

Unit 06: Hour of Code

Content Area: **Template**
Course(s):
Time Period: **Full Year**
Length: **FY**
Status: **Published**

Standards Alignment

New Jersey Student Learning Standards

Practice 1. Asking questions (for science) and defining problems (for engineering)

Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.

Ask questions based on observations to find more information about the natural and/or designed world(s).

Practice 2. Developing and using models

Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.

Distinguish between a model and the actual object, process, and/or events the model represents.

Practice 3. Planning and carrying out investigations

Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

Make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons.

Make predictions based on prior experiences.

Practice 4. Analyzing and interpreting data

Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

Use observations (firsthand or from media) to describe patterns and/or relationships in the natural and designed world(s) in order to answer scientific questions and solve problems.

Compare predictions (based on prior experiences) to what occurred (observable events).

Analyze data from tests of an object or tool to determine if it works as intended.

Practice 6. Constructing explanations (for science) and designing solutions (for engineering)

Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.

Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.

Generate and/or compare multiple solutions to a problem.

Practice 7. Engaging in argument from evidence

Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s).

Construct an argument with evidence to support a claim.

Make a claim about the effectiveness of an object, tool, or solution that is supported by relevant evidence.

Practice 8. Obtaining, evaluating, and communicating information

Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.

Read grade-appropriate texts and/or use media to obtain scientific and/or technical information to determine patterns in and/or evidence about the natural and designed world(s).

Communicate information or design ideas and/or solutions with others in oral and/or written forms using models, drawings, writing, or numbers that provide detail about scientific ideas, practices, and/or design ideas.

AAAA.K-12.1	Inquire, think critically, and gain knowledge.
AAAA.K-12.1.1	Skills
AAAA.K-12.1.1.1	Follow an inquiry-based process in seeking knowledge in curricular subjects, and make the real-world connection for using this process in own life.
AAAA.K-12.1.1.2	Use prior and background knowledge as context for new learning.
AAAA.K-12.1.1.9	Collaborate with others to broaden and deepen understanding.
AAAA.K-12.1.3	Responsibilities
AAAA.K-12.1.3.5	Use information technology responsibly.
AAAA.K-12.1.4	Self-Assessment Strategies
AAAA.K-12.1.4.2	Use interaction with and feedback from teachers and peers to guide own inquiry process.
AAAA.K-12.1.4.4	Seek appropriate help when it is needed.
AAAA.K-12.2	Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.
AAAA.K-12.2.1	Skills
AAAA.K-12.2.1.5	Collaborate with others to exchange ideas, develop new understandings, make decisions, and solve problems.
AAAA.K-12.2.3	Responsibilities
AAAA.K-12.2.3.1	Connect understanding to the real world.
AAAA.K-12.3	Share knowledge and participate ethically and productively as members of our democratic society.
AAAA.K-12.3.1	Skills
AAAA.K-12.3.1.4	Use technology and other information tools to organize and display knowledge and understanding in ways that others can view, use, and assess.
AAAA.K-12.4	Pursue personal and aesthetic growth.
AAAA.K-12.4.1	Skills
AAAA.K-12.4.1.1	Read, view, and listen for pleasure and personal growth.

Integration of Career Readiness, Life Literacies and Key Skills

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP3	Attend to personal health and financial well-being.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP7	Employ valid and reliable research strategies.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP9	Model integrity, ethical leadership and effective management.
CRP.K-12.CRP10	Plan education and career paths aligned to personal goals.
CRP.K-12.CRP11	Use technology to enhance productivity.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.

Technology / Integration of Computer Science and Design Thinking

TECH.8.1.2	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.2.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations
TECH.8.1.2.A.1	Identify the basic features of a digital device and explain its purpose.
TECH.8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e., games, museums).
TECH.8.1.2.C	Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
TECH.8.1.2.C.1	Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.
TECH.8.1.2.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
TECH.8.1.2.E.1	Use digital tools and online resources to explore a problem or issue.
TECH.8.2.2	Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
TECH.8.2.2.C	Design: The design process is a systematic approach to solving problems.
TECH.8.2.2.C.1	Brainstorm ideas on how to solve a problem or build a product.
TECH.8.2.2.E	Computational Thinking: Programming: Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.
TECH.8.2.2.E.1	List and demonstrate the steps to an everyday task.
TECH.8.2.2.E.2	Demonstrate an understanding of how a computer takes input through a series of written commands and then interprets and displays information as output.

TECH.8.2.2.E.3	Create algorithms (a sets of instructions) using a pre-defined set of commands (e.g., to move a student or a character through a maze).
TECH.8.2.2.E.4	Debug an algorithm (i.e., correct an error).
TECH.8.2.2.E.5	Use appropriate terms in conversation (e.g., basic vocabulary words: input, output, the operating system, debug, and algorithm).

Interdisciplinary Connections: NJSL for ELA, Social Studies, Science and/or Math Section

Capacities of the Literate Individual

Students Who are College and Career Ready in Reading, Writing, Speaking, Listening, & Language

They demonstrate independence.

They build strong content knowledge.

They respond to the varying demands of audience, task, purpose, and discipline.

They comprehend as well as critique.

They value evidence.

They use technology and digital media strategically and capably.

They come to understand other perspectives and cultures.

Key Ideas and Details

LA.K-12.NJSLSA.R1	Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
LA.K-12.NJSLSA.R3	Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
	Craft and Structure
LA.K-12.NJSLSA.R4	Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
LA.K-12.NJSLSA.R5	Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
LA.K-12.NJSLSA.R6	Assess how point of view or purpose shapes the content and style of a text.

Integration of Knowledge and Ideas

LA.K-12.NJSLSA.R7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
LA.K-12.NJSLSA.R8	Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
LA.RI.2	Reading Informational Text
LA.RI.2.1	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
LA.RI.2.3	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
LA.RI.2.4	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
LA.RI.2.5	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.
LA.RI.2.6	Identify the main purpose of a text, including what the author wants to answer, explain, or describe.
LA.RI.2.7	Explain how specific illustrations and images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
LA.RI.2.8	Describe and identify the logical connections of how reasons support specific points the author makes in a text.
LA.RF.2	Reading Foundation Skills
	Phonics and Word Recognition
LA.RF.2.3	Know and apply grade-level phonics and word analysis skills in decoding words.
LA.RF.2.3.A	Know spelling-sound correspondences for common vowel teams.
LA.RF.2.3.B	Decode regularly spelled two-syllable words with long vowels.
LA.K-12.NJSLSA.SL	Speaking and Listening
LA.RF.2.3.C	Decode words with common prefixes and suffixes.
LA.RF.2.3.D	Identify words with inconsistent but common spelling-sound correspondences.
	Comprehension and Collaboration
LA.K-12.NJSLSA.SL1	Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
LA.RF.2.3.E	Recognize and read grade-appropriate irregularly spelled words.
LA.K-12.NJSLSA.SL2	Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
	Fluency
LA.K-12.NJSLSA.SL3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.
LA.RF.2.4	Read with sufficient accuracy and fluency to support comprehension.
	Presentation of Knowledge and Ideas
LA.RF.2.4.A	Read grade-level text with purpose and understanding.
LA.K-12.NJSLSA.SL4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
LA.RF.2.4.B	Read grade-level text orally with accuracy, appropriate rate, and expression.
LA.RF.2.4.C	Use context to confirm or self-correct word recognition and understanding, rereading as

	necessary.
LA.K-12.NJSLSA.SL6	Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.
LA.K-12.NJSLSA.L	Language Conventions of Standard English
LA.K-12.NJSLSA.L1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. Knowledge of Language
LA.K-12.NJSLSA.L3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening. Vocabulary Acquisition and Use
LA.K-12.NJSLSA.L4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
LA.K-12.NJSLSA.L5	Demonstrate understanding of word relationships and nuances in word meanings.
LA.K-12.NJSLSA.L6	Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.
LA.SL.2.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
LA.SL.2.1.A	Follow agreed-upon norms 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).
LA.SL.2.1.B	Build on others' talk in conversations by linking their explicit comments to the remarks of others.
LA.SL.2.1.C	Ask for clarification and further explanation as needed about the topics and texts under discussion.
LA.SL.2.2	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
LA.SL.2.3	Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.
LA.SL.2.4	Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
LA.SL.2.6	Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.
LA.L.2.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
LA.L.2.1.A	Use collective nouns (e.g., group).
LA.L.2.1.B	Form and use frequently occurring irregular plural nouns (e.g., feet, children, teeth, mice, fish).
LA.L.2.1.C	Use reflexive pronouns (e.g., myself, ourselves).
LA.L.2.1.D	Form and use the past tense of frequently occurring irregular verbs (e.g., sat, hid, told).
LA.L.2.1.E	Use adjectives and adverbs, and choose between them depending on what is to be modified.

LA.L.2.1.F	Produce, expand, and rearrange complete simple and compound sentences (e.g., The boy watched the movie; The little boy watched the movie; The action movie was watched by the little boy).
LA.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
LA.L.2.4	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.
LA.L.2.4.A	Use sentence-level context as a clue to the meaning of a word or phrase.
LA.L.2.4.B	Determine the meaning of the new word formed when a known prefix is added to a known word (e.g., happy/unhappy, tell/retell).
LA.L.2.4.C	Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., addition, additional).
LA.L.2.4.D	Use knowledge of the meaning of individual words to predict the meaning of compound words (e.g., birdhouse, lighthouse, housefly; bookshelf, notebook, bookmark).
LA.L.2.5	Demonstrate understanding of figurative language, word relationships and nuances in word meanings.
LA.L.2.5.A	Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).
LA.L.2.5.B	Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).
LA.L.2.6	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).

Integration of Diversity, Equity and Inclusion; Climate Change; Informational and Media LiteracyNew Section

see Crosswalks

21st Century Life and Careers

Stage I: Desired Results

Transfer/Overview/Rationale

Transfer / Overview / Rationale

Unit Rationale

The purpose of this unit...

21st-Century learners create algorithms to explore and find solutions to problems.

Meaning

Essential Questions

Essential Questions

In a world of constant change, what skills should we learn?

How can we demonstrate a grade-appropriate and sound understanding of the nature and operation of technology systems?

What problem-solving skills and strategies can we use to solve technology challenges?

Enduring Understanding/Indicators of Understanding

Enduring Understanding/Indicators of Understanding

- A sound understanding of the nature and operation of technology systems is essential to the 21st-Century learner.
- A strong knowledge of problem-solving strategies is necessary to solve technology challenges.
- 21st-Century learner practices responsible use of technology systems.
- 21st-Century learners apply current knowledge to the learning of new technology skills.

Acquisition (Student Learning Objectives)

Knowledge

Knowledge

Students will know...

- Computer terms and use (e.g. monitor/screen, computer/laptop/Chromebook, Internet, mouse and keyboard).
- To work cooperatively and collaboratively with others to solve technology challenges.

Skills

Skills

Student will be skilled at ...

- creating a series of instructions to solve computer-based puzzles.
- using different problem-solving strategies such as

- Guess & Check

- Look for Patterns

- Use Logical Reasoning

- Work Backwards

Stage 3: Learning Plan

Resource and Mentor Texts

Resources and Mentor Texts

- Web browser (e.g. Google Chrome)

Formative Assessment Strategies

Formative Assessment Strategies

Hand Signals

Observation

Student Conference

Misconception Check

Think-Pair-Share

Oral Questioning

Learning Activities/Unit of Study

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"Hour of Code" puzzle challenges

- Students will write computer code to solve a series of logic puzzles appropriate for their grade level and interest level.
- Each puzzle will build on computer coding knowledge learned by completed the previous puzzle(s).

Modifications and/or Accommodations

Suggested Modifications (ELL, Sp. Ed, Gifted, At-risk of Failure)

English Language Learners

Native language support: The teacher provides auditory or written content to students in their native language.

Adjusted Speech: The teacher changes speech patterns to increase student comprehension. This could include facing the students, paraphrasing, clearly indicating the most important ideas, and speaking more slowly.

Visuals: The teacher uses graphics, pictures, visuals, and manipulatives. This helps ELL students better understand and comprehend the subjects at hand.

Front-Loading Vocabulary: The teacher front loads vocabulary. This means providing students with a list of important vocabulary words they will need to know for a book, lesson, etc. prior to the lesson being taught. Including pictures to go with the vocabulary words is also very beneficial for the students.

Special Education Students

Chunking: The teacher presents information in a way that makes it easy for students to understand and remember. Chunking is based on the presumption that our working memory is easily overloaded by excessive detail. The best way to deliver information is to organize it into meaningful units. Because students with special needs get overloaded easily, chunking is an effective strategy to use with them.

Checking for Understanding: It is important to constantly check for understanding, especially for students who have accommodations. Teachers want to make sure students understand the concepts being covered in a way that makes sense to them.

Extra time: The teacher provides students with special needs extra time to complete work or answer questions. It is important to give students enough time to process their thoughts.

Oral Reading: The teacher will read work orally to students. Class work such as tests and literature circles may need to be read aloud to the student.

Timers: The teacher will use timers as an instructional tool. The use of timers is beneficial for students who have trouble completing tasks. Timers can be helpful so the student is aware of how much time they have to complete an assignment.

Students with 504 Plans

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Gifted & Talented Strategies

Extensions/Enrichments: Teachers will provide gifted and talented students with extension/enrichment projects. Students will be challenged to further their understanding, to apply acquired knowledge, and/or to produce something in reference to acquired knowledge.

Modify/Change Activities: Teachers will monitor and modify activities to accommodate those students who need to be challenged further. Additional reading, problem-solving, writing, or project work is necessary for those students who are ready to move on at a rate more accelerated than their peers. In this way, G & T students are provided the same opportunity for support as special needs students.

Students at Risk of School Failure

Directions or Instructions: Make sure directions and/or instructions are given in limited numbers. Give directions/instructions verbally and in simple written format. Ask students to repeat the instructions or directions to ensure understanding occurs. Check back with the student to ensure he/she hasn't forgotten.

Peer Support: Peers can help build confidence in other students by assisting in peer learning. Many teachers use the 'ask 3 before me' approach. This is fine, however, a student at risk may have to have a specific student or two to ask. Set this up for the student so he/she knows who to ask for clarification before going to you.

Alternate or Modified Assignments: Always ask yourself, "How can I modify this assignment to ensure the students at risk are able to complete it?" Sometimes you'll simplify the task, reduce the length of the assignment or allow for a different mode of delivery. For instance, many students may hand something in, the at-risk student may jot notes and give you the information verbally. Or, it just may be that you will need to assign an alternate assignment.

Increase One to One Time: When other students are working, always touch base with your students at risk and find out if they're on track or needing some additional support. A few minutes here and there will go a long way to intervene as the need presents itself.

Contracts: It helps to have a working contract between you and your students at risk. This helps prioritize the tasks that need to be done and ensure completion happens. Each day write down what needs to be completed, as the tasks are done, provide a checkmark or happy face. The goal of

using contracts is to eventually have the student come to you for completion sign-offs.

Hands On: As much as possible, think in concrete terms and provide hands-on tasks. This means a child doing math may require a calculator or counters. The child may need to tape record comprehension activities instead of writing them. A child may have to listen to a story being read instead of reading it him/herself.

Tests/Assessments: Tests can be done orally if need be. Break tests down in smaller increments by having a portion of the test in the morning, another portion after lunch and the final part the next day.

Seating: Seat students near a helping peer or with quick access to the teacher. Those with hearing or sight issues need to be close to the instruction which often means near the front.