

Common Core State Standards Alignment

English Language Arts



DISCOVER

Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of <i>FIRST</i> ® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Kindergarten

Cluster	Indicator	Indicator Statement	Addressed
Reading: Literature	RL.K.1	With prompting and support, ask and answer questions about key details in a text.	-
	RL.K.2	With prompting and support, retell familiar stories, including key details.	-
	RL.K.3	With prompting and support, identify characters, settings, and major events in a story.	-
	RL.K.4	Ask and answer questions about unknown words in a text	-
	RL.K.5	Recognize common types of texts (e.g. storybooks, poems).	-
	RL.K.6	With prompting and support, name the author and illustrator of a story and define the role of each on telling a story.	-
	RL.K.7	With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g. what moment in a story an illustration depicts).	-
	RL.K.8	(not applicable to literature)	n/a
	RL.K.9	With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.	-
	RL.K.10	Actively engage in group reading activities with purpose and understanding.	-
Reading: Informational Text	RI.K.1	With prompting and support, ask and answer questions about key details in a text.	-
	RI.K.2	With prompting and support, identify the main topic and retell key details of a text.	-
	RI.K.3	With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.	-
	RI.K.4	With prompting and support, ask and answer questions about unknown words in text.	-
	RI.K.5	Identify the front cover, back cover, and title page of a book.	-
	RI.K.6	Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.	-
	RI.K.7	With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).	-
	RI.K.8	With prompting and support, identify the reasons an author gives to support points in a text.	-
	RI.K.9	With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).	-
	RI.K.10	Actively engage in group reading activities with purpose and understanding.	-
Reading: Foundational Skills	RF.K.1	Demonstrate understanding of the organization and basic features of print.	•
	RF.K.1.A	Follow words from left to right, top to bottom, and page by page.	•
	RF.K.1.B	Recognize that spoken words are represented in written language by specific sequences of letters.	•
	RF.K.1.C	Understand that words are separated by spaces in print.	•
	RF.K.1.D	Recognize and name all upper- and lowercase letters of the alphabet.	-
	RF.K.2	Demonstrate understanding of spoken words, syllables, and sounds (phonemes).	-
	RF.K.2.A	Recognize and produce rhyming words.	-
	RF.K.2.B	Count, pronounce, blend, and segment syllables in spoken words.	-
	RF.K.2.C	Blend and segment onsets and rimes of single syllable spoken words.	-
	RF.K.2.D	Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words.	-

	RF.K.2.E	Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words.	-
	RF.K.3	Know and apply grade-level phonics and word analysis skills in decoding words.	-
	RF.K.3.A	Demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant.	-
	RF.K.3.B	Associate the long and short sounds with the common spellings (graphemes) for the five major vowels.	-
	RF.K.3.C	Read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does).	-
	RF.K.3.D	Distinguish between similarly spelled words by identifying the sounds of the letters that differ.	-
	RF.K.4	Read emergent reader texts with purpose and understanding.	-
Writing	W.K.1	Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell the reader the topic or name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is...)	-
	W.K.2	Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.	-
	W.K.3	Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.	-
	W.K.4	(begins in grade 3)	n/a
	W.K.5	With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed.	●
	W.K.6	With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.	
	W.K.7	Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).	-
	W.K.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.	●
	W.K.9	(begins in grade 4)	n/a
	W.K.10	(begins in grade 3)	n/a
Speaking & Listening	SL.K.1	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.	●
	SL.K.1.A	Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).	●
	SL.K.1.B	Continue a conversation through multiple exchanges.	●
	SL.K.2	Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.	●
	SL.K.3	Ask and answer questions in order to seek help, get information, or clarify something that is not understood.	●
	SL.K.4	Describe familiar people, places, things, and events with prompting and support, provide additional detail.	●
	SL.K.5	Add drawings or other visual displays to descriptions as desired to provide additional detail.	●
SL.K.6	Speak audibly and express thoughts, feelings, and ideas clearly.	●	
Language	L.K.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	-
	L.K.1.A	Print many upper- and lowercase letters.	-
	L.K.1.B	Use frequently occurring nouns and verbs.	-
	L.K.1.C	Form regular plural nouns orally by adding /s/ or /es/ (e.g., dog, dogs; wish, wishes).	-
	L.K.1.D	Understand and use question words (interrogatives) (e.g., who, what, where, when, why, how).	-
	L.K.1.E	Use the most frequently occurring prepositions (e.g., to, from, in, out, on, off, for, of, by, with).	-
	L.K.1.F	Produce and expand complete sentences in shared language activities.	-
	L.K.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	-
	L.K.2.A	Capitalize the first word in a sentence and the pronoun I.	-
L.K.2.B	Recognize and name end punctuation.	-	

	L.K.2.C	Write a letter or letters for most consonant and short-vowel sounds (phonemes).	-
	L.K.2.D	Spell simple words phonetically, drawing on knowledge of sound-letter relationships.	-
	L.K.3	This standard is not addressed at the kindergarten level.	n/a
	L.K.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on kindergarten reading and content.	-
	L.K.4.A	Identify new meanings for familiar words and apply them accurately (e.g., knowing duck is a bird and learning the verb to duck).	-
	L.K.4.B	Use the most frequently occurring inflections and affixes (e.g., -ed, -s, re-, un-, pre-, -ful, -less) as a clue to the meaning of an unknown word.	-
	L.K.5	With guidance and support from adults, explore word relationships and nuances in word meanings.	-
	L.K.5.A	Sort common objects into categories (e.g., shapes, food) to gain a sense of the concepts the categories represent.	-
	L.K.5.B	Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms).	-
	L.K.5.C	Identify real-life connections between words and their use (e.g., note places at school that are colorful).	-
	L.K.5.D	Distinguish shades of meaning among verbs describing the same general action (e.g., walk, march, strut, prance) by acting out the meanings.	-
	L.K.6	Use words and phrases acquired through conversations, reading, and being read to, and responding to texts.	-

Grade 1

Cluster	Indicator	Indicator Statement	Addressed
Reading: Literature	RL.1.1	Ask and answer questions about key details in a text.	-
	RL.1.2	Retell stories, including key details, and demonstrate understanding of their central message or lesson.	-
	RL.1.3	Describe characters, settings, and major events in a story, using key details.	-
	RL.1.4	Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.	-
	RL.1.5	Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types.	-
	RL.1.6	Identify who is telling the story at various points in a text.	-
	RL.1.7	Use illustrations and details in a story to describe its characters, setting, or events.	-
	RL.1.8	(not applicable to literature)	n/a
	RL.1.9	Compare and contrast the adventures and experiences of characters in stories.	-
	RL.1.10	With prompting and support, read prose and poetry of appropriate complexity for grade 1.	-
Reading: Informational Text	RI.1.1	Ask and answer questions about key details in a text.	-
	RI.1.2	Identify the main topic and retell key details of a text.	-
	RI.1.3	Describe the connection between two individuals, events, ideas, or pieces of information in a text.	-
	RI.1.4	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.	-
	RI.1.5	Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.	-
	RI.1.6	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.	-
	RI.1.7	Use the illustrations and details in a text to describe its key ideas.	-
	RI.1.8	Identify the reasons an author gives to support points in a text.	-
	RI.1.9	Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).	-
	RI.1.10	With prompting and support, read informational texts appropriately complex for grade 1.	-
Reading: Foundational Skills	RF.1.1	Demonstrate understanding of the organization and basic features of print.	-
	RF.1.1.A	Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).	-
	RF.1.2	Demonstrate understanding of spoken words, syllables, and sounds (phonemes).	-
	RF.1.2.A	Distinguish long from short vowel sounds in spoken single-syllable words.	-
	RF.1.2.B	Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.	-

	RF.1.2.C	Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.	-
	RF.1.2.D	Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).	-
	RF.1.3	Know and apply grade-level phonics and word analysis skills in decoding words.	-
	RF.1.3.A	Know the spelling-sound correspondences for common consonant digraphs.	-
	RF.1.3.B	Decode regularly spelled one-syllable words.	-
	RF.1.3.C	Know final -e and common vowel team conventions for representing long vowel sounds.	-
	RF.1.3.D	Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word.	-
	RF.1.3.E	Decode two-syllable words following basic patterns by breaking the words into syllables.	-
	RF.1.3.F	Read words with inflectional endings.	-
	RF.1.3.G	Recognize and read grade-appropriate irregularly spelled words.	-
	RF.1.4	Read with sufficient accuracy and fluency to support comprehension.	-
	RF.1.4.A	Read grade-level text with purpose and understanding.	-
	RF.1.4.B	Read grade-level text orally with accuracy, appropriate rate, and expression on successive readings.	-
	RF.1.4.C	Use context to confirm or self-correct word recognition and understanding, rereading as necessary.	-
Writing	W.1.1	Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.	-
	W.1.2	Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.	-
	W.1.3	Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.	-
	W.1.4	(begins in grade 3)	n/a
	W.1.5	With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.	•
	W.1.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.	-
	W.1.7	Participate in shared research and writing projects (e.g., explore a number of "how-to" books on a given topic and use them to write a sequence of instructions).	-
	W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.	•
	W.1.9	(begins in grade 4)	n/a
	W.1.10	(begins in grade 3)	n/a
Speaking & Listening	SL.1.1	Participate in collaborative conversations with diverse partners about Grade 1 topics and texts with peers and adults in small and larger groups.	•
	SL.1.1.A	Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).	•
	SL.1.1.B	Build on others' talk in conversations by responding to the comments of others through multiple exchanges.	•
	SL.1.1.C	Ask questions to clear up any confusion about the topics and texts under discussion.	•
	SL.1.2	Ask and answer questions about key details in a text read aloud or information presented orally or through other media.	•
	SL.1.3	Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.	•
	SL.1.4	Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.	•
	SL.1.5	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.	•
	SL.1.6	Produce complete sentences when appropriate to task and situation. (See grade 1 Language standards 1 and 3 here for specific expectations.)	-
L.1.1	L.1.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	-
	L.1.1.A	Print all upper- and lowercase letters.	-
	L.1.1.B	Use common, proper, and possessive nouns.	-

Language	L.1.1.C	Use singular and plural nouns with matching verbs in basic sentences (e.g., <i>He hops; We hop</i>).	-
	L.1.1.D	Use personal, possessive, and indefinite pronouns (e.g., <i>I, me, my; they, them, their, anyone, everything</i>).	-
	L.1.1.E	Use verbs to convey a sense of past, present, and future (e.g., <i>Yesterday I walked home; Today I walk home; Tomorrow I will walk home</i>).	-
	L.1.1.F	Use frequently occurring adjectives.	-
	L.1.1.G	Use frequently occurring conjunctions (e.g., <i>and, but, or, so, because</i>).	-
	L.1.1.H	Use determiners (e.g., <i>articles, demonstratives</i>).	-
	L.1.1.I	Use frequently occurring prepositions (e.g., <i>during, beyond, toward</i>).	-
	L.1.1.J	Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to prompts.	-
	L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	-
	L.1.2.A	Capitalize dates and names of people.	-
	L.1.2.B	Use end punctuation for sentences.	-
	L.1.2.C	Use commas in dates and to separate single words in a series.	-
	L.1.2.D	Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words.	-
	L.1.2.E	Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions.	-
	L.1.3	This standard is not addressed at this grade level.	n/a
	L.1.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 1 reading and content, choosing flexibly from an array of strategies.	-
	L.1.4.A	Use sentence-level context as a clue to the meaning of a word or phrase.	-
	L.1.4.B	Use frequently occurring affixes as a clue to the meaning of a word.	-
	L.1.4.C	Identify frequently occurring root words (e.g., <i>look</i>) and their inflectional forms (e.g., <i>looks, looked, looking</i>).	-
	L.1.5	With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings.	-
	L.1.5.A	Sort words into categories (e.g., <i>colors, clothing</i>) to gain a sense of the concepts the categories represent.	-
	L.1.5.B	Define words by category and by one or more key attributes (e.g., <i>a duck is a bird that swims; a tiger is a large cat with stripes</i>).	-
	L.1.5.C	Identify real-life connections between words and their use (e.g., <i>note places at home that are cozy</i>).	-
	L.1.5.D	Distinguish shades of meaning among verbs differing in manner (e.g., <i>look, peek, glance, stare, glare, scowl</i>) and adjectives differing in intensity (e.g., <i>large, gigantic</i>) by defining or choosing them or by acting out the meanings.	-
	L.1.6	Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., <i>because</i>).	-

Common Core State Standards Alignment

Mathematics



DISCOVER

Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of FIRST® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

All Grades

Cluster	Indicator	Indicator Statement	Addressed
Mathematical Practice	MP1	Make sense of problems and persevere in solving them.	-
	MP2	Reason abstractly and quantitatively.	•
	MP3	Construct viable arguments and critique the reasoning of others.	•
	MP4	Model with mathematics.	-
	MP5	Use appropriate tools strategically.	-
	MP6	Attend to precision.	-
	MP7	Look for and make use of structure.	•
	MP8	Look for and express regularity in repeated reasoning.	-

Kindergarten

Cluster	Indicator	Indicator Statement	Addressed
Counting & Cardinality	K.CC.A.1	Count to 100 by ones and tens.	-
	K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	-
	K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	-
	K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.	-
	K.CC.B.4.A	<i>When counting objects, say the number names in the standard order; pairing each object with one and only one number name and each number name with one and only one object.</i>	-
	K.CC.B.4.B	<i>Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangements or the order in which they were counted.</i>	-
	K.CC.B.4.C	<i>Understand that each successive number name refers to a quantity that is one larger.</i>	-
	K.CC.B.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration, given a number from 1-20, count out that many objects.	-
	K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	-
	K.CC.C.7	Compare two numbers between 1 and 10 presented as written numerals.	-
Operations and Algebraic Thinking	K.OA.A.1	Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	-
	K.OA.A.2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	-
	K.OA.A.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by drawing or equation (e.g., $5=2+3$ and $5=4+1$).	-

	K.OA.A.4	For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	-
	K.OA.A.5	Fluently add and subtract within 5.	-
Number and Operations in Base Ten	K.NBT.A.1	Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as $18=10+8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	-
Measurement and Data	K.MD.A.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	-
	K.MD.A.2	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	-
	K.MD.B.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	-
Geometry	K.G.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	-
	K.G.A.2	Correctly name shapes regardless of their orientations or overall size.	-
	K.G.A.3	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	-
	K.G.B.4	Analyze and compare two- and three-dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	-
	K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	•
	K.G.B.6	Compose simple shapes to form larger shapes.	•

Grade 1

Cluster	Indicator	Indicator Statement	Addressed
Operations and Algebraic Thinking	1.OA.A.1	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	-
	1.OA.A.2	Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	-
	1.OA.B.3	Apply properties of operations as strategies to add and subtract.2 Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)	-
	1.OA.B.4	Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.	-
	1.OA.C.5	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	-
	1.OA.C.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).	-

	1.OA.D.7	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.	-
	1.OA.D.8	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$.	-
Number and Operations in Base Ten	1.NBT.A.1	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	-
	1.NBT.B.2	Understand that the two digits of a two-digit number represent amounts of tens and ones.	-
	1.NBT.B.2.A	<i>10 can be thought of as a bundle of ten ones — called a “ten.”</i>	-
	1.NBT.B.2.B	<i>The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</i>	-
	1.NBT.B.3	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.	-
	1.NBT.2	Understand that the two digits of a two-digit number represent amounts of tens and ones.	-
	1.NBT.2.C	<i>The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).</i>	-
	1.NBT.C.4	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	-
	1.NBT.C.5	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	-
1.NBT.C.6	Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (+ or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	-	
Measurement and Data	1.MD.A.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.	-
	1.MD.A.2	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.	-
	1.MD.B.3	Tell and write time in hours and half-hours using analog and digital clocks.	-
	1.MD.C.4	Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	-
Geometry	1.G.A.1	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	-
	1.G.A.2	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.	-
	1.G.A.3	Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	-

Next Generation Science Standards Alignment

Performance Expectations



Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of FIRST® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Kindergarten

Cluster	Indicator	Indicator Statement	Addressed
Motion and Stability: Forces and Interactions	K-PS2-1	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.	•
	K-PS2-2	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.	•
Energy	K-PS3-1	Make observations to determine the effect of sunlight on Earth's surface.	
	K-PS3-2	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.	
From Molecules to Organisms: Structures and Processes	K-LS1-1	Use observations to describe patterns of what plants and animals (including humans) need to survive.	
Earth's Systems	K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.	
	K-ESS2-2	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.	
Earth and Human Activity	K-ESS3-1	Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.	
	K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.	
	K-ESS3-3	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.	

Grade 1

Cluster	Indicator	Indicator Statement	Addressed
Waves and Their Applications in Technologies for Information Transfer	1-PS4-1	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	
	1-PS4-2	Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.	
	1-PS4-3	Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.	
	1-PS4-4	Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.	
From Molecules to Organisms: Structures and Processes	1-LS1-1	Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	
	1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.	

Heredity: Inheritance and Variation of Traits	1-LS3-1	Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.	
Earth's Place in the Universe	1-ESS1-1	Use observations of the sun, moon, and stars to describe patterns that can be predicted.	
	1-ESS1-2	Make observations at different times of year to relate the amount of daylight to the time of year.	

Grades K-2

Cluster	Indicator	Indicator Statement	Addressed
Engineering Design	K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	•
	K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	•
	K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	

21st Century Skills Alignment

Student Outcomes



DISCOVER

Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of <i>FIRST</i> [®] LEGO [®] League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Core Subjects

Cluster	Indicator Statement	Addressed
Global Awareness	Using 21st century skills to understand and address global issues	-
	Learning from and working collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work and community contexts	-
	Understanding other nations and cultures, including the use of non-English languages	
Financial, economic, business and entrepreneurial literacy	Knowing how to make appropriate personal economic choices	
	Understanding the role of the economy in society	
	Using entrepreneurial skills to enhance workplace productivity and career options	
Civic literacy	Participating effectively in civic life through knowing how to stay informed and understanding governmental processes	
	Exercising the rights and obligations of citizenship at local, state, national and global levels	
	Understanding the local and global implications of civic decisions	
Health literacy	Obtaining, interpreting and understanding basic health information and services and using such information and services in ways that are health enhancing	-
	Understanding preventive physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance and stress reduction	-
	Using available information to make appropriate health-related decisions	-
	Establishing and monitoring personal and family health goals	
	Understanding national and international public health and safety issues	-
Environmental literacy	Demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water and ecosystems	-
	Demonstrate knowledge and understanding of society's impact on the natural world (e.g., population growth, population development, resource consumption rate, etc.)	-
	Investigate and analyze environmental issues, and make accurate conclusions about effective solutions	-
	Take individual and collective action towards addressing environmental Challenges (e.g., participating in global actions, designing solutions that inspire action on environmental issues)	

Learning and Innovation Skills

Cluster	Indicator Statement	Addressed
Creativity and Innovation	Use a wide range of idea creation techniques (such as brainstorming)	•
	Create new and worthwhile ideas (both incremental and radical concepts)	•

	Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts	-
	Develop, implement and communicate new ideas to others effectively	●
	Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work	-
	Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas	
	View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes	●
	Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur	
Critical Thinking and Problem Solving	Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation	●
	Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems	-
	Effectively analyze and evaluate evidence, arguments, claims and beliefs	
	Analyze and evaluate major alternative points of view	
	Synthesize and make connections between information and arguments	
	Interpret information and draw conclusions based on the best analysis	-
	Reflect critically on learning experiences and processes	-
	Solve different kinds of non-familiar problems in both conventional and innovative ways	●
Identify and ask significant questions that clarify various points of view and lead to better solutions	-	
Communication and Collaboration	Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts	●
	Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions	●
	Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade)	
	Utilize multiple media and technologies, and know how to judge their effectiveness a priority as well as assess their impact	
	Communicate effectively in diverse environments (including multi-lingual)	-
	Demonstrate ability to work effectively and respectfully with diverse teams	●
	Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal	●
	Assume shared responsibility for collaborative work, and value the individual contributions made by each team member	●
	Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts	●

Information, Media and Technology Skills

Cluster	Indicator Statement	Addressed
Information Literacy	Access information efficiently (time) and effectively (sources)	
	Evaluate information critically and competently	
	Use information accurately and creatively for the issue or problem at hand	-
	Manage the flow of information from a wide variety of sources	
	Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information	
Media Literacy	Understand both how and why media messages are constructed, and for what purposes	
	Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors	
	Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media	

	Understand and utilize the most appropriate media creation tools, characteristics and conventions	
	Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments	
ICT Literacy	Use technology as a tool to research, organize, evaluate and communicate information	
	Use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy	
	Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies	

Life and Career Skills

Cluster	Indicator Statement	Addressed
Flexibility and Adaptability	Adapt to varied roles, jobs responsibilities, schedules and context	●
	Work effectively in a climate of ambiguity and changing priorities	-
	Incorporate feedback effectively	●
	Deal positively with praise, setbacks and criticism	●
	Understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments	-
Initiative and Self-Direction	Set goals with tangible and intangible success criteria	
	Balance tactical (short-term) and strategic (long-term) goals	
	Utilize time and manage workload efficiently	-
	Monitor, define, prioritize and complete tasks without direct oversight	-
	Go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise	-
	Demonstrate initiative to advance skill levels towards a professional level	
	Demonstrate commitment to learning as a lifelong process	-
	Reflect critically on past experiences in order to inform future progress	-
Social and Cross-Cultural Skills	Know when it is appropriate to listen and when to speak	●
	Conduct themselves in a respectable, professional manner	●
	Respect cultural differences and work effectively with people from a range of social and cultural backgrounds	-
	Respond open-mindedly to different ideas and values	●
	Leverage social and cultural differences to create new ideas and increase both innovation and quality of work	
Productivity and Accountability	Set and meet goals, even in the face of obstacles and competing pressure	
	Prioritize, plan and manage work to achieve the intended result	-
	Demonstrate additional attributes associated with producing high quality products including the abilities to:	●
	<ul style="list-style-type: none"> - Work positively and ethically - Manage time and projects effectively - Multi-task - Participate actively, as well as be reliable and punctual 	
	<ul style="list-style-type: none"> - Present oneself professionally and with proper etiquette - Collaborate and cooperate effectively with teams - Respect and appreciate team diversity - Be accountable for results 	
Leadership and Responsibility	Use interpersonal and problem-solving skills to influence and guide others toward a goal	-
	Leverage strengths of others to accomplish a common goal	-
	Inspire others to reach their very best via example and selflessness	-
	Demonstrate integrity and ethical behavior in using influence and power	-
	Act responsibly with the interests of the larger community in mind	-

Computer Science Standards Alignment

Standards



DISCOVER

Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of <i>FIRST</i> ® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Grades K-2

Cluster	Indicator	Indicator Statement	Addressed
Computing Systems	1A-CS-01	Select and operate appropriate software to perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.	
	1A-CS-02	Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).	
	1A-CS-03	Describe basic hardware and software problems using accurate terminology.	
Networks & the Internet	1A-NI-04	Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized access.	
Data & Analysis	1A-DA-05	Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.	
	1A-DA-06	Collect and present the same data in various visual formats.	
	1A-DA-07	Identify and describe patterns in data visualizations, such as charts or graphs, to make predictions.	
Algorithms & Programming	1A-AP-08	Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks.	
	1A-AP-09	Model the way programs store and manipulate data by using numbers or other symbols to represent information.	
	1A-AP-10	Develop programs with sequences and simple loops, to express ideas or address a problem.	
	1A-AP-11	Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.	
	1A-AP-12	Develop plans that describe a program's sequence of events, goals, and expected outcomes.	
	1A-AP-13	Give attribution when using the ideas and creations of others while developing programs.	
	1A-AP-14	Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.	
	1A-AP-15	Using correct terminology, describe steps taken and choices made during the iterative process of program development.	
Impacts of Computing	1A-IC-16	Compare how people live and work before and after the implementation or adoption of new computing technology.	
	1A-IC-17	Work respectfully and responsibly with others online.	
	1A-IC-18	Keep login information private, and log off of devices appropriately.	

ISTE Standards Alignment

Student Standards



Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of FIRST® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

All Grades

Cluster	Indicator	Indicator Statement	Addressed
Empowered Learner	1	Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.	-
	1a	<i>Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</i>	-
	1b	<i>Students build networks and customize their learning environments in ways that support the learning process.</i>	-
	1c	<i>Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</i>	-
	1d	<i>Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.</i>	-
Digital Citizen	2	Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.	
	2a	<i>Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.</i>	
	2b	<i>Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.</i>	
	2c	<i>Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</i>	
	2d	<i>Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.</i>	
Knowledge Constructor	3	Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.	-
	3a	<i>Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.</i>	
	3b	<i>Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.</i>	
	3c	<i>Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.</i>	
	3d	<i>Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.</i>	-
Innovative Designer	4	Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.	•
	4a	<i>Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.</i>	•
	4b	<i>Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.</i>	
	4c	<i>Students develop, test and refine prototypes as part of a cyclical design process.</i>	
	4d	<i>Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</i>	•

Computational Thinker	5	Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.	-
	5a	<i>Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.</i>	-
	5b	<i>Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.</i>	-
	5c	<i>Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.</i>	-
	5d	<i>Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</i>	-
Creative Communicator	6	Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.	●
	6a	<i>Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.</i>	-
	6b	<i>Students create original works or responsibly repurpose or remix digital resources into new creations.</i>	-
	6c	<i>Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.</i>	-
	6d	<i>Students publish or present content that customizes the message and medium for their intended audiences.</i>	●
Global Collaborator	7	Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.	●
	7a	<i>Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.</i>	-
	7b	<i>Students use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.</i>	-
	7c	<i>Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.</i>	●
	7d	<i>Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.</i>	-

ITEEA Standards Alignment
Student Standards



Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of FIRST® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Grades K-2

Cluster	Indicator	Indicator Statement	Addressed
The Nature of Technology	1	Students will develop an understanding of the characteristics and scope of technology.	-
	A	<i>The natural world and human-made world are different.</i>	-
	B	<i>All people use tools and techniques (technology) to help them do things.</i>	-
	2	Students will develop an understanding of the core concepts of technology.	-
	A	<i>Some systems are found in nature, and some are made by humans.</i>	-
	B	<i>Systems have parts or components that work together to accomplish a goal.</i>	-
	C	<i>Tools are simple objects that help humans complete tasks.</i>	-
	D	<i>Different materials are used in making things.</i>	•
	E	<i>People plan in order to get things done.</i>	-
	3	Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.	-
A	<i>The study of technology uses many of the same ideas and skills as other subjects.</i>	-	
Technology and Society	4	Students will develop an understanding of the cultural, social, economic, and political effects of technology.	-
	A	<i>The use of tools and machines can be helpful or harmful.</i>	-
	5	Students will develop an understanding of the effects of technology on the environment.	-
	A	<i>Some materials can be reused and/or recycled.</i>	-
	6	Students will develop an understanding of the role of society in the development and use of technology.	-
	A	<i>Products are made to meet individual needs and wants.</i>	-
	7	Students will develop an understanding of the influence of technology on history.	-
A	<i>The way people live and work has changed throughout history because of technology.</i>	-	
Design	8	Students will develop an understanding of the attributes of design.	•
	A	<i>Everyone can design solutions to a problem.</i>	•
	B	<i>Design is a creative process.</i>	•
	9	Students will develop an understanding of engineering design.	•
	A	<i>The engineering design process includes identifying a problem, looking for ideas, developing solutions, and sharing solutions with others.</i>	•
	B	<i>Expressing ideas to others verbally and through sketches and models is an important part of the design process.</i>	•
	10	Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.	•
	A	<i>Asking questions and making observations helps a person to figure out how things work.</i>	•
	B	<i>All products and systems are subject to failure. Many products and systems, however, can be fixed.</i>	-

Abilities for a Technological World	11	Students will develop abilities to apply the design process.	●
	A	<i>Brainstorm people's needs and wants and pick some problems that can be solved through the design process.</i>	●
	B	<i>Build or construct an object using the design process.</i>	-
	C	<i>Investigate how things are made and... can be improved.</i>	●
	12	Students will develop abilities to use and maintain technological products and systems.	●
	A	<i>Discover how things work.</i>	●
	B	<i>Use hand tools correctly & safely & name them correctly.</i>	
	C	<i>Recognize and use everyday symbols.</i>	
	13	Students will develop abilities to assess the impact of products and systems.	-
	A	<i>Collect information about everyday products and systems by asking questions.</i>	-
B	<i>Determine if the human use of a product or system creates positive or negative results.</i>	-	
The Designed World	14	Students will develop an understanding of and be able to select and use medical technologies.	-
	A	<i>Vaccinations protect people from getting certain diseases.</i>	-
	B	<i>Medicine helps people who are sick to get better.</i>	-
	C	<i>There are many products designed specifically to help people take care of themselves.</i>	-
	15	Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.	-
	A	<i>The use of technologies in agriculture makes it possible for food to be available year round and to conserve resources.</i>	-
	B	<i>There are many different tools necessary to control and make up the parts of an ecosystem.</i>	-
	16	Students will develop an understanding of and be able to select and use energy and power technologies.	-
	A	<i>Energy comes in many forms.</i>	-
	B	<i>Energy should not be wasted.</i>	-
	17	Students will develop an understanding of and be able to select and use information and communication technologies.	-
	A	<i>Information is data that has been organized.</i>	-
	B	<i>Technology enables people to communicate by sending and receiving information over a distance.</i>	-
	C	<i>People use symbols when they communicate by technology.</i>	-
	18	Students will develop an understanding of and be able to select and use transportation technologies.	-
	A	<i>A transportation systems has many parts that work together to help people travel.</i>	-
	B	<i>Vehicles move people or goods from one place to another in water, air or space, and on land.</i>	-
	C	<i>Transportation vehicles must be cared for to prolong use.</i>	-
	19	Students will develop an understanding of and be able to select and use manufacturing technologies.	-
	A	<i>Manufacturing systems produce products in quantity.</i>	-
B	<i>Manufactured products are designed.</i>	-	
20	Students will develop an understanding of and be able to select and use construction technologies.	-	
A	<i>People live, work, & go to school in buildings, which are of different types: houses... office buildings, & schools.</i>	-	
B	<i>The type of structure determines how the parts are put together.</i>	-	

Social and Emotional Learning Standards Alignment

Student Standards



This alignment covers the CASEL Core SEL Competencies and the Ohio K-12 Social and Emotional Learning Standards. The Ohio standards were used because they provided grade level learning standards aligned to the CASEL core competencies.

Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of FIRST® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Grades K-2

Cluster	Indicator	Indicator Statement	Addressed
Self-Awareness	A1	Demonstrate an awareness of personal emotions	-
	A1. 1.a	Identify basic personal emotions	-
	A1. 2.a	Recognize emotions as natural and important	-
	A1. 3.a	Identify appropriate time and place to safely process emotions, independently or with the guidance of a trusted adult	-
	A1. 4.a	Recognize that current events can impact emotions	-
	A2	Demonstrate awareness of personal interests and qualities, including strengths and challenges	•
	A2. 1.a	Identify personal interests and qualities	-
	A2. 2.a	Explore opportunities to develop skills and talents	•
	A3	Demonstrate awareness of and willingness to seek help for self or others	•
	A3. 1.a	Identify at least one trusted adult at school and in the community and know when and how to access them	-
	A3. 2.a	Seek help when faced with challenges or when frustrated with a task, skill or situation	•
	A3. 3.a	Describe situations or locations that feel safe	-
	A4	Demonstrate a sense of personal responsibility, confidence and advocacy	•
	A4. 1.a	Describe the outcomes of both following and breaking rules	-
	A4. 2.a	Demonstrate confidence in the ability to complete simple tasks and challenges independently, while expressing positive attitudes towards self	•
	A4. 3.a	Identify ways to respectfully advocate for basic personal needs	-
Self-Management	B1	Regulate emotions and behaviors by using thinking strategies that are consistent with brain development	-
	B1. 1.a	Identify personal behaviors or reactions when experiencing basic emotions	-
	B1. 2.a	Describe verbal and nonverbal ways to express emotions in different settings	-
	B1. 3.a	Identify and begin to use strategies to regulate emotions and manage behaviors	-
	B2	Set, monitor, adapt and evaluate goals to achieve success in school and life	-
	B2. 1.a	Identify goals for classroom behavior and academic success	-
	B2. 2.a	Identify how adults and peers can help with a goal	-
	B2. 3.a	Describe what action steps can be taken to reach a short-term goal	-
	B2. 4.a	Discuss obstacles that can get in the way of reaching a goal and ideas for handling those obstacles	-
	B3	Persevere through challenges and setbacks in school and life	-
	B3. 1.a	Describe a time when you kept trying in a challenging situation	-
	B3. 2.a	Explain how practice improves performance of a skill and can help in overcoming a challenge or setback	-

Social Awareness	C1	Recognize, identify and empathize with the feelings and perspective of others	-
	C1. 1.a	Identify facial and body cues representing feelings in others	-
	C1. 2.a	Identify words and actions that may support or hurt the feelings of others	-
	C1. 3.a	Define empathy and identify empathetic reactions in others	-
	C2	Demonstrate consideration for and contribute to the well-being of the school, community and world	●
	C2. 1.a	Identify the purpose for having school-wide expectations and classroom rules	-
	C2. 2.a	Identify characteristics of positive citizenship in the classroom and school	●
	C2. 3.a	Perform activities that contribute to classroom, school and home, with adult involvement as needed	●
	C2. 4.a	Identify and participate in activities to improve school or home	-
	C3	Demonstrate an awareness and respect for human dignity, including the similarities and differences of all people, groups and cultures	-
	C3. 1.a	Discuss how people can be the same or different	-
	C3. 2.a	Participate in cross-cultural activities and discuss differences, similarities and positive qualities across all cultures and groups	-
	C3. 3.a	Discuss the concept of, and practice, treating others the way you would want to be treated	-
	C4	Read social cues and respond constructively	-
	C4. 1.a	Recognize social cues in different settings	-
	C4. 2.a	Identify norms for various family and social situations	-
C4. 3.a	Recognize others' personal space and boundaries	-	
Relationship Skills	D1	Apply positive verbal and non-verbal communication and social skills to interact effectively with others and in groups	●
	D1. 1.a	Identify and engage in positive communication skills	●
	D1. 2.a	Practice giving and receiving feedback in a respectful way	-
	D1. 3.a	Develop an awareness that people communicate through social and digital media	-
	D2	Develop and maintain positive relationships	●
	D2. 1.a	Demonstrate an awareness of roles in various relationships	-
	D2. 2.a	Recognize the need for inclusiveness	●
	D2. 3.a	Recognize that people may influence each other with words or actions	-
	D3	Demonstrate the ability to prevent, manage and resolve interpersonal conflicts in constructive ways	●
	D3. 1.a	Identify common conflicts and describe possible causes	-
	D3. 2.a	Recognize that there are various ways to solve conflicts and utilize these techniques to practice solving problems	●
	D3. 3.a	Apply listening and attention skills to identify the feelings and perspectives of others	●
Responsible Decision-Making	E1	Develop, implement and model effective decision and critical thinking skills	●
	E1. 1.a	Identify a problem or needed decision and recognize that there may be multiple responses	●
	E1. 2.a	Identify strategies to solve a problem	●
	E2	Identify potential outcomes to help make constructive decisions	-
	E2. 1.a	Identify factors that can make it hard for a person to make the best decision in the classroom	-
	E2. 2.a	Identify reliable sources of adult help in the immediate setting	-
	E2. 3.a	Identify how personal choices will impact the outcome of a situation	-
	E3	Consider the ethical and civic impact of decisions	●
	E3. 1.a	Identify how certain actions can impact others	-
	E3. 2.a	Recognize safe practices and actions	-
	E3. 3.a	Recognize the need for group decisions that support a common goal	●
	E4	Explore and approach new situations with an open mind and curiosity while recognizing that some outcomes are not certain or comfortable	●
	E4. 1.a	Recognize that new opportunities may have positive outcomes	●
E4. 2.a	Identify physical and emotional responses to unfamiliar situations	-	
E4. 3.a	Identify examples of transitions and how they are a necessary and appropriate part of school and life	-	

Head Start Early Learning Framework Alignment

Learning Goals



Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of <i>FIRST</i> ® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Preschool

Domain	Indicator	Indicator Statement	Addressed
Approaches to Learning	Sub-Domain: Emotional and Behavioral Self-Regulation		
	P-ATL 1	Child manages emotions with increasing independence.	-
	P-ATL 2	Child follows classroom rules and routines with increasing independence.	•
	P-ATL 3	Child appropriately handles and takes care of classroom materials.	•
	P-ATL 4	Child manages actions, words, and behavior with increasing independence.	-
	Sub-Domain: Cognitive Self-Regulation (Executive Functioning)		
	P-ATL 5	Child demonstrates an increasing ability to control impulses.	-
	P-ATL 6	Child maintains focus and sustains attention with minimal adult support.	•
	P-ATL 7	Child persists in tasks.	•
	P-ATL 8	Child holds information in mind and manipulates it to perform tasks.	•
	P-ATL 9	Child demonstrates flexibility in thinking and behavior.	•
	Sub-Domain: Initiative and Curiosity		
	P-ATL 10	Child demonstrates initiative and independence.	•
P-ATL 11	Child shows interest in and curiosity about the world around them.	•	
P-ATL 12	Child expresses creativity in thinking and communication.	•	
P-ATL 13	Child uses imagination in play and interactions with others.	•	
Social and Emotional Development	Sub-Domain: Relationships with Adults		
	P-SE 1	Child engages in and maintains positive relationships and interactions with adults.	•
	P-SE 2	Child engages in prosocial and cooperative behavior with adults.	•
	Sub-Domain: Relationships with Other Children		
	P-SE 3	Child engages in and maintains positive interactions and relationships with other children.	•
	P-SE 4	Child engages in cooperative play with other children.	•
	P-SE 5	Child uses basic problem-solving skills to resolve conflicts with other children.	•
	Sub-Domain: Emotional Functioning		
	P-SE 6	Child expresses a broad range of emotions and recognizes these emotions in self and others.	-
	P-SE 7	Child expresses care and concern toward others.	-
	P-SE 8	Child manages emotions with increasing independence.	-
Sub-Domain: Sense of Identity and Belonging			
P-SE 9	Child recognizes self as a unique individual having own abilities, characteristics, emotions, and interests.	•	
P-SE 10	Child expresses confidence in own skills and positive feelings about self.	•	
P-SE 11	Child has sense of belonging to family, community, and other groups.	•	

Language and Communication	Sub-Domain: Attending and Understanding		
	P-LC 1	Child attends to communication and language from others.	●
	P-LC 2	Child understands and responds to increasingly complex communication and language from others.	●
	Sub-Domain: Communicating and Speaking		
	P-LC 3	Child varies the amount of information provided to meet the demands of the situation.	●
	P-LC 4	Child understands, follows, and uses appropriate social and conversational rules.	●
	P-LC 5	Child expresses self in increasingly long, detailed, and sophisticated ways.	●
	Sub-Domain: Vocabulary		
P-LC 6	Child understands and uses a wide variety of words for a variety of purposes.	●	
P-LC 7	Child shows understanding of word categories and relationships among words.	-	
Literacy	Sub-Domain: Phonological Awareness		
	P-LIT 1	Child demonstrates awareness that spoken language is composed of smaller segments of sound.	-
	Sub-Domain: Print and Alphabet Knowledge		
	P-LIT 2	Child demonstrates an understanding of how print is used (functions of print) and the rules that govern how print works (conventions of print).	-
	P-LIT 3	Child identifies letters of the alphabet and produces correct sounds associated with letters.	-
	Sub-Domain: Comprehension and Text Structure		
	P-LIT 4	Child demonstrates an understanding of narrative structure through storytelling/re-telling.	-
	P-LIT 5	Child asks and answers questions about a book that was read aloud.	-
Sub-Domain: Writing			
P-LIT 6	Child writes for a variety of purposes using increasingly sophisticated marks.	-	
Mathematics Development	Sub-Domain: Counting and Cardinality		
	P-MATH 1	Child knows number names and the count sequence.	-
	P-MATH 2	Child recognizes the number of objects in a small set.	-
	P-MATH 3	Child understands the relationship between numbers and quantities.	-
	P-MATH 4	Child compares numbers.	-
	P-MATH 5	Child associates a quantity with written numerals up to 5 and begins to write numbers.	-
	Sub-Domain: Operations and Algebraic Thinking		
	P-MATH 6	Child understands addition as adding to and understands subtraction as taking away from.	-
	P-MATH 7	Child understands simple patterns.	-
	Sub-Domain: Measurement		
	P-MATH 8	Child measures objects by their various attributes using standard and non-standard measurement. Uses differences in attributes to make comparisons.	-
	Sub-Domain: Geometry and Spatial Sense		
P-MATH 9	Child identifies, describes, compares, and composes shapes.	●	
P-MATH 10	Child explores the positions of objects in space.	●	
Scientific Reasoning	Sub-Domain: Scientific Inquiry		
	P-SCI 1	Child observes and describes observable phenomena (objects, materials, organisms, and events).	●
	P-SCI 2	Child engages in scientific talk.	●
	P-SCI 3	Child compares and categorizes observable phenomena.	-
	Sub-Domain: Reasoning and Problem-Solving		
	P-SCI 4	Child asks a question, gathers information, and makes predictions.	●
	P-SCI 5	Child plans and conducts investigations and experiments.	-
P-SCI 6	Child analyzes results, draws conclusions, and communicates results.	-	

Perceptual, Motor, and Physical Development	Sub-Domain: Gross Motor		
	P-PMP 1	Child demonstrates control, strength, and coordination of large muscles.	-
	P-PMP 2	Child uses perceptual information to guide motions and interactions with objects and other people.	●
	Sub-Domain: Fine Motor		
	P-PMP 3	Child demonstrates increasing control, strength, and coordination of small muscles.	●
	Sub-Domain: Health, Safety, and Nutrition		
	P-PMP 4	Child demonstrates personal hygiene and self-care skills.	
	P-PMP 5	Child develops knowledge and skills that help promote nutritious food choices and eating habits.	
P-PMP 6	Child demonstrates knowledge of personal safety practices and routines.		