

SRI International

Alternate Assessment Design— English Language Arts

Technical Report 8:

Implementing Evidence—Centered Design to Develop Assessments for Students with Significant Cognitive Disabilities:

Procedural Guidelines for Creating Design Patterns and Development Specifications and Exemplar Task Templates for English Language Arts

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Implementing Evidence-Centered Design to Develop Assessments for Students with Significant Cognitive Disabilities: Guidelines for Creating Design Patterns and Development Specifications and Exemplar Task Templates for English Language Arts

This procedural manual is intended to be a user-friendly document that details the processes, procedures, and considerations for applying evidence-centered design (ECD) methodology to the development of high-quality alternate assessments in English Language Arts for students with significant cognitive disabilities. Part I of the manual details the procedures for creating *Design Patterns*. Part II describes the processes, procedures, and considerations involved in the creation of *Development Specifications and Exemplar Task Templates*. This manual is intended to be used by co-design teams of experts to use an ECD methodology in the design and development of assessments and tasks.

Background Information

Alternate Assessment Design–English Language Arts Project

This manual was created out of the work conducted by the Alternate Assessment Design–English Language Arts (AAD-ELA) project. SRI International worked with the departments of education in the states of Idaho, Kansas, and Utah to design and develop assessment tasks that were linked to Common Core State Standards (CCSS) in English Language Arts and Literacy in History/Social Studies and Science, and Technical Subjects (ELA). The CCSS were developed as a result of the Common Core State Standards Initiative supported by the Council of Chief State School Officers and the National Governors Association. The CCSS were designed to establish clear and consistent goals for learning that prepared children for success in college and work. The CCSS for ELA consist of a comprehensive K–5 section and two content area specific sections for grades 6–12, one for ELA and one for history/social studies and science. ELA consists of four strands, reading, writing, listening and speaking, and language. The reading strand is divided into three parts: informational text, literary text, and foundational skills (K through 5).

The AAD-ELA project is a multi-disciplinary effort involving expertise in English Language Arts, assessment design, and universal design for learning to advance the design of alternate assessment tasks for students with significant cognitive disabilities that can be applied to performance events, portfolio, or mixed approach assessments. The goals of the project were to (1) extend the conceptual framework of ECD to alternate assessment using the Principled Assessment Designs for Inquiry (PADI) model, (2) integrate the principles of universal design for learning (UDL) with ECD to guide the development of tasks that are accessible to all learners, (3) use the CCSS in ELA to identify content standards and expectations, (4) develop *Design Patterns* and *Development Specifications and Exemplar Task Templates* (which include assessment task specifications and exemplar tasks), (5) enhance the human capital of state departments of education staff, and (6) support state department of education staff and teachers in the development of additional tasks in ELA to expand the task bank for each state.

Using Evidence-Centered Design to Develop Alternate Assessments

Students with significant cognitive disabilities challenge conventions with respect to the teaching, learning, and assessment of academic content. Assessment has been instrumental in changing the learning expectations of these students, which in turn is beginning to influence classroom instructional practices, including the teaching of more advanced grade-level academic content and skills. Assessment designers are challenged to develop assessments that adequately and reliably show what these students know and can do, while minimizing the demands of non-focal knowledge and skills in tasks. The sheer variability in this target population, the assumptions about measuring their achievement, and the variability of design implementation procedures make traditional assessment design approaches inapplicable without some reformulation (Gong & Marion, 2006; Ryan, Quenemoen, & Thurlow, 2004; U.S. Government Accountability Office, 2009). The methods used to date in designing alternate assessments and selecting their content are varied but typically do not match the technical rigor used for designing general education assessments (Bechard, 2005).

Historically, large-scale assessments have not focused on how content, design, or task characteristics influence the ability of students to perform, especially those students in the tails of the achievement distribution. Alternate assessment designers in particular have often lacked systematic design processes that (1) define the focal knowledge, skills, and abilities (KSAs) required to demonstrate what students know and can do in academic content areas; (2) design assessment tasks with features that are well aligned with the focal KSAs; (3) design assessment tasks that minimize nonfocal KSAs and thereby mitigate construct-irrelevant variance; and (4) take into account the many ways that students perceive test content and express their responses.

ECD directly addresses these most pressing issues by using a rigorous and replicable assessment design process that carefully considers how the content, task, and learner characteristics interact in the creation of assessment tasks. ECD can be applied to all content areas and all types of evidence, from performance tasks and portfolio activities to technology-based simulations and animations to traditional multiple-choice item formats. The use of ECD can enhance the quality of assessments and improve the efficiency with which future assessments are developed, while documenting the myriad design decisions required when developing a valid assessment of student learning (Mislevy, Steinberg, & Almond, 2003).

ECD works synergistically with UDL. By considering multiple means of perception, expression, cognition, language and symbol use, executive functioning, and engagement, the application of UDL in the ECD process accounts for individual differences in how students recognize, strategize, and engage in learning and testing situations. This synergistic process minimizes the unintended negative influence that access needs may have on student performance and maximizes the opportunities for students to show what they know and can do. This can include consideration of augmentative and alternative communication systems.

Overview of ECD Products

Design Patterns and Development Specifications and Exemplar Task Templates are schemas/structures developed to support assessment developers in implementing ECD approaches.

Design Patterns

When completed, *Design Patterns* describe the elements of an assessment argument, including the targeted or focal KSAs, the student behaviors or actions that would provide evidence of these knowledge and skills, and the situations that will evoke those observations (Mislevy & Haertel, 2006). *Design Patterns* also play a key role in articulating additional KSAs that may be required for successful performance on a task, but are not targeted by assessment tasks (e.g., ability to perceive components of a task). *Design Patterns* provide a structure for also considering ways to vary task features (e.g., whether to use manipulatives) to support students in communicating what they understand and are able to do in relation to the focal KSAs. In this way, *Design Patterns* facilitate communication among members of the co-design team about how academic content can be made accessible for students with significant cognitive disabilities.

Development Specifications and Exemplar Task Templates

Development Specifications and Exemplar Task Templates include two categories of information: design specifications for tasks based on a *Design Pattern* and detailed descriptions of exemplar assessment tasks.

Design Specifications. Design specification information in the template includes:

- (1) Decisions regarding specific content to assess in a task;
- (2) Variable features selected for attaining the appropriate amount of scaffolding, depth of knowledge, complexity, and scope for the task (for example, the designers can specify the complexity of a task by indicating that four data points [rather than three or five] will be presented to students who are asked to create a line graph); and
- (3) Variable features selected to support the multiple means of representation, expression, and engagement of students (as operationalized in the principles of UDL) (Rose & Meyer, 2006).

Exemplar Tasks. The detailed description of the exemplar assessment task in the template includes:

- (1) Information that will be communicated to the student,
- (2) Materials that will be presented to the student,
- (3) Response options that will be presented to the student,
- (4) The correct response, and
- (5) Materials required for examiners to administer the task.

Establishing a Co-Design Team

The process of implementing ECD to inform the design of assessment tasks for students with significant cognitive disabilities requires a team that can provide expertise in special education (including those with specific knowledge about and/or experiences with students with significant cognitive disabilities), content (e.g., ELA), instruction in the content, assessment design and development using ECD, and measurement. Co-design teams meet to develop and refine the *Design Patterns* and *Development Specifications and Exemplar Task Templates*. It is essential that all members of the co-design team have an opportunity to provide input on the products, which are the outcome of the ECD process. If in-person meetings are not possible for all

members of the team, teleconference phone calls with technologies to support live document editing and sharing can be used to facilitate communication among the co-design team.

Strategies for Co-Design Team Management

The ECD co-design process is intensive and requires consideration of time management issues as well as a clear division of labor. Below are several helpful strategies:

Use small teams—Create and revise ECD products in small interdisciplinary teams. Smaller teams work more efficiently. Working in multiple small teams is also useful for simultaneously developing many tasks. [Body Indent]

Document your work—Keep a copy of every version of the *Design Patterns* and *Development Specifications and Exemplar Task Templates*. Note every change that was made, and where possible include the reasoning behind the change. This will help avoid repeated discussions and provide historical documentation of the team’s conceptual path regarding the development of the ECD products.

Share responsibility—Co-design teams should have one member (e.g., team leader) who is primarily responsible for the conceptual work involving that team. However, each member of the team should take an active part in reviewing and revising the *Design Patterns* and *Development Specifications and Exemplar Task Templates* in light of their expertise.

Devote time—When planning the timeline of the teams’ work, set aside enough time for product development. A product will typically undergo several iterations during development.

Follow the order—When members of the co-design team are new to developing ECD products, work sequentially through the steps outlined in the procedures so that team members become familiar with the details of the attributes and the assessment argument considerations.

Manage discussions and track status of products—Discussions in large multidisciplinary groups have the potential of “going off on tangents” since everyone brings their own unique perspective. In order to facilitate efficient meetings, the team leader should make sure that (1) the length of discussions is proportional to the importance of the topic discussed; (2) at the end of the meeting all the main points including next steps (e.g., for completing a particular task) are summarized and agreed upon, and responsibility to carry out tasks is delegated to a particular individual when necessary; and (3) one team member is in charge of taking notes, summarizing changes to the task specifications/exemplar task template, and disseminating the working version among the team members after the meeting is over. Occasionally, team members can benefit from taking a break from working on a particular product. When team members return to the product, they can review it with fresh eyes and come up with new and interesting ways to improve it.

Part I: Procedures for Creating *Design Patterns*

Design Patterns are the first opportunity for the co-design team to define the targeted KSAs to be assessed and to discuss appropriate task designs and supports for students with significant cognitive disabilities. Each *Design Pattern* builds around the general form of an assessment argument, concerning the knowledge or skill to address (examples in mathematics include one-to-one correspondence and using a number line), the kinds of observations that can provide evidence about acquisition of this knowledge or skill, and the features of task situations that allow students to provide this evidence. Explicating the assessment structure in a narrative form with slots to be filled, *Design Patterns* arrange an underlying assessment argument into attributes that can subsequently be instantiated in particular operational tasks. Table 1 defines the attributes within a *Design Pattern*, rendering explicit an assessment argument (shown according to Messick's student, evidence, and task model components) (Messick, 1994).

Table 1. *Design Pattern* Attributes, Definitions, and Corresponding Messick Argument Components

<i>Design Pattern</i> Attribute	Attribute Definition	Messick Assessment Argument Component
Title	Short name for the <i>Design Pattern</i> (DP)	
Overview	Brief description of the family of tasks implied by the DP	
Rationale	Nature of the KSAs of interest and why they are important	Student Model/Claim What construct (complex of student attributes) should be assessed?
Focal Knowledge, Skills & Abilities (KSAs)	The primary KSAs targeted by this DP	
Additional KSAs	Other KSAs that may be required by tasks from this DP, some of which can be supported by universal design for learning (UDL) and accommodations	
Potential Observations	Observed behaviors of students that can provide evidence of Focal KSAs	Evidence Model/Actions What behaviors should reveal the construct?
Potential Work Products	What students say, do, or make that provides evidence about the Focal KSAs	
Potential Rubrics	Some evaluation techniques that may apply	
Characteristic Task Features	Aspects of assessment situations likely to evoke the desired evidence	Task Model/Situation What tasks should elicit those behaviors?
Variable Task Features	Aspects of assessment situations that can be varied in order to control difficulty or target emphasis on various KSAs	
Educational Standards	National standards or state extended standards (if appropriate)	Student Model/Claim

Elements of the *Design Pattern* related to the student model include Educational Standards, the Rationale, Focal Knowledge, Skills, and Abilities (Focal KSAs), and the Additional KSAs. The Educational Standards are the CCSS in ELA that each participating state had adopted or committed to adopting as their state content standards. The CCSS in ELA are statements of core ideas and practices that experts in the domain believe are essential for college and career readiness for all students. The Rationale provides context for why the content being addressed (e.g., the standard or the expectation) is important for students to learn and can include context to situate the Focal KSAs within the larger content domain. The Focal KSAs are knowledge, skills, and abilities targeted by the *Design Pattern*. The Additional KSAs are nonconstruct relevant knowledge, skills, and abilities that may be required for successful performance on tasks associated with this *Design Pattern*. The Additional KSAs define relevant Cognitive Background Knowledge as well as knowledge and skills that reflect six categories related to UDL: (1) Perceptual (Receptive), (2) Skill and Fluency (Expressive), (3) Language and Symbols, (4) Cognitive, (5) Executive, and (6) Affective (CAST, 2008) (see Table 2).

Potential Observations and Potential Work Products are associated with the evidence model component of the assessment argument. Potential observations are the “correct” and “accurate” student actions or expressions that provide complete and clear evidence of the Focal KSAs. Potential work products are descriptions of the products that students create or make (e.g., constructed response, drawing, verbal response) that can be judged to infer whether a student has acquired the Focal KSAs.

Characteristic Features and Variable Features inform the task model by specifying design features of tasks associated with this *Design Pattern*. Characteristic Features describe features of tasks that must be present to elicit the Focal KSAs. They also include descriptions of ways to constrain the task design space (e.g., in the domain of ELA, limitations on the types of figurative language that would be included in tasks resulting from the *Design Pattern*). Variable Features are related explicitly to Additional KSAs in that they describe features of tasks that can be used to support cognitive background knowledge, as well as student abilities associated with perceiving task stimuli, expressing responses to tasks, comprehending linguistic components of tasks, information processing, executive functioning, and engagement. UDL is enacted through the principled implementation of these Variable Features. Definitions of associated categories of Additional KSAs and Variable Features are shown in Table 2.

Table 2. Definitions of Categories of Additional KSAs and Variable Features

Category	Definition of Additional KSA	Definition of Variable Features
Cognitive Background Knowledge	Prerequisite knowledge, skills, and abilities (KSAs) required for students to demonstrate proficiency on Focal KSAs	Task options for supporting recall of prerequisite KSAs
Perceptual (Receptive)	KSAs associated with perceiving or receiving images, physical objects, and linguistic components of tasks	Ways to vary the delivery mechanisms by which tasks are perceived and task supports for the use of equipment required for assessments
Skill and Fluency (Expressive)	KSAs associated with communicating/expressing a response and using/manipulating equipment and physical materials	Task supports for responding to and composing a response and supports for manipulating equipment and physical materials
Language and Symbols	KSAs associated with decoding, recognizing, and comprehending text, symbols and images, and understanding vocabulary and syntax in which tasks will be presented	Task options for presenting language and symbols and supporting students in comprehending essential text, symbols, and images
Cognitive	KSAs associated with cognitive and information processing (e.g., ability to process multistep problems, ability to recall and use information presented in the task) and skills associated with using supports provided as part of the task (e.g., ability to understand the purpose of highlighted features in text or illustrations)	Task options for varying the complexity of tasks; for guiding exploration and information processing (e.g., sequential highlighting); for supporting the identification of critical task features, big ideas and relations (e.g., graphic organizer); and for supporting memory and transfer (e.g., embed task in a scenario)
Executive	KSAs associated with monitoring, planning and sequencing, self-regulating and reflecting, and setting goals and expectations	Task options for the provision of guides, checklists, graphic organizers, and templates; for prompts, scaffolds and questions to monitor progress; and for adjusting levels of challenge and support
Affective	KSAs associated with engaging, persisting, and sustaining effort in tasks	Task options for engagement (e.g., enhancing relevance, value, and salience of tasks) and teacher options for supporting student attention and engagement (e.g., prompting the student to engage)

Design Pattern Development Guidelines

The nine steps in the following pages describe the process to complete a *Design Pattern*. However, it is possible for the process to be more iterative than implied by these steps; that is, prior steps may be revisited and the *Design Pattern* refined accordingly to further specify attributes or make the assessment argument more explicit. The example described in the steps that follow was developed for the Reading Standard for Informational Text K-5 (Reading Standard 4.7B): **“Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, and interactive elements) and explain how the information contributes to understanding of the text in which it appears.”**

Step 1. Create a Title and Overview

The title is a name for the *Design Pattern* that briefly describes the content or skills addressed in it. It is important to adopt a naming convention and to consistently use it. For the AAD-ELA project, the title was comprised of three elements: the content area subdomain, the grade level of the standard, and the label or code of the standard or “expectation” addressed. For example, the title “Reading 4.7 B” was created from the CCSS in ELA. The content area subdomain was Reading. The next element in the title was the code for the CCSS standard being addressed, 4.7 B, in which “4” referred to the grade level of the standard, “7” referred to the number of the standard, and the “B” identified the text as “informational.”

The overview provides more detail about the scope or breadth of knowledge and skills to be addressed in the *Design Pattern*. To operationalize this attribute, the AAD-ELA project used the verbatim wording of the standard from the CCSS in ELA. For instance, the summary for Reading Standard for Informational Text K-5 was “Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, and interactive elements) and explain how the information contributes to understanding of the text in which it appears,” which is the exact wording of the CCSS in ELA.

Note that although the AAD-ELA project chose to use the CCSS to guide the work, other standards, including the state’s extended standards, could serve as the base for the ECD approach.

Step 2. Select Target Educational Standards

In the AAD-ELA project, prior to developing the *Design Pattern*, the co-design team engaged two experts in ELA to recommend sample standards from the CCSS in ELA. This collection of sample standards were then submitted to the AAD-ELA project partners for them to make the final determination of which standards to use.

Step 3. Develop Rationale Statement

The Rationale identifies why the construct(s) identified in the summary are important to assess. Creating a rationale statement requires input from an ELA content expert, who can situate the ELA constructs targeted by the *Design Pattern* within the broader domain of ELA. For instance, the rationale statement for Reading 4.7B was **“As much information is now accessed through multimedia formats, the ability to interpret information from a variety of formats is essential for students to comprehend material. Students must be able to understand information presented through visual, oral, or quantitative formats and make**

judgments about the quality and utility of the information to the purpose or task. These are important skills for 21st century learners.”

Step 4. Identify Focal Knowledge, Skills, and Abilities (Focal KSAs)

Standards are often written at a grain-size that is too large for assessment purposes. Focal KSAs reflect the standard when it is further unpacked into its essential, assessable elements. The content expert(s) on the co-design team draft Focal KSAs by reviewing the standard. In co-design meetings, Focal KSAs are discussed and further refined.

The focus and grain-size of the Focal KSAs need to be agreed upon by the co-design team. It is possible to generate multiple standards-based Focal KSAs, each of which only addresses one facet of a standard. For example, Reading 4.7B, included three Focal KSAs each of which addresses a component of the expectation:

- (1) Ability to identify information presented visually in text
- (2) Ability to identify information presented quantitatively in (e.g., in charts, graphs, diagrams, timelines) in a text
- (3) Ability to identify and use both information presented visually (e.g., a. video: realistic vs. fictional, b. picture: photograph vs. abstract)

It is critical to take the time with the co-design team to consider how the content or skills in the standard should be parsed because Focal KSAs will influence other attributes of the *Design Pattern*. Focal KSAs may be refined or deleted after their influence with respect to other attributes of the *Design Pattern* becomes more apparent. For example, in Step 4 Focal KSAs are “operationalized” when observations of student behaviors that are likely to provide evidence of each Focal KSA are specified. At this point the co-design team may realize that a Focal KSA is too vague or too complex to create these observations. If this occurs, the co-design team should revisit Step 4 and refine the Focal KSA. The co-design may also go back and add new Focal KSAs as they progress through the design steps.

Step 5. Develop Potential Observations and Potential Work Products

Potential Observations help to make each Focal KSA more concrete by describing the evidence (in the form of a specific student behavior) that indicates that a student has acquired the KSA. Potential Observations are phrased to describe the highest quality of student performance that demonstrates evidence of the Focal KSA. Qualifiers such as “accurate” and “correct” are used in all Potential Observation statements. Co-design teams also may find it helpful to generate specific examples for each Potential Observation (i.e., given a particular ELA context, describe the observed behavior). See Table 3 for examples of Potential Observations.

Potential Work Products are descriptions of the form of the information that can be gathered from students (e.g., written explanation or selection of a response or completion of a template). When possible, work products should be stated such that they do not reflect bias in how students express their response. Often, Potential Observations can be expressed in multiple ways (e.g., in speech or in writing). Thus, the Potential Work Product “expression of an answer” is preferable to “Student writes the answer,” because not all students can write. In some cases, a Potential Work Product must be specific to a particular mode of expression for a Potential Observation. In these cases, additional Potential Observations and associated Potential Work Products should be specified that reflect alternate modes of expression. See Table 3 for examples of Potential Work Products.

A “horizontal view” of the *Design Pattern* is used during co-design meetings to make the connections among each Focal KSA and its associated Potential Observations and Potential Work Products explicit. Table 3 shows an excerpt of the “horizontal view” for Reading 4.7B.

Table 3. “Horizontal View” of Excerpt from Reading 4.7B: *Design Pattern* Focal KSAs, Potential Observations, and Potential Work Products

Focal KSAs	Potential Observations	Potential Work Products
Ability to identify and use both information presented in text and related information presented visually or quantitatively.	Student reads (or is read) passage about a topic and perceives supplemental visual (e.g., picture, illustration, video) or quantitative information (e.g., chart, graph, diagram) about the same topic. Student correctly answers a question that requires him/her to integrate information from the two sources (e.g., Student reads a passage from Good Pet, Bad Pet that contains information about the amount of time required for care and play of different types of pets. The student also reads an accompanying chart that contains information about the cost of different types of pets. Given this passage and chart, the student answers the question, which pet should a child pick who doesn't have a lot of money but has a lot of time to play with the pet?).	Selection from a list Expression of answer

Step 6. Develop Characteristic Features of Tasks

In reviewing the Focal KSAs, Potential Observations and Potential Work Products, the co-design team identifies the key features of tasks that will be developed using a particular *Design Pattern*. These Characteristic Features must apply to all tasks created from a *Design Pattern*. For example, one Characteristic Feature developed for the Reading 4.7B *Design Pattern* is **“Only two sources of information will be presented to the student.”** In addition, Characteristic Features can define ways to constrain tasks in relation to the content (e.g., limitations on the types information presented to the student). Characteristic Features also can pertain to more general task features desired in tasks associated with a *Design Pattern*. These may include task features such as prompting for individual student responses (not group responses), allowing accommodations, and involving a test administrator who knows the student’s comprehensive/ response abilities.

Step 7. Identify Cognitive Background Knowledge Additional KSAs

Steps 2–6 make explicit relationships among the standard, the Focal KSAs, student behaviors and work products that provide evidence of the Focal KSAs, and characteristic features of tasks to elicit the desired student behaviors. In Step 7 the co-design team describes the Additional KSAs that are not construct relevant but may be required for successful performance on tasks associated with a particular *Design Pattern*.

To determine the Cognitive Background Knowledge Additional KSAs, the co-design team must consider the prerequisite knowledge and skills that may be needed for each Focal KSA. For

example, the Reading 4.7B *Design Pattern* includes the Focal KSA, “**Ability to identify and use both information presented visually (e.g., a. video: realistic vs. fictional, b. picture: photograph vs. abstract).**” In order for students to be able to demonstrate this ability, the co-design team determined that students may need additional background KSAs, such as:

- Knowledge of basic characteristics of information presented visually (e.g., a. video: realistic vs. fictional, b. picture: photograph vs. abstract)
- Knowledge of basic characteristics of information presented quantitatively (e.g., type of graph, a. timeline: events displayed chronologically, b. bar graph: frequencies displayed by groups)
- Knowledge that information presented visually or quantitatively can supplement information presented in text alone

Step 8. Create Cognitive Background Knowledge Variable Features of Tasks

In order to prevent Cognitive Background Knowledge Additional KSAs from impinging on a student’s ability to demonstrate what they know about the Focal KSAs, the co-design team considers how these Additional KSAs may be supported. These supports are Cognitive Background Knowledge Variable Features. For example, for Reading 4.7B the following Cognitive Background Knowledge Variable Features were identified:

- Review with student the basic characteristics of information presented visually
- Review with student the basic characteristics of information presented quantitatively
- Provide an example to the student that illustrates that information presented visually or quantitatively can supplement text
- Provide student with a non-construct relevant example of visual or quantitative information that is aligned with the topic of a text

Step 9. Review and Select UDL Additional KSAs and Variable Features

In the AAD-ELA project six categories of UDL were used: (1) Perceptual (Receptive), (2) Skill and Fluency (Expressive), (3) Language and Symbols, (4) Cognitive, (5) Executive, and (6) Affective. UDL Additional KSAs are nonconstruct relevant knowledge, skills, and abilities in these categories that may be required for successful performance on tasks associated with a *Design Pattern*. UDL Variable Features are used to support student abilities associated with perceiving task stimuli, expressing responses to tasks, comprehending linguistic components of tasks, information processing, executive functioning, and engagement. Unlike the Cognitive Background Knowledge Additional KSAs and Variable Features, which are created afresh for each Design Pattern, the UDL Additional KSAs and associated Variable Features have been standardized and are prepopulated in each Design Pattern (see Table 4). The co-design team is responsible for reviewing this standardized list and selecting those Additional KSAs and associated Variable Features that are most relevant for the task.

Table 4. Linkage Between Additional KSAs and Variable Features

Additional KSAs	Linked to:	Variable Features
Perceptual (Receptive)		
<ul style="list-style-type: none"> AP1. Ability to perceive the linguistic components of the stimulus material and question (e.g., through print, objects, audio, Braille) 	(P1, P2, P3)	<ul style="list-style-type: none"> P1. Delivery mechanisms by which the question is perceived (e.g., read aloud verbatim/read aloud paraphrase, pictures, large print, printed text, Braille, text, symbols, concrete objects, description of objects or images, text to speech, signing, auditory amplification, CCTV – close circuit TV, to increase size of font, vary contrast, etc.)
<ul style="list-style-type: none"> AP2. Ability to perceive images in the stimulus material and question (e.g., through print, objects, holistic description, Braille) 	(P1, P2, P3)	<ul style="list-style-type: none"> P2. Supports for the use of equipment required for the task (e.g., communication board, CD player) P3. Delivery parameters for oral presentation of material (e.g., speed of reading, volume, amount of expression used, student ability to pause, stop, and/or repeat information read aloud)
<ul style="list-style-type: none"> AP3. Ability to perceive physical objects required for the task (e.g., see physical objects and manipulatives) 	(P1, P2)	
Skill and Fluency (Expressive)		
<ul style="list-style-type: none"> AS1. Ability to communicate response (e.g., respond verbally, by using pictures, by making a selection from a group) 	(S1, S2, S3, S4, S5, S6)	<ul style="list-style-type: none"> S1. Response mode options (e.g., pointing, speech and verbalization, writing, signing, switch or other assistive device/augmentative communication device, eye gaze, for lowest functioning students – predictable behavioral response, tolerate assistance – e.g., hand over hand)
<ul style="list-style-type: none"> AS2. Ability to compose or express a response in text (e.g., by writing, using Braille) 	(S1, S2, S3, S4, S5, S6)	<ul style="list-style-type: none"> S2. Supports for composing a response in text (e.g., speech to text, written by teacher, keyboarding)
<ul style="list-style-type: none"> AS3. Ability to manipulate physical materials (e.g., dexterity, strength and mobility) 	(S1, S2, S3, S4, S5, S6)	<ul style="list-style-type: none"> S3. Supports for manipulating physical materials (e.g., use of Velcro, size of materials, teacher manipulation of materials) S4. Supports for manipulating digital/electronic equipment (e.g., pointers, teacher manipulation of equipment, spoken commands, stylus for input, larger keyboard/buttons, adaptive mouse)
<ul style="list-style-type: none"> AS4. Ability to manipulate digital/electronic equipment 	(S1, S4, S5, S6)	<ul style="list-style-type: none"> S5. Practice tutorials with unfamiliar physical materials or digital/electronic equipment
<ul style="list-style-type: none"> AS5. Knowledge of how to use physical materials or digital/electronic equipment (e.g., familiarity) 	(S5, S6)	<ul style="list-style-type: none"> S6. Practice with familiar equipment

Table 4. Linkage Between Additional KSAs and Variable Features, continued

Additional KSAs	Linked to:	Variable Features
Language and Symbols		
<ul style="list-style-type: none"> AL1. Ability to recognize text, symbols, or images 	(L2, L4, L5, L8, L9, L10, L11)	<ul style="list-style-type: none"> L1. Level of abstraction required of student (e.g., concrete objects, images, text) L2. New vs. pre-taught vocabulary and symbols L3. Embedded support for vocabulary and symbols (e.g., technical and non-technical glossary, hyperlinks/footnotes to definitions, illustrations, background knowledge) L4. All key information in the dominant language (e.g., English) is also available in prevalent first languages (e.g., Spanish) L5. All key information in sign language for students who utilize this mode of communication L6. Use of multiple representations (e.g., physical models, demonstrations, acting out scenarios) L7. Alternate syntactic levels (simplified text) L8. Highlight essential elements, words, or phrases L9. Digital text with automatic text to speech L10. Digital Braille with automatic Braille to speech L11. Read language and symbols aloud
<ul style="list-style-type: none"> AL2. Ability to decode text, symbols, or images 	(L1, L2, L3, L4, L5, L8, L9, L10, L11)	
<ul style="list-style-type: none"> AL3. Ability to comprehend text, symbols, or images 	(L1, L2, L3, L4, L5, L6, L7, L8)	
<ul style="list-style-type: none"> AL4. Ability to understand English vocabulary and syntax 	(L2, L3, L4, L5, L7, L8)	
Cognitive		
<ul style="list-style-type: none"> AC1. Ability to attend to stimuli (DOK level 1) 	(C37, C38, C39, C40, C41, C42, C43, C44, C45, C46)	<ul style="list-style-type: none"> C1. Depth of knowledge of the content – SELECTED IN EVERY DESIGN PATTERN AND TASK C2. Complexity of the content (e.g., length of scenario , number of supporting details included, richness of context) – SELECTED IN EVERY DESIGN PATTERN AND TASK C3. Item/task format (selected response vs. constructed response, performance, etc.) C4. Adjustable levels of challenge (teacher able to adjust) Options for supporting background knowledge: <ul style="list-style-type: none"> C5. Pre-teach background content (pre-teach definitions of unfamiliar words or concepts unrelated to the standard; pre-teach means teaching a student for the first time the definition of a word or concept that is included in the narrative of a test item but not part of the construct being measured) C6. Provide analogies and examples C7. Provide hyperlinks to multi-media C8. Provide links to related information
<ul style="list-style-type: none"> AC2. Ability to recall related knowledge (DOK level 2) 	(C5, C6, C7, C8, C9, C10, C11, C12)	
<ul style="list-style-type: none"> AC3. Ability to perform (e.g., answer questions, solve simple problems, measure DOK level 3) 	(C11, C12, C13, C19, C20, C29, C30, C33)	
<ul style="list-style-type: none"> AC4. Ability to comprehend (e.g., explain, sort, extend a pattern) (DOK level 4) 	(C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19)	
<ul style="list-style-type: none"> AC5. Ability to apply information (e.g., organize, collect, solve complex problems) (DOK level 5) 	(C13, C14, C15, C16, C17, C18, C19, C20, C21)	

Table 4. Linkage Between Additional KSAs and Variable Features, continued

Additional KSAs	Linked to:	Variable Features
Cognitive (continued)		
<ul style="list-style-type: none"> • AC6. Ability to analyze, synthesize, or evaluate information (compare, contrast, interpret data) (DOK level 6) 	(C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31)	<ul style="list-style-type: none"> • Options for supporting background knowledge (concluded): <ul style="list-style-type: none"> – C9. Provide links to familiar materials – C10. Provide concept maps – C11. Remind student of prior experiences – C12. Remind student of materials or activities used to teach foundational ELA skills • Options for supporting critical features, big ideas, and relations: <ul style="list-style-type: none"> – C13. Provide graphic organizers – C14. Outline information – C15. Highlight information – C16. Provide alternative forms of key concepts – C17. Provide multi-media glossaries – C18. Provide translation tools – C19. Provide modeled prompts (on non-construct relevant content) – C20. Provide a response template – C21. Remind student of the function of tools/features designed to aide comprehension and processing of information (e.g., highlighting, graphic organizers, captions, and headings) • Options for guiding exploration and information processing: <ul style="list-style-type: none"> – C22. Provide multiple entry points – C23. Allowing viewing of stimuli from previous stages and parts – C24. Use familiar materials – C25. Use consistent signals/cues – C26. Provide sequential highlighting – C27. Chunk information into smaller elements – C28. Mask part of the information – C29. Provide modeled prompts (on non-construct relevant content) – C30. Provide a practice item or task – C31. Provide a guide or checklist for prioritization of steps in multi-step problems Options for supporting memory and transfer: <ul style="list-style-type: none"> – C32. Note-taking – C33. Mnemonic aids – C34. Locate items near relevant text – C35. Reread question/stimulus
<ul style="list-style-type: none"> • AC7. Ability to understand the meaning of an example 	(C16, C24)	
<ul style="list-style-type: none"> • AC8. Ability to process multi-step problems 	(C13, C14, C15, C20, C22, C23, C24, C25, C26, C27, C28, C31, C32, C34, C35)	
<ul style="list-style-type: none"> • AC9. Ability to recall and use information presented in a task/item (working memory) 	(C32, C33, C34, C35, C36)	
<ul style="list-style-type: none"> • AC10. Ability to understand the structure of “organizers” used to present information or to scaffold responses (e.g., understand meaning of table headings, labeling of axis,) 	(C11, C21, C24, C29, C30)	
<ul style="list-style-type: none"> • AC11. Ability to understand the purpose of highlighted features in text or illustrations 	(C21, C25)	

Table 4. Linkage Between Additional KSAs and Variable Features, continued

Additional KSAs	Linked to:	Variable Features
Cognitive (concluded)		
		<ul style="list-style-type: none"> – C36. Present items as a discrete unit or embed in a scenario • Teacher options for providing supports for attention: <ul style="list-style-type: none"> – C37. Cover up part of text so student isn't overwhelmed – C38. Prompt student to engage/re-engage – C39. Provide verbal/gestural prompts – C40. Provide feedback to support attention – C41. Provide supports to reduce student frustration (e.g., noise reduction, extended test taking time, contingencies, number of items administered at one time) – C42. Provide optimal student positioning (positions which encourage alertness, not recumbent) – C43. Administer assessment at optimal time of day for student engagement • Task options to support student attention (task refers to the assessment items, scenario, and materials): <ul style="list-style-type: none"> – C44. Enhance relevance, value, and authenticity of tasks – C45. Heighten salience – C46. Variety of stimuli
Executive		
<ul style="list-style-type: none"> • AE1. Ability to set goals and expectations 	(E1, E4, E5)	<ul style="list-style-type: none"> • E1. Prompts and scaffolds to estimate effort, resources, and difficulty • E2. Prompts, scaffolds, and questions to monitor progress, to “stop and think”, and for categorizing and systematizing • E3. Representations of progress (e.g., before and after photos, graphs and charts) • E4. Guides, checklists, graphic organizers, and/or templates for goal setting, prioritizing, breaking long-term objectives into reachable, short-term goals, self-reflection, and self-assessment • E5. Adjust levels of challenge and support (e.g., adjustable leveling and embedded support, alternative levels of difficulty, alternative points of entry)
<ul style="list-style-type: none"> • AE2. Ability to monitor goals and progress 	(E1, E2, E3, E4, E5)	
<ul style="list-style-type: none"> • AE3. Ability to plan and sequence 	(E1, E4, E5)	
<ul style="list-style-type: none"> • AE4. Ability to self-regulate and reflect during problem solving 	(E1, E2, E3, E4, E5)	

Table 4. Linkage Between Additional KSAs and Variable Features, concluded

Additional KSAs	Linked to:	Variable Features
Affective		
<ul style="list-style-type: none"> • AA1. Ability to engage (e.g., task-specific motivation) 	<p>(A1, A2, A3, A4, A5, A6, A7, A8, A11, A12, A13, A14, A15)</p>	<ul style="list-style-type: none"> • Teacher options for providing supports for attention and engagement: <ul style="list-style-type: none"> – A1. Cover up part of text so student isn’t overwhelmed – A2. Prompt student to engage/re-engage – A3. Provide verbal/gestural prompts – A4. Provide feedback to support engagement – A5. Provide supports to reduce student frustration (e.g., noise reduction, extended test taking time, contingencies, number of items administered at one time) – A6. Provide varied levels of challenge and support – A7. Provide optimal student positioning (positions which encourage alertness, not recumbent) – A8. Administer assessment at optimal time of day for student engagement • Task options for engagement (task refers to the assessment items, scenario, and materials): <ul style="list-style-type: none"> – A9. Provide students with choices for personal control of age-appropriate content when construct is not impacted (e.g., choice of topic or theme) MAY NOT BE APPLICABLE FOR STATEWIDE ASSESSMENTS – A10. Provide students with choices for personal control of task context when construct is not impacted NOT MAY NOT BE APPLICABLE FOR STATEWIDE ASSESSMENTS – A11. Enhance relevance, value, and authenticity of tasks – A12. Heighten salience – A13. Variety of stimuli – A14. Vary amount of context supporting tasks (e.g., discrete tasks vs. scenarios) • A15. Item/task format (selected response vs. constructed response, performance, etc.)
<ul style="list-style-type: none"> • AA2. Ability to persist and sustain effort 	<p>(A1, A2, A3, A4, A5, A6, A7, A8, A11, A12, A13, A14, A15)</p>	

Part II: Procedures for Creating *Development Specifications and Exemplar Task Templates*

Part II of this manual focuses on the processes, procedures, and considerations associated with the *Development Specifications and Exemplar Task Template*. With clearly specified links to the *Design Pattern*, the *Development Specifications and Exemplar Task Template* guides assessment designers in making principled decisions about task design for the range of students who have significant cognitive disabilities. The template also includes fields for creating all elements of exemplar tasks. An example *Development Specifications and Exemplar Task Template* is presented in Appendix B; the *Development Specifications and Exemplar Task Template* attributes and their definitions are displayed in Table 5. The *Development Specifications and Exemplar Task Template* documents each of the important considerations and decisions made during the task design process.

Table 5. Development Specifications and Exemplar Task Template Attributes and Definitions

Task Template Attribute	Attribute Definition
Title	Short name for the <i>Design Pattern</i> (DP)
Nu Design Pattern (from Overview in the Design Pattern)	Title and grade-level expectations for general education students (CCSS and NCECC)
Grade level activities	Optional, category was not used for AAD
Depth of Knowledge (DOK)	The Depth of Knowledge is the degree of understanding a student needs to respond to an assessment item. DOK focuses on how deeply the student has to know the content.
Selected Focal Knowledge, Skills, and Abilities (FKSA)	Focal KSA from DP for Items 1 and 2
Focal KSA notes	Optional
Selected KSA for Item 3a/3b	Additional KSA from DP for Items 3a and 3b
KSA for Item 3a/3b Notes	Optional
Associated AKSAs, Cognitive Background Knowledge	Associated KSAs from DP for Items 1 and 2
Potential Observations from DP	Observed behaviors of students that can provide evidence of the Focal KSA
Potential Observation Notes (based on selected KSA)	Optional
Potential Work Products	What students say, do, or make that provides evidence about the Focal KSA
Potential Work Product Notes (based on selected KSA)	Optional
Characteristic Features	Aspects of assessment situations likely to evoke the desired evidence
Associated Variable Features, Cognitive Background Knowledge	Features that could be changed to impact item difficulty Features that could be changed to impact item accessibility for individual student needs (e.g., as specified in the student’s Individual Education Program [IEP])
Selected Variable Features	From Items 1 to 3: <ul style="list-style-type: none"> • Reduce depth of knowledge (DOK) • Reduce scope • Increase scaffolding/supports
Item Complexity Notes	Description of complexity variation between items
Item Directive	The stem or question (includes description and number of distractors if applicable)
Correct Answer	Correct answer for the item
Materials for Examiner	Materials required to administer, document, and score the task (e.g., worksheet, camera to take picture of product, manipulatives)
Description of Stimulus Materials	Materials that are given to the student during administration of the item
Notes	Notes regarding the task

Each *Development Specifications and Exemplar Task Template* facilitates the creation of 4 items. This set of items targets the range of functional abilities within the target population, thus enabling items to be accessible to students with varying levels of cognitive functioning and communication capabilities. In addition, if the items are administered to the same students over time, the hierarchical sequence could help to provide some evidence of student growth. The 6-point depth of knowledge (DOK) scale developed by Flowers and colleagues (Flowers, Wakeman, Browder, & Karvonen, 2007) was adopted for determining the DOK to be targeted for each item. This scale, developed as part of Links for Academic Learning, was designed to accommodate the unique learning characteristics of students with significant cognitive disabilities deemed eligible to take alternate assessments based on alternate achievements standards (AA-AAS). The 6-point DOK scale is shown in Table 6.

- Item 1 of the *Development Specifications and Exemplar Task Template* is the most sophisticated (in terms of complexity, DOK, scope of content covered, and level of scaffolding/supports), is closest to grade level, and targets the higher functioning students within the population. Item 1 targets the selected Focal KSA most comprehensively.
- Item 2 also aims to assess the selected Focal KSA, but is less complex and is designed to address a lower DOK.
- Item 3 is made up of two items: Items 3a and 3b. These items target the lowest functioning students within the population. Item 3a targets the recall or memorize level of the 6-point DOK scale and Item 3b targets the attention level. If a student does not respond or responds incorrectly to Item 3a, then Item 3b can be administered. Item 3b extends below the recall/memorize DOK level in an effort to ensure that every student from the 1% population can participate in the task and experience success with content, age, and grade-appropriate stimulus materials. Because Items 3a and 3b are intended to address a less sophisticated DOK, an Additional KSA (i.e., a prerequisite or foundational skill) from the associated *Design Pattern* that is most closely related to the selected Focal KSA is used to develop these items.

Table 6. 6-point Depth of Knowledge (DOK) Scale

Item in Template	Depth of Knowledge
3b	1. Attention (touch, look, vocalize, respond, attend)
2, 3a	2. Memorize/recall (list, describe [facts], identify, state, define, label, recognize, record, match, recall, relate)
1, 2	3. Performance (perform, demonstrate, follow, count, locate, read)
1	4. Comprehension (explain, conclude, group/categorize, restate, review, translate, describe [concepts], paraphrase, infer, summarize, illustrate)
1	5. Application (compute, organize, collect, apply, classify, construct, solve, use, order, develop, generate, interact with text, implement)
1	6. Analysis, Synthesis, Evaluation (pattern, analyze, compare, contrast, compose, predict, extend, plan, judge, evaluate, interpret, cause/effect, investigate, examine, distinguish, differentiate, generate)

Development Specifications and Exemplar Task Template Development Guidelines

Once a *Design Pattern* has been reviewed and finalized, the creation of the *Development Specifications and Exemplar Task Template* can commence. In this section the methodology involved in this enterprise is described. Specifically, the following section provides guidelines and suggestions for the development of tasks.¹ Appendix B includes an example *Development Specifications and Exemplar Task Template* for Reading 4.7B.

Step 1. Pre-populate the Development Specifications and Exemplar Task Template with Background Information

Step 1 involves pre-populating some of the attributes within the *Development Specifications and Exemplar Task Template* with information taken directly from the *Design Pattern*. The first three attributes come directly from the associated *Design Pattern* and are not manipulated in the task development phase.

Step 2. Pre-populate the Development Specifications and Exemplar Task Template with Attributes to be Manipulated

Step 2 involves pre-populating the attributes from the *Design Pattern* to the *Development Specifications and Exemplar Task Template*. In this step all Focal KSAs, Cognitive Background Knowledge Additional KSAs, Potential Observations, Potential Work Products, Potential Variable Features and Characteristic Features are copied from the associate *Design Pattern* into the *Development Specifications and Exemplar Task Template*. These Potential Variable Features will be “selected” as part of the item development process to document precisely how task features are manipulated to influence item difficulty. For instance, in Reading 4.7B, the Potential Variable Features included:

- Sources of information: (e.g., text and chart, number of pictures, number of pets)
- Length of text passage (length and number of sentences)
- Reading level of text passage (Fleish Kincaid)
- Location of critical information (text and chart)
- Number of questions/parts
- Number of attributes varying (e.g., cost, care, color, size)

Step 3. Review and/or Revise the Pre-populated Attributes in Section B

It is an important and necessary step to review the pre-populated components of the template, as well as reflect again on the standard/expectation being addressed. From among the Focal KSAs, the co-design team will select the Focal KSA that will serve as the foundation for Items 1 and 2. The choice of the Focal KSA can depend on several factors:

- Complexity of the KSA (e.g., number of steps involved, level of cognitive skill required, and whether this level is appropriate for the target population). During the ECD design pattern process, the expectation is deconstructed into a set of distinct focal KSAs. Some co-design teams may prefer to select more fine-grained or more comprehensive Focal KSAs.

¹ The methodology we describe here is a result of our experiences in developing the AAD-ELA project’s task design and development specifications template. Although there may be minor variations among different co-design teams in their implementation, these are the general guidelines that were followed.

- Clarity or relative simplicity of the intended KSA to be assessed.
- Feasibility for developing tasks that can be “worked down”² (Browder et al., 2007) to encourage content accessibility for a wider spectrum of the target population.

Once the Focal KSA is selected, the next step is to determine the Potential Observations and Potential Work Products that will be targeted for Items 1 and 2. Within the *Design Pattern* each Focal KSA is associated with one or more Potential Observations (i.e., which represent different ways of gathering evidence of the Focal KSA) and one or more corresponding Potential Work Products. A decision must be made about which Potential Observation and Potential Work Product will be used to provide evidence about the chosen Focal KSA.

Although it is usually the case that the Potential Observation for Items 1 and 2 is selected from the list of Potential Observations detailed in the *Design Pattern* for the chosen Focal KSA, the co-design team may identify others at this point. If there is not a Potential Observation and/or Potential Work Product within the list from the *Design Pattern*, then a more appropriate Potential Observation and/or Potential Work Product that embodies the Focal KSA can be suggested, selected, and subsequently added to the *Development Specifications and Exemplar Task Template*. The selection of the Potential Observation and Potential Work Product may depend on several factors including:

- Cognitive complexity of the observed behavior for the target population (e.g., number of steps or skills involved in providing an answer)
- How characteristics of students from this population might limit their ability to demonstrate evidence about their knowledge in a specific way

Once the Focal KSA, Potential Observation, and Potential Work Product are determined, Characteristic Features are reviewed to remind the co-design team about the critical task features that must be present. Potential Variable Features are also reviewed so that the co-design team can consider possible ways to vary the four items. It is possible that the co-design team will propose additional Characteristic Features and Potential Variable Features. If it is determined that a proposed Characteristic Feature (not already within the *Design Pattern*) applies to all tasks created from a *Design Pattern*, it should be added.

For consistency the co-design team should update the *Design Pattern* by adding any new Potential Observations, Potential Work Products, Characteristic Features, and Variable Features that are generated during the task development process. Consistency of content between the *Design Pattern* and *Development Specifications and Exemplar Task Template* is critical. Note that this reconsideration or revision to the *Design Pattern* illustrates the iterative nature of the ECD process for developing both *Design Patterns* and *Development Specifications and Exemplar Task Templates*.

² Browder uses the phrase “work it down” to describe how to develop alternate assessments (AA) for students with significant cognitive disabilities that are linked to grade-level academic content standards. She suggests starting with content standards at grade level then considering how items can be translated so that students at different levels of functioning or communication would be able to access it.

Step 4. Determine the Task Requirements for the Item

As items are created it is important to keep the following considerations in mind:

Presence of context—A decision must be made about whether to include a context or to present the task in a decontextualized fashion. For example, if the Focal KSA aims to assess the students’ ability to use the relationships between particular words to better understand each of the words (e.g., synonyms including those with different connotations, antonyms, and homographs) a contextualized item can be developed **“We are going to read a story about a teenager who survived after her boat sank in a storm. Then I’ll ask you some questions.”**

Alternatively, a decontextualized item can be developed, **“Look at this pair of words. They are synonyms: Humorous and funny. Humorous and funny mean the same thing. They are synonyms. Which of these words means the same as wealthy?”** In the ELA content area it is often necessary to include a context passage to assess the target construct. Even if it is not a requirement of the assessment target, including context can make an item more understandable, interesting, and engaging to students. However, context can also increase the cognitive demand in a nonconstruct relevant way. If the decision is to have context present, here are further considerations in choosing an appropriate context:

- The context should be grade-level appropriate and respectful. For instance, when targeting students in grade 4 comparing household pets was the chosen context for students to demonstrate their ability to interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, and interactive elements) and to explain how the information contributes to understanding of the text in which it appears. Although choosing which car to buy based on its gas consumption and yearly maintenance costs would assess the same skill it would not have been grade appropriate for students in grade 4.
- Literary texts and informational texts should be grade level appropriate and used in general education. For example, if the target construct of a 7th grade item is ability to determine how a character’s thoughts or actions are shaped by setting of a story or drama, the text chosen should be a grade 7 text, simplified as necessary. A high school item in writing provided the context of things to do and see on a visit to Washington DC. This is appropriate and relevant as schools may organize a visit to the nation’s capital and also the course National, State, and Local Government is studied in high school. Appendix B of the CCSS for ELA provides text exemplars and sample performance tasks. Appendix B is available at http://www.corestandards.org/assets/Appendix_B.pdf.
- If an item is related to an informational text, choose text that is on a topic from that grade level.
- Ensure concrete examples are used in the context where possible. For example, an item requiring a student to write persuasively at grade 4 could involve making a poster for a school bake sale. For speaking and listening in grade 8, giving a speech about voting in the student government council election is appropriate.
- Use a context that is generalized rather than localized to a specific population or region where possible. For example, when discussing the use of idioms select ones that are in general use and not those specific to a geographical region or those that are anachronisms. For example, the idiom “Doubting Thomas” meaning someone is skeptical is rarely used whereas “A piece of cake,” meaning something is very easy, is in common

usage. In refining items from a template, a state may choose to incorporate more localized references to contexts relevant to their population of students.

- Choose a context that is clear and unambiguous. For example, when discussing the use of rhetoric in a speech, use a well known speech that clearly shows the use of rhetorical devices.

Student response mode—A decision must be made about whether students will be asked to select the correct response from a set of response options or whether the student will be asked to construct the correct response on their own. If the student is asked to construct the correct response, another decision must be made about whether students would be asked to construct a verbal response, a graphical representation, a computer generated response, a concrete representation of their response, or a written response. The assessment designer must consider the relationship between the response mode required and the specific cognitive limitations of the students. It is possible that although an item may be designed with a particular response mode in mind, it may need to be modified by the test administrator at the time of administration given a particular student’s capabilities.

Presence of information presented visually—Decisions must be made about information presented visually. The CCSS in ELA require students to understand, explain, and use multiple sources of data. In addition, the use of visual information, such as a picture can support student’s understanding of the texts used. If visual information will accompany an item or be integral to construct being measured the following questions should be considered:

- Should the visual information be presented as a photograph, a picture (illustration), or a graphic? Photographs are more realistic but may not be readily available. For example, some fictional works, for instance the *Odyssey*, are situated in the past.
- Should visual information be presented in black and white or in color? Information in black and white (e.g., a line drawing) can be photocopied and enlarged more easily than information in color. On the other hand a pie chart may be easier to understand in color.
- In items requiring information presented in a graph or chart, should the information presented visually be detailed or simple to allow the assessment designers to ask a range of nontrivial or interesting questions or should the visual information be limited to a specific question without extraneous information?
- How much information should be presented visually to support understanding of text? Too few pictures and the student may not understand what the text is about. Too many and the student may become overwhelmed.
- Where to place information presented visually within the text. Ideally text and accompanying visual information should be located close to each other so that the student does not have skip back and forth.
- What font should be used for text? Consider size, color, and typeface. Ideally use one that is well proportioned and has simple lines. Serifed type is best - for example, Times, Palatino, Melior, Century, Bembo, etc. Use upper and lower case rather than all upper case as words are easier to read in upper and lower case. However, if the item is presented on a computer the font may need to be changed.

Number of questions within an item—The decision must be made about whether one question or multiple questions should be asked of the student for a given item. This may depend on the

complexity of the Focal KSA and whether item interdependency can be addressed in the measurement model.

- If multiple questions are asked, should they be asked in the same context and/or text or should multiple contexts and/or texts be progressively built into the items? Having multiple texts will add to the cognitive load for the student.
 - Should an overall framing or thematic question be included when multiple questions are asked?
- Number of parts in demonstrating skills—A decision must be made about how many parts should be involved in getting to the final work product.

Step 5. Develop the Item Directive

In the template specific task information is generated and recorded for each of the 4 items within the task. It is suggested that co-design teams work through steps 5–9 for Item 1, then go back and repeat these steps for Item 2, and finally go through them again to create Items 3a and 3b. Iterations and adjustments to previously completed items may be needed to ensure coherence among the entire set of 4 items.

The Item Directive segment of the template includes the item prompt or question, the item description and distracters when applicable, and specific instructions that will be presented to students for each item. For the AAD-ELA project the convention was adopted that text in quotes was to be read aloud by the examiner and text in brackets were instructions to the examiner (e.g., point at the word synonym). The Item Directive does not detail specific individual adjustments that can be made (and that are acceptable) in the task administration. This information concerning individual adjustments is presented in the Variable Features for Administration to Individual Students section of the template (described in detail in step 9).

The ELA expert within the co-design team typically suggests an idea for the Item Directive, taking into consideration the Focal KSA, the decisions made about the task requirements, their experience in the classroom, and the best way to assess the ELA concepts targeted.

After drafting an initial representation of the idea for the Item Directive, the team discusses and modifies the Item Directive based on insights from differing perspectives, such as the principles of ECD, ELA education, and classroom experience with special education students. The concerns addressed in these discussions should include:

- Capabilities of students in the target population
- Construct relevant and irrelevant details elicited by the proposed Item Directive:
 - Whether the proposed Item Directive adheres to the Focal KSA
 - What Additional KSAs might be required by the task
 - How to minimize or support the Additional KSAs within the design of the Item Directive
- Evaluation of the content of the Item Directive:
 - Context (see criteria in step 4)
 - Data presentation (see criteria in step 4)

To illustrate this process, the following is an example of the Item Directive for Item 1 of Reading 4.7B: The item directive development process will be further elaborated in steps 6–7.

Examiner presents student with a passage and says, “I’m going to read you some information. Then I’ll ask you some questions.” Examiner reads the passage aloud:

“Pets can be great! They can be fun to play with. There are many kinds of pets. Some pets need more care than others. Some pets cost more than others. DOGS: -Dogs take a lot of time to care for. Dogs are expensive. CATS: Cats take less time to care for than dogs. Cats are less expensive than dogs. FISH: Fish take very little time to care for. Fish do not cost very much. Teacher/administrator places the information where the student can see it.”

Part 1: Teacher/administrator says, “Which pet takes the most time to care for?”

Part 2: Teacher/administrator places a chart in front of student and says, “Look at this chart. It shows that a dog costs \$10, a cat costs \$5, and a fish costs \$1. The dog takes the most time to care for. How much does the dog cost?”

Step 6. Document the Correct Answer

After the co-design team has reached consensus on the Item Directive, they next document the Correct Answer. The answer can be a student generated description, a student completed response template, or a selected response. For example, for the item created for Reading 4.7B there are two parts and two answers. For part 1 the correct answer is “Student indicates that a dog takes the most time to care for.” This is a student generated answer and the student should be able to respond in the manner most appropriate to their mode of communication. For part 2 the correct answer is “Student indicates \$10.” Again this is a generated response. The team should also specify whether alternative versions of the stated correct answer are also acceptable.

Step 7. Describe the Stimulus Items and Materials for the Examiner

The Description of the Stimulus Items is a depiction or detailed description of the graphics, objects, or tools to be used in task administration. This might include a table of data presented to the student with which they must create graphics or interpret, synthesize, and/or calculate statistics. If there are multiple questions within an item, there will be a description of the stimulus materials for each question. The Stimulus Materials for Item 1 of Reading 4.7B 3–5 include:

Item C Stimulus Material 1: Passage printed in large font

Item C Stimulus Material 2: Chart: two columns (type of pet and cost in dollars); 3 rows: dog (picture and word), cat (picture and word), fish (picture and word).

The Materials for the Examiner is a description of the materials examiners will need to administer, document, and score an item (e.g., worksheet, camera with which to take a picture of product, or a manipulative). It includes the task worksheet that describes the item and delivery instructions and task data sheet or other method to record the student’s response.

Step 8. Update Selected Variable Features

The co-design team must return to the Selected Variable Features to update the information based on the selections made for the finalized Item Directive. The team first decides on the DOK level for the item. Using the 6-point DOK scale (Flowers, et al., 2007), the team decides which level best exemplifies the DOK required by the Item Directive created for the item. This decision is based on a number of factors including:

- **Understanding of the structure** of the DOK levels and the verbs used to exemplify each level, including how each level and verb can be operationalized generally in the context of ELAs and more specifically in the context of the item. For instance, an item that asks students to explain and/or make a conclusion is considered to be at the comprehension level.
- **Determining the ELA sophistication** elicited by the item based on the nature of the ELA concept being probed based on (1) the amount of prior ELA knowledge that has to be drawn upon, (2) the nature of the student interaction with the text; 3) the amount and range of textual evidence including the number of connections among ideas and between texts; and 4) the degree of sensitivity to inconsistencies, ambiguities, and poor reasoning in and between texts.
- **Determining the complexity** of skills elicited by the item based on (1) whether the student has to retrieve, extend, or produce novel findings, (2) whether the item has multiple questions or requires multiple or integrated skills, and (3) whether the answer is a constructed response or selected response. In addition, the distracters in a selected response item can be written to impact the item's complexity.

If the DOK assigned is lower or higher than desired, the team should revise the Item Directive to adjust the DOK level of the item. Alternatively, the item may be considered as a better fit as a different level in the template. For instance, if the DOK assigned to an Item 1 is lower than desired, the team may choose to use this item as an Item 2.

The co-design team should explicitly detail the decisions made for each Variable Feature selected to create the Item Directive. For instance, if the co-design team chooses to ask students to create a visual presentation (rather than a script), then they must document this decision.

Step 9. Document Variable Features for Administration to Individual Students

Variable Features for Administration to Individual Students specify task features that could be changed to impact item accessibility according to individual student needs (e.g., large print, Braille for those with visual impairments). Although the Item Directive will not be modified, it is possible that certain students will require specific accommodations in addition to the accessibility and scaffolding features built in to the design of the item. The boundaries of this category will be determined in part by accommodation policies in individual states. However, it is essential that these Variable Features should not compromise the construct (Focal KSA) targeted. Currently, two types of Variable Features for Administration to Individual Students have been consistently noted in the *Development Specifications and Exemplar Task Template*: (1) the freedom to vary the format of the question presentation (e.g., presented in sign language with Braille, auditory, or with or without gestural prompts) and (2) the students' response format individualized based on their communication system. States need to specify which accommodations or formats are and are not allowed. A particularly sensitive accommodation is read aloud. When the focal KSA is ability to read text fluently and accurately to support comprehension, a read aloud accommodation could compromise the target construct. However, if the target construct is ability to use the relationships between particular words to better understand each of the words (e.g., synonyms including those with different connotations, antonyms, and homographs) a read aloud accommodation/format may be allowable depending on state policy.

Step 10. Repeat Steps 5–9 to Develop Item 2

The co-design team should repeat Steps 5–9 to develop Item 2. Item 2 must assess the same Focal KSA as Item 1, but it involves skills that are considered to be at a lower DOK level. In addition, Item 2 is typically less complex, narrower in scope, and more heavily scaffolded or supported. In creating Item 2, the modifications below should be considered. These modifications help to ensure that the DOK and scope have been appropriately decreased and that supports or scaffolding have been appropriately increased relative to Item 1 while still preserving the Focal KSA.

- **Reduce DOK Levels:**
 - If Item 1 required students to *construct or generate* a response (a higher DOK level), in Item 2 students can be asked to *select* the appropriate answer from a set of response options (a lower DOK level).
- **Reduce Complexity:**
 - If Item 1 presents the student with a comparison of cost and amount of care Item 2 could present the student with a comparison of size and color.
 - If Item 1 contains *2 parts* (i.e., 1 and 2), Item 2 could contain only one question *one*.
- **Narrow the Scope of Content to Be Assessed:** If Item 1 assessed *a composite set of skills* (e.g., Ability to generate logically organized informative/explanatory text to convey ideas, concepts, and information clearly by introducing the topic, using graphics and/or multimedia to aid comprehension, using two or more facts and details to develop the topic, using domain-specific vocabulary, and providing a concluding statement that summarizes the information), then Item 2 should *assess fewer components of those skills* (e.g., perhaps students just logically organize information and select an appropriate concluding statement).
- **Increase Scaffolding or Support:** If the Focal KSA is about the ability to demonstrate understanding of word relationships including homographs, idioms, synonyms, and antonyms, Item 1 could include a narrative passage and questions about the homographs, idioms, synonyms, and antonyms included in the passage. Item 2 could consist of discrete questions about words paired with supporting/explanatory pictures.

Step 11. Repeat Steps 5–9 to Develop Items 3a and 3b

Steps 5–9 also should be followed to complete Items 3a and 3b to ensure systematic development and documentation of design decisions for these items. However, recall that for these items an Additional KSA (not the Focal KSA) is targeted.

Some important considerations developing Item 3a are as follows:

- For consistency, select an Additional KSA that is aligned to the selected Focal KSA.
- The choice and use of an Additional KSA (or prerequisite skill) that is narrowly focused increases the likelihood that the item is less sophisticated than Items 1 and 2.
- Ensure that students at the lower functioning end of the spectrum of students with significant disabilities are taken into account in the design of this item.

Item 3b targets the attention DOK level. This usually involves removing all distracters from Item 3a and leaving only the correct answer for the student. The student is asked to point to or otherwise indicate the remaining stimulus item. This item is included in an effort to ensure that

all students, including those with the most severe cognitive disabilities, will be able to participate in the testing experience and encounter some success.

Pilot Testing

Following the steps described in these guidelines doesn't ensure the validity and reliability of the assessment tasks. It is imperative that assessment designers gather empirical data from the appropriate population of students to establish the viability of the assessment tasks and their technical qualities. Teachers should pilot-test the newly developed assessment tasks with students eligible to take state AA-AAS. The focus of the pilot should be to collect information about task variability and the appropriateness of the tasks to measure a range of student performance levels.

Task Viability. Pilot tests of the tasks should be undertaken to judge the viability of the tasks. Can the four items associated with a Design Pattern be administered as designed? Are the task instructions and materials clear to the teacher? Are they clear to the student? Data can be collected through a teacher questionnaire and/or observations of task administration.

Task Appropriateness. It is recommended that tasks be administered to students with significant cognitive disabilities with differing levels of functioning so that the tasks measure a range of student performance levels. Which students perform successfully on Item 1 (most complex item)? Which students perform successfully on Items 2, 3a, and 3b (decreasingly complex items)? Do at least some students get Item 1 correct?

Data from the pilot testing can be used to inform modification of items so that all or most students can gain access to at least one item associated with each Design Pattern.

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Appendix A: Design Pattern

Design Pattern Reading 4.7 B

	Attribute	Definition	Design Pattern (DP)	Notes/Guidance
1	Title	Short name for the DP	Reading 4.7B: Interpreting Information	
2	Overview	Brief description of the family of tasks implied by the DP	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, and interactive elements) and explain how the information contributes to understanding of the text in which it appears.	
3	Rationale	Nature of the KSAs of interest and why they are important	As much information is now accessed through multimedia formats, the ability to interpret information from a variety of formats is essential for students to comprehend material. Students must be able to understand information presented through visual, oral, or quantitative formats and make judgments about the quality and utility of information to the purpose or task: they are important skills for 21st century learners.	
4	Focal KSAs	The primary KSAs targeted by this DP	<ul style="list-style-type: none"> • Ability to identify information presented visually in a text • Ability to identify information presented quantitatively (e.g., in charts, graphs, diagrams, time lines) in a text • Ability to identify and use both information presented in text and related information presented visually or quantitatively 	<ul style="list-style-type: none"> • Link to grade level academic content • Include variety in depth of knowledge so that all students are appropriately challenged • Do not include prerequisite KSAs
5	Additional KSAs	Other KSAs that may be required by tasks from this DP, some of which can be supported by universal design for learning (UDL) and accommodations	<p><u>Cognitive Background Knowledge</u></p> <ul style="list-style-type: none"> • Knowledge of basic characteristics of information presented visually (e.g., a. video: realistic vs. fictional, b. picture: photograph vs. abstract) • Knowledge of basic characteristics of information presented quantitatively (e.g., type of graph, a. timeline: events displayed chronologically, b. bar graph: frequencies displayed by groups) • Knowledge that information presented visually or quantitatively can supplement information presented in text <p><u>Perceptual (Receptive)</u></p> <ul style="list-style-type: none"> • Ability to perceive images in the stimulus material and question (e.g., through print, objects, holistic description, Braille, audio description, tactile images) (Image in this case means a picture, drawing, table, map, graph, or photograph and not a mental image) • Ability to perceive physical objects required for the task (e.g., see physical objects used to relate a story) • Ability to perceive the linguistic components of the stimulus 	<ul style="list-style-type: none"> • May include prerequisite background knowledge (KSAs) • Additional KSAs organized by 6 UDL categories • Content related Additional KSAs are addressed in the Cognitive Background Knowledge category • Create Technology Appendix organized by focus of Design Pattern (e.g., fractions)

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	Attribute	Definition	Design Pattern (DP)	Notes/Guidance
			<p>material and question (e.g., through print, objects, audio, Braille, sign language, tactile images)</p> <p><u>Skill and Fluency (Expressive)</u></p> <ul style="list-style-type: none"> • Ability to communicate response (e.g., respond verbally, by using pictures, by making a selection from a group) • Ability to compose or express a response in text (e.g., by writing, using Braille, using a scribe) • Ability to manipulate physical or virtual materials (e.g., dexterity, strength, computer access, and mobility) • Ability to manipulate digital/electronic equipment • Knowledge of how to use physical materials or digital/electronic equipment (e.g., familiarity) <p><u>Language and Symbols</u></p> <ul style="list-style-type: none"> • Ability to recognize text, symbols, tactile images, images or objects (Image in this case means a picture, drawing, table, map, graph, or photograph and not a mental image) • Ability to comprehend text, symbols, images or objects (Image in this case means a picture, drawing, table, map, graph, or photograph and not a mental image) • Ability to understand English vocabulary and syntax (If the student doesn't have the linguistic competency then it would be hard to support. If a student speaks another language then a bilingual translator can be used) <p><u>Cognitive</u></p> <ul style="list-style-type: none"> • Ability to attend to stimuli (Stimuli include item prompt, response options, and associated materials [e.g., images, text passages]; the stimuli can be represented in any modality) • Ability to recall related background knowledge (Background information refers to information learned outside of the assessment situation [not working memory]) • Ability to perform (e.g., answer questions, solve simple problems) • Ability to organize information • Ability to understand the meaning of an example (e.g., use of a non-construct relevant example) • Ability to process multi-step (requires an explicit sequence of procedures) or multiple component (requires multiple cognitive decisions) problems or questions. 	

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	Attribute	Definition	Design Pattern (DP)	Notes/Guidance
			<ul style="list-style-type: none"> • Ability to recall and use information presented in a task/item (working memory) • Ability to understand the structure of “organizers” used to present information or to scaffold responses (e.g., understand the meaning of headers, subtitles, etc., in diverse media) • Ability to understand the purpose of highlighted features in text or illustrations (e.g., unfamiliar words or terms printed in italics indicating they are included in a glossary; critical words in instructions printed in bold or all capitals) <p><u>Executive</u></p> <ul style="list-style-type: none"> • Ability to set goals and expectations • Ability to monitor goals and progress • Ability to plan and sequence • Ability to self-regulate and reflect during problem solving <p><u>Affective</u></p> <ul style="list-style-type: none"> • Ability to engage (e.g., task-specific motivation) • Ability to persist and sustain effort 	
6	Potential Observations	Observed behaviors of students that can provide evidence of Focal KSAs	<ul style="list-style-type: none"> • PO1: Student perceives visual information (e.g., an illustration or a video) within a text and correctly answers a question about the visual information (e.g., Student given a labeled illustration of a butterfly and points to parts of the butterfly's anatomy). • PO2: Student perceives information presented quantitatively (e.g., chart, graph, diagram) within a text and correctly answers a question about the quantitative information (e.g., Student reads a chart from Good Pet, Bad Pet that contains information about the heights of different types of dogs. The student answers the question, which dog is tallest?). • PO3. Student reads (or is read) passage about a topic and perceives supplemental visual (e.g., picture, illustration, video) or quantitative information (e.g., chart, graph, diagram) about the same topic. Student correctly answers a question that requires him/her to integrate information from the two sources (e.g., Student reads a passage from Good Pet, Bad Pet that contains information about the amount of time required for care and play of different types of pets. The student also reads an accompanying chart that contains information about the cost of different types of pets. Given this passage and chart, the student answers the question, which pet should a child 	<ul style="list-style-type: none"> • Each Potential Observation includes a qualifier (e.g., correctly, accurately, appropriately) that specifies the judgment about a behavior that will provide evidence about a student's knowledge, skill, or ability

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	Attribute	Definition	Design Pattern (DP)	Notes/Guidance
			pick who doesn't have a lot of money but has a lot of time to play with the pet?)	
7	Potential Work Products	What students say, do, or make that provides evidence about the Focal KSAs	<ul style="list-style-type: none"> • Selection from a list • Expression of an answer 	<ul style="list-style-type: none"> • Illustrate types of work products that could be gathered as part of the assessment to provide evidence of Focal KSAs • Create concrete examples of work products • Menu of options – not required work products (e.g., if user only uses paper/pencil tasks, why include multiple options for work products? We want users to think broadly; this document can be used if assessments change in the future) • Do not include qualifying words (e.g., appropriate) • Worksheet can include electronic worksheets or screenshot of work in computer math skill program
8	Potential Rubrics	Some evaluation techniques that may apply	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Rubrics unique to states should be identified • Ways tasks may be scored • How to apply so assessment is rich, not confined
9	Characteristic Features	Aspects of assessment situations likely to evoke the desired evidence	<ul style="list-style-type: none"> • Only two sources of information will be presented to the student • Some unique information should appear in each source, the text/passage AND in the chart/graph/other information presented • One source of information must be a text/passage • Text/Passage must contain content that is age respectful 	<ul style="list-style-type: none"> • Features tasks must include to evoke the desired response • Consider cost/benefit of adding “story” information or authentic context to problems (increase relevance) vs. limiting extraneous information (minimize ambiguity and reduce cognitive load)
10	Variable Features	Aspects of assessment situations that can be varied in order to control difficulty or target emphasis on various KSAs	<p><u>Cognitive Background Knowledge</u></p> <ul style="list-style-type: none"> • Review with student the basic characteristics of information presented visually • Review with student the basic characteristics of information presented orally • Review with student the basic characteristics of information presented quantitatively • Provide an example to the student that illustrates that information presented visually or quantitatively can supplement text 	<ul style="list-style-type: none"> • Special consideration required of the variable features of “story” problems. Adding story information can increase relevance but also adds ambiguity and increases cognitive load. • For multi-step problems, use of executive management supports will be essential.

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	Attribute	Definition	Design Pattern (DP)	Notes/Guidance
			<p><u>Perceptual (Receptive)</u></p> <ul style="list-style-type: none"> • Delivery mechanisms by which the question is perceived (e.g., read aloud verbatim/read aloud paraphrase, pictures, large print, printed text, Braille, text, symbols, concrete objects, description of objects or images, text to speech, signing, auditory amplication, CCTV – close circuit TV, to increase size of font, vary contrast, etc.) • Supports for the use of objects required for the task (e.g., communication board, CD player; possible to reprogram communication to include punctuation, capitalization, etc.) <p><u>Skill and Fluency (Expressive)</u></p> <ul style="list-style-type: none"> • Practice tutorials with unfamiliar physical materials or digital/electronic equipment (Practice materials can be used to introduce students to new item formats or modeled examples using materials that are not construct relevant or new tools to support test taking) • Response mode options (e.g., pointing, speech and verbalization, writing, signing, switch or other assistive device/augmentative communication device, eye gaze, for lowest functioning students – predictable behavioral response, tolerate assistance – e.g., hand over hand) • Supports for composing a response in text (e.g., written by student, speech to text, written by teacher, keyboarding) • Supports for manipulating physical materials (e.g., use of Velcro, size of materials, teacher manipulation of materials; in writing students can manipulate cards with punctuation symbols on them and Velcro on back to apply correct punctuation to a sentence) • Supporting for manipulating digital/electronic equipment (pointers, teacher manipulation of equipment, spoken commands, stylus for input, larger keyboard/buttons, adaptive mouse) <p><u>Language and Symbols</u></p> <ul style="list-style-type: none"> • Level of abstraction required of student (e.g., concrete objects, images, text) • Embedded support for vocabulary and symbols (e.g., technical and non-technical glossary, hyperlinks/footnotes to definitions, illustrations, background knowledge, number line) • Alternate syntactic levels (simplified text) 	

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	Attribute	Definition	Design Pattern (DP)	Notes/Guidance
			<ul style="list-style-type: none"> • Highlight essential elements, words, or phrases • Digital Braille with or without automatic Braille to speech <p><u>Cognitive</u></p> <ul style="list-style-type: none"> • Depth of knowledge of the content • Level of complexity of the content (e.g., fractions used (halves, thirds, quarters, etc.)) • Prompts to explain sequential steps used to solve the problem • Item/task format (selected response vs. constructed response, performance, etc.) • Adjustable levels of challenge (teacher able to adjust) <ul style="list-style-type: none"> ○ Provides the opportunity for successive approximations of the task ○ Utilizes back-chaining technique • Options for supporting background knowledge: <ul style="list-style-type: none"> ○ Pre-teach background content ○ Provide analogies and examples ○ Provide hyperlinks to multi-media ○ Provide links to related information ○ Provide links to familiar materials ○ Provide concept maps ○ Remind student of prior experiences ○ Remind student of materials or activities used to teach foundational math skills • Options for guiding exploration and information processing: <ul style="list-style-type: none"> ○ Allow viewing of stimuli from previous stages and parts ○ Familiar materials and their use (this includes the presentation of familiar organizational tools [e.g., tables] and familiar concrete objects and/or using familiar organizational processes [e.g., how highlighting is used]) ○ Mask incorrect answer options ○ Mask part of the information ○ Provide sequential highlighting • Options for supporting critical features, big ideas, and relations: highlight information. • Options for supporting memory and transfer: <ul style="list-style-type: none"> ○ Locate items near relevant text ○ Present items as a discrete unit or embed in a scenario ○ Reread question/stimulus <p><u>Executive</u></p>	

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	Attribute	Definition	Design Pattern (DP)	Notes/Guidance
			<ul style="list-style-type: none"> • Guides, checklists, graphic organizers, and/or templates for goal setting, prioritizing, breaking long-term objectives into reachable short-term goals, self-reflection, and self-assessment. • Prompts, scaffolds, and questions to monitor progress, to "stop and think", and for categorizing and systematizing. • Representations of progress. (e.g., before and after photos, graphs and charts) • Adjust levels of challenge and support. (e.g., adjustable leveling and embedded support, alternative levels of difficulty, alternative points of entry) <p><u>Affective</u></p> <ul style="list-style-type: none"> • Teacher options for providing supports for attention and engagement: <ul style="list-style-type: none"> ○ Cover up part of text so student isn't overwhelmed ○ Prompt student to re-engage ○ Hierarchical prompt structure to promote engagement and reengagement ○ Provide verbal/gestural prompts ○ Provide feedback to support engagement ○ Provide supports to reduce student frustration (e.g., noise reduction, extended test taking time, contingencies, number of items administered at one time) ○ Provide varied levels of challenge and support ○ Provide optimal student positioning (positions which encourage alertness, not recumbent) ○ Administer assessment at optimal time of day for student engagement ○ Provides the opportunity for successive approximations of the task ○ Utilizes back-chaining technique • Task options for engagement: <ul style="list-style-type: none"> ○ Provide students with choices for personal control of age-appropriate content when construct is not impacted (e.g., choice of topic or theme) ○ Provide students with choices for personal control of task context when construct is not impacted ○ Enhance relevance, value, and authenticity of tasks ○ Heighten salience ○ Variety of stimuli 	

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	Attribute	Definition	Design Pattern (DP)	Notes/Guidance
			<ul style="list-style-type: none">○ Vary amount of context supporting tasks (e.g., discrete tasks vs. scenarios)○ Item/task format (selected response vs. constructed response, performance, etc.)	
11	Educational Standards			

Appendix B: Example Development Specifications and Exemplar Task Template

Task/Item Development Reading 4.7 B

Attributes		General Information		
Title	Reading 4.7B			
Summary	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, and interactive elements) and explain how the information contributes to understanding of the text in which it appears.			
Rationale	As much information is now accessed through multimedia formats, the ability to interpret information from a variety of formats is essential for students to comprehend material. Students must be able to understand information presented through visual, oral, or quantitative formats and make judgments about the quality and utility of the information to the purpose or task. These are important skills for 21 st century learners.			
Grade level standards				
Attributes	Definition	Item 1	Item 2	Item 3a/3b
		Application/Comprehension/Performance	Performance/Recall	Recall/Attention
Focal KSA	Focal KSA from DP for Items 1 & 2; Add'l KSA from DP for Item 3	Ability to identify and use both information presented in text and related information presented visually or quantitatively		Ability to identify visual or quantitative information that is aligned with the topic of a text.
Potential Observations from DP	Observed behaviors of students that can provide evidence of the Focal KSA	PO3. Student reads (or is read) passage about a topic and perceives supplemental visual (e.g., picture, illustration, video) or quantitative information (e.g., chart, graph, diagram) about the same topic. Student correctly answers a question that requires him/her to integrate information from the two sources (e.g., Student reads a passage from Good Pet, Bad Pet that contains information about the amount of time required for care and play of different types of pets. The student also reads an accompanying chart that contains information about the cost of different types of pets. Given this passage and chart, the student answers the question, which pet should a child pick who doesn't have a lot of money but has a lot of time to play with the pet?).		<i>Not addressed in DP</i>
Potential Work Products	What students say, do, or make that provides evidence about the Focal KSA	<ul style="list-style-type: none"> • Selection from a list • Expression of answer 		<i>Not addressed in DP</i>
Characteristic Features	Aspects of assessment situations likely to evoke the desired evidence	<ul style="list-style-type: none"> • Only two sources of information will be presented to the student • Some unique information should appear in each source, the text/passage AND in the chart/graph/other information presented • One source of information must be a text/passage • Text/Passage must contain content that is age respectful 		

Appendix B: Example Development Specifications and Exemplar Task Template

Attributes	Definition	Item 1	Item 2	Item 3a/3b
		Application/Comprehension/ Performance	Performance/Recall	Recall/Attention
Potential Variable Features/ Scaffolding	Features that could be changed to impact item difficulty and scope	<ul style="list-style-type: none"> • DOK of the content • Sources of information • Complexity of the information • Scaffolding 	<ul style="list-style-type: none"> • DOK of the content • Sources of information • Complexity of the information 	<ul style="list-style-type: none"> • DOK of the content • Sources of information • Complexity of the information
Selected Variable Features/ Scaffolding for the Item	From Item 1 to Item 3: <ul style="list-style-type: none"> • Reduce DOK • Reduce scope • Increase scaffolding 	DOK: Comprehension Sources of information: text and chart, both with multiple pictures Number of pets: three Length of passage: 11 sentences FK reading level: 0.4 Location of critical information: text and chart Number of questions: 2 Number of attributes varying: 2 (time to care and cost) Difficulty of attributes: more difficult Read aloud: yes	DOK: Comprehension Sources of information: text and picture Number of pets: one Length of text: 4 sentences FK reading level: 1.0 Location of critical information: text and picture Number of questions: 1 Number of attributes varying: 2 (color and size) Difficulty of attributes: less difficult Read aloud: yes	DOK: 3a: Recall, 3b: Attention Sources of information: text and objects Number of objects: 2 Length of text: 1 sentence FK reading level: 0.0 Location of critical information: text Number of questions: 1 Number of attributes varying: 1 (source of object) Difficulty of attributes: simple Read aloud: yes
Item Directive	The stem or question (includes description and number of distractors if applicable)	This is a 2 part item. Teacher/administrator may provide student with breaks between parts. If a break is provided, teacher/ administrator should reread passage to student before asking next question. Teacher/administrator presents student with a passage (Item C Stimulus Material 1) and says, I'm going to read you some information. Then I'll ask you some questions. Teacher/administrator reads the passage aloud: Pets can be great! They can be fun to play with. There are many kinds of pets. Some pets need more care than others. Some pets cost more than others. DOGS: -Dogs take a lot of time to care for. -Dogs are expensive. CATS:	Teacher/administrator presents student with a picture of a Dalmatian (Item B Stimulus Material 1) and says, This is a picture of a Dalmatian. Teacher/administrator places the picture where the student can see it. Teacher/administrator presents student with a passage (Item B Stimulus Material 2) printed on paper [or in other format accessible to student] and reads the following: Dalmatians are a kind of dog. They are medium sized. Dalmatians are very smart. They can make great family pets. Teacher/administrator presents student with three note cards (Item B Stimulus Materials 3, 4,	3a) Teacher/administrator presents student with two objects (Item A Stimulus Materials 1 and 2), a leaf and an ice cube. Teacher/ administrator says, This is a leaf and this is an ice cube. Listen to this sentence: 'Plants have leaves.' Which object am I talking about, the leaf or the ice cube? 3b) If student does not respond to A1, teacher/administrator removes the ice cube and says, [Show me]/ [Touch]/[Look at] the leaf.

Appendix B: Example Development Specifications and Exemplar Task Template

		<p>-Cats take less time to care for than dogs. -Cats are less expensive than dogs. FISH: -Fish take very little time to care for. -Fish do not cost very much.</p> <p>Teacher/administrator places the information where the student can see it.</p> <p>Part 1 Teacher/administrator says, Which pet takes the most time to care for? Teacher/administrator records student answer. Teacher/administrator can reread passage if needed. After student responds teacher/administrator provides a break if needed or moves to next part.</p> <p>Part 2 Teacher/administrator places chart (Item C Stimulus Material 2) in front of student and says, Look at this chart. It shows that a dog costs \$10, a cat costs \$5, and a fish costs \$1. The dog takes the most time to care for. How much does the dog cost?</p>	<p>and 5) and says, Think about what I just read and look at the picture. Which of these is correct? Teacher/ administrator points to each option and reads it aloud:</p> <ul style="list-style-type: none"> - Dalmatians are small dogs with black and white spots - Dalmatians are medium size dogs with black and white spots - Dalmatians are medium size dogs that are yellow 	
Correct Answers	Correct answer for the item	<p>Part 1 Student indicates that the dog takes the most time to care for Part 2: Student indicates that the dog costs \$10</p>	<p>Student indicates answer choice Stimulus material 4: Dalmatians are medium size dogs with black and white spots</p>	<p>3a) Student indicates the leaf 3b) Student looks at/touches the leaf</p>
Description of Stimulus Items	Description of the <i>graphics or objects</i> used in administration of the task	<p>Stimulus Material 1: Passage printed in large font, 11 sentences Stimulus Material 2: Chart showing three household pets (names and pictures) and their cost in dollars (pictures and symbols)</p>	<p>Stimulus material 1: passage printed in large font, 4 sentences Stimulus material 2: picture of a Dalmatian dog Stimulus material 3: note card with Dalmatians are small dogs with black and white spots Stimulus Material 4: note card with Dalmatians are medium size dogs with black and white spots Stimulus Material 5: note card with Dalmatians are medium size dogs that are yellow</p>	<p>Examiner provides objects: an ice cube and a non-poisonous leaf</p>

Appendix B: Example Development Specifications and Exemplar Task Template

Attributes	Definition	Item 1	Item 2	Item 3a/3b
		Application/Comprehension/ Performance	Performance/Recall	Recall/Attention
Materials for Examiner	Materials required to administer, document, and score the task (e.g., worksheet, camera to take picture)	Passage Chart	Passage Image of a Dalmatian	1 leaf 1 ice cube
Variable Features for Administration to Individual Students	Features that could be changed to impact item accessibility for individual student needs (e.g., as specified in the student's IEP)	<ul style="list-style-type: none"> • Question presentation individualized (e.g., related in sign language) • Response format individualized based on student communication system • Remind student of prior experiences • Verbal/gestural prompts individualized • Use of tactile graphics 	<ul style="list-style-type: none"> • Question presentation individualized (e.g., related in sign language) • Response format individualized based on student communication system • Remind student of prior experiences • Verbal/gestural prompts individualized • Use of tactile graphics 	<ul style="list-style-type: none"> • Question presentation individualized (e.g., related in sign language) • Response format individualized based on student communication system • Remind student of prior experiences • Verbal/gestural prompts individualized • Use of tactile graphics

Updated Flowers/Browder Math DOK³:

- (1) **Attention:** touch, look, listen, repeat what the teacher said, vocalize, respond, attend, recognize
- (2) **Memorize/recall:** list, describe (facts), state math facts, identify, state, define, match, recognize, label, follow a pattern
- (3) **Performance:** answer, follow 1 step directions, find answer, present, read, separate, spell, tell time, map, model demonstration, perform, demonstrate, follow, choose, count, locate, group by given attributes, solve simple (one computation skill) problems, measure
- (4) **Comprehension:** understand, extend a pattern, sketch, ask and answer questions, categorize/group by unknown attributes, explain, conclude, group, restate, review, translate, classify/sort with understanding, simplify (equivalent forms)
- (5) **Application:** compute, organize, collect (such as data), apply, revise, construct, solve complex (multiple computation skills) problems, use given formulas in novel situations (formula may or may not be identified), explain a process, conduct research
- (6) **Analysis, Synthesis, Evaluation:** create a complex pattern, analyze, compare, contrast, compose, predict, plan, judge, evaluate, interpret data, generalize findings, create hypotheses

³ Bechard, S., Almond, P., Karvonen, M., Wakeman, S., Turner, C., Bowen, T., & Turner, L. (2009). *Hitting a moving target: A discussion of ten alignment studies for AA-AAS*. Paper presented at the National Conference on Student Assessment. Los Angeles, CA June 23, 2009.

Materials for Examiner

Item 1:

Dalmatians are a kind of dog.

They are medium size.

Dalmatians are very smart.

They can make great family pets.

Appendix B: Example Development Specifications and Exemplar Task Template



Reading 4.7B Item 1 Stimulus Material 2

Dalmatians are small dogs with black and white spots

Reading 4.7B, Item 1 Stimulus Material 3

Dalmatians are medium size dogs with black
and white spots

Reading 4.7B, Item 1 Stimulus Material 4

Dalmatians are medium size dogs that are
yellow

Reading 4.7B, Item 1 Stimulus Material 5

Appendix B: Example Development Specifications and Exemplar Task Template

Item 2:

Pets can be great! They can be fun to play with. There are many kinds of pets. Some pets need more care than others. Some pets cost more than others.

DOGS:

- Dogs take a lot of time to care for.
- Dogs are expensive.







CATS:

- Cats take less time to care for than dogs.
- Cats are less expensive than dogs.

FISH:

- Fish take very little time to care for.
- Fish do not cost very much.

Appendix C: Task/Item Development

PET	COST
 <p data-bbox="373 798 454 840">Dog</p>	 <p data-bbox="1104 798 1185 840">\$10</p>
 <p data-bbox="373 1354 454 1396">Cat</p>	 <p data-bbox="1120 1354 1169 1396">\$5</p>
 <p data-bbox="373 1575 454 1617">Fish</p>	 <p data-bbox="1120 1575 1169 1617">\$1</p>

Reading 4.7B, Item 2 Stimulus Material 2

Item 3:
Examiner provides the materials (1 leaf and 1 ice cube)