

DYNAMIC[®]
LEARNING MAPS

**GUIDE TO PRACTICE
ACTIVITIES AND RELEASED
TESTLETS
2025–2026**

ELA, MATHEMATICS, AND SCIENCE

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All screenshots, data dictionaries, and templates shown or referred to in this manual are accurate on the Revision Date noted above.

When this manual is updated, the Revision Date will also be updated. An alert will be posted on the Test Updates webpage. A summary of changes is included in the Appendix under Document History.

GUIDE TO PRACTICE ACTIVITIES AND RELEASED TESTLETS: ENGLISH LANGUAGE ARTS, MATHEMATICS, AND SCIENCE

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INTRODUCTION

The Dynamic Learning Maps® (DLM®) Alternate Assessment System provides educators and students with the opportunity to prepare for assessments by using practice activities and released testlets.

- **Practice activities** are designed to familiarize users with the way testlets look in the Kite® system. One activity is for educators and the other is for students.
- **Released testlets** are similar to the real DLM testlets in content and format. A released testlet is a publicly available sample DLM assessment. Students and educators can use released testlets as examples or opportunities for practice. Released testlets are developed using the same standards and methods used to develop testlets for the DLM operational assessments. New released testlets are added periodically.

Access practice activities and released testlets through Kite Student Portal in the practice section. Use login information provided in this guide to complete both types of activities as many times as desired.

HINT: Some released testlets are available as PDFs on the DLM website at the [Released Testlets](#) page. Kite Student Portal does not need to be installed on a computer to access these PDFs.

Users who have questions or problems accessing the practice activities and released testlets should contact their assessment coordinator or technology personnel.

DEMO STUDENT ACCOUNTS FOR PRACTICE ACTIVITIES AND RELEASED TESTLETS

Practice activities and released testlets are only available through demo student accounts. The demo student accounts listed in Table 1 are enrolled in all available practice activities and released testlets. The practice activities and released testlets have certain Personal Needs and Preferences (PNP) Profile settings turned on depending on the account, as indicated in Table 1.

Table 1

Demo Student Accounts for Practice Activities and Released Testlets

Name	Password	PNP Profile supports turned on
demo.sue29	wall3	None*
demo.sue28	sand3	Spoken audio: voice source = synthetic, read at start = false, spoken preference = text and graphics, audio for directions only = false Contrast color: green text on white background
demo.sue30	swept	Single-switch: scan speed = 4 seconds, auto scan = manual override, auto repeat scan frequency = infinity**
demo.sue31	topic	2× magnification
demo.sue33	void7	4× magnification and reverse contrast
demo.sue34	nine7	Color overlay (green)
demo.sue35	jar71	Single-switch: scan speed = 5 seconds, initial delay = 5 seconds, auto repeat scan frequency = 2**

Name	Password	PNP Profile supports turned on
demo.sue36	stop3	Spoken audio: voice source = synthetic, read at start = false, spoken preference = nonvisual, audio for directions only = false
demo.sue37	after	5× magnification

*Demo student accounts are enrolled in English language arts—reading, mathematics, science, and practice activities. demo.sue29 can also access English language arts—writing.

No special settings are required for two-switch users. Use **Tab to navigate and **Enter** to select. Two-switch users may use any of the demo logins except demo.sue30 and demo.sue35 because those two logins are specifically for single-switch scanning users.

The ACCESSIBILITY MANUAL describes the PNP Profile settings in detail.

ACCESSING PRACTICE ACTIVITIES AND RELEASED TESTLETS

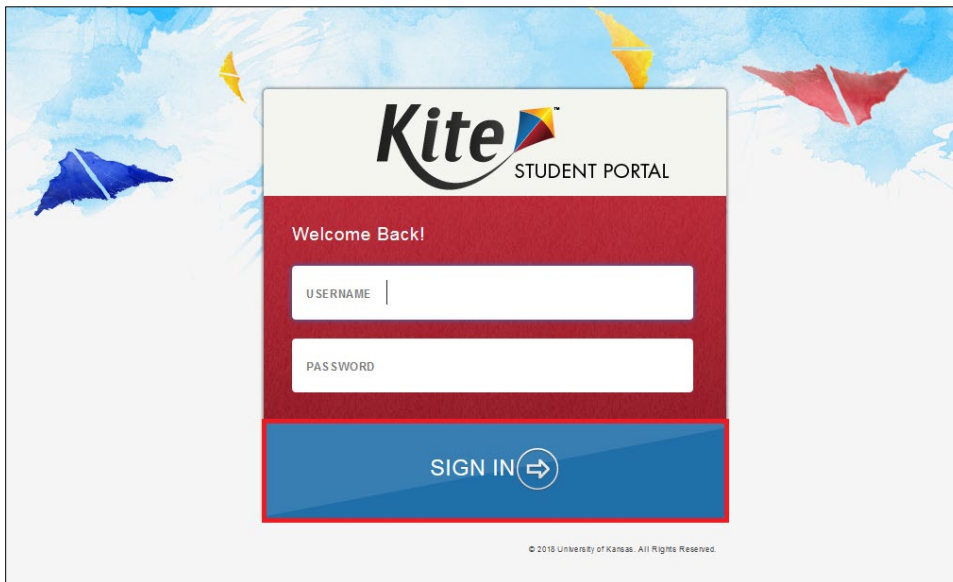
HINT: Kite Student Portal must be installed before you can access practice activities or released testlets. Download information is available on the [Kite Suite](#) page of the DLM website.

To access practice activities and released testlets, follow these steps:

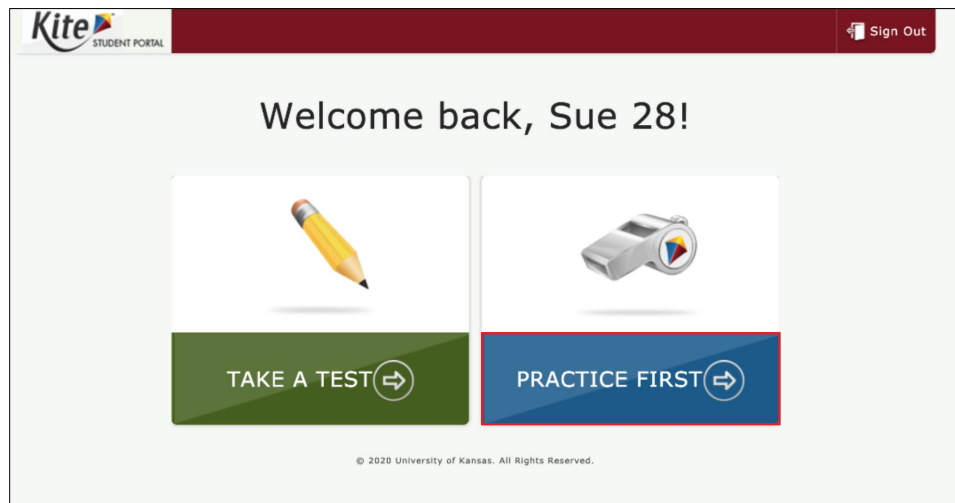
- 1) Select the **Kite Student Portal** icon on the testing device.



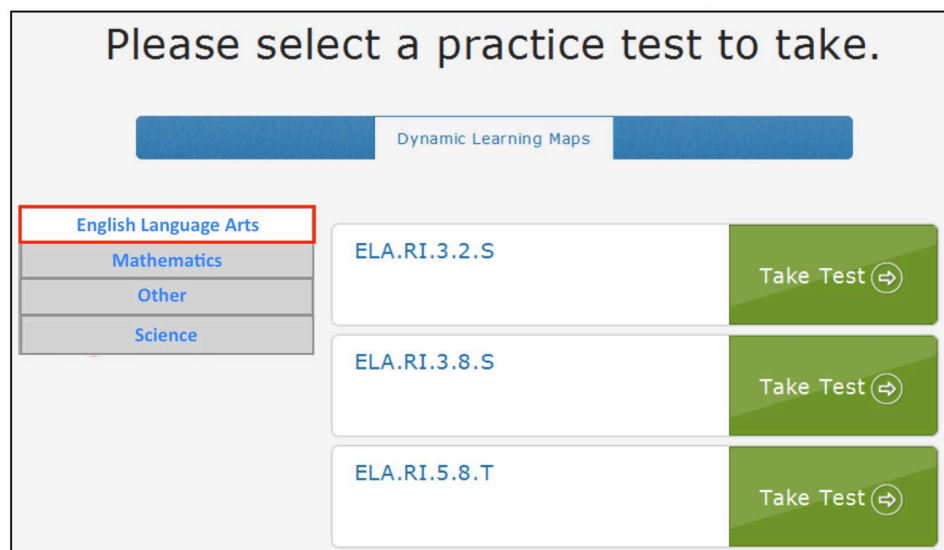
- 2) Enter the demo student username and password. Select **SIGN IN**.

The login screen for the Kite Student Portal. It features a light blue background with a watercolor-style illustration of kites in blue, yellow, and red. The central login box has a white header with the 'Kite' logo and 'STUDENT PORTAL' text. Below this is a red section with 'Welcome Back!' and two white input fields labeled 'USERNAME' and 'PASSWORD'. At the bottom is a blue button with 'SIGN IN' and a right-pointing arrow icon. A small copyright notice '© 2018 University of Kansas. All Rights Reserved.' is at the very bottom.

3) Select **PRACTICE FIRST**.



4) To access released testlets, select the appropriate subject and scroll to the desired testlet.



- 5) Use the page navigation buttons at the bottom of the screen to see more available testlets in Kite Student Portal.

Please select a practice test to take.

Practice

English Language Arts
Mathematics
Other

ELA.RI.3.2.S Take Test

ELA.RI.3.6.S Take Test

ELA.RI.5.9.T Take Test

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- 6) To access practice activities, select **Other** for the subject area.

Please select a practice test to take.

Dynamic Learning Maps

English Language Arts
Mathematics
Other
Science

Student Practice Activity Take Test

Teacher Practice Activity Take Test

- 7) Select **Take Test** next to the desired released testlet or practice activity.

ELA.RI.3.2.S Take Test

- 8) Select **BEGIN**.

- 9) Continue with the testlet and navigate with the **BACK** and **NEXT** buttons. To stop in the middle of a testlet, select **EXIT DOES NOT SAVE**.



- 10) To try a different practice activity or released testlet, either complete the current testlet or select **EXIT DOES NOT SAVE** to return to the welcome screen. To try different demo student credentials, log out and log back in with the different username and password.

PRACTICE ACTIVITIES

TEACHER PRACTICE ACTIVITY

The teacher practice activity is a tutorial about testlets that are administered directly by the educator. Teacher-administered testlets are typically for students with presymbolic communication who cannot interact directly with the computer. These testlets are at the Initial Precursor linkage level in English language arts and mathematics, and typically at the Initial linkage level for science. Some mathematics testlets at higher linkage levels are also teacher-administered when the content is difficult to assess on the computer. In this type of testlet, the educator reads the instructions aloud on the testlet screens and follows them. The educator enters the student's responses to activities or exchanges that occur outside the system into Kite Student Portal. All writing testlets for all linkage levels at all grade levels are also teacher-administered.

STUDENT PRACTICE ACTIVITY

The student practice activity is a tutorial on testlets that are administered directly to the student. Computer-delivered testlets are used when the content can be assessed directly by computer, **and** the student can interact with the system directly and select their own responses, using assistive devices or other supports as needed.

Testlets at the Distal Precursor, Proximal Precursor, Target, and Successor linkage levels in English language arts and mathematics are typically computer-delivered. For science, testlets at the Precursor and Target linkage levels are typically computer-delivered.

Students may navigate using a mouse, Tab and Enter on a keyboard, or switches. If the student can engage with the content but cannot advance the screens or input responses independently, the educator may navigate the screens and record the student's responses on their behalf. More information about allowable practices is provided in the TEST ADMINISTRATION MANUAL.

There are several types of items in the student practice activity:

- **Multiple choice:** the student selects one or more responses.
- **Matching:** the student identifies how pairs of items are related to one another.

Students may go forward and backward within a testlet as much as needed.

RELEASED TESTLETS FOR ENGLISH LANGUAGE ARTS, MATHEMATICS, AND SCIENCE

A released testlet is a publicly available sample DLM assessment. Released testlets can be used by students and educators as examples or opportunities for practice. Released testlets are developed using the same standards and methods used to develop testlets for the DLM operational assessments. More detailed information on each released testlet is available starting on page 14.

Remember that testlets for English language arts and mathematics contain items that align to nodes at the designated linkage level. The linkage levels in English language arts and mathematics are

- Initial Precursor (IP)
- Distal Precursor (DP)
- Proximal Precursor (PP)
- Target (T)
- Successor (S)

The linkage levels for science are

- Precursor (P)
- Initial (I)
- Target (T)

In Student Portal, released testlets are labeled by subject, grade, Essential Element, and linkage level (Figure 1).

Figure 1

Screenshot from Kite Student Portal that Demonstrates a Released Testlet Name



Table 2 describes the labels from the previous image.

Table 2*Definitions Behind a Released Testlet Name*

Subject	Grade	Section and level codes	Linkage level
ELA RI = English language arts, Reading Informational text	3	2 = Identify details in a text	S = Successor

Each released testlet is at a grade level and a linkage level. Select a testlet at the grade level and linkage level appropriate for your student.

For more information on the Essential Elements, linkage levels, and nodes used in assessments, go to the [Educator Resource Page](#) on the DLM website.

RELEASED TESTLETS

AVAILABLE RELEASED TESTLETS

The following section includes tables with information about each released testlet available in Kite Student Portal for English language arts, mathematics, and science. Table 3 provides a description of each column heading in a sample English Language Arts—Reading table. The mathematics and science tables are similar to the English language arts table.

Table 3*Description of Each Column Heading in a Sample English Language Arts—Reading Table*

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.3.2 IP	RI.3.2: Identify details in a text	Initial Precursor	The student can demonstrate an understanding that absent objects still exist despite not being visible by searching for objects that are hidden or not visible.	Reading for Information Familiar Text Fun on the Bus

TESTLET NAME

This column contains the name of the released testlet in Kite Student Portal. Each testlet is named after the subject area, Essential Element, grade level, and linkage level.

ESSENTIAL ELEMENT

This column contains the Essential Element.

LINKAGE LEVEL

This column contains the linkage level of the released testlet.

LINKAGE LEVEL DESCRIPTION

This column describes what knowledge, skills, and understandings will be included in the released testlet.

FAMILIAR OR UNFAMILIAR TEXT

This column is only in the English Language Arts—Reading table and contains up to three pieces of information for the released testlet. The first piece of information in this column is the type of text: Reading Literature (RL) or Reading Informational (RI).

The second piece of information is whether the text used in the testlet is familiar or unfamiliar to your student.

If the released testlet uses Familiar Text, then the third piece of information is a link to the actual text. If the released testlet uses Unfamiliar Text, which is new text unfamiliar to the student, then there is no link.

ENGLISH LANGUAGE ARTS RELEASED TESTLETS

The English language arts released testlets tables are arranged by grade (Table 4–Table 19). Each grade has two tables, one for reading testlets (see Table 4) and another for writing testlets (see Table 5).

Each grade has two forms of writing testlets: Emergent Writing and Conventional Writing. Emergent writing testlets are for students who may not use traditional means to write such as pencil and paper.

Table 4

Grade 3 English Language Arts—Reading

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.L.3.5c IP	L.3.5c: Identify words that describe personal emotional states.	Initial Precursor	The student can identify feeling states in self by responding to questions about their emotions (e.g., are you happy? Are you sad?).	Reading for Information Familiar Text <i>The New Puppy</i>
ELA.RI.3.2 IP	RI.3.2: Identify details in a text.	Initial Precursor	The student can demonstrate an understanding that absent objects still exist despite not being visible by searching for objects that are hidden or not visible.	Reading for Information Familiar Text <i>Fun on the Bus</i>

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.3.8 IP	RI.3.8: Identify two related points the author makes in an informational text.	Initial Precursor	The student can react to a change in an object or a situation through eye gaze, vocalization, or otherwise expressing interest.	Reading for Information Familiar Text <i>What Do Cats Do?</i>
ELA.RL.3.1 IP	RL.3.1: Answer who and what questions to demonstrate understanding of details in a text.	Initial Precursor	When provided with language cues, the student can pay attention to the entire object, a characteristic of the object, or an action the object can perform.	Reading Literature Familiar Text <i>Ready for School</i>
ELA.RI.3.2 DP	RI 3.2: Identify details in a text.	Distal Precursor	When provided with language cues, the student can pay attention to the entire object, a characteristic of the object, or an action the object can perform.	Reading for Information Familiar Text <i>What Do Cats Like?</i>

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.3.5 DP	RL.3.5: Determine the beginning, middle, and end of a familiar story with a logical order.	Distal Precursor	During a shared reading of a text the student is able to identify, indicate, and distinguish between the words and pictures on a page in a text, braille, or tactile object/graphic.	Reading Literature Familiar Text Henry and Mudge Are Happy
ELA.RI.3.3 PP	RI.3.3: Order two events from a text as “first” and “next.”	Proximal Precursor	The student can identify events that occur in a familiar informational text.	Reading for Information Familiar Text Exercising Your Dog
ELA.RI.3.8 S	RI.3.8: Identify two related points the author makes in an informational text.	Successor	The student can identify reasons an author includes in a text (i.e., details) that support the points of an informational text.	Reading for Information Unfamiliar Text N/A

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.3.5 T	RL.3.5: Determine the beginning, middle, and end of a familiar story with a logical order.	Target	After reading or hearing a familiar, linear story, the student is able to identify information or events that occur at the beginning, middle, and end of the story.	Reading Literature Familiar Text <i>The Baby Dragon</i>

Table 5*Grade 3 English Language Arts—Writing*

Testlet name	Essential Element	Linkage level	Linkage level description
Emergent Writing Grade 3	ELA.EE.W.3.2.a: Select a topic and write about it including one fact or detail. ELA.EE.W.3.4: With guidance and support, produce writing that expresses more than one idea.	Initial Precursor Distal Precursor	Emergent Writing EW.3.2 EW.3.4
Conventional Writing Grade 3	ELA.EE.W.3.2.a: Select a topic and write about it including one fact or detail. ELA.EE.W.3.4: With guidance and support, produce writing that expresses more than one idea.	Proximal Precursor Target Successor	Conventional Writing CW.3 CW.3.4

Table 6*Grade 4 English Language Arts—Reading*

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.4.1 IP	RL.4.1: Use details from the text to recount what the text says.	Initial Precursor	When presented with familiar and unfamiliar representations of people, objects, places, and events, the student can correctly identify the familiar representations.	Reading Literature Familiar Text <i>Fudge's Birthday</i>
ELA.RL.4.2 IP	RL.4.2: Identify the theme or central idea of a familiar story, drama or poem.	Initial Precursor	When presented with familiar and unfamiliar representations of people, objects, places, and events, the student can correctly identify the familiar representations.	Reading Literature Familiar Text <i>Peter Wins a Prize</i>
ELA.RI.4.8 DP	RI.4.8: Identify one or more reasons supporting a specific point in an informational text.	Distal Precursor	The student can identify concrete details in a familiar informational text, such as people, events, or ideas.	Reading for Information Familiar Text <i>Trains</i>

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.4.1 PP	RI.4.1: Identify explicit details in an informational text.	Proximal Precursor	After hearing or reading a beginner-level informational text, the student can identify a concrete detail in the text.	Reading for Information Unfamiliar Text N/A
ELA.RI.4.4 T	RI.4.4: Determine the meaning of words in text.	Target	When given an unfamiliar word that has only one meaning, the student can use textual and contextual clues in order to determine the word's meaning.	Reading for Information Unfamiliar Text N/A

Table 7*Grade 4 English Language Arts—Writing*

Testlet name	Essential Element	Linkage level	Linkage level description
Emergent Writing Grade 4	EE.L.4.2.a: Capitalize the first word in a sentence. EE.L.4.2.d: Spell words phonetically, drawing on knowledge of letter-sound relationships, and/or common spelling patterns. EE.W.4.2.b: List words, facts, or details related to the topic.	Initial Precursor Distal Precursor	Emergent Writing <u>L.4.2.a</u> <u>EE.L.4.2.d</u> <u>EE.W.4.2.b</u>
Conventional Writing Grade 4	EE.L.4.2.a: Capitalize the first word in a sentence. EE.L.4.2.d: Spell words phonetically, drawing on knowledge of letter-sound relationships, and/or common spelling patterns. EE.W.4.2.b: List words, facts, or details related to the topic.	Proximal Precursor Target Successor	Conventional Writing <u>EE.L.4.2.a</u> <u>EE.L.4.2.d</u> <u>EE.W.4.2.b</u>

Table 8*Grade 5 English Language Arts—Reading*

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.5.6 IP	RL.5.6: Determine the point of view of the narrator.	Initial Precursor	When presented with familiar and unfamiliar representations of people, objects, places, and events, the student can correctly identify the familiar representations.	Reading Literature Familiar Text <i>Visiting Friends</i>
ELA.RL.5.9 IP	RL.5.9: Compare stories, myths, or texts with similar topics or themes.	Initial Precursor	The student can demonstrate an understanding of object names by correctly identifying an object or person.	Reading Literature Familiar Text <i>Grandfather Helps His Neighbors</i>
ELA.RL.5.1 DP	RL.5.1: Identify words in the text to answer a question about explicit information.	Distal Precursor	The student can identify major observable events that occur in a familiar story.	Reading Literature Familiar Text <i>Mary and Colin</i>

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.5.5 DP	RI.5.5: Determine if a text tells about events, gives directions, or provides information on a topic.	Distal Precursor	When provided with illustrations that are related and unrelated to a familiar text, the student can identify the illustrations that relate to aspects of the familiar text such as people, places, things, and ideas.	Reading for Information Familiar Text Heidi Goes Home
ELA.RL.5.9 DP	RL.5.9: Compare stories, myths, or texts with similar topics or themes.	Distal Precursor	The student can identify an object by its descriptor or provide a descriptor for the object.	Reading Literature Familiar Text Grandfather Helps His Neighbors
ELA.RL.5.9 PP	RL.5.9: Compare stories, myths, or texts with similar topics or themes.	Proximal Precursor	The student can identify a character's actions in a familiar story and recall the consequences of those actions.	Reading Literature Familiar Text Gifts from Grandma

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.5.1 PP	RI.5.1: Identify words in the text to answer a question about explicit information.	Proximal Precursor	The student can identify concrete details in an informational text and can answer simple comprehension questions related to those concrete details.	Reading for Information Unfamiliar Text N/A
ELA.RI.5.8 PP	RI.5.8: Identify the relationship between a specific point and supporting reasons in an informational text.	Proximal Precursor	The student can identify the points that are made by an author of an informational text and identify points that are related.	Reading for Information Familiar Text Goats
ELA.RI.5.8 T	RI.5.8: Identify the relationship between a specific point and supporting reasons in an informational text.	Target	The student can identify how specific details of a text help the author make a particular point/claim and can match details to the corresponding point/claim.	Reading for Information Unfamiliar Text N/A

Table 9*Grade 5 English Language Arts—Writing*

Testlet name	Essential Element	Linkage level	Linkage level description
Emergent Writing Grade 5	EE.W.5.2.b: Provide facts, details, or other information related to the topic. EE.W.5.2.a: Introduce a topic and write to convey information about it including visual, tactual, or multimedia information as appropriate.	Initial Precursor Distal Precursor	Emergent Writing EE.W.5.2.b EE.W.5.2.a
Conventional Writing Grade 5	EE.W.5.2.a: Introduce a topic and write to convey information about it including visual, tactual, or multimedia. EE.W.5.2.b: Provide facts, details, or other information related to the topic.	Proximal Precursor Target Successor	Conventional Writing EE.W.5.2.a EE.W.5.2.b

Table 10*Grade 6 English Language Arts—Reading*

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.L.6.5.a IP	L.6.5.a: Identify the meaning of simple similes (e.g., the man was as big as a tree.).	Initial Precursor	The student can identify an object by its descriptor or provide a descriptor for the object.	Language Familiar Text <i>Day on the Farm</i>
ELA.L.6.5b IP	L.6.5b: Demonstrate understanding of words by identifying other words with similar and different meanings.	Initial Precursor	The student can use their knowledge of a category to draw conclusions about the characteristics of objects that are part of that category.	Language Familiar Text <i>Visiting an Island</i>

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.6.2 IP	RL.6.2: Identify details in a text that are related to the theme or central idea.	Initial Precursor	When provided with a picture of an object, or other symbolic representation of that object, the student can correctly match the picture with the real object.	Reading Literature Familiar Text Visiting Diana
ELA.RL.6.3 IP	RL.6.3: Can identify how a character responds to a challenge in story.	Initial Precursor	When the student is presented with familiar objects and given a prompt to complete an action, the student is able to complete the action using the appropriate object.	Reading Literature Familiar Text Visiting Diana

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.6.2 DP	RL.6.2: Identify details in a text that are related to the theme or central idea.	Distal Precursor	The student can identify concrete details in a familiar story, including characters and objects.	Reading Literature Familiar Text Anne
ELA.RL.6.4 DP	RL.6.4: Determine how word choice changes the meaning in a text.	Distal Precursor	The student can identify differences in meaning when provided with opposite-meaning words.	Reading Literature Familiar Text Visiting Diana

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.6.1 DP	RI.6.1: Analyze a text to determine what it says explicitly as well as what inferences should be drawn.	Distal Precursor	When provided with illustrations that are related and unrelated to a familiar text, the student can identify the illustrations that relate to aspects of the familiar text, such as people, places, things, and ideas.	Reading for Information Familiar Text Ready for Bed
ELA.RI.6.5 DP	RI.6.5: Determine how the title fits the structure of the text.	Distal Precursor	The student can identify concrete details, such as individuals, events, or ideas, in a familiar informational text.	Reading for Information Familiar Text Pigs All Around

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.6.6 DP	RI.6.6: Identify words or phrases in the text that describe or show the author's point of view.	Distal Precursor	The student can identify concrete details, such as individuals, events, or ideas in a familiar informational text.	Reading for Information Familiar Text Libraries
ELA.RI.6.8 DP	RI.6.8: Distinguish claims in a text supported by reason.	Distal Precursor	After reading a paragraph in an informational text, the student can see that some details are more relevant to the overall topic of the text than others.	Reading for Information Unfamiliar Text N/A

Table 11*Grade 6 English Language Arts—Writing*

Testlet name	Essential Element	Linkage level	Linkage level description
Emergent Writing Grade 6	<p>EE.L.6.2.b: Spell untaught words phonetically, drawing on letter-sound relationships and common spelling patterns.</p> <p>EE.W.6.2.a: Introduce a topic and write to convey ideas and information about it including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.6.2.b: Provide facts, details, or other information related to the topic.</p>	<p>Initial Precursor</p> <p>Distal Precursor</p>	<p>Emergent Writing</p> <p>EE.L.6.2.b</p> <p>EE.W.6.2.a</p> <p>EE.W.6.2.b</p>
Conventional Writing Grade 6	<p>EE.L.6.2.b: Spell untaught words phonetically, drawing on letter-sound relationships and common spelling patterns.</p> <p>EE.W.6.2.a: Introduce a topic and write to convey ideas and information about it including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.6.2.b: Provide facts, details, or other information related to the topic.</p>	<p>Proximal Precursor</p> <p>Target</p> <p>Successor</p>	<p>Conventional Writing</p> <p>EE.L.6.2.b</p> <p>EE.W.6.2.a</p> <p>EE.W.6.2.b</p>

Table 12*Grade 7 English Language Arts—Reading*

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.7.8 IP	RI.7.8: Determine how a claim or reason fits into the overall structure of an informational text.	Initial Precursor	After reading a story with a repeated line in the text, the student is able to say the repeated line during a second reading of the text.	Reading for Information Familiar Text <i>The Fair</i>
ELA.RL.7.1 DP	RL.7.1: Analyze text to identify where information is explicitly stated and where inferences must be drawn.	Distal Precursor	The student can identify the major characters, setting, and major events in a story without the use of additional information from pictures.	Reading Literature Familiar Text <i>The Golden Apple</i>
ELA.RI.7.3 DP	RI.7.3: Determine how two individuals, events, or ideas in a text are related.	Distal Precursor	After reading an informational text, the student is able to distinguish the author's most important points.	Reading for Information Unfamiliar Text N/A

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.7.2 PP	RI.7.2: Determine two or more central ideas in a text.	Proximal Precursor	After hearing or reading an informational text, the student can identify the implicit main idea of the text and identify the relationships between concrete details.	Reading for Information Unfamiliar Text N/A
ELA.RI.7.4 T	RI.7.4: Determine how words or phrases are used to persuade or inform a text.	Target	The student recognizes that word choices can be used to persuade or inform the reader. After reading or hearing an informational text, the student can determine how word choice is used to persuade or inform the reader.	Reading for Information Unfamiliar Text N/A

Table 13*Grade 7 English Language Arts—Writing*

Testlet name	Essential Element	Linkage level	Linkage level description
Emergent Writing Grade 7	<p>EE.L.7.2.a: Use end punctuation when writing a sentence or question.</p> <p>EE.L.7.2.b: Spell words phonetically, drawing on knowledge of letter-sound relationships and/or common spelling patterns.</p> <p>EE.W.7.2.a: Introduce a topic and write to convey ideas and information about it including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.7.2.b: Provide facts, details, or other information related to the topic.</p> <p>EE.W.7.2.d: Select domain-specific vocabulary to use in writing about the topic.</p>	<p>Initial Precursor</p> <p>Distal Precursor</p>	<p>Emergent Writing</p> <p><i>EE.L.7.2.a</i></p> <p><i>EE.L.7.2.b</i></p> <p><i>EE.W.7.2.a</i></p> <p><i>EE.W.7.2.b</i></p> <p><i>EE.W.7.2.d</i></p>

Testlet name	Essential Element	Linkage level	Linkage level description
Conventional Writing Grade 7	<p>EE.L.7.2.a: Use end punctuation when writing a sentence or question.</p> <p>EE.L.7.2.b: Spell words phonetically, drawing on knowledge of letter-sound relationships and/or common spelling patterns.</p> <p>EE.W.7.2.a: Introduce a topic and write to convey ideas and information about it including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.7.2.b: Provide facts, details, or other information related to the topic.</p> <p>EE.W.7.2.d: Select domain-specific vocabulary to use in writing about the topic.</p>	<p>Proximal</p> <p>Precursor</p> <p>Target</p> <p>Successor</p>	<p>Conventional Writing</p> <p>EE.L.7.2.a</p> <p>EE.L.7.2.b</p> <p>EE.W.7.2.a</p> <p>EE.W.7.2.b</p> <p>EE.W.7.2.d</p>

Table 14*Grade 8 English Language Arts—Reading*

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.8.3 IP	RL.8.3: Identify which incidents in a story or drama lead to subsequent action.	Initial Precursor	The student can demonstrate understanding of an object's function through demonstration, pointing to pictures, or verbally explaining the function.	Reading Literature Familiar Text Return to the Island
ELA.RI.8.1 DP	RI.8.1: Cite text to support inferences from informational text.	Distal Precursor	The student can identify concrete details, such as individuals, events, or ideas, in a familiar informational text.	Reading for Information Familiar Text Animals in Alaska
ELA.RL.8.5 PP	RL.8.5: Compare and contrast the structure of two or more texts.	Proximal Precursor	After reading two texts (story, poem, drama), the student can identify similarities between the structures such as story elements, text features, and organizational patterns.	Reading Literature Unfamiliar Text N/A

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.8.8 T	RI.8.8: Determine the argument made by an author in an informational text.	Target	After reading an informational text that states an explicit argument, the student is able to identify the statement from the text that reflects the main argument.	Reading for Information Unfamiliar Text N/A
ELA. RL.8.1 S	RL.8.1: Cite text to support inferences from stories and poems.	Successor	The student can recognize that textual evidence can be used to support explicit and inferred information and can distinguish between citations of textual evidence which refer to either explicit or implicit information.	Reading Literature Unfamiliar Text N/A

Table 15*Grade 8 English Language Arts—Writing*

Testlet name	Essential Element	Linkage level	Linkage level description
Emergent Writing Grade 8	<p>EE.W.8.2.a: Introduce a topic clearly and write to convey ideas and information about it including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.8.2.b: Write one or more facts or details related to the topic.</p> <p>EE.W.8.2.c: Write complete thoughts as appropriate.</p> <p>EE.W.8.2.d: Use domain specific vocabulary related to the topic.</p> <p>EE.W.8.2.f: Provide a closing.</p>	Initial Precursor Distal Precursor	Emergent Writing <i>EE.W.8.2.a</i> <i>EE.W.8.2.b</i> <i>EE.W.8.2.c</i> <i>EE.W.8.2.d</i> <i>EE.W.8.2.f</i>
Conventional Writing Grade 8	<p>EE.W.8.2.a: Introduce a topic clearly and write to convey ideas and information about it including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.8.2.b: Write one or more facts or details related to the topic.</p> <p>EE.W.8.2.c: Write complete thoughts as appropriate.</p> <p>EE.W.8.2.d: Use domain specific vocabulary related to the topic.</p> <p>EE.W.8.2.f: Provide a closing.</p>	Proximal Precursor Target Successor	Conventional Writing <i>EE.W.8.2.a</i> <i>EE.W.8.2.b</i> <i>EE.W.8.2.c</i> <i>EE.W.8.2.d</i> <i>EE.W.8.2.f</i>

Table 16*Grades 9 and 10 English Language Arts—Reading*

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.9-10.1 IP	RI.9-10.1: Determine which citations demonstrate what the text says explicitly as well as inferentially.	Initial Precursor	The student can identify concrete details, such as individuals, events or ideas, in a familiar informational text.	Reading for Information Familiar Text Table Manners
ELA.RI.9-10.2 IP	RI.9-10.2: Determine the central idea of the text and select details to support it.	Initial Precursor	The student can identify concrete details, such as individuals, events, or ideas in a familiar informational text.	Reading for Information Familiar Text Table Manners

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.9-10.4 IP	RI.9-10.4: Determine the meaning of words and phrases as they are used in text, including common idioms, analogies, and figures of speech.	Initial Precursor	The student can identify relevant words for describing familiar people, places, things, or events.	Reading for Information Familiar Text What Teachers Do
ELA.RI.9-10.8 IP	RI.9-10.8: Determine how the specific claims support the argument made in an informational text.	Initial Precursor	During a shared reading activity, the student can recognize that another person can have a perspective that is different from their own.	Reading for Information Familiar Text At the Theater

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.9-10.3 DP	RL.9-10.3: Determine how characters change or develop over the course of a text.	Distal Precursor	The student can identify the feelings of specific characters in a familiar story by selecting feelings words from multiple answer options. The student can also identify feelings words within a familiar text.	Reading Literature Familiar Text <i>The Concert</i>
ELA.RL.9-10.5 DP	RL.9-10.5: Identify where a text deviates from a chronological presentation of events.	Distal Precursor	After reading or hearing a story, the student can identify information or events that occurred at the beginning and end of the story.	Reading Literature Familiar Text <i>Farm Life City Life</i>

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.9-10.4 T	RL.9-10.4: Determine the meaning of words and phrases as they are used in a text, including idioms, analogies, and figures of speech.	Target	When provided with a story to read or hear, the student can determine the meaning of words and phrases, such as common idioms, analogies, and figures of speech.	Reading Literature Unfamiliar Text N/A

Table 17*Grades 9 and 10 English Language Arts—Writing*

Testlet name	Essential Element	Linkage level	Linkage level description
Emergent Writing Grade 9–10	<p>EE.L.9-10.2.c: Spell most single-syllable words correctly and apply knowledge of word chunks in spelling longer words.</p> <p>EE.W.9-10.2.c: Use complete, simple sentences as appropriate.</p> <p>EE.W.9-10.2.d: Use domain specific vocabulary when writing claims related to a topic of study or text.</p> <p>EE.W.9-10.2.f: Provide a closing or concluding statement.</p> <p>EE.W.9-10.2.a: Introduce a topic clearly and use a clear organization to write about it including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.9-10.2.b: Develop the topic with facts or details.</p>	Initial Precursor Distal Precursor	<p>Emergent Writing</p> <p><i>EE.L.9-10.2.c</i></p> <p><i>EE.W.9-10.2.c</i></p> <p><i>EE.W.9-10.2.d</i></p> <p><i>EE.W.9-10.2.f</i></p> <p><i>EE.W.9-10.2.a</i></p> <p><i>EE.W.9-10.2.b</i></p>

Testlet name	Essential Element	Linkage level	Linkage level description
Conventional Writing Grade 9–10	<p>EE.L.9-10.2.c: Spell most single-syllable words correctly and apply knowledge of word chunks in spelling longer words.</p> <p>EE.W.9-10.2.c: Use complete, simple sentences as appropriate.</p> <p>EE.W.9-10.2.d: Use domain specific vocabulary when writing claims related to a topic of study or text.</p> <p>EE.W.9-10.2.f: Provide a closing or concluding statement.</p> <p>EE.W.9-10.2.a: Introduce a topic clearly and use a clear organization to write about it including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.9-10.2.b: Develop the topic with facts or details.</p>	<p>Proximal</p> <p>Precursor</p> <p>Target</p> <p>Successor</p>	<p>Conventional Writing</p> <p>EE.L.9-10.2.c</p> <p>EE.W.9-10.2.c</p> <p>EE.W.9-10.2.d</p> <p>EE.W.9-10.2.f</p> <p>EE.W.9-10.2.a</p> <p>EE.W.9-10.2.b</p>

Table 18*Grades 11 and 12 English Language Arts—Reading*

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.11-12.5 IP	RI.11-12.5: Determine whether the structure of a text enhances an author's claim.	Initial Precursor	The student can identify concrete details in a familiar informational text, such as people, events, or ideas.	Reading for Information Familiar Text <i>Business People</i>
ELA.RI.11-12.8 IP	RI.11-12.8: Determine whether the claims and reasoning enhance the author's argument in an informational text.	Initial Precursor	During a shared reading activity, the student can recognize that another person can have a perspective that is different.	Reading for Information Familiar Text <i>Fun in Different Weather</i>

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.11-12.9 IP	RI.11-12.9: Compare and contrast arguments made by two different texts on the same topic.	Initial Precursor	During a shared reading activity, the student can recognize that another person can have a perspective that is different.	Reading for Information Familiar Text Exercise
ELA.RL.11-12.3 IP	RL.11-12.3: Determine how characters, the setting or events change over the course of the story or drama.	Initial Precursor	The student can use knowledge of a category to draw conclusions about the characteristics of objects that are part of that category.	Reading Literature Familiar Text The Garden

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RL.11-12.2 DP	RL.11-12.2: Recount the main events of the text which are related to the theme or central idea.	Distal Precursor	After reading or hearing a familiar story, the student can use story details to correctly identify the specific theme of the story and the main goal or idea of a character in a story.	Reading Literature Familiar Text Mary and Martha Jim and Antonia
ELA.RL.11-12.1 PP	RL.11-12.1: Analyze a text to determine its meaning and cite textual evidence to support explicit and implicit understandings.	Proximal Precursor	After reading a narrative text, the student can correctly determine the explicit meaning of the text using information explicitly stated in the text.	Reading Literature Unfamiliar Text N/A

Testlet name	Essential Element	Linkage level	Linkage level description	Familiar or unfamiliar text
ELA.RI.11-12.2 S	RI.11-12.2: Determine the central idea of a text; recount the text.	Successor	After reading or hearing an informational text, the student can identify the relationship between two or more individuals, ideas, or other details in the text.	Reading for Information Unfamiliar Text N/A

Table 19*Grades 11 and 12 English Language Arts—Writing*

Testlet name	Essential Element	Linkage level	Linkage level description
Emergent Writing Grade 11–12	<p>EE.W.11-12.2.c: Use complete, simple sentences, as well as compound and other complex sentences as appropriate.</p> <p>EE.W.11-12.2.d: Use domain specific vocabulary when writing claims related to a topic of study or text.</p> <p>EE.W.11-12.2.f: Provide a closing or concluding statement.</p> <p>EE.L.11-12.2.b: Spell most single-syllable words correctly and apply knowledge of word chunks in spelling longer words.</p> <p>EE.W.11-12.2.a: Introduce a topic clearly and write an informative or explanatory text that conveys ideas, concepts, and information including visual, tactual, or multimedia information as appropriate.</p> <p>EE.W.11-12.2.b: Develop the topic with relevant facts, details, or quotes.</p>	Initial Precursor Distal Precursor	<p>Emergent Writing</p> <p>EE.W.11-12.2.c</p> <p>EE.W.11-12.2.d</p> <p>EE.W.11-12.2.f</p> <p>EE.L.11-12.2.b</p> <p>EE.W.11-12.2.a</p> <p>EE.W.11-12.2.b</p>

Testlet name	Essential Element	Linkage level	Linkage level description
Conventional Writing Grade 11–12	<p>EE.W.11-12.2.c: Use complete, simple sentences, as well as compound and other complex sentences as appropriate.</p> <p>EE.W.11-12.2.d: Use domain specific vocabulary when writing claims related to a topic of study or text.</p> <p>EE.W.11-12.2.f: Provide a closing or concluding statement.</p> <p>EE.L.11-12.2.b: Spell most single-syllable words correctly and apply knowledge of word chunks in spelling longer words.</p> <p>EE.W.11-12.2.a: Introduce a topic clearly and write an informative or explanatory text that conveys ideas, concepts, and information including visual, factual, or multimedia information as appropriate.</p> <p>EE.W.11-12.2.b: Develop the topic with relevant facts, details, or quotes.</p>	<p>Proximal Precursor</p> <p>Target</p> <p>Successor</p>	<p>Conventional Writing</p> <p>EE.W.11-12.2.c</p> <p>EE.W.11-12.2.d</p> <p>EE.W.11-12.2.f</p> <p>EE.L.11-12.2.b</p> <p>EE.W.11-12.2.a</p> <p>EE.W.11-12.2.b</p>

MATHEMATICS RELEASED TESTLETS

The mathematics released testlets tables are arranged by grade (Table 20–Table 26).

Table 20

Grade 3 Mathematics

Testlet name	Essential Element	Linkage level	Linkage level description
Math.3.NF.1-3 IP	3.NF.1-3: Differentiate a fractional part from a whole.	Initial Precursor	Communicate generic understanding of “some” as a certain amount or a number of people or things.
Math 3.OA.4 IP	3.OA.4: Solve addition and subtraction problems when result is unknown, limited to operands and results within 20.	Initial Precursor	Communicate understanding of “separateness” by recognizing objects that are not joined together. Communicate understanding of a set by recognizing a group of objects sharing an attribute.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 3.G.2 PP	3.G.2: Recognize that shapes can be partitioned into equal areas.	Proximal Precursor	<p>Recognize two glasses with an equal amount of liquid.</p> <p>Demonstrate an ability to partition a circle and rectangle into two, three, and four equal parts.</p> <p>Recognize that a rectangle divided into equal parts can have rows and columns.</p>
Math 3.MD.1 PP	3.MD.1: Tell time to the hour on a digital clock.	Proximal Precursor	<p>Identify the hour as the numeral on the left side of the colon symbol (:) and the minutes on the right side of the colon symbol (:) on a digital clock.</p>

Testlet name	Essential Element	Linkage level	Linkage level description
Math 3.NBT.3 PP	3.NBT.3: Count by tens using models such as objects, base ten blocks, or money.	Proximal Precursor	Communicate number words 1 to 30 in numerical order verbally. Start at a number, one or otherwise, and count objects to 30 by assigning a single number word to each object. While counting objects up to 30, demonstrate an understanding that (i) it does not matter where you start or in what order you count, (ii) number of objects in a set remains the same, and (iii) the last number counted equals the total number of objects.
Math 3.OA.8 PP	3.OA.8: Solve one-step real-world problems using addition and subtraction within 20.	Proximal Precursor	Find the unknown sum (e.g., $5 + 8 = ?$) or the missing addend (e.g., $6 + ? = 10$) in an addition equation. Find the unknown difference in a subtraction equation (e.g., $12 - 7 = ?$).

Testlet name	Essential Element	Linkage level	Linkage level description
Math 3.OA.8 T	3.OA.8: Solve one-step real-world problems using addition and subtraction within 20.	Target	Solve addition and subtraction word problems within 20.

Table 21*Grade 4 Mathematics*

Testlet name	Essential Element	Linkage level	Linkage level description
Math 4.MD.2.d IP	4.MD.2.d: Identify coins (penny, nickel, dime, quarter) and their values.	Initial Precursor	Show interest in and focused attention to a task, object, or any environmental stimulus.
Math 4.MD.3 IP	4.MD.3: Determine the area of a square or rectangle by counting units of measure (unit squares).	Initial Precursor	Communicate understanding of “separateness” by recognizing objects that are not joined together. Communicate generic understanding of “some” as a certain amount or a number of people or things.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 4.OA.3 IP	4.OA.3: Solve one-step real-world problems using addition or subtraction within 100.	Initial Precursor	Combine two or more sets of objects to form a new set. Divide a set of 10 or fewer objects into two or more distinct subsets (e.g., dividing a set containing 10 objects into two subsets containing 4 and 6 objects).
Math 4.MD.2.d DP	4.MD.2.d: Identify coins (penny, nickel, dime, quarter) and their values.	Distal Precursor	Recognize any measurable (e.g., length, width, mass) or non-measurable (e.g., color) attribute values.

Testlet name	Essential Element	Linkage level	Linkage level description
Math.4.NBT.3 PP	4.NBT.3: Round any whole number 0–30 to the nearest ten.	Proximal Precursor	Communicate understanding that the digit at the tens place is formed by grouping objects by tens and the digit at the ones place is composed of individual objects. Round numbers to the nearest ten using place-value understanding, with digit at the tens place is rounded up if the digit at the ones place equals 5 (e.g., 45 is rounded to 50) or more and is rounded down otherwise (e.g., 32 is rounded down to 30).
Math 4.MD.6 PP	4.MD.6: Identify angles as larger and smaller.	Proximal Precursor	Recognize whether a container is more full or less full than another container.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 4.MD.3 PP	4.MD.3: Determine the area of a square or rectangle by counting units of measure (unit squares).	Proximal Precursor	Communicate understanding that a unit square is a square with edge lengths of 1 unit and area of 1 square unit. Communicate understanding of area as the measure of space contained within the outline or boundary of a two-dimensional object or figure.
Math 4.NBT.4 T	4.NBT.4: Add and subtract two-digit whole numbers.	Target	Demonstrate addition by adding two numbers up to 100. Demonstrate subtraction by subtracting numbers up to 100. Use place-value reasoning including multiples of 10s and 100s to add or subtract numbers.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 4.MD.6 T	4.MD.6: Identify angles as larger and smaller.	Target	Compare two angles without using any measuring tools, and communicate whether the angle is greater than, less than, or equal to the other angle.
Math.4.G.1 T	4.G.1: Recognize parallel lines and intersecting lines.	Target	Recognize intersecting lines or line segments as those that have at least one point in common, and parallel lines or line segments as those that are equal distant apart.

Table 22*Grade 5 Mathematics*

Testlet name	Essential Element	Linkage level	Linkage level description
Math 5.NBT.4 IP	5.NBT.4: Round two-digit whole numbers to the nearest 10 from 0–90.	Initial Precursor	Without counting each object, recognize the number of objects in a set (up to four).
Math 5.MD.4-5 DP	Determine the volume of a rectangular prism by counting units of measure (unit cubes).	Distal Precursor	Communicate understanding that volume is the space enclosed by a three-dimensional shape or an object. Communicate understanding that a unit cube is a cube with edge lengths of 1 unit and a volume of 1 cubic unit.
Math.5.G.1-4 PP	5.G.1-4: Sort two-dimensional figures and identify the attributes (angles, number of sides, corners, color) they have in common.	Proximal Precursor	Communicate attribute values of a shape, such as number of sides, number of corners (e.g., a square has 4 sides).
Math 5.NBT.4 T	5.NBT.4: Round two-digit whole numbers to the nearest 10 from 0–90.	Target	Round numbers 0–100 to the nearest ten by using a rounding strategy (e.g., number line, place value).

Testlet name	Essential Element	Linkage level	Linkage level description
Math 5.MD.3 S	5.MD.3: Identify common three-dimensional shapes.	Successor	Communicate different attribute values (e.g., number of sides, number of angles, orientation, size) of spheres, cylinders, cubes, and cones. Describe objects in the real-world using attributes of 3-dimensional shapes (e.g., describing a door as rectangular, a human torso as a cylinder).
Math 5.NBT.5 S	5.NBT.5: Multiply whole numbers up to 5×5 .	Successor	Communicate understanding of multiplication as the number of groups times the number of objects in each group (with the understanding that each group contains equal number of objects), and that the total number of objects (i.e., the product) can then be divided by the number of groups to equal the number of objects in each group, and vice versa.

Table 23*Grade 6 Mathematics*

Testlet name	Essential Element	Linkage level	Linkage level description
Math.6.NS.5-8 IP	6.NS.5-8: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	Initial Precursor	Communicate understanding of “separateness” by recognizing objects that are not joined together. Communicate understanding of set by recognizing a group of objects sharing an attribute.
Math 6.EE.1-2 IP	6.EE.1-2: Identify equivalent number sentences.	Initial Precursor	Combine two or more sets of objects to form a new set. Compare two or more sets containing objects to communicate whether a set has same, different, or equal number of objects than the other set.
Math 6.EE.5-7 IP	6.EE.5-7: Match an equation to a real-world problem in which variables are used to represent numbers.	Initial Precursor	Combine two sets of objects to form a new set. Divide objects in a set into two or more subsets.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 6.NS.2 PP	6.NS.2: Apply the concept of fair share and equal shares to divide.	Proximal Precursor	Communicate understanding that repeated subtraction is subtracting equal groups from a number (e.g., $15 - 5 - 5 - 5$). Represent repeated subtraction using equations (e.g., $15 - 5 - 5 - 5 = 0$), and model repeated subtraction using concrete manipulatives.
Math 6.NS.5-8 PP	6.NS.5-8: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	Proximal Precursor	Communicate understanding that opposite numbers are equidistant from zero but in opposite directions, or that when two opposite numbers are added together they yield a sum of zero (e.g., $3 + [-3] = 0$, this 3 and -3 are opposite numbers).

Testlet name	Essential Element	Linkage level	Linkage level description
Math 6.SP.5 PP	6.SP.5: Summarize data distributions shown in graphs or tables.	Proximal Precursor	Analyze data distribution to recognize outliers, peaks, or symmetric distribution. Recognize data values substantially larger or smaller than the other values as outliers. Recognize peaks as data values that most frequently occur. Recognize symmetric distribution as distributions where the left- and right-hand sides of the distributions are roughly equal.
Math 6.NS.5-8 T	6.NS.5-8: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	Target	Demonstrate use of positive and negative numbers in real world contexts such as temperature, elevation, credits and debits, etc. (e.g., representing a debit of 500 dollars as –500 dollars).
Math 6.G.1 T	6.G.1: Solve real world and mathematical problems about area using unit squares.	Target	Find the unknown quantity in the word problem by determining the area of a rectangle.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 6.EE.3 T	6.EE.3: Apply the properties of addition to identify equivalent numerical expressions.	Target	Create equivalent expressions by applying commutative and associative properties of addition (e.g., the expression $5+8$ is equal to $8+5$ due to the commutative property of addition).
Math 6.EE.1-2 S	6.EE.1-2: Identify equivalent number sentences.	Successor	Recognize equivalent expressions by applying commutative and associative properties of addition (e.g., the expression $5+8$ is equal to $8+5$ due to the commutative property of addition).

Table 24*Grade 7 Mathematics*

Testlet name	Essential Element	Linkage level	Linkage level description
Math 7.NS.2.a IP	7.NS.2.a: Solve multiplication problems with products to 100.	Initial Precursor	Communicate understanding of “separateness” by recognizing objects that are not joined together. Communicate understanding of a set by recognizing a group of objects sharing an attribute.
Math 7.G.5 DP	7.G.5: Recognize angles that are acute, obtuse, and right.	Distal Precursor	Recognize a point as a precise location on a plane or in space, usually represented by a dot. Recognize a ray as a part of a line that begins at one point and extends infinitely in one direction. Recognize a line as a straight line that extends infinitely in two directions.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 7.EE.1 DP	7.EE.1: Use the properties of operations as strategies to demonstrate that expressions are equivalent.	Distal Precursor	Demonstrate understanding that the sum or product of two numbers remains the same regardless of the order in which numerals are written (e.g., $3 + 4 = 4 + 3$, $2 \times 3 = 3 \times 2$), and the sum or product of three or more numbers remains the same regardless of the grouping of the numbers (e.g., $[2 + 3] + 5 = 2 + [3 + 5]$, $2 \times [3 \times 5] = [2 \times 3] \times 5$).
Math 7.EE.1 PP	7.EE.1: Use the properties of operations as strategies to demonstrate that expressions are equivalent.	Proximal Precursor	Apply commutative (e.g., $3 + 4 = 4 + 3$) and associative [e.g., $(2 + 3) + 5 = 2 + (3 + 5)$] properties of addition to add two or more numbers. Apply commutative (e.g., $3 \times 4 = 4 \times 3$) and associative [e.g., $(10 \times 4) \times 2 = 10 \times (4 \times 2)$] properties of multiplication as strategies to multiply two or more numbers.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 7.SP.5-7 T	7.SP.5-7: Describe the probability of events occurring as possible or impossible.	Target	Categorize events as possible or impossible (e.g., drawing a red marble from a bag containing red and yellow marbles as possible and drawing a blue marble from a group of red and yellow marbles as an impossible event).
Math 7.G.5 T	7.G.5: Recognize angles that are acute, obtuse, and right.	Target	Recognize an acute, obtuse, or right angle.

Table 25*Grade 8 Mathematics*

Testlet name	Essential Element	Linkage level	Linkage level description
Math 8.G.5 IP	8.G.5: Compare any angle to a right angle, and describe the angle as greater than, less than, or congruent to a right angle.	Initial Precursor	Recognize attributes or characteristics of an object, such as color, orientation, length, width, and weight.
Math 8.G.9 IP	8.G.9: Use the formulas for perimeter, area, and volume to solve real-world and mathematical problems (limited to perimeter and area of rectangles and volume of rectangular prisms).	Initial Precursor	Recognize attributes, or characteristics of an object such as color, orientation, length, width, weight, etc.
Math 8.SP.4 IP	8.SP.4: Construct a graph or table from given categorical data, and compare data categorized in the graph or table.	Initial Precursor	Arrange objects in a specific order or by following a specific rule (e.g., arranging three pencils by increasing length). Group like items by attributes and distinguish between like items based on simple characteristics such as shape, size, texture, and numerical pattern.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 8.EE.7 IP	8.EE.7: Solve simple algebraic equations with one variable using addition and subtraction.	Initial Precursor	Combine two or more sets of objects or numbers to form a new set. Split one set into multiple sets grouped together by similar characteristics.
Math.8.EE.1 DP	8.EE.1: Identify the meaning of an exponent (limited to exponents of 2 and 3).	Distal Precursor	Communicate understanding that in repeated addition problems, a single numerical value is added repeatedly (e.g., $6 + 6 + 6$), and one way to add a number a given number of times is using skip counting strategy (e.g., $6 + 6 + 6$ can be added as 6, 12, 18). Use models, such as mathematical equations (e.g., $5 + 5 + 5 = 15$), sets of manipulatives, or number line diagrams to represent a repeated addition problem.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 8.F.1-3 DP	8.F.1-3: Given a function table containing at least 2 complete ordered pairs, identify a missing number that completes another ordered pair (limited to linear functions).	Distal Precursor	Recognize growing patterns as a pattern that increases (e.g., 3, 6, 9, 12...), and a shrinking pattern as a pattern that decreases (e.g., 12, 10, 8...).
Math 8.G.9 DP	8.G.9: Use the formulas for perimeter, area, and volume to solve real-world and mathematical problems (limited to perimeter and area of rectangles and volume of rectangular prisms).	Distal Precursor	Recognize attributes or characteristics of an object that are measurable (e.g., length, weight, time).

Testlet name	Essential Element	Linkage level	Linkage level description
Math 8.G.9 PP	8.G.9: Use the formulas for perimeter, area, and volume to solve real-world and mathematical problems (limited to perimeter and area of rectangles and volume of rectangular prisms).	Proximal Precursor	Communicate understanding that length is the distance between the two points that define a line segment, perimeter is the distance that surrounds a plane area, area is the amount of space contained within the outline or boundary of a two-dimensional object or figure, and volume is the space enclosed by a shape or an object.
Math.8.NS.2.a PP	8.NS.2.a: Express a fraction with a denominator of 100 as a decimal.	Proximal Precursor	Communicate understanding that a decimal point is a dot that separates the whole number from the fractional part of a number. Represent a fraction with a denominator of 10 as a decimal.

Testlet name	Essential Element	Linkage level	Linkage level description
Math 8.EE.2 PP	8.EE.2: Identify a geometric sequence of whole numbers with a whole number common ratio.	Proximal Precursor	Recognize a growing pattern that increases (e.g., 3, 6, 9, 12...) and a shrinking pattern as a pattern that decreases (e.g., 12, 10, 8, ...).
Math 8.G.9 S	8.G.9: Use the formulas for perimeter, area, and volume to solve real world and mathematical problems (limited to perimeter and area of rectangles and volume of rectangular prisms).	Successor	Solve word problems where the unknown quantity is obtained using the volume of a rectangular prism, area of rectangles, or perimeter of a polygon.

Table 26*High School Mathematics*

Testlet name	Essential Element	Linkage level	Linkage level description
Math N.Q1-3 IP	N.Q1-3: Express quantities to the appropriate precision of measurement.	Initial Precursor	Without counting each object, identify the number of objects in a set (up to four).
Math N-CN.2.b IP	N-CN.2.b: Solve real world problems involving addition and subtraction of decimals, using models when needed.	Initial Precursor	Communicate understanding of “separateness” by recognizing objects that are not joined together. Communicate understanding of set by recognizing a group of objects sharing an attribute.
Math G-MG.1-3 IP	G.MG.1-3: Use properties of geometric shapes to describe real-life objects.	Initial Precursor	Recognize “same” as the object that shares all of the same attributes as other objects in a group. Recognize “different” as the object that shares some or none of the attributes as other objects in a group.

Testlet name	Essential Element	Linkage level	Linkage level description
Math A-SSE.4 IP	A-SSE.4: Determine the successive term in a geometric sequence given the common ratio.	Initial Precursor	Group together objects by attribute values such as shape or size (e.g., group together a square, a rectangle, and a rhombus as they all have four sides). Contrast or distinguish objects based on attributes such as shape, size, texture, and numerical pattern. Order objects by following a specific rule (e.g., arrange three objects with different sizes from the smallest to largest).
Math S-ID.3 IP	S-ID.3: Interpret general trends on a graph or chart.	Initial Precursor	Arrange objects in a specific order (e.g., smallest to largest). Group objects by some attribute value (e.g., shape, size, texture, numerical pattern).

Testlet name	Essential Element	Linkage level	Linkage level description
Math N.Q.1-3 DP	N.Q. 1-3: Express quantities to the appropriate precision of measurement.	Distal Precursor	Round decimals to any place by using standard rounding off rules (e.g., round up when the digit in the tenths place is 5 or greater, and round down when the digit in the tenths place is less than 5). For example, round 8.5 to 9.0.
Math A.-SSE.3 PP	A.-SSE.3: Solve simple algebraic equations with one variable using multiplication and division.	Proximal Precursor	Determine the unknown factor or product in an equation involving multiplication (e.g., $6 \times 7 = ?$). Determine the unknown divisor, dividend, or quotient in an equation involving division (e.g., $24 \div 4 = ?$).

Testlet name	Essential Element	Linkage level	Linkage level description
Math F-BF.2 PP	F-BF.2: Determine an arithmetic sequence with whole numbers when provided a recursive rule.	Proximal Precursor	Recognize an arithmetic sequence as an ordered list of numbers, such that each term after the first is determined by adding or subtracting the preceding term by a constant amount (e.g., 2, 4, 8, 16...). Recognize the recursive rule in arithmetic sequences by determining how each term in the sequence differs from the preceding term (e.g., the recursive rule in the sequence is 2, 4, 6, 8... is “add 2”).
Math G.MG.1-3 PP	G-MG.1-3: Use properties of geometric shapes to describe real-life objects.	Proximal Precursor	Recognize a square, rectangle, circle, triangle, cube, cone, cylinder, and sphere.

Testlet name	Essential Element	Linkage level	Linkage level description
Math N.CN.2.b T	N-CN.2.b: Solve real world problems involving addition and subtraction of decimals and whole numbers, using models when needed.	Target	Solve real-world problems involving addition and subtraction of rational numbers with digits to the hundredths place (e.g., John has \$2.50. Sara gives him \$1.50 more. How much money does John have now?).
Math A.REI.10-12 S	A.REI.10-12: Interpret the meaning of a point on the graph of a line. For example, on a graph of pizza purchase, trace the graph to a point and tell the number of pizzas purchased and the total cost of the pizzas.	Successor	Find solutions to real-world problems by interpreting linear function graphs.

SCIENCE RELEASED TESTLETS

The science released testlets tables are arranged by grade band (Table 27–Table 29).

Table 27

Elementary: Physical, Life, Earth and Space Science

Testlet name	Essential Element	Linkage level	Linkage level description
Science 5.ESS2-1 I	Earth & Space Science 5.ESS2-1: Develop a model showing how water (hydrosphere) affects the living things (biosphere) found in a region.	Initial	Anticipates routine (e.g., clothes to wear, activities to do) to follow when it is raining.
Science 5.ESS3-1 I	Earth & Space Science 5.ESS3-1: Use information to describe how people can help protect the Earth's resources and how that affects the environment.	Initial	Identify one way to protect a recourse of Earth (e.g., put paper in the recycling bin to save trees, recycle cans to save metal, turn off appliances to save energy).
Science 5.ESS1-2 P	Earth & Space Science 5.ESS1-2: Represent and interpret data on a picture, line, or bar graph to show seasonal patterns in the length of daylight hours. <i>Instructional Activities: The Daylight Hours</i>	Precursor	Recognize patterns about length of daylight hours over time (e.g., week to week, month to month).

Testlet name	Essential Element	Linkage level	Linkage level description
Science 5.ESS3-1 P	Earth & Space Science 5.ESS3-1: Use information to describe how people can help protect the Earth's resources and how that affects the environment.	Precursor	Compare two methods (e.g., reusable water bottles vs. recycling disposable bottles, shutting off lights, using both sides of paper) people can use to help protect the Earth's resources.
Science 5.ESS3-1 T	Earth & Space Science 5.ESS3-1: Use information to describe how people can help protect the Earth's resources and how that affects the environment.	Target	Use information to describe how people can help protect the Earth's resources and how that affects the environment.
Science 5.LS1-1 I	Life Science 5.LS1-1: Provide evidence that plants need air and water to grow.	Initial	Distinguish things that grow from things that don't grow (but some things grow slower than others).

Testlet name	Essential Element	Linkage level	Linkage level description
Science 5.LS2-1 I	Life Science 5.LS2-1: Create a model that shows the movement of matter (e.g., plant growth, eating, composting) through living things. <i>Instructional Activities: Food Cycles</i>	Initial	Identify common human foods (and non-food items).
Science 5.LS.1-1 P	Life Science 5.LS1-1: Provide evidence that plants need air and water to grow.	Precursor	Provide evidence that plants grow (e.g., increase in weight, size, or number of stems, leaves, roots).
Science 5.PS1-2 I	Physical Science 5.PS1-2: Measure and compare weights of substances before and after heating, cooling, or mixing substances to show that weight of matter is conserved.	Initial	Recognize the change in state from liquid to solid or from solid to liquid of the same material.
Science 5.PS1-3 I	Physical Science 5.PS1-3: Make observations and measurements to identify materials based on their properties (e.g., weight, shape, texture, buoyancy, color, or magnetism).	Initial	Match materials with similar physical properties (e.g., shape, texture, weight).

Testlet name	Essential Element	Linkage level	Linkage level description
Science 5.PS2-1 I	Physical Science 5.PS2-1: Demonstrate that the gravitational force exerted by Earth on objects is directed down.	Initial	Recognize the direction an object will go when dropped (recognition should be after the action).
Science 5.PS1-2 P	Physical Science 5.PS1-2: Measure and compare weights of substances before and after heating, cooling, or mixing substances to show that weight of matter is conserved.	Precursor	Compare the weight of an object before and after it changes from a liquid to a solid and from a solid to a liquid.
Science 5.PS1-3 P	Physical Science 5.PS1-3: Make observations and measurements to identify materials based on their properties (e.g., weight, shape, texture, buoyancy, color, or magnetism).	Precursor	Classify materials by physical properties (e.g., weight, shape, texture, buoyancy, color or response to magnetic force).
Science 5.PS1-2 T	Physical Science 5.PS1-2: Measure and compare weights of substances before and after heating, cooling, or mixing substances to show that weight of matter is conserved.	Target	Measure and compare weights of substances before and after heating, cooling, or mixing substances to show that weight of matter is conserved.

Testlet name	Essential Element	Linkage level	Linkage level description
Science 5.PS2-1 T	Physical Science 5.PS2-1: Demonstrate that the gravitational force exerted by Earth on objects is directed down.	Target	Demonstrate that the gravitational force exerted by Earth on objects is directed down.

Table 28*Middle School: Physical, Life, Earth and Space Science*

Testlet name	Essential Element	Linkage level	Linkage level description
Science MS.ESS2-6 I	Earth & Space Science MS.ESS2-6: Interpret basic weather information (e.g., radar, map) to make predictions about future conditions (e.g., precipitation, temperature, wind). <i>Instructional Activity: Weather Watchers</i>	Initial	Interpret basic weather information (e.g., radar, map) to identify weather conditions.
Science MS.ESS3-3 I	Earth & Space Science MS.ESS3-3: Develop a plan to monitor and minimize a human impact on the local environment (e.g., water, land, pollution).	Initial	Recognize resources (e.g., food, water, air, land, materials) in the local environment that are important for human life.
Science MS.ESS3-3 P	Earth & Space Science MS.ESS3-3: Develop a plan to monitor and minimize a human impact on the local environment (e.g., water, land, pollution).	Precursor	Recognize ways in which humans impact the environment (e.g., agriculture, pollution, recycling, city growth).

Testlet name	Essential Element	Linkage level	Linkage level description
Science MS.ESS3-3 T	Earth & Space Science MS.ESS3-3: Develop a plan to monitor and minimize a human impact on the local environment (e.g., water, land, pollution).	Target	Develop a plan to monitor and minimize a human impact on the local environment (e.g., water, land, pollution).
Science MS.LS1-3 I	Life Science MS.LS1-3: Make a claim about how a structure (e.g., organs and organ systems) and its related function supports survival of animals (circulatory, digestive, and respiratory systems).	Initial	Recognize major organs of animals.
Science MS.LS1-5 I	Life Science MS.LS1-5: Interpret data to show that environmental resources (e.g., food, light, space, water) influence growth of organisms (e.g., drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, fish growing larger in large ponds than small ponds).	Initial	Match organisms to their habitats

Testlet name	Essential Element	Linkage level	Linkage level description
Science MS.LS2-2 I	Life Science MS.LS2-2: Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems. <i>Instructional Activity: What Animals Eat</i>	Initial	Identify food that animals eat (foods could be general [e.g., meat, plants] or more specific).
Science MS.LS2-2 P	Life Science MS.LS2-2: Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems. <i>Instructional Activity: What Animals Eat</i>	Precursor	Classify animals based on what they eat (e.g., herbivore, omnivore, carnivore).
MS.LS1-3 T	Life Science MS.LS1-3: Make a claim about how a structure (e.g., organs and organ systems) and its related function supports survival of animals (circulatory, digestive, and respiratory systems).	Target	Make a claim about how a structure (e.g., organs and organ systems) and its related function supports survival of animals (circulatory, digestive, and respiratory systems).

Testlet name	Essential Element	Linkage level	Linkage level description
Science MS.LS2-2 T	Life Science MS.LS2-2: Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems. <i>Instructional Activity: What Animals Eat</i>	Target	Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems.
Science MS.PS3-3 I	Physical Science MS.PS3-3: Test and refine a device (e.g., foam cup, insulated box, or thermos) to either minimize or maximize thermal energy transfer (e.g., keeping liquids hot or cold, preventing liquids from freezing, keeping hands warm in cold temperatures).	Initial	Identify objects/materials used to minimize or maximize thermal energy transfer (e.g., gloves, vacuum flask, insulated hot pad holder or foam cup).
Science MS.PS1-2 P	Physical Science MS.PS.1-2: Interpret and analyze data on the properties (e.g., color, texture, odor, and state of matter) of substances before and after chemical changes have occurred (e.g., burning sugar or burning steel wool, rust, effervescent tablets). <i>Instructional Activity: Chemical Changes</i>	Precursor	Gather data on the properties (e.g., color, texture, odor, and state of matter) of substances before and after chemical changes have occurred (e.g., burning sugar or burning steel wool, rust, effervescent tablets).

Testlet name	Essential Element	Linkage level	Linkage level description
Science MS.PS2-2 P	Physical Science MS.PS2-2: Investigate and predict the change in motion of objects based on the forces acting on those objects.	Precursor	Investigate and identify ways to change the motion of an object (e.g., change an incline's slope to make an object go slower, faster, farther).
Science MS.PS2-2 T	Physical Science MS.PS2-2: Investigate and predict the change in motion of objects based on the forces acting on those objects.	Target	Investigate and predict the change in motion of objects based on the forces acting on those objects.
Science MS.PS3-3 T	Physical Science MS.PS3-3: Test and refine a device (e.g., foam cup, insulated box, or thermos) to either minimize or maximize thermal energy transfer (e.g., keeping liquids hot or cold, preventing liquids from freezing, keeping hands warm in cold temperatures).	Target	Test and refine a device (e.g., foam cup, insulated box, or thermos) to either minimize or maximize thermal energy transfer (e.g., keeping liquids hot or cold, preventing liquids from freezing, keeping hands warm in cold temperatures).

Table 29*High School: Physical, Life, Earth and Space Science*

Testlet name	Essential Element	Linkage level	Linkage level description
Science HS.ESS3-2 I	Earth and Space Science HS.ESS3-2: Construct an argument for a strategy to conserve, recycle, or reuse resources.	Initial	Recognize strategies to manage objects (e.g., dispose, repurpose, or recycle).
Science HS.ESS1-4 I	Earth and Space Science HS.ESS1-4: Use a model of Earth and the Sun to show how Earth's tilt and orbit around the Sun cause changes in seasons.	Initial	Identify characteristics of the seasons (e.g., warmest or coldest weather, shortest or longest length of day, seasonal appearance of deciduous trees, seasonal activities).
Science HS.ESS3-2 P	Earth and Space Science HS.ESS3-2: Construct an argument for a strategy to conserve, recycle, or reuse resources.	Precursor	Describe the factors (e.g., money savings, effects on resources) that would favor one strategy to conserve, recycle, or reuse resources over another.
Science HS.LS2-2 I	Life Science HS.LS2-2: Use a graphical representation to explain the dependence of an animal population on other organisms for food and their environment for shelter.	Initial	Identify food and shelter needs for familiar wildlife.

Testlet name	Essential Element	Linkage level	Linkage level description
Science HS.LS4-2 I	Life Science HS.LS4-2: Explain how the traits of particular species allow them to survive in their specific environments.	Initial	Match particular species to their various environments.
Science HS.LS1-2 P	Life Science HS.LS1-2: Use a model to illustrate the organization and interaction of major organs into systems (e.g., circulatory, respiratory, digestive, sensory) in the body to provide specific functions. <i>Instructional Activity: Respiratory System</i>	Precursor	Identify which organs work for a specific function (e.g., controlling the nervous system, helping living things breathe, pumping blood or moving nutrients throughout the body, protecting the body, breaking down food for absorption).
Science HS.LS2-2 P	Life Science HS.LS2-2: Use a graphical representation to explain the dependence of an animal population on other organisms for food and their environment for shelter.	Precursor	Recognize the relationship between population size and available resources for food and shelter from a graphical representation.
Science HS.LS4-2 P	Life Science HS.LS4-2: Explain how the traits of particular species allow them to survive in their specific environments.	Precursor	Identify factors in an environment that require special traits to survive.

Testlet name	Essential Element	Linkage level	Linkage level description
Science HS.LS1-2 T	Life Science HS.LS1-2: Use a model to illustrate the organization and interaction of major organs into systems (e.g., circulatory, respiratory, digestive, sensory) in the body to provide specific functions. <i>Instructional Activity: Respiratory System</i>	Target	Use a model to illustrate the organization and interaction of major organs into systems (e.g., circulatory, respiratory, digestive, sensory) in the body to provide specific functions.
Science HS.LS4-2 T	Life Science HS.LS4-2: Explain how the traits of particular species allow them to survive in their specific environments.	Target	Explain how the traits of particular species allow them to survive in their specific environments.
Science HS.PS2-3 I	Physical Science HS.PS2-3: Evaluate the effectiveness of safety devices and design a solution that could minimize the force of a collision.	Initial	Identify safety devices that minimize force of a collision (e.g., floor mats, helmets, or steel-toed boots).
Science HS.PS3-4 I	Physical Science HS.PS3-4: Investigate and predict the temperatures of two liquids before and after combining to show uniform energy distribution.	Initial	Compare relative difference in temperature (warmth, coldness) of two liquids.

Testlet name	Essential Element	Linkage level	Linkage level description
Science HS.PS2-3 P	Physical Science HS.PS2-3: Evaluate the effectiveness of safety devices and design a solution that could minimize the force of a collision.	Precursor	Use data to compare the effectiveness of safety devices to determine which best minimizes the force of a collision.
Science HS.PS3-4 P	Physical Science HS.PS3-4: Investigate and predict the temperatures of two liquids before and after combining to show uniform energy distribution.	Precursor	Compare the temperatures of two liquids of different temperatures before and after combining.
Science HS.PS1-2 P	Physical Science HS.PS1-2 P: Make a claim supported by evidence to explain patterns of chemical properties that occur in a substance during a common chemical reaction (e.g., baking soda and vinegar).	Precursor	Identify the changes that have occurred during a chemical reaction (e.g., metal rusting, paper burning, baking soda and vinegar reacting).

Testlet name	Essential Element	Linkage level	Linkage level description
Science HS.PS1-2 T	Physical Science HS.PS1-2: Make a claim supported by evidence to explain patterns of chemical properties that occur in a substance during a common chemical reaction (e.g., baking soda and vinegar).	Target	Make a claim supported by evidence to explain patterns of chemical properties (e.g., solubility in water, substances if reacts with, flammability, conductivity, melting point, boiling point) that occur in a substance during a common chemical reaction (e.g., baking soda and vinegar, rusting, burning).
Science HS.PS3-4 T	Physical Science HS.PS3-4: Investigate and predict the temperatures of two liquids before and after combining to show uniform energy distribution.	Target	Investigate and predict the temperatures of two liquids before and after combining to show uniform energy distribution.