

Part 1: Learning Trajectory Approaches to Monitoring Student Learning

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Learning Progressions

- Learning progressions are described increasingly in the literature as theoretical underpinnings for curriculum development, instruction, and assessment of learning.
 - description of the increasingly more sophisticated ways of reasoning in the content domain that follow one another as a student learns (Smith, Wiser, Anderson, and Krajcik, 2006)
 - are partly hypothetical Simon (1995)
 - provide the big picture of what is to be learned across a year, support instructional planning, and act as a touchstone for formative assessment (Heritage, 2008).

Linking to Standards

- The SLO Objective Statement, that depicts enduring understanding from the *Common Core Standards*, may be thought of as the learning goal
- SLO Achievement Level Descriptors (ALDs) may be considered developmental learning progressions

...descriptions of children's thinking and learning...and a related, conjectured route through a set of instructional tasks," Clements and Sarama (2004)

...based on related standards/indicators in lower & upper grades, and increased reasoning of standards/indicators within grade

...based on research, using learning trajectory-based interpretations www.turnonccmath.net or trajectory-based curriculums such as "Building Blocks."

The outcome of instructional tasks or assessment tasks should be the same: **observable evidence** of what students know and can do.

Step 1: Create the Objective Statement

- Kindergarten students will apply grade-level phonics to decode and encode words.

Step 2: Study the grade-level indicators for the SLO.

K

First

Second

Standard 3: Know and apply grade-level phonics and word analysis skills when decoding words.

3.1 Produce one-to-one letter-sound correspondences for each consonant.	3.1 Demonstrate the sound correspondences for common consonant blends and digraphs.	3.1 Use knowledge of r-controlled vowels to read.
3.2 Associate long and short sounds of the five major vowels with their common spellings.	3.2 Use knowledge that every syllable must have a vowel sound to determine the number of syllables in words.	3.2 Use knowledge of how syllables work to read multisyllabic words.
3.3 Read regularly spelled one-syllable words.	3.3 Read a two-syllable word by breaking the word into syllables.	3.3 Read irregularly spelled two-syllable words and words with common prefixes and suffixes.
3.4 Distinguish between similarly spelled consonant-vowel-consonant-patterned words by identifying the sounds of the letters that differ.	3.4 Use final -e and common vowel team conventions to read words with long vowel sounds.	3.4 Use and apply knowledge of vowel diphthongs.
3.5 Read common high-frequency words.	3.5 Read words with inflectional endings.	3.5 Use and apply knowledge of how inflectional endings change words.
3.6 Recognize grade-appropriate irregularly spelled words.	3.6 Recognize and read grade-appropriate irregularly spelled words.	3.6 Recognize and read grade-appropriate irregularly spelled words.

Step 3: Study the grade-level indicators above (and below) your grade of interest.

K

First

Standard 3: Know and apply grade-level phonics and word analysis skills when decoding words

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3.5 Read common high-frequency words.	3.5 Read words with inflectional endings.
3.6 Recognize grade-appropriate irregularly spelled words.	3.6 Recognize and read grade-appropriate irregularly spelled words.

A Level D book Word Count

	A	D
1	Words	Freq
2	a	1
3	and	11111
4	away	1
5	bad	1
6	big	1
7	blew	11
8	blow	1
9	came	1
10	come	1
11	could	1
12	did	111
13	down	111
14	eat	1
15	happy	11
16	he	11
17	house	11111
18	Huff	11111
19	I	1

0	in	1
	it	11
2	jig	1
3	like	1
4	little	1
5	made	1111
6	meet	11
7	not	1
8	one	1
9	other	1
0	pigs	1111111
	puff	11111
2	ran	1
3	safe	1
4	said	1
5	so	111
6	stay	1
7	the	11111111111
8	then	1
9	they	111
0	this	111
	three	11
2	to	111

How do progressions develop?

Indicators, curriculum, teacher knowledge

Beginning	Developing	Maturing	Meeting	Advancing
Produce 1 to 1 letter-sound correspondence for each consonant	Produce 1 to 1 letter-sound correspondence for each short vowel sound	Identify sounds that differ between similarly spelled cvc words; encode similarly spelled cvc words during dictation, decode cvc words	Read high frequency, one syllable words; produce 1 to 1 sound correspondence for st, sh, ch, and wh; encode cvc words accurately when expressing thoughts.	Decode consonant digraphs st, sh, ch, wh; encode one syllable words that have consonant digraphs with short vowel sounds; use final -e to decode one syllable words with long vowel sounds

How do progressions develop?

Research – e.g., Clements and Sarama (2009)

Reciter	Corresponder	Counter	Producer	Counter & Producer
Counts verbally up to 10 without objects, may have some correspondence to objects	Keeps 1-to-1 correspondence between counting words and objects (one word for each object), at least for small groups of objects <u>laid in a line</u> . When asked “How many” may recount.	Counts objects in a line to 5 and answers the “how many” question with the last number counted.	Counts out objects to 5 in applied situations. Uses counting in situations in which a certain number must be placed or is needed.	Counts out objects accurately to 10, then beyond (to about 30). Has explicit understanding of cardinality (how numbers tell how many). Keeps track of objects that have and have not been counted, <u>even in different arrangements</u>

How do progressions develop?

Research – e.g., Clements and Sarama (2009)

Reciter	Corresponder	Counter	Producer	Counter & Producer	Producer, Group & Writer
Counts verbally up to 10 without objects, may have some correspondence to objects	Keeps 1-to-1 correspondence between counting words and objects (one word for each object), at least for small groups of objects <u>laid in a line</u> . When asked “How many” may recount.	Counts objects in a line to 5 and answers the “how many” question with the last number counted. (K.NS.4a)	Counts out objects to 5 in applied situations. Uses counting in situations in which a certain number is needed.	Counts out objects accurately to 10, then beyond (to about 20). Explains how numbers tell how many; Tracks objects that have and have not been counted, <u>even in different arrangements</u> (K.NS.4a &b) (K.NS.5.)	Counts out objects accurately to about 30. Explains how numbers tell how many, groups objects while counting, & <u>represents objects with a written numeral</u> (K.NS.4a &b) (K.NS.5) (K.NS.3)

Number Sense

K.NS.3	Read numbers from 0 – 20 and represent a number of objects 0 – 20 with a written numeral.
K.NS.4	Understand the relationship between number and quantity. Connect counting to cardinality by demonstrating an understanding that: <ol style="list-style-type: none"> the last number said tells the number of objects in the set (cardinality); the number of objects is the same regardless of their arrangement or the order in which they are counted (conservation of number); each successive number name refers to a quantity that is one more and each previous number name refers to a quantity that is one less.
K.NS.5	Count a given number of objects from 1 – 20 and connect this sequence in a one-to-one manner.
K.NS.6	Recognize a quantity of up to ten objects in an organized arrangement (subitizing).
K.NS.7	Determine whether the number of up to ten objects in one group is more than, less than, or equal to the number of up to ten objects in another group using matching and counting strategies.
K.NS.8	Compare two written numerals up to 10 using more than, less than or equal to.

Objective Statement

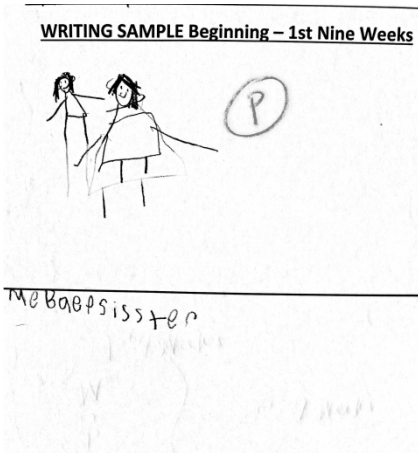
- Students will draw and write to **communicate ideas** and information using grade appropriate **sentence structure and conventions for grammar and usage, punctuation, capitalization, and spelling.**
 - Kindergarten

Study the SLO ALD

Objective Statement		Students will draw and write to communicate ideas and information using grade appropriate sentence structure and conventions for grammar and usage, punctuation, capitalization, and spelling.			
Subject	Beginning	Developing	Approaching Target	On Target	Above Target
Communicative Arts	Dictates or draws scenarios of writing or communication using physical representations (e.g., or blocks, or string of letters).	Uses a combination of drawing and sketching/writing to communicate a short personal idea with guidance and support.	Uses a combination of drawing, dictating, or writing to compose a variety of short texts to communicate ideas. With guidance and support, builds on a personal idea or the ideas of others to strengthen writing.	Uses a combination of drawing and writing to communicate ideas and information across a variety of texts. With advice to no guidance and support, builds on personal ideas to strengthen writing.	Uses a combination of drawing and extended writing to communicate ideas and information a variety of texts; build on personal ideas independently.
Writing	With guidance and support, orally generates ideas using a simple sentence structure.	With guidance and support, writes a phrase.	With guidance and support, writes and responds complete sentence with a simple sentence structure.	Independently writes and responds complete sentences that follow a simple sentence structure.	Writes and responds complete simple and compound sentences that communicate and elaborate meaning.
Punctuation, Capitalization, and Spelling	Identifies ending period when prompted in writing of others. Identifies capital letter starts a sentence when prompted in writing of others.	Identifies that ending period and sentence capitalization is needed in own writing when prompted at specific locations. Identifies question mark when prompted in writing of others.	Identifies that ending punctuation and sentence capitalization is needed in own writing when prompted in specific locations and correctly marks. Spells early sight words correctly (e.g., a, l, low) and capital the first letter of words correctly when words follow phonetic connection.	Often capitalizes the first word of the sentence and the pronoun I. Often uses periods and needs support on application of question marks. Spells words phonetically and uses the correct consonant and vowel sounds. Encodes on words correctly.	Often capitalizes the first word of a sentence, opens, and the pronoun I in own work. Often uses correct sentence and punctuation, including question marks. Spells words phonetically and uses some conventional spelling of high frequency words.

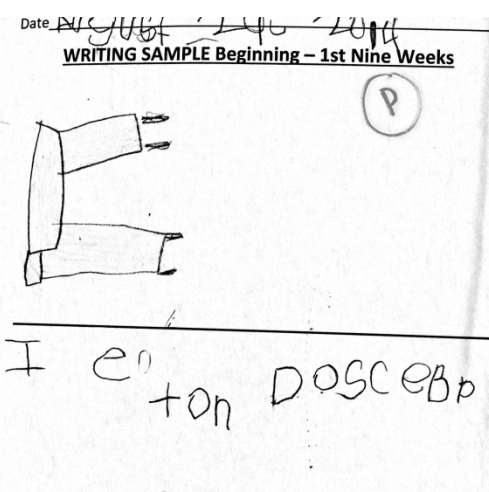
Verna McCallister
 Clarendon Co.
 Dr. Cindy Washington
 Richland School District 1
 LaWonda Wheeler
 Sumter School District

Which descriptor most closely matches the knowledge and skills the student is demonstrating? Sample 1



Subpart	Beginning	Developing
Communicates Ideas	dictates or shows awareness of writing as communication using physical representations (e.g., scribbles, or string of letters).	uses a combination of drawing and dictating/writing to communicate a short personal idea with guidance and support.
Grammar	With guidance and support, orally generates ideas using a simple sentence structure.	With guidance and support, writes a phrase.
Punctuation, Capitalization, and Spelling	Identifies ending period when prompted in writing of others. Identifies capital letter starts a sentence when prompted in writing of others.	Identifies that ending period and sentence capitalization is needed in own writing when prompted at specific locations. Identifies question mark when prompted in writing of others.

Which descriptor most closely matches the knowledge and skills the student is demonstrating? Sample 2



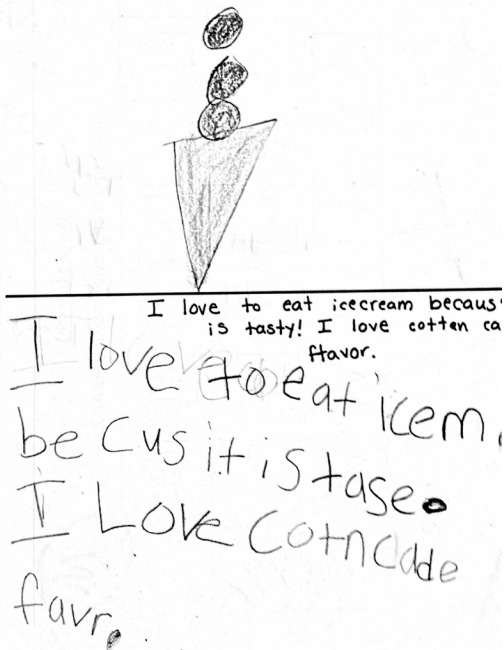
Subpart	Beginning	Developing
Communicates Ideas	dictates or shows awareness of writing as communication using physical representations (e.g., scribbles, or string of letters).	uses a combination of drawing and dictating/writing to communicate a short personal idea with guidance and support.
Grammar	With guidance and support, orally generates ideas using a simple sentence structure.	With guidance and support, writes a phrase.
Punctuation, Capitalization, and Spelling	Identifies ending period when prompted in writing of others. Identifies capital letter starts a sentence when prompted in writing of others.	Identifies that ending period and sentence capitalization is needed in own writing when prompted at specific locations. Identifies question mark when prompted in writing of others.

Which descriptor most closely matches the knowledge and skills the student is demonstrating? Sample 3



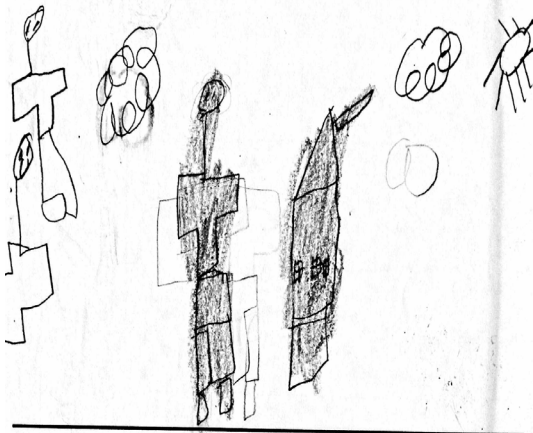
Approaching Target	On Target
<p>uses a combination of drawing, dictating, or writing to compose a variety of short texts to communicate ideas; With guidance and support, builds on a personal ideas or the ideas of others to strengthen writing.</p>	<p>uses a combination of drawing and writing to communicate ideas and information across a variety of texts; With minor to no guidance and support, builds on personal ideas to strengthen writing.</p>
<p>With guidance and support, writes and expands complete sentence with a simple sentence structure.</p>	<p>independently writes and expands complete sentences that follow a simple sentence structure.</p>
<p>Identifies that ending punctuation and sentence captalization is needed in own writing when prompted in specific locations and corrects works. Spells early sight words correctly (e.g., a, I, love) and spells the first letter of words correctly when words follow phonetic connection.</p>	<p>Often captilizes the first word of the sentence and the pronoun I; Often uses periods and needs support on application of question marks. Spells words phonetically and uses the correct consonant and vowel sounds. Encodes cvc words correctly.</p>

Which descriptor most closely matches the knowledge and skills the student is demonstrating? Sample 4



Approaching Target	On Target
uses a combination of drawing, dictating, or writing to compose a variety of short texts to communicate ideas; With guidance and support, builds on a personal ideas or the ideas of others to strengthen writing.	uses a combination of drawing and writing to communicate ideas and information across a variety of texts; With minor to no guidance and support, builds on personal ideas to strengthen writing.
With guidance and support, writes and expands complete sentence with a simple sentence structure.	independently writes and expands complete sentences that follow a simple sentence structure.
Identifies that ending punctuation and sentence captilization is needed in own writing when prompted in specific locations and corrects works. Spells early sight words correctly (e.g., a, I, love) and spells the first letter of words correctly when words follow phonectic connection.	Often captilizes the first word of the sentence and the pronoun I; Often uses periods and needs support on application of question marks. Spells words phonetically and uses the correct consonant and vowel sounds. Encodes cvc words correctly.

Which descriptor most closely matches the knowledge and skills the student is demonstrating? Sample 5



SAI please was at my house.
You came at a a mya

Approaching Target	On Target
<p>uses a combination of drawing, dictating, or writing to compose a variety of short texts to communicate ideas; With guidance and support, builds on a personal ideas or the ideas of others to strengthen writing.</p>	<p>uses a combination of drawing and writing to communicate ideas and information across a variety of texts; With minor to no guidance and support, builds on personal ideas to strengthen writing.</p>
<p>With guidance and support, writes and expands complete sentence with a simple sentence structure.</p>	<p>independently writes and expands complete sentences that follow a simple sentence structure.</p>
<p>Identifies that ending punctuation and sentence captilization is needed in own writing when prompted in specific locations and corrects works. Spells early sight words correctly (e.g., a, l, love) and spells the first letter of words correctly when words follow phonetic connection.</p>	<p>Often captilizes the first word of the sentence and the pronoun I; Often uses periods and needs support on application of question marks. Spells words phonetically and uses the correct consonant and vowel sounds. Encodes cvc words correctly.</p>

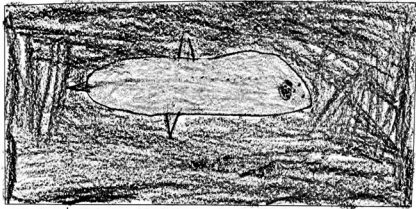
Which descriptor most closely matches the knowledge and skills the student is demonstrating? Sample 6



My house is purple
and orange. My mom
is home. My dad is home.

Approaching Target	On Target
uses a combination of drawing, dictating, or writing to compose a variety of short texts to communicate ideas; With guidance and support, builds on a personal ideas or the ideas of others to strengthen writing.	uses a combination of drawing and writing to communicate ideas and information across a variety of texts; With minor to no guidance and support, builds on personal ideas to strengthen writing.
With guidance and support, writes and expands complete sentence with a simple sentence structure.	independently writes and expands complete sentences that follow a simple sentence structure.
Identifies that ending punctuation and sentence capitalization is needed in own writing when prompted in specific locations and corrects works. Spells early sight words correctly (e.g., a, I, love) and spells the first letter of words correctly when words follow phonetic connection.	Often capitalizes the first word of the sentence and the pronoun I; Often uses periods and needs support on application of question marks. Spells words phonetically and uses the correct consonant and vowel sounds. Encodes cvc words correctly.

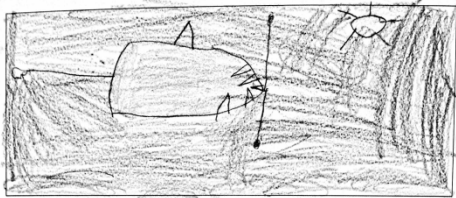
Which descriptor most closely matches the knowledge and skills the student is demonstrating? Sample 7



Dolphins like to eat fish.
 Dolphins are mammals.
 Dolphins feed their babies
 milk.

On Target	Above Target
<p>uses a combination of drawing and writing to communicate ideas and information across a variety of texts; With minor to no guidance and support, builds on personal ideas to strengthen writing.</p>	<p>uses a combination of drawing and extended writing to communicate ideas and information a variety of texts; build on personal ideas independently</p>
<p>independently writes and expands complete sentences that follow a simple sentence structure.</p>	<p>writes and expands complete simple and compound sentences that communicate and elaborates meaning.</p>
<p>Often capitalizes the first word of the sentence and the pronoun I; Often uses periods and needs support on application of question marks. Spells words phonetically and uses the correct consonant and vowel sounds. Encodes cvc words correctly.</p>	<p>Often capitalizes the first word of a sentence, names, and the pronoun I in own work; Often uses correct sentence end punctuation, including question marks. Spells words phonetically and uses some conventional spelling of high frequency words.</p>

Which descriptor most closely matches the knowledge and skills the student is demonstrating? Sample 8



I Went to go see
a Hammerhead Shark.
I got to touch the
shark. The Shark had
very rough skin.

On Target	Above Target
<ul style="list-style-type: none"> uses a combination of drawing and writing to communicate ideas and information across a variety of texts; With minor to no guidance and support, builds on personal ideas to strengthen writing. 	<ul style="list-style-type: none"> uses a combination of drawing and extended writing to communicate ideas and information a variety of texts; build on personal ideas independently
<ul style="list-style-type: none"> independently writes and expands complete sentences that follow a simple sentence structure. 	<ul style="list-style-type: none"> writes and expands complete simple and compound sentences that communicate and elaborates meaning.
<ul style="list-style-type: none"> Often capitalizes the first word of the sentence and the pronoun I; Often uses periods and needs support on application of question marks. Spells words phonetically and uses the correct consonant and vowel sounds. Encodes cvc words correctly. 	<ul style="list-style-type: none"> Often capitalizes the first word of a sentence, names, and the pronoun I in own work; Often uses correct sentence end punctuation, including question marks. Spells words phonetically and uses some conventional spelling of high frequency words.

Additional supports

- Examples from Utah
 - <http://www.utah.gov/pmn/files/102693.pdf>
- **Smarter Balanced Assessment Consortium Range Achievement Level Descriptors**
 - <http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/11/Smarter-Balanced-ELA-Literacy-ALDs.pdf>
 - <http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/11/Smarter-Balanced-Math-ALDs.pdf>

For more information:

Center for Assessment

www.nciea.org

