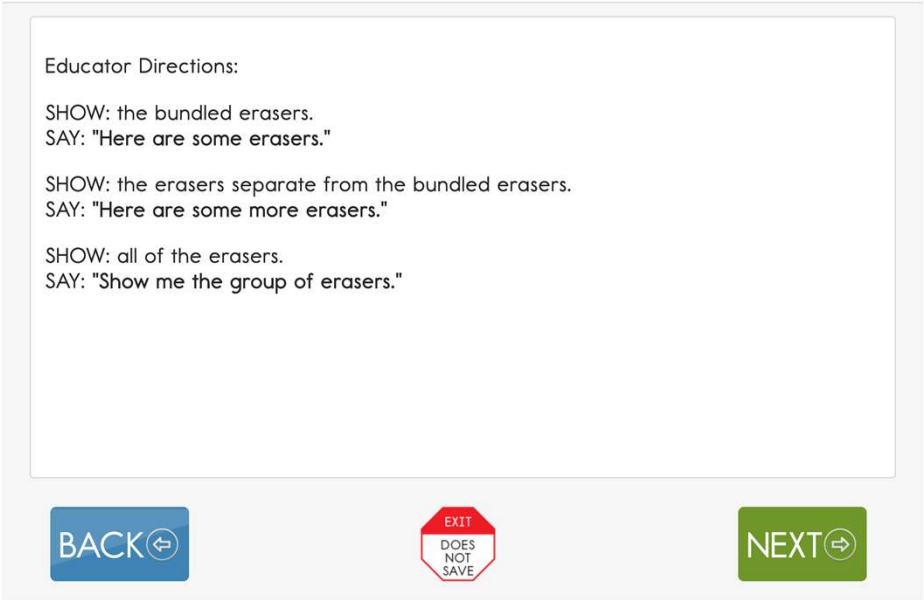
Demo 1, Screen 5—Response Selected



Indicates the erasers separate from the group.

NEXT

Demo 1, Screen 6



Educator Directions:

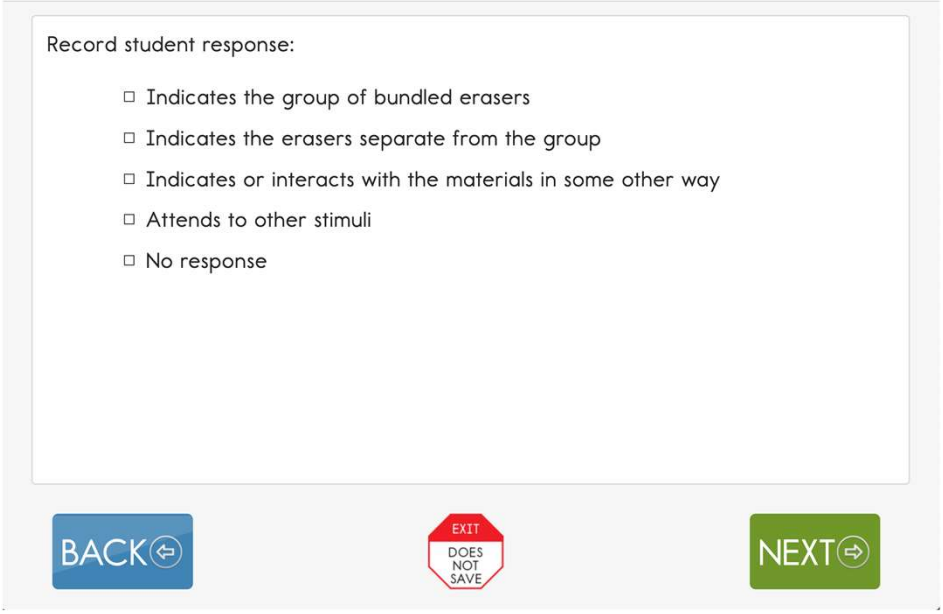
SHOW: the bundled erasers.
SAY: “Here are some erasers.”

SHOW: the erasers separate from the bundled erasers.
SAY: “Here are some more erasers.”

SHOW: all of the erasers.
SAY: “Show me the group of erasers.”

NEXT

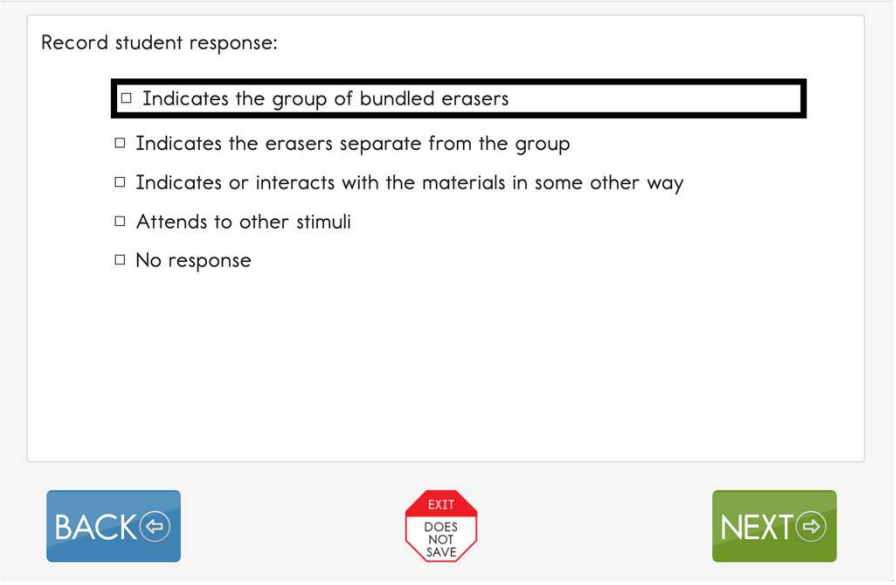
Demo 1, Screen 7—Response Not Selected



Record student response:

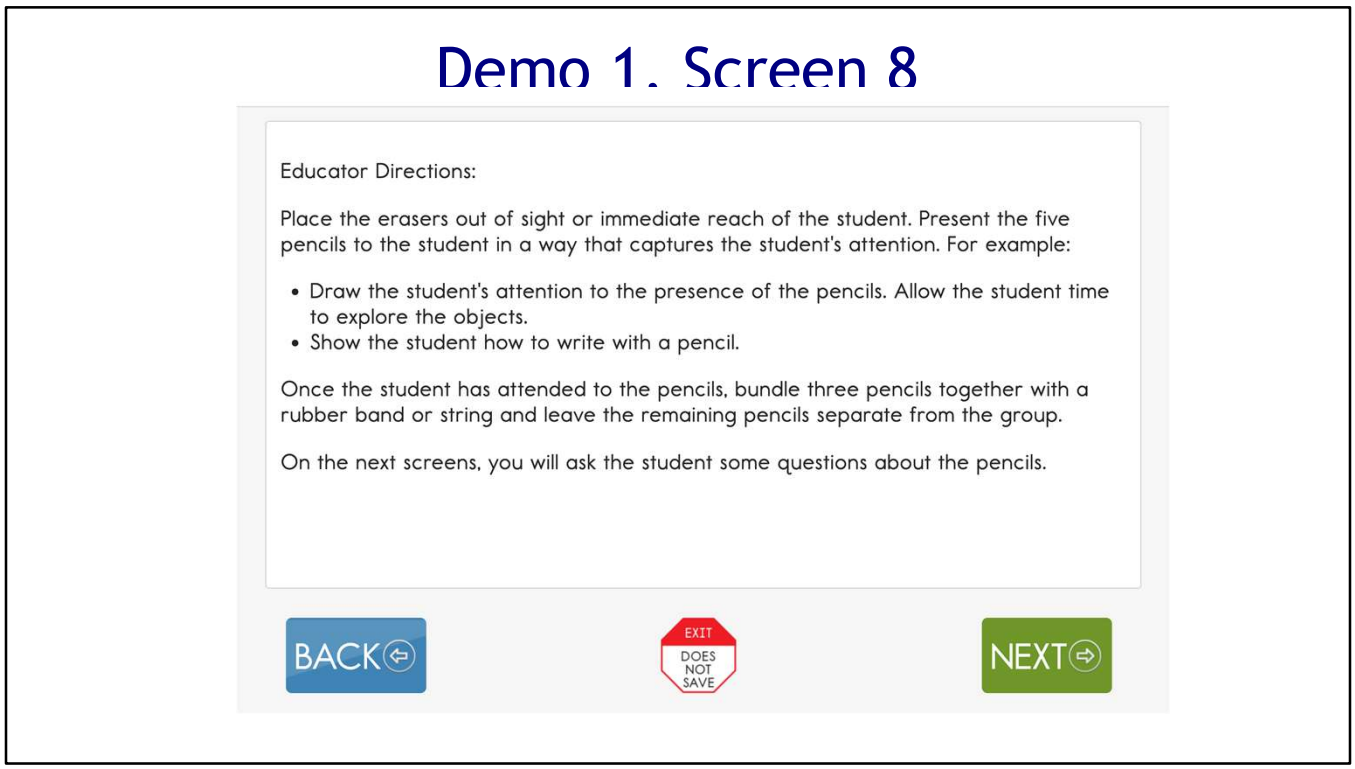
- ❑ Indicates the group of bundled erasers
- ❑ Indicates the erasers separate from the group
- ❑ Indicates or interacts with the materials in some other way
- ❑ Attends to other stimuli
- ❑ No response

Demo 1, Screen 7—Response Selected



Indicates the group of bundled erasers.

NEXT



Educator Directions:

Place the erasers out of sight or immediate reach of the student. Present the five pencils to the student in a way that captures the student's attention. For example:

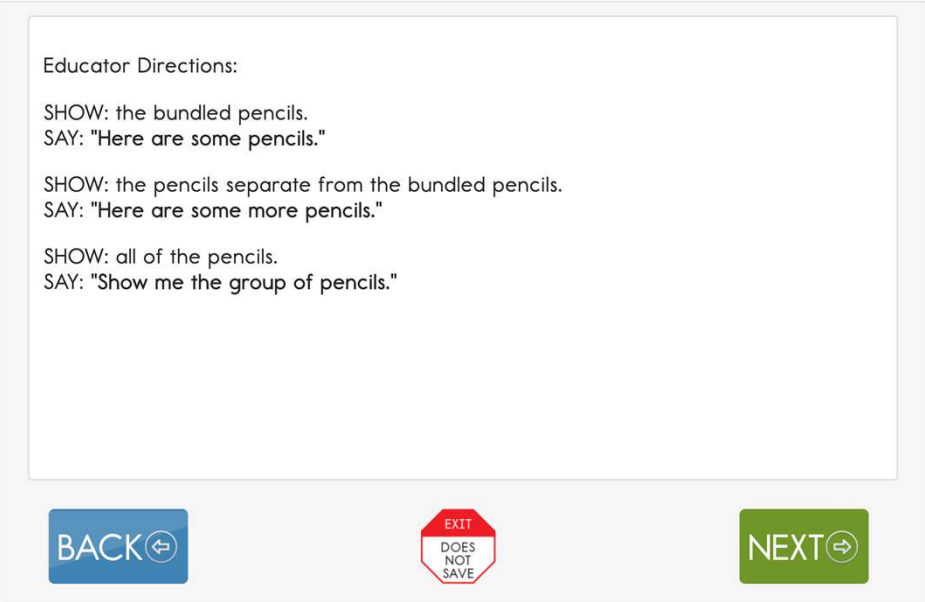
- Draw the student's attention to the presence of the pencils. Allow the student time to explore the objects.
- Show the student how to write with a pencil.

Once the student has attended to the pencils, bundle three pencils together with a rubber band or string and leave the remaining pencils separate from the group.

On the next screens, you will ask the student some questions about the pencils.

NEXT

Demo 1. Screen 9



Educator Directions:

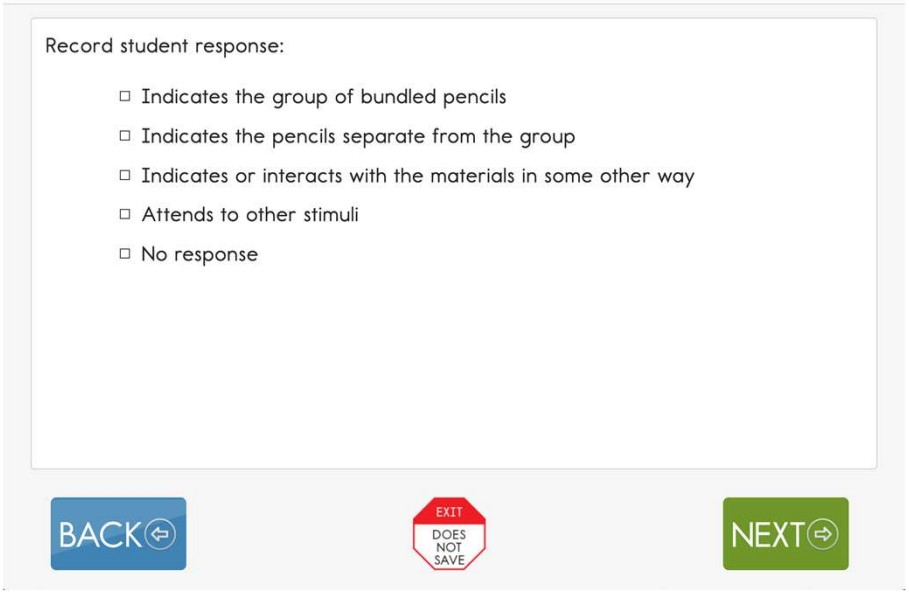
SHOW: the bundled pencils.
SAY: “Here are some pencils.”

SHOW: the pencils separate from the bundled pencils.
SAY: “Here are some more pencils.”

SHOW: all of the pencils.
SAY: “Show me the group of pencils.”

NEXT

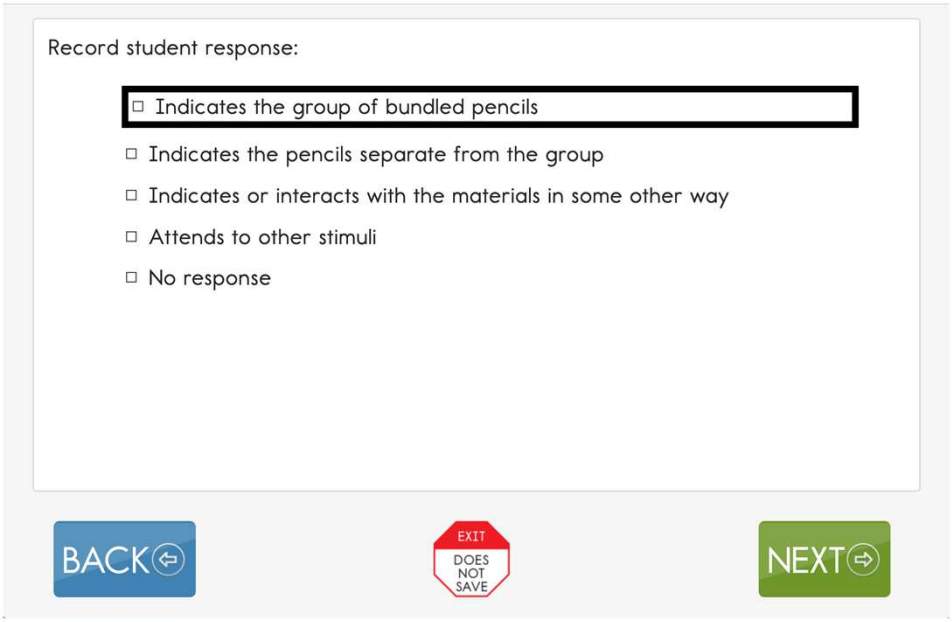
Demo 1, Screen 10—Response Not Selected



Record student response:

- ❑ Indicates the group of bundled pencils
- ❑ Indicates the pencils separate from the group
- ❑ Indicates or interacts with the materials in some other way
- ❑ Attends to other stimuli
- ❑ No response

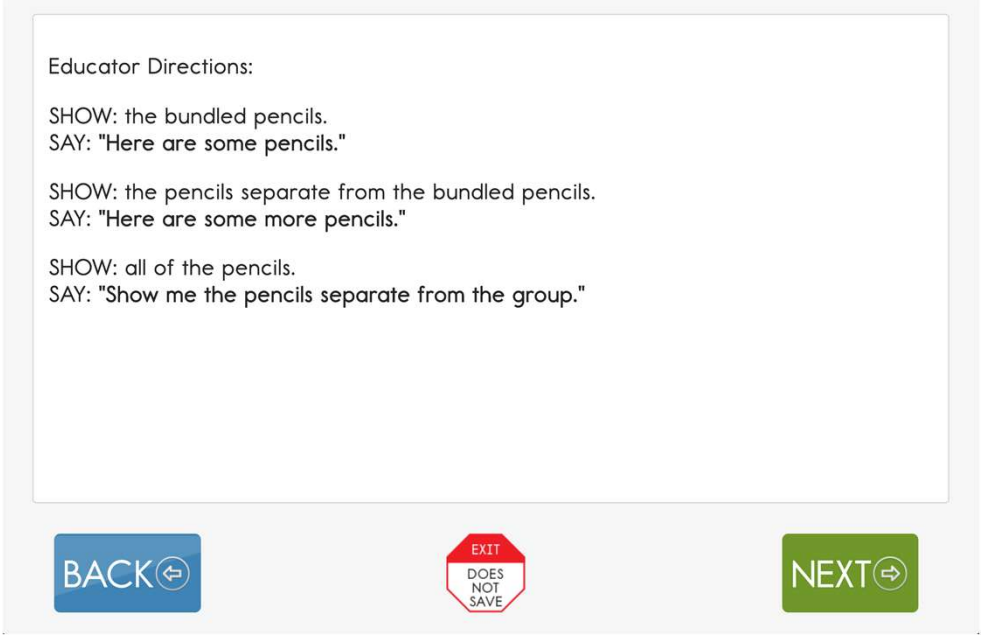
Demo 1, Screen 10—Response Selected



Indicates the group of bundled pencils.

NEXT

Demo 1. Screen 11



Educator Directions:

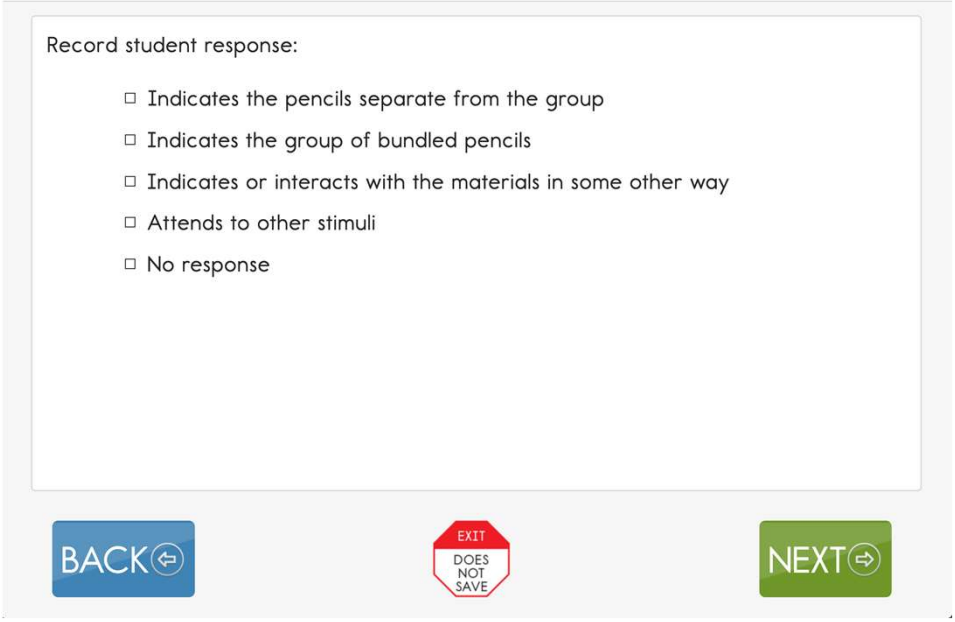
SHOW: the bundled pencils.
SAY: “Here are some pencils.”

SHOW: the pencils separate from the bundled pencils.
SAY: “Here are some more pencils.”

SHOW: all of the pencils.
SAY: “Show me the pencils separate from the group.”

NEXT

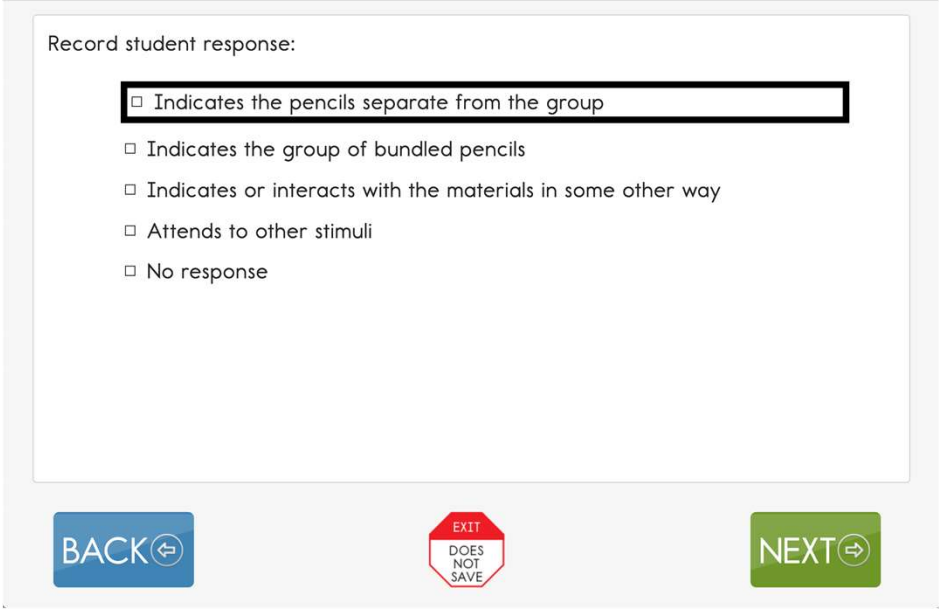
Demo 1, Screen 12—Response Not Selected



Record student response:

- ❑ Indicates the pencils separate from the group
- ❑ Indicates the group of bundled pencils
- ❑ Indicates or interacts with the materials in some other way
- ❑ Attends to other stimuli
- ❑ No response

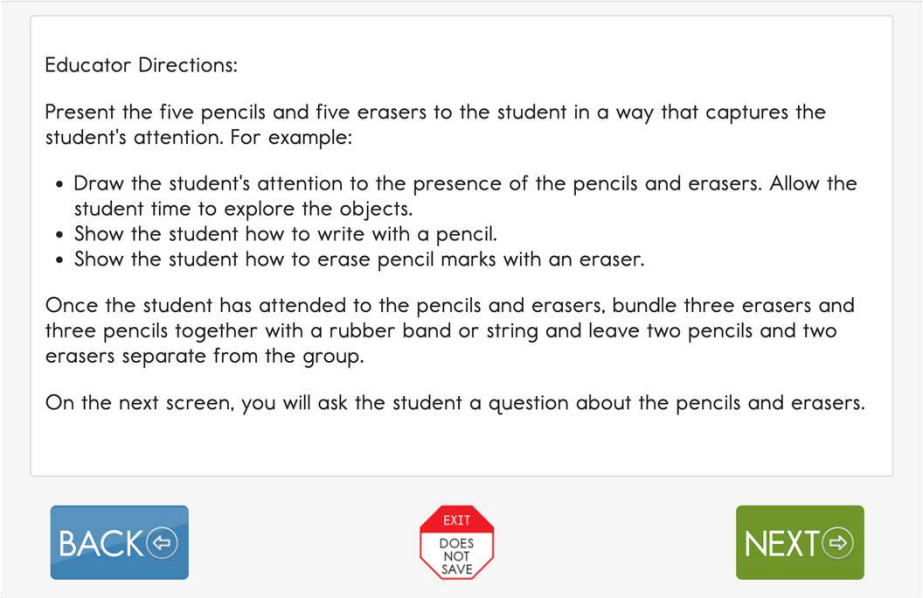
Demo 1, Screen 12—Response Selected



Indicates the pencils separate from the group.

NEXT

Demo 1, Screen 13



Educator Directions:

Present the five pencils and five erasers to the student in a way that captures the student's attention. For example:

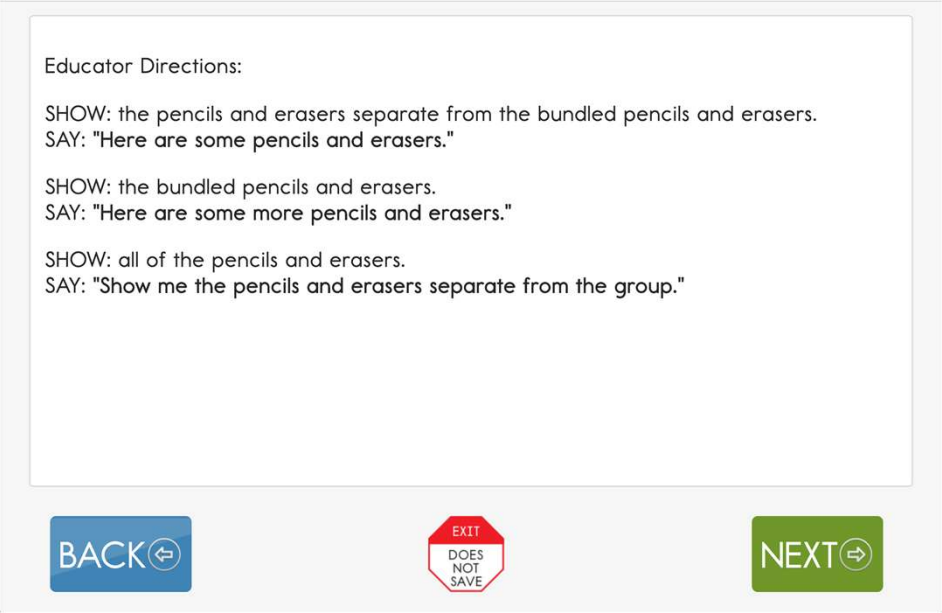
- Draw the student's attention to the presence of the pencils and erasers. Allow the student time to explore the objects.
- Show the student how to write with a pencil.
- Show the student how to erase pencil marks with an eraser.

Once the student has attended to the pencils and erasers, bundle three erasers and three pencils together with a rubber band or string and leave two pencils and two erasers separate from the group.

On the next screen, you will ask the student a question about the pencils and erasers.

NEXT

Demo 1, Screen 14



Educator Directions:

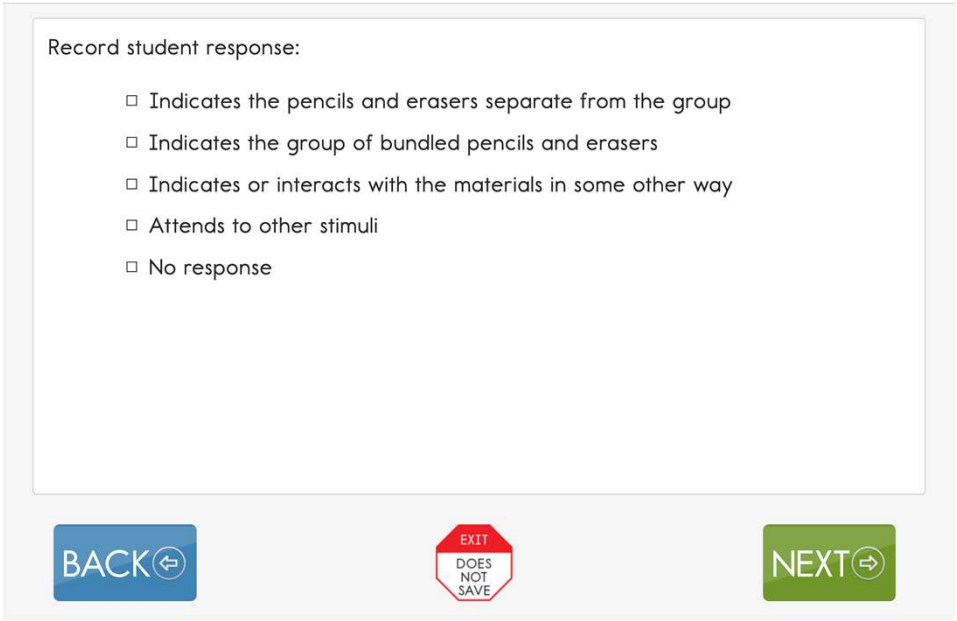
SHOW: the pencils and erasers separate from the bundled pencils and erasers.
SAY: “Here are some pencils and erasers.”

SHOW: the bundled pencils and erasers.
SAY: “Here are some more pencils and erasers.”

SHOW: all of the pencils and erasers.
SAY: “Show me the pencils and erasers separate from the group.”

NEXT

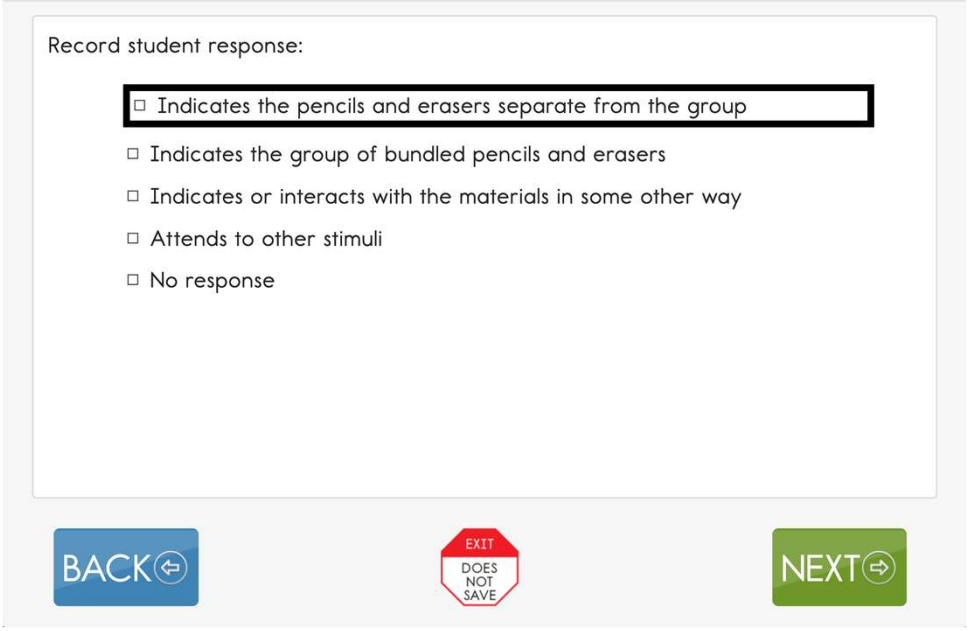
Demo 1, Screen 15—Response Not Selected



Record student response:

- ❑ Indicates the pencils and erasers separate from the group
- ❑ Indicates the group of bundled pencils and erasers
- ❑ Indicates or interacts with the materials in some other way
- ❑ Attends to other stimuli
- ❑ No response

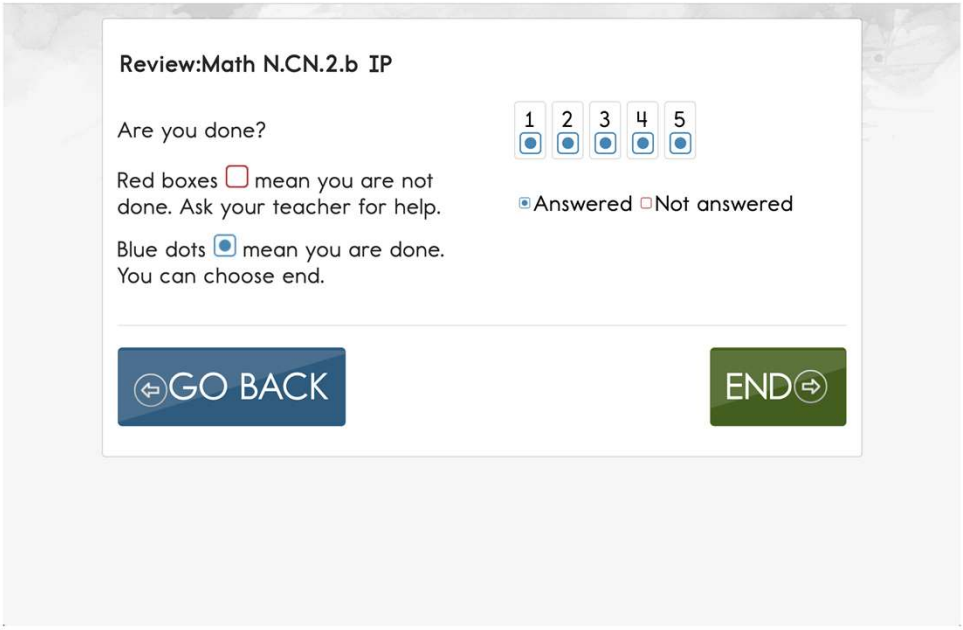
Demo 1. Screen 15—Response Selected



Indicates the pencils and erasers separate from the group.

NEXT

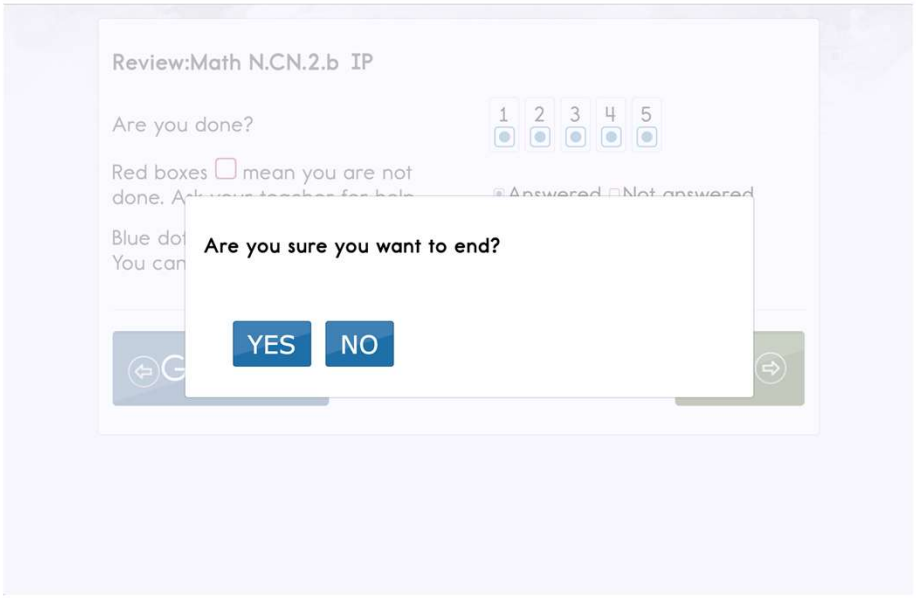
Demo 1, Screen 16



Since this is a teacher-administered testlet, this review screen is an opportunity for the test administrator to ensure responses for all items in the testlet have been recorded. For computer-delivered testlets, the same screen appears to give the student the opportunity to go back and answer any items left unanswered.

END

End of Demo 1



Are you sure you want to end?

YES

Demo 1 Complete

The demonstration for the first testlet in this presentation is now complete.

Linkage Level for Demo 2

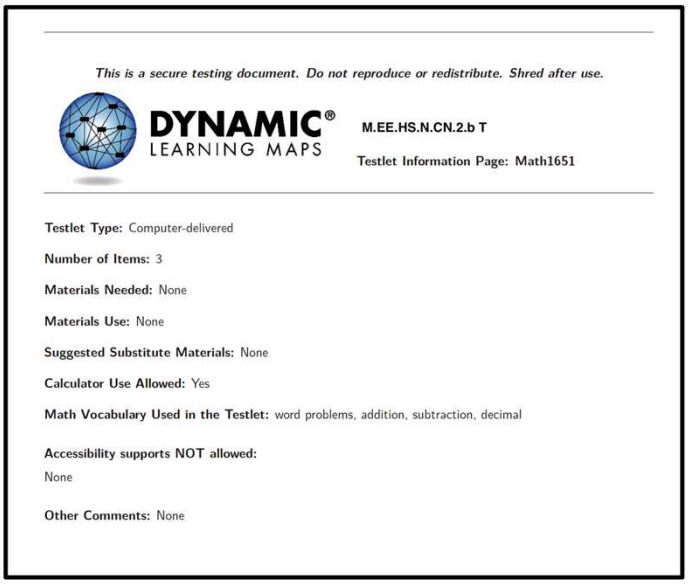
- Target
  - Solve word problems involving addition with rational numbers
  - Solve word problems involving subtraction with rational numbers

30

DYNAMIC LEARNING MAPS

The second demonstrated testlet assesses the same Essential Element as the first but at the Target linkage level, which is specific to the skills “Solve word problems involving addition with rational numbers,” and “Solve word problems involving subtraction with rational numbers.”

Demo 2—Testlet Information Page (TIP)



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DYNAMIC® LEARNING MAPS

M.EE.HS.N.CN.2.b T

Testlet Information Page: Math1651

Testlet Type: Computer-delivered

Number of Items: 3

Materials Needed: None

Materials Use: None

Suggested Substitute Materials: None

Calculator Use Allowed: Yes

Math Vocabulary Used in the Testlet: word problems, addition, subtraction, decimal

Accessibility supports NOT allowed:
None

Other Comments: None

31

DYNAMIC® LEARNING MAPS

As mentioned previously, before administering a testlet with a student in Kite Student Portal, the testlet's corresponding Testlet Information Page should be accessed in Kite Educator Portal because it contains important preparatory information.

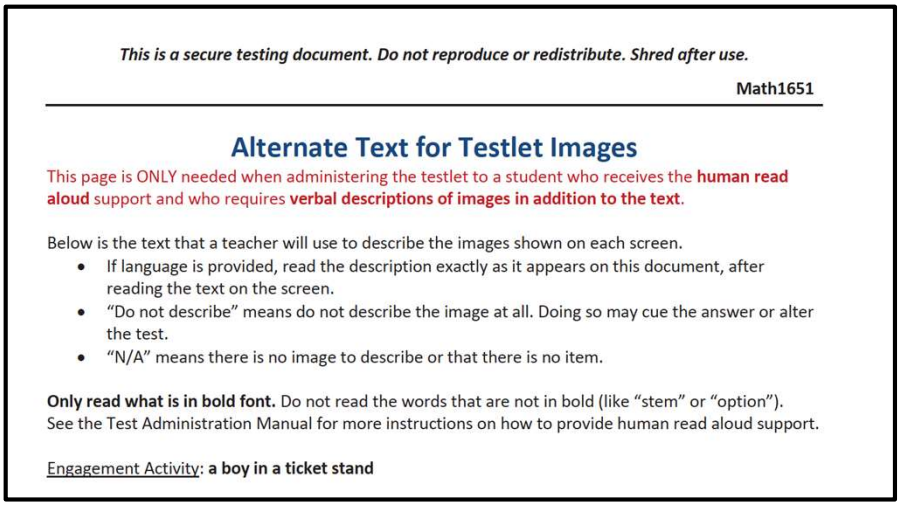
The Testlet Information Page for the following released testlet indicates the testlet will assess the Essential Element at the Target linkage level, will be computer-delivered, and will have three items. However, no materials will be needed.

The Testlet Information Page states that use of a calculator is allowed.

The mathematics vocabulary used in the testlet includes "word problems," "addition," "subtraction," and "decimal."

The Testlet Information Page does not include any other information about accessibility supports NOT allowed or any comments.

Demo 2—Alternate Text



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Math1651

Alternate Text for Testlet Images

This page is ONLY needed when administering the testlet to a student who receives the **human read aloud** support and who requires **verbal descriptions of images in addition to the text**.

Below is the text that a teacher will use to describe the images shown on each screen.

- If language is provided, read the description exactly as it appears on this document, after reading the text on the screen.
- "Do not describe" means do not describe the image at all. Doing so may cue the answer or alter the test.
- "N/A" means there is no image to describe or that there is no item.

Only read what is in bold font. Do not read the words that are not in bold (like "stem" or "option").
See the Test Administration Manual for more instructions on how to provide human read aloud support.

Engagement Activity: **a boy in a ticket stand**

DYNAMIC LEARNING MAPS

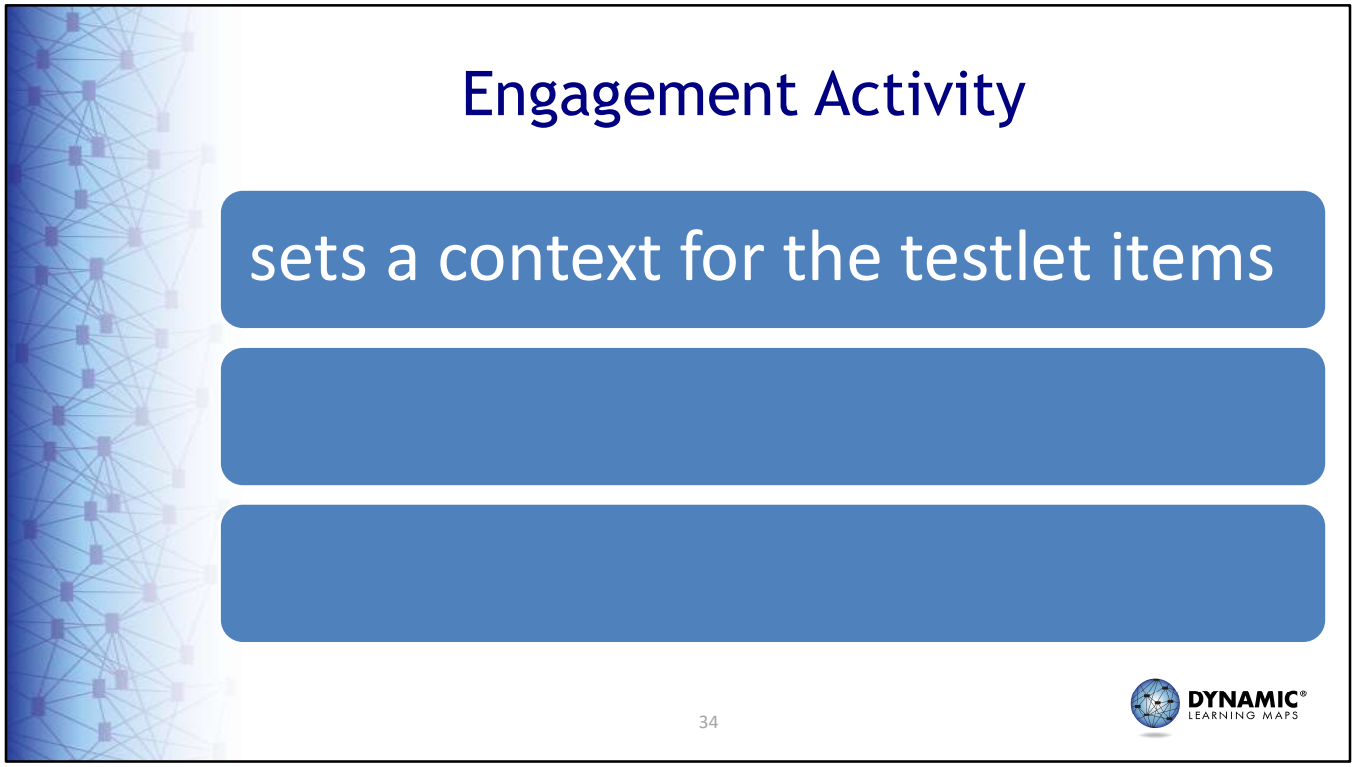
However, alternate text for testlet images are provided on subsequent pages of the Testlet Information Page for students who receive the human read aloud support and require verbal descriptions of the images in addition to the text. Directions for the test administrator are provided. This testlet's engagement activity includes a picture of a boy in a ticket stand. On the engagement activity screen, the test administrator would read the alternate text "a boy in a ticket stand" exactly as written. No other pictures are used in this testlet.

DEMO 2
M.EE.HS.N.CN.2.b—TARGET

33

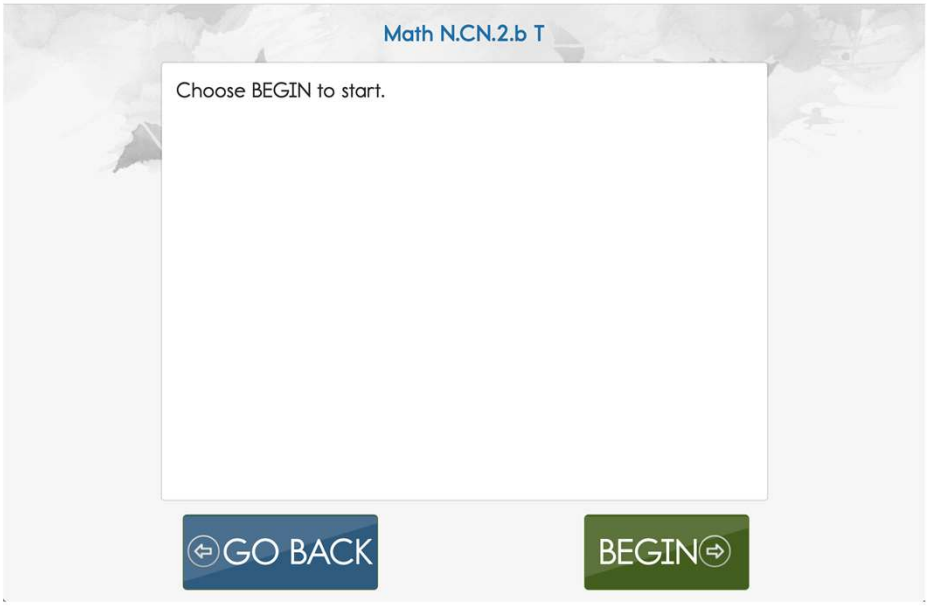
Having considered the Testlet Information Page for this released testlet, the testlet will now be demonstrated.

For the purpose of the demonstration, each screen will be read as it appears. The testlet will be shown without any accessibility supports. Only correct response options will be chosen.



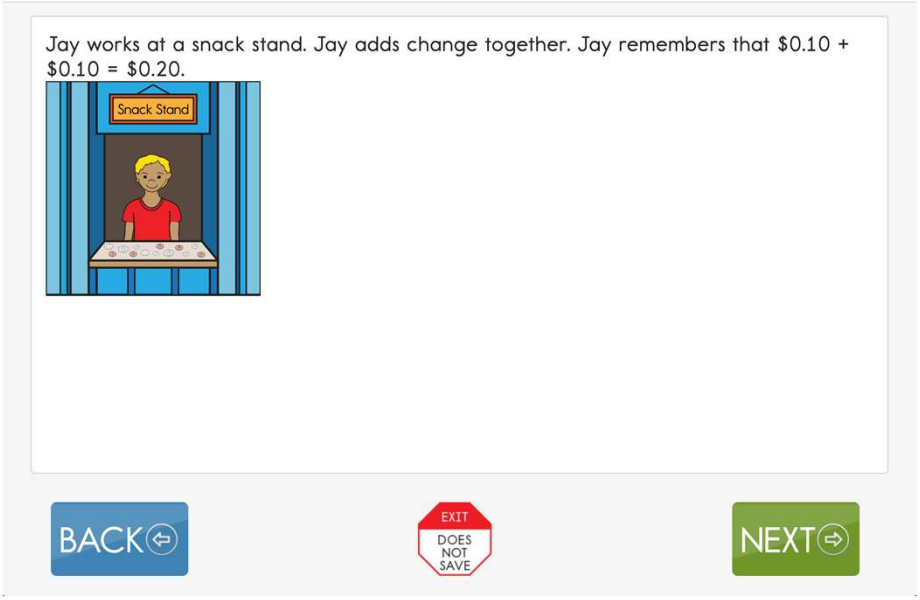
After the **BEGIN** screen, a short engagement activity will appear. The engagement activity serves to provide a context for the items in the testlet, activate the student's prior knowledge, and engage the student.

Demo 2, Screen 1



Choose **BEGIN** to start.

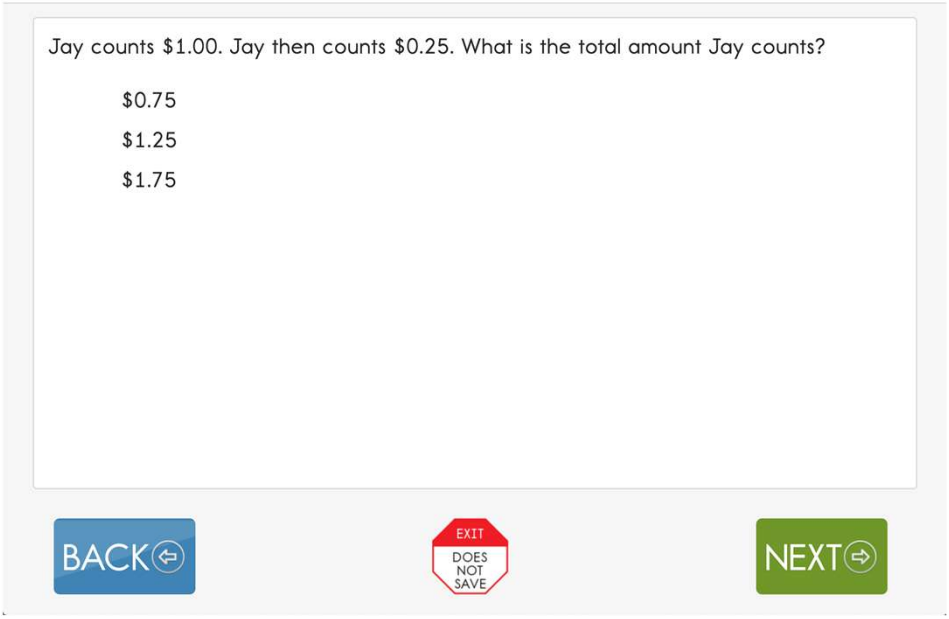
Demo 2, Screen 2



Jay works at a snack stand. Jay adds change together. Jay remembers that $0.10 + $0.10 = $0.20.

NEXT

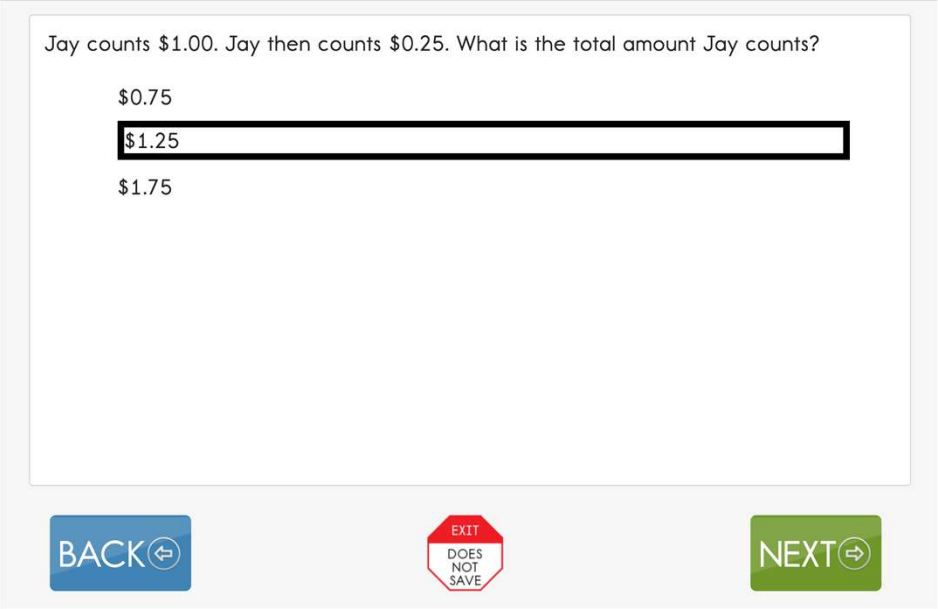
Demo 2, Screen 3—Response Not Selected



Jay counts $1.00. Jay then counts $0.25. What is the total amount Jay counts?

$0.75
$1.25
$1.75

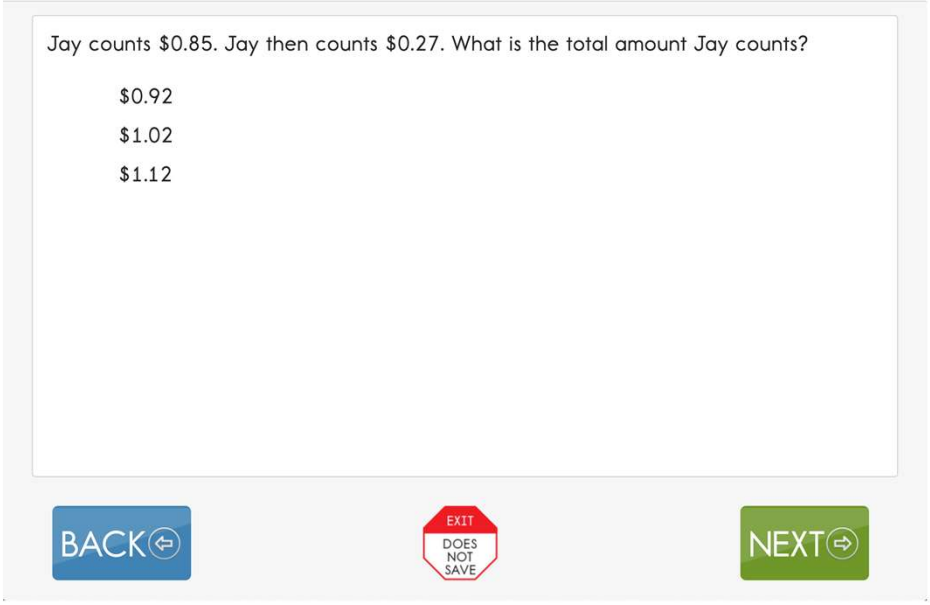
Demo 2. Screen 3—Response Selected



$1.25

NEXT

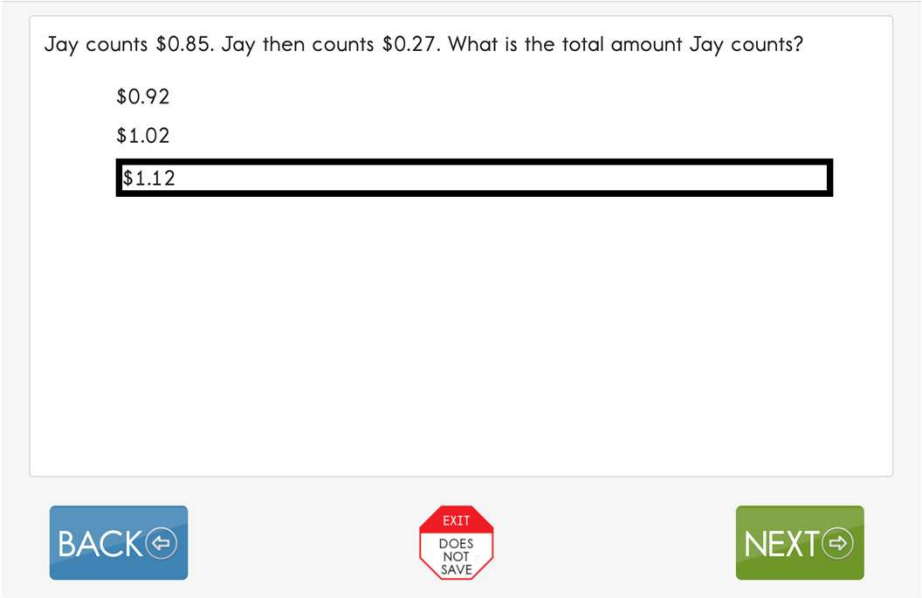
Demo 2, Screen 4—Response Not Selected



Jay counts $0.85. Jay then counts $0.27. What is the total amount Jay counts?

$0.92
$1.02
$1.12

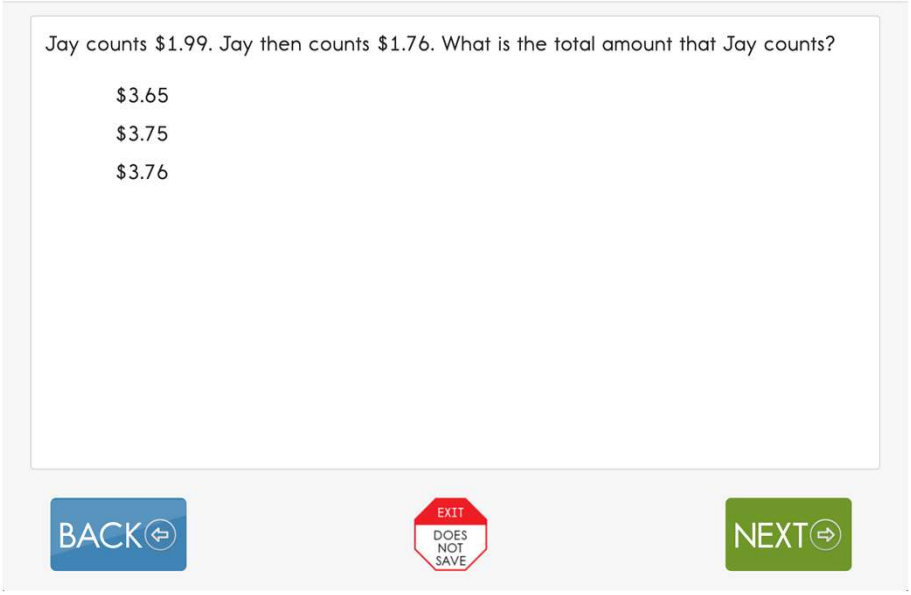
Demo 2, Screen 4—Response Selected



$1.12

NEXT

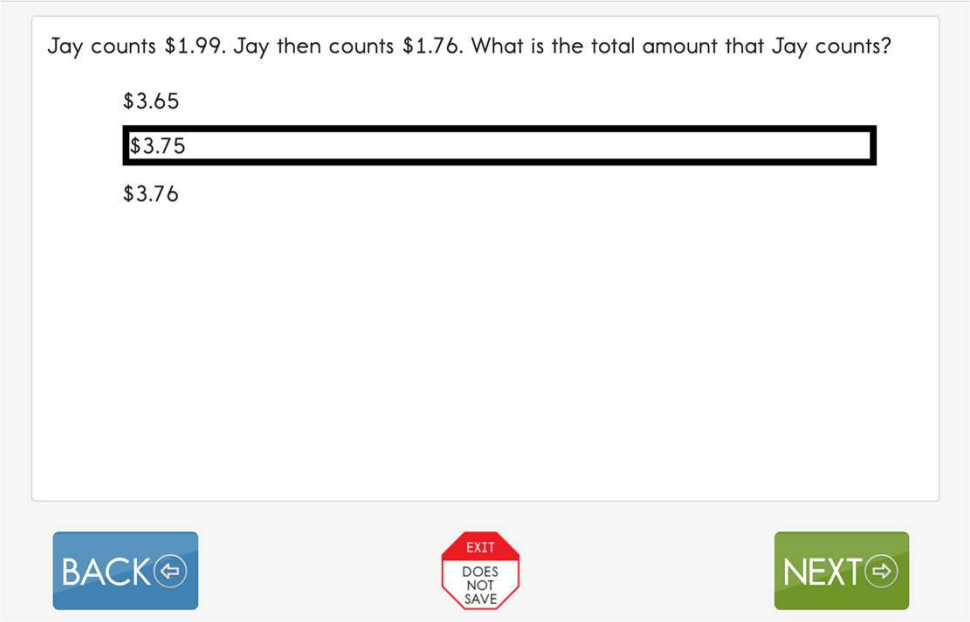
Demo 2, Screen 5—Response Not Selected



Jay counts $1.99. Jay then counts $1.76. What is the total amount that Jay counts?

$3.65
$3.75
$3.76

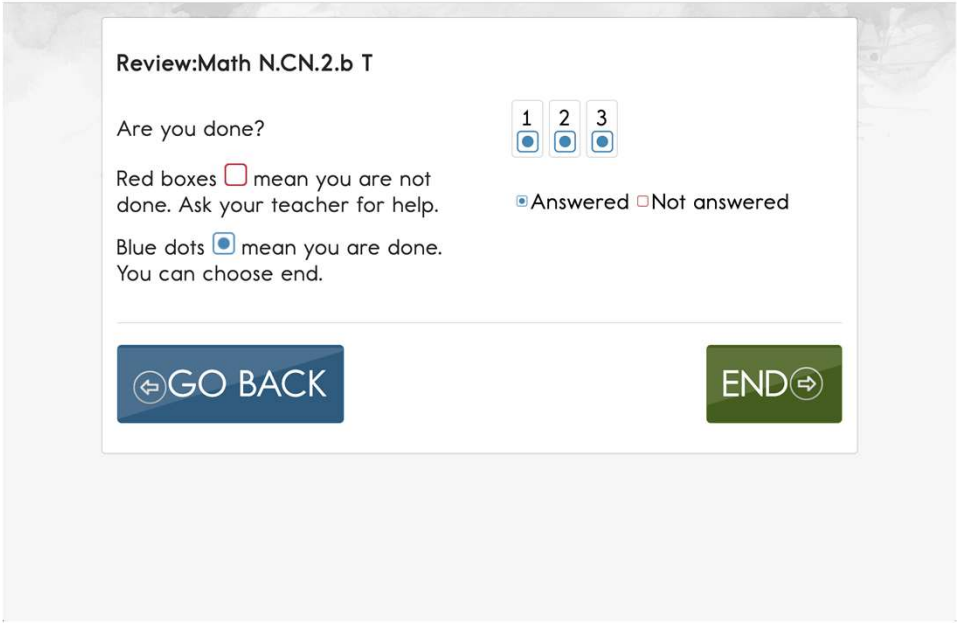
Demo 2, Screen 5—Response Selected



$3.75

NEXT

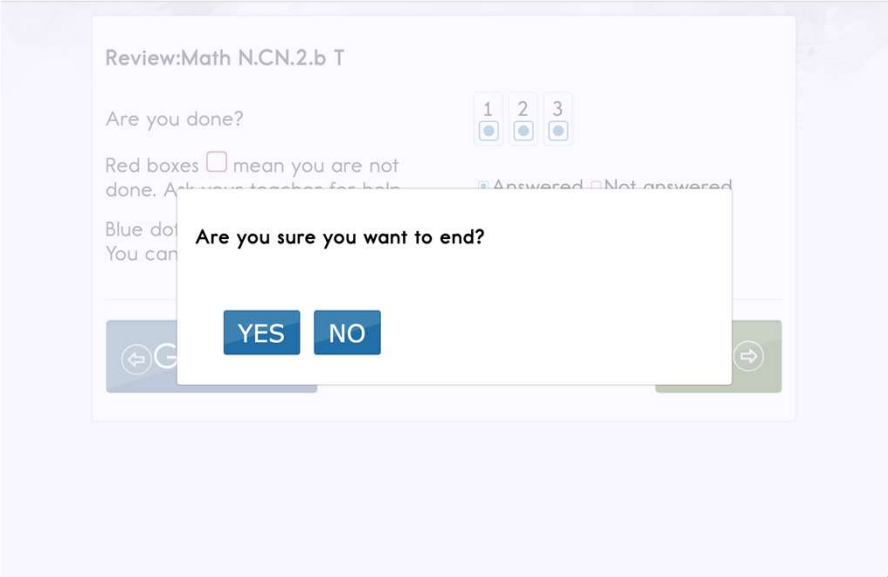
Demo 2, Screen 6



Are you done? Red boxes mean you are not done. Ask your teacher for help. Blue dots mean you are done. You can choose end.

END

End of Demo 2



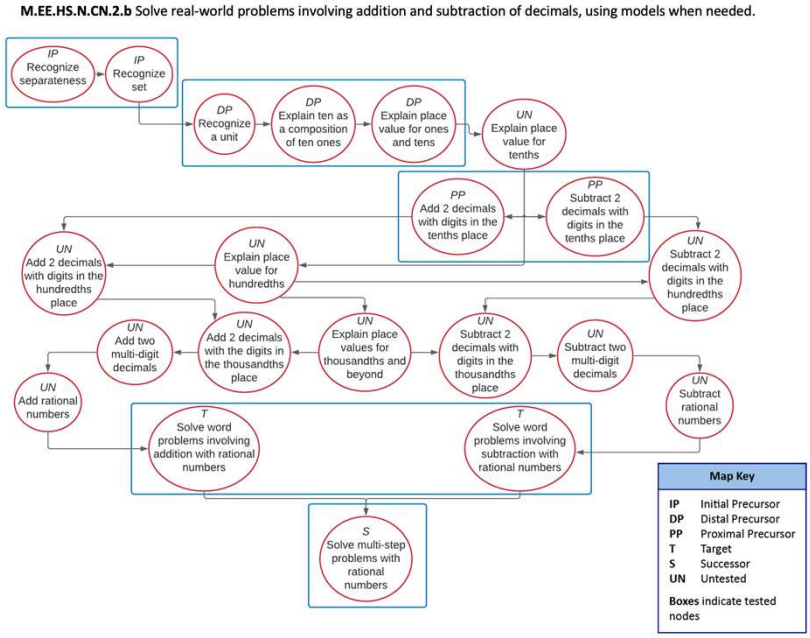
Are you sure you want to end?

YES

Demo 2 Complete

The demonstration for the second testlet in this presentation is now complete.

Mini-Map for M.EE.HS.N.CN.2.b



Shown here is the mini-map for M.EE.HS.N.CN.2.b.

Again, the first demonstrated testlet assessed the Initial Precursor skills, which are “recognize set” and “recognize separateness.” All items in that first demonstrated testlet asked the student to show the items that were grouped or bundled or to show the items that were separated.

The second demonstrated testlet assessed the Target linkage level. The testlet could have assessed “solve word problems involving addition with rational numbers” or “solve word problems involving subtraction with rational numbers.” However, all items in the demonstrated testlet were addition problems.

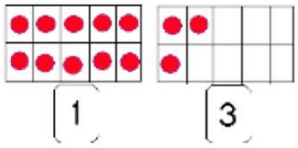
The purpose of the mini-map is to show all the skills connected to an Essential Element and the multiple pathways of learning students may take from one skill to another. The skills increase in complexity moving down the mini-map, and the arrows, or connections, indicate the pathways from skill to skill. Mini-maps are important instructional resources because they help teachers understand a student’s current skill level related to the Essential Element and identify skills the student could be taught to help the student move further along the map.

Please note: each skill, or node, is circled on the mini-map. Inside each circle is a two-letter code that indicates the linkage level of the skill. IP stands for Initial Precursor, DP stands for Distal Precursor, PP stands for Proximal Precursor, T stands for Target, and S stands for Successor. Notice that some circles have the letters UN. UN is used to indicate skills that are untested but may be necessary for a student to learn in order to continue further along the mini-map.

Feel free to pause the video and consider the pathways of instruction that could be plotted to help a student currently at the Initial Precursor linkage level achieve the Target linkage level.

Connecting to the Target

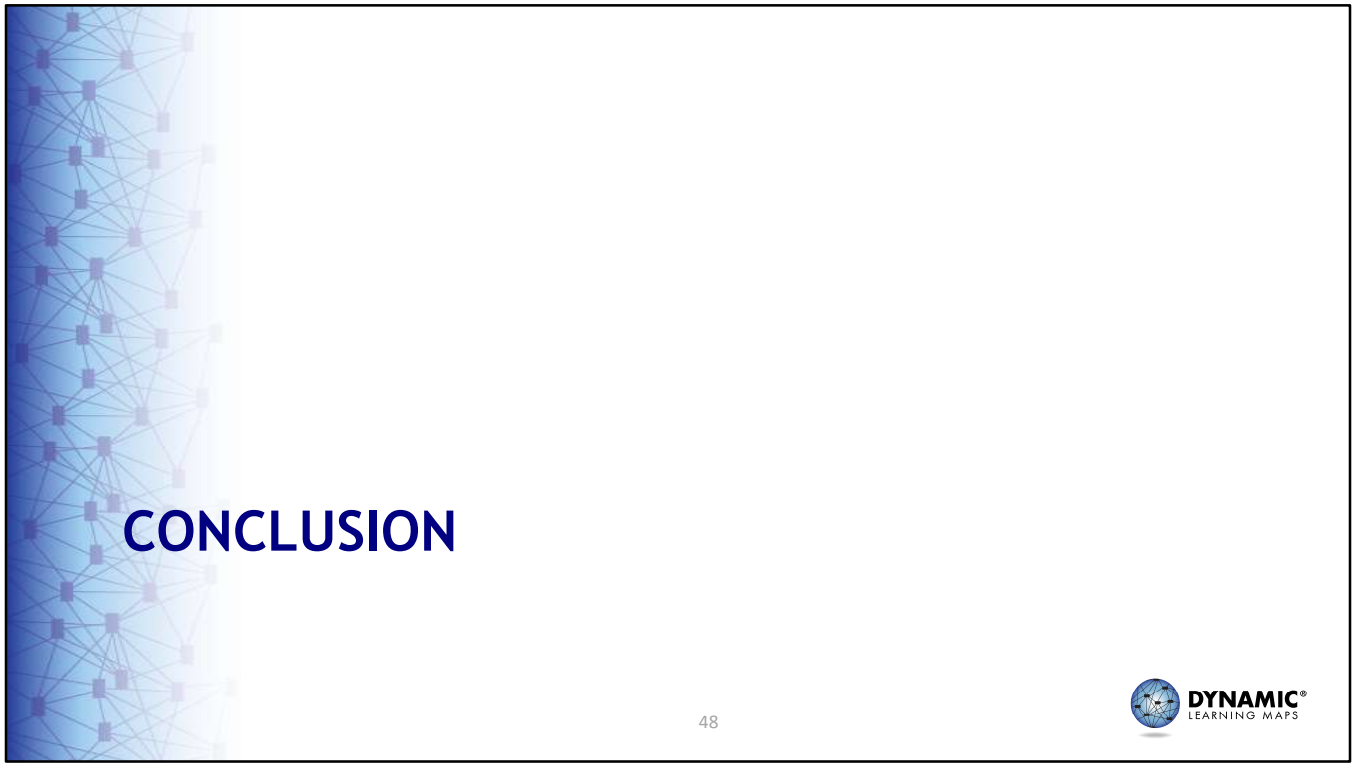
How is the Initial Precursor related to the Target?	How is the Distal Precursor related to the Target?
Initial Precursor: Adding and subtracting rational numbers requires a student to be able to recognize that two or more sets or groups of items exist. Work on this skill using a variety of sets. Help students recognize when items are grouped together into a set or separated out. The educator presents a set, labels it (e.g., two balls, one marker, three CDs), counts the items, labels it again, and encourages students to use numerals to label and count the separate sets.	**Distal Precursor:** As students' understanding of numbers develop, they will work with numbers greater than nine (two-digit numbers). Use tools to create tactual and visual models of tens and ones (e.g., ten-frames, connecting cubes, bundling sticks). Educators will describe these numbers as ___ groups of ten and ___ ones (e.g., 13 is 1 group of ten and 3 ones).



47

DYNAMIC LEARNING MAPS

Sometimes the connection from the least complex linkage levels to the more complex linkage levels is not readily apparent. The mini-maps PDFs found within the Currently Tested Essential Elements for Mathematics on the DLM website provide additional insight to this relationship. For example, in terms of the M.EE.HS.N.CN.2.b Initial Precursor skills, "Adding and subtracting rational numbers requires a student to be able to recognize that two or more sets or groups of items exist. Work on this skill using a variety of sets. Help students recognize when items are grouped together into a set or separated out. The educator presents a set, labels it (such as two balls, one marker, three CDs), counts the items, labels it again, and encourages students to use numerals to label and count the separate sets."



Hopefully, this presentation provided further insight to the look and feel of testlets as well as the way linkage levels for Essential Elements shape testlets.