

**Developing and Refining Learning Progressions:
Extending Learning Progressions to Include All Learners
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This resource was created to assist educators who are developing and refining instructional learning progressions and considering ways to include more basic or foundational skills that are clearly connected to the “essence” or unifying thread that runs throughout the learning progression across grades. In these examples, the phrase “[leads to: ...]” is used to show possible later learning along the same learning progression continuum for that generalized concept or skill. The skills and concepts presented in this document are not meant to be complete or exhaustive, but rather to illustrate examples of typical foundational, early, and later learning for some selected reading and mathematics content strands.

Four Interrelated Guiding Principles of Learning Progressions

Guiding Principle #1: Learning Progressions should be based on existing research (when available), and refined by ongoing action research in the classroom.

Guiding Principle #2: The big ideas - the “essence” of concepts/processes - are the binding threads that provide continuity for the learning progressions.

Guiding Principle #3: Learning progressions may not be linear, but they do articulate learning that becomes broader, deeper, or more complex over time.

Guiding Principle #4: Learning progressions go hand-in-hand with, and are validated by, well-designed/aligned formative and summative assessments.

**Examples of Foundational Skills within
Reading Learning Progressions**

Reading at the Word Level

1. Demonstrates a one-to-one matching of spoken words to words in print
2. Understands that the sequence of letters in a written word represents the sequence of sounds (phonemes) in a spoken word (alphabetic principle); [leads to: blends or segments the phonemes of most one-syllable words; uses letter-sound correspondence to sound out regularly spelled (decodable) one- or two-syllable words]
3. Reads high-frequency words in isolation and then in connected text:: 1 or 2-letter words (I, am, is), 3-letter words (the, and, but), more than 3 letters (come, like, could, there)
4. Reads high-frequency words, including names, environmental print, and sight words (e.g., based on personal, classroom, community, and vocational experiences); [leads to: increases bank of sight words, including some subject-specific words]

5. Locates/selects words from sources, such as word banks; [leads to: scanning for specific information in a variety of texts]
6. Uses knowledge of sounds, syllable types, or word patterns (including word families) to identify regularly spelled multi-syllabic words,

Developing Breadth and Depth of Vocabulary

7. Identifies vocabulary (pictures, symbols, objects, or words) that demonstrate knowledge of basic pragmatic functions (e.g., social words, asks questions, makes requests)
8. Generalizes use of pictures, symbols, objects, and actions to identify their meaning; [leads to: recognizing words and their meanings]
9. Uses vocabulary to identify objects and events, (e.g. applies vocabulary in school environments, community or in vocational settings).
10. Locates and labels objects and actions, later simple to complex concept words (e.g., colors, numbers, seasons, fruit, tools, countries, etc.), and then subject-specific and technical words
11. Expands vocabulary with words related to known words (e.g., words that sound the same, spelled the same, in the same category, etc.)
12. Uses word structure/ known parts of words to make sense of the whole word: syllables [leads to base words, affixes, word roots; compound words; compound word families – e.g., everyone, everywhere, everything; hyphenated]
13. Uses context (sentence, paragraph) to determine word meaning: intended meaning, multiple meanings, shades of meaning, and use of later figurative language

Reading at the Text Level

14. Demonstrates understanding that print (words, pictures, symbols, and objects) carries a message
15. Distinguishes between letters and words, pictures, symbols, and objects
16. Demonstrates understanding that print materials are read top to bottom, left to right, front to back (e.g., student follows charts or simple books with eye gaze, then tracks with finger, [leads to one-to-one match])
17. Identifies key parts of a book
 - a. Cover, title, author, illustrator, chapter
 - b. [Later skills: identify text features (illustrations, guide words, index, table of contents, etc.) and use/obtain information from text features]
18. Recognizes basic punctuation marks and their usage.
 - a. difference between a punctuation mark and a letter
 - b. identifies period, question mark, exclamation mark, comma, quotation marks
 - c. [leads to: meaning of use of period, question mark, exclamation mark, commas, quotation marks; use of punctuation for intended effect]
19. Connects stories/other texts to personal experience or prior knowledge (e.g., states an opinion/general impression of text, compares to own experiences; [leads to: connects texts to other texts (e.g., compares topics, authors, books by same author) or broader ideas]

20. Identifies the general topic of a text; [leads to: identifies topic sentence of paragraph; identifies main/central ideas of texts; identifies author's message or theme, common themes, universal themes]

Examples of Foundational Skills within Mathematics Learning Progressions

Numeric Reasoning: Number Sense and Operations

1. Counts; [leads to: skip counting by 1s, 2s, 5s, 10s; connecting skip counting to multiplication; counting up and counting back to add and subtract]
2. Labels sets of objects with words, numbers, or symbols
3. Connects number words and numerals to the quantities they represent using various physical models and representations; Counts sets of objects
4. Sequences numbers and explain what comes before, after and between other numbers; which is larger, which is smaller
5. Uses manipulatives to model putting together and taking apart (e.g., you have one cookie and you get two more cookies)
6. Uses manipulatives to show more than one way to make a target number
7. Composes and decomposes numbers; Uses manipulatives, pictures, or direct models, to model putting together and taking apart numbers
8. Write number sentences to represent addition combinations
9. Demonstrates an understanding that our number system is based on combinations of ones and tens [leads to: and 100s]—place value
10. Connects number words for fractions with pictures and numerals ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$); [leads to: decimals, ratios, percents, proportions]
11. Uses number sentences with missing addends to represent number combinations
12. Demonstrates understanding of fractions as parts of unit wholes, as part of a collection/set, as locations on number lines; leads to understanding fractions as division of whole numbers
13. Demonstrates equivalent forms of common fractions using physical models, pictures, and number lines
14. Represents repeated addition with pictures and models; [leads to: multiplication]
15. Describes when an estimate makes more sense than adding, subtracting, etc. (e.g., counting a flock of birds, counting stars, etc.)

Patterns and Algebraic Thinking

16. Finds visual patterns in the environment (e.g., patterns in the wallpaper, clothing)
17. Sorts objects by a given attribute (e.g., size, color, shape); resorts by another attribute; sorts using more than one attribute (e.g., boys with glasses, shapes that are blue and square)
18. Reproduces and later identifies a pattern of increasing complexity
19. Repeats and extends a simple repeating pattern, given the core; [leads to: describes the rule for a visual pattern; describes the rule for a simple numeric pattern; finds numeric patterns in a hundreds table, finds a numeric pattern, creates or extends a pattern]

20. Uses the = sign to connect equivalent parts in a number sentence; [leads to: writes equations to show how two numbers (and then how variables) are related]

Geometry & Measurement

21. Identifies geometric shapes and structures in the environment
22. Names and sorts figures by shape (e.g., rectangle, triangle, circle); [leads to: names and sorts solid and plane figures by common attributes (e.g., number of corners, number of sides, number of angles)]
23. Identifies attributes and parts of two-dimensional and three-dimensional shapes; leads to ability to generalize rules for 2, 3, and 3+sided polygons
24. Finds and names locations with simple relationships (e.g., near to, over, under, beside, between, outside, inside)
25. Compares the size or length of two objects (e.g., by placing them side by side); [leads to: finds items that are larger/longer than or smaller/shorter than a given measure (e.g., longer than 10 linker cubes); leads to: orders more than 2 objects or measures]
26. Describes and informally compares volume/capacity of two objects (e.g., full/empty, more/less) or weights of two objects (heavier/lighter), or distances (e.g., near, far, closer)
27. Recognizes and represents shapes from different perspectives; [leads to combines/creates shapes; identifies two congruent shapes; describes a flip or slide]

Data Analysis and Probability

28. Gathers and reports data about self/familiar surroundings using teacher-defined categories; [leads to; collects categorical data (e.g., observes and counts frequencies) to answer a question posed by the teacher; by self; collects numerical data]
29. Uses physical objects to organize and informally represent categorical data
30. Interprets data by making simple comparisons (e.g., more, less, the same)
31. Demonstrates a variety of informal techniques for organizing and representing categorical data (e.g., tallies, pictures, or physical objects, bar graph with scale provided, line plot); [leads to: develops tables, pictographs, bar graphs]
32. Describes data as a whole (e.g., describing the general shape of the distribution as increasing/decreasing); [leads to: describes concentration of data values (e.g., spread of the values, and extreme values; mode, median, mean)]
33. Uses simple randomizing devices (e.g. spinners, number cubes) to identify ideas related to probability: to determine what's certain, what's impossible, and later what's equally likely; [leads to: uses and interprets tree diagrams: lists all possible outcomes (the sample space) for a probability experiment involving an event; collecting and interpreting data for a probability event]