

OPEN MIC™ ALIGNED TO NEXT GENERATION SCIENCE STANDARDS

K-6

KINDERGARTEN–GRADE TWO

K-2-ETS1 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.

GRADE THREE–FIVE

3-5-ETS1 ENGINEERING DESIGN

- 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

GRADE SIX–EIGHT

MS-ETS1 ENGINEERING DESIGN

- MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit the possible solutions.
- MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

GRADE ONE

1-PS4 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.

GRADE TWO

2-PS1 MATTER AND ITS INTERACTIONS

- 2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
- 2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

GRADE FOUR

4-PS3 ENERGY

- 4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

GRADE SIX-EIGHT

MS-PS4 WAVES AND THEIR APPLICATIONS IN TECHNOLOGIES FOR INFORMATION TRANSFER

- MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

OPEN MIC™ ALIGNED TO COMMON CORE STATE STANDARDS FOR MATHEMATICS K-6

KINDERGARTEN

GEOMETRY K.G

Analyze, compare, create, and compose shapes.

- K.G5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

GRADE ONE

GEOMETRY 1.G

Reason with shapes and their attributes.

- 1.G2. 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.

GRADE TWO

GEOMETRY 2.G

Reason with shapes and their attributes.

- 2.G1. Recognize and draw shapes having specified attributes such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

GRADE FOUR

GEOMETRY 4.G

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

- 4.G1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

OPEN MIC™ ALIGNED TO COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS K-6

READING STANDARDS FOR INFORMATIONAL TEXT RI

KINDERGARTEN

- RI.4. With prompting and support, ask and answer questions about unknown words in a text.
- RI.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.10. Actively engage in group reading activities with purpose and understanding.

GRADE ONE

- RI.4. Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
- RI.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.6. Distinguish information provided by pictures or other illustrations and information provided by the words in a text.

GRADE TWO

- RI.4. Determine the meaning of words and phrases in text relevant to a *grade 2 topic or subject area*.
- RI.5. Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
- RI.7. Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.

GRADE THREE

- RI.4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to *grade 3 topic or subject area*.
- RI.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
- RI.7. Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

GRADE FOUR

- RI.4. Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area*.

- RI7. Interpret information presented visually, orally, or quantitatively (e.g., charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

GRADE FIVE

- RI4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 5 topic or subject area*.

GRADE SIX

- RI4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.

READING STANDARDS: FOUNDATIONAL SKILLS RF

KINDERGARTEN

- RF1. Demonstrate understanding of the organization and basic features of print.
 - a. Follow words from left to right, top to bottom, and page by page.
- RF2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes).
 - a. Recognize and produce rhyming words.
- RF3. Know and apply grade-level phonics and word analysis skills in decoding words.

GRADE ONE

- RF1. Demonstrate understanding of the organization and basic features of print.
- RF3. Know and apply grade-level phonics and word analysis skills in decoding words.

GRADE TWO

- RF3. Know and apply grade-level phonics and word analysis skills in decoding words.

GRADE THREE

- RF3. Know and apply grade-level phonics and word analysis skills in decoding words.

GRADE FOUR

- RF3. Know and apply grade-level phonics and word analysis skills in decoding words.

GRADE FIVE

- RF3. Know and apply grade-level phonics and word analysis skills in decoding words.

WRITING W

KINDERGARTEN

- W8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

GRADE ONE

- W8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

GRADE TWO

- W8. Recall information from experiences or gather information from provided sources to answer a question.

GRADE THREE

- W8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

GRADE FOUR

- W4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

GRADE FIVE

- W4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

GRADE SIX

- W4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

SPEAKING AND LISTENING STANDARDS SL

KINDERGARTEN

- SL1. Participate in collaborative conversations with diverse partners about *kindergarten topics and texts* with peers and adults in small and larger groups.
 - a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about topics and texts under discussion).
- SL2. 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.
- SL4. Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
- SL5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
- SL6. Speak audibly and express thoughts, feelings, and ideas clearly.

GRADE ONE

- SL1. Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and larger groups.
 - a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL2. Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
- SL4. Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
- SL5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
- SL6. Produce complete sentences when appropriate to task and situation. (See grade 1 Language standards 1 and 3 on page 26 for specific expectations.)

GRADE TWO

- SL1. Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.
 - a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL2. Recount and describe key ideas or details from a text read aloud or information presented orally or through other media.
- SL4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
- SL5. Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.
- SL6. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 2 Language standards 1 and 3 on page 26 for specific expectations.)

GRADE THREE

- SL1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.
 - b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL2. Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

- SL4. Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.
- SL5. Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.
- SL6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 3 Language standards 1 and 3 on page 28 for specific expectations.)

GRADE FOUR

- SL1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.
 - b. Follow agreed-upon rules for discussions and carry out assigned roles. .
- SL2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- SL4. Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- SL5. Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.
- SL6. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation. (See grade 4 Language standards 1 on page 28 for specific expectations.)

GRADE FIVE

- SL1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.
 - b. Follow agreed-upon rules for discussions and carry out assigned roles.
- SL2. Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- SL4. Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- SL5. Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

- SL6. Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation. (See grade 5 Language standards 1 and 3 on page 28 for specific expectations.)

GRADE SIX

- SL1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 6 topics, texts, and issues*, building on others' ideas and expressing their own clearly.
 - b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.
- SL2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
- SL4. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
- SL5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

LANGUAGE STANDARDS L

KINDERGARTEN

- L1. Demonstrate command of the conventions of standard English grammar and usage when writing and speaking.
 - a. Print many upper- and lowercase letters.
- L2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *kindergarten reading and content*.
- L6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

GRADE ONE

- L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
 - a. Print all upper- and lowercase letters.
- L2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L4. 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.

- L6. 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., *because*).

GRADE TWO

- L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- L2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- L4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 2 reading and content*, choosing flexibly from an array of strategies.
- L6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., *When other kids are happy that makes me happy*).

GRADE THREE

- L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- L2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- L4. Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on *grade 3 reading and content*, choosing flexibly from a range of strategies.
- L6. Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., *After dinner that night we went looking for them*).

GRADE FOUR

- L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- L2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 4 reading and content*, choosing flexibly from a range of strategies.
- L6. Acquire and use accurately grade-appropriate general academic and domain-specific words

and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., *wildlife, conservation, and endangered when discussing animal preservation*).

GRADE FIVE

- L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- L2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- L4. Determine or clarify the meaning of unknown multiple-meaning words and phrases based on *grade 5 reading and content*, choosing flexibly from a range of strategies.
- L6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., *however, although, nevertheless, similarly, moreover, in addition*).

GRADE SIX

- L1. Demonstrate command of conventions of standard English grammar and usage when writing or speaking.
- L2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- L4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 6 reading and content*, choosing flexibly from a range of strategies.
- L6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

READING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES RH

GRADE SIX

- RH4. Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.
- RH7. Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

READING STANDARDS FOR LITERACY IN SCIENCE AND TECHNICAL SUBJECTS RST

GRADE SIX

- RST3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- RST4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 6-8 texts and topics*.