Unit 02: Inquiry, Makerspaces or Innovation Stations

Content Area: **English Language Arts**
Course(s):
Time Period: **Trimester 1**
Length: **Taught at the start; ALL YEAR implementation**
Status: **Published**

Brief Summary of Unit

At the beginning of the school year, first-grade students are introduced to the library's makerspaces and innovation stations. Procedures and behavioral expectations are taught, modeled, and practiced to ensure students can use the materials safely and responsibly.

Following the initial orientation, library classes typically begin with a lesson, followed by book checkout and time for students to create at a makerspace or innovation station. While the featured stations generally remain the same across grade levels, the complexity of students' creations and level of independence increase as their skills develop.

This unit is designed to be part of a developmental progression across grade levels and make interdisciplinary connections across content areas including physical and social sciences, technology, career readiness, cultural awareness, and global citizenship. During this course, students are provided with opportunities to develop skills that pertain to a variety of careers.

Revision Date: July 2026

Standards

The identified standards reflect a developmental progression across grades/ levels and make interdisciplinary connections across content areas including social sciences, technology, career readiness, cultural awareness and global citizenship. The standards that follow are relevant to this course in addition to the associated content-based standards listed below.

Information Literacy: This unit challenges students to locate, evaluate, and use information effectively. Information literacy includes, but is not limited to, digital, visual, media, textual, and technological literacy. Lessons may include the research process and how information is created and produced; critical thinking and

using information resources; research methods, including the difference between primary and secondary sources; the difference between facts, points of view, and opinions, accessing peer-reviewed print and digital library resources; the economic, legal, social, and ethical issues surrounding the use of information.

Information Literacy for Elementary Educators

L	Language
R.MF	Diverse Media and Formats: By the end of grade 12, synthesize content presented in diverse media and formats, including visually and quantitatively, as well as in words.
SL.UM	Use Media: By the end of grade 12, make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
RL.CR.1.1	Ask and answer questions about key details in a literary text (e.g., who, what, where, when, why, how).
RI.CR.1.1	Ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).
RL.CI.1.2	Determine central message and retell a sequence of events in literary texts (e.g., who, what, where, when, why, how).
RI.CI.1.2	Determine main topic and retell a series of key details in informational texts (e.g., who, what, where, when, why, how).
RI.TS.1.4	With prompting and support, explain major differences between books that tell stories and books that give information, identifying various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text while drawing on a wide reading of a range of text types.
RI.PP.1.5	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
RL.MF.1.6	With prompting and support, use illustrations and details in a story to describe its characters, setting, or events.
RI.MF.1.6	With prompting and support, use text features (e.g., diagrams, tables, animations) to describe key ideas.
LA.SL.K.1	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
LA.SL.K.1.A	Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion).
LA.SL.K.1.B	Continue a conversation through multiple exchanges.
LA.SL.K.3	Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
LA.SL.K.6	Speak audibly and express thoughts, feelings, and ideas clearly.
SL.PE.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.PE.1.1.A	Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
SL.PE.1.1.B	Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
SL.PE.1.1.C	Ask questions to clear up any confusion about the topics and texts under discussion.
SL.II.1.2	Ask and answer questions about key details in a text read aloud or information presented

	orally or through other media.
SL.ES.1.3	Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
I	Inquire: Build new knowledge by inquiring, thinking critically, identifying problems, and developing strategies for solving problems.
I.A	Learners display curiosity and initiative by:
I.A.1	Formulating questions about a personal interest or a curricular topic.
I.A.2	Recalling prior and background knowledge as context for new meaning.
I.B	Learners engage with new knowledge by following a process that includes:
I.B.1	Using evidence to investigate questions.
I.B.2	Devising and implementing a plan to fill knowledge gaps.
I.B.3	Generating products that illustrate learning
I.C	Learners adapt, communicate, and exchange learning products with others in a cycle that includes:
I.C.1	Interacting with content presented by others.
I.C.2	Providing constructive feedback.
I.C.3	Acting on feedback to improve.
I.C.4	Sharing products with an authentic audience
I.D	Learners participate in an ongoing inquiry-based process by:
I.D.1	Continually seeking knowledge.
I.D.2	Engaging in sustained inquiry.
I.D.3	Enacting new understanding through real-world connections.
I.D.4	Using reflection to guide informed decisions.
V	Explore: Discover and innovate in a growth mindset developed through experience and reflection.
V.A	Learners develop and satisfy personal curiosity by:
V.A.1	Reading widely and deeply in multiple formats and write and create for a variety of purposes
V.A.2	Reflecting and questioning assumptions and possible misconceptions
V.A.3	Engaging in inquiry-based processes for personal growth.
V.B	Learners construct new knowledge by:
V.B.1	Problem solving through cycles of design, implementation, and reflection.
V.B.2	Persisting through self-directed pursuits by tinkering and making.
V.C	Learners engage with the learning community by:
V.C.1	Expressing curiosity about a topic of personal interest or curricular relevance
V.C.2	Co-constructing innovative means of investigation.
V.C.3	Collaboratively identifying innovative solutions to a challenge or problem
V.D.1	Iteratively responding to challenges.
V.D.2	Recognizing capabilities and skills that can be developed, improved, and expanded.
V.D.3	Open-mindedly accepting feedback for positive and constructive growth.
II	Include: Demonstrate an understanding of and commitment to inclusiveness and respect

	for diversity in the learning community.
II.A	Learners contribute a balanced perspective when participating in a learning community by:
II.A.1	Articulating an awareness of the contributions of a range of learners.
II.A.2	Adopting a discerning stance toward points of view and opinions expressed in information resources and learning products.
II.A.3	Describing their understanding of cultural relevancy and placement within the global learning community
II.B	Learners adjust their awareness of the global learning community by:
II.B.1	Interacting with learners who reflect a range of perspectives.
II.B.2	Evaluating a variety of perspectives during learning activities.
II.B.3	Representing diverse perspectives during learning activities.
II.C	Learners exhibit empathy with and tolerance for diverse ideas by:
II.C.1	Engaging in informed conversation and active debate.
II.C.2	Contributing to discussions in which multiple viewpoints on a topic are expressed.
II.D	Learners demonstrate empathy and equity in knowledge building within the global learning community by:
II.D.1	Seeking interactions with a range of learners.
II.D.2	Demonstrating interest in other perspectives during learning activities.
II.D.3	Reflecting on their own place within the global learning community.
IV	Curate: Make meaning for oneself and others by collecting, organizing, and sharing resources of personal relevance.
IV.A	Learners act on an information need by:
IV.A.1	Determining the need to gather information.
IV.A.2	Identifying possible sources of information.
IV.A.3	Making critical choices about information sources to use.
IV.B	Learners gather information appropriate to the task by:
IV.B.1	Seeking a variety of sources.
IV.B.2	Collecting information representing diverse perspectives.
IV.B.3	Systematically questioning and assessing the validity and accuracy of information.
IV.B.4	Organizing information by priority, topic, or other systematic scheme.
IV.C	Learners exchange information resources within and beyond their learning community by:
IV.C.1	Accessing and evaluating collaboratively constructed information sites.
IV.C.2	Contributing to collaboratively constructed information sites by ethically using and reproducing others work.
IV.C.3	Joining with others to compare and contrast information derived from collaboratively constructed information sites.
IV.D	Learners select and organize information for a variety of audiences by:
IV.D.1	Performing ongoing analysis of and reflection on the quality, usefulness, and accuracy of curated resources.
IV.D.2	Integrating and depicting in a conceptual knowledge network their understanding gained from resources.

IV.D.3	Openly communicating curation processes for others to use, interpret, and validate.
VI	Engage: Demonstrate safe, legal, and ethical creating and sharing of knowledge products independently while engaging in a community of practice and an interconnected world.
VI.A	Learners follow ethical and legal guidelines for gathering and using information by:
VI.A.1	Responsibly applying information, technology, and media to learning.
VI.A.2	Understanding the ethical use of information, technology, and media.
VI.A.3	Evaluating information for accuracy, validity, social and cultural context, and appropriateness for need.
VI.B	Learners use valid information and reasoned conclusions to make ethical decisions in the creation of knowledge by:
VI.B.1	Ethically using and reproducing others work.
VI.B.2	Acknowledging authorship and demonstrating respect for the intellectual property of others.
VI.B.3	Including elements in personal-knowledge products that allow others to credit content appropriately.
VI.C	Learners responsibly, ethically, and legally share new information with a global community by:
VI.C.1	Sharing information resources in accordance with modification, reuse, and remix policies.
VI.C.2	Disseminating new knowledge through means appropriate for the intended audience.
VI.D	Learners engage with information to extend personal learning by:
VI.D.1	Personalizing their use of information and information technologies.
VI.D.2	Reflecting on the process of ethical generation of knowledge.
VI.D.3	Inspiring others to engage in safe, responsible, ethical, and legal information behaviors.
CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
CRP.K-12.CRP6.1	Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest

	value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.
CRP.K-12.CRP7.1	Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies. They use reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices in their workplace situation.
CRP.K-12.CRP8.1	Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.
CRP.K-12.CRP9.1	Career-ready individuals consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.
CRP.K-12.CRP12.1	Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.
III	Collaborate: Work effectively with others to broaden perspectives and work toward common goals.
III.A	Learners identify collaborative opportunities by:
III.A.1	Demonstrating their desire to broaden and deepen understandings.
III.A.2	Developing new understandings through engagement in a learning group.
III.A.3	Deciding to solve problems informed by group interaction.
III.B	Learners participate in personal, social, and intellectual networks by:
III.B.1	Using a variety of communication tools and resources.
III.B.2	Establishing connections with other learners to build on their own prior knowledge and create new knowledge
III.C	Learners work productively with others to solve problems by:
III.C.1	Soliciting and responding to feedback from others.
III.C.2	Involving diverse perspectives in their own inquiry processes.
III.D	Learners actively participate with others in learning situations by:
III.D.1	Actively contributing to group discussions.
III.D.2	Recognizing learning as a social responsibility.
TECH.8.1.2.A.CS1	Understand and use technology systems.
TECH.8.1.2.A.CS2	Select and use applications effectively and productively.
TECH.8.1.2.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.2.B.CS1	Apply existing knowledge to generate new ideas, products, or processes.

TECH.8.1.2.E.1	Use digital tools and online resources to explore a problem or issue.
TECH.8.1.2.E.CS1	Plan strategies to guide inquiry
TECH.8.1.2.F	Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
TECH.8.2.2.A.CS2	The core concepts of technology.
TECH.8.2.2.C.1	Brainstorm ideas on how to solve a problem or build a product.
TECH.8.2.2.C.CS3	The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving

Essential Questions

- How can a makerspace change the way I learn?
- How can a makerspace help us collaborate, explore, and create?
- How can design thinking help me learn from mistakes and improve my ideas?
- How can I think like a designer and creator?
- How does tinkering and play help me become a better problem solver?
- Why are exploration and creativity important parts of learning?

Students Will Know/Students Will Be Skilled At

- Listening, sharing ideas, and working collaboratively with others.
- Persevering through challenges and beginning to develop a growth mindset.
- Seeking help when needed.
- Understanding that a makerspace is a place to create, explore, tinker, and learn through hands-on experiences.
- Using makerspace tools and materials safely and responsibly.

Evidence/Performance Tasks

Students demonstrate differentiated proficiency through formative, summative, and benchmark assessments. Based on individual student readiness and performance, assessments may be used for either formative or summative purposes.

Developmental growth across grade levels is measured through benchmark assessments that support the media specialist's Student Growth Objective (SGO). Follow-up diagnostic assessments are used to identify areas for skill development and guide targeted instruction. Students who demonstrate proficiency may participate in alternative or advanced assessments as appropriate.

The performance tasks listed below are examples of assessments that may be used to monitor student learning

and collect data to track progress throughout the school year.

- Formative: Demonstrate acceptable behavior in a makerspace station.
- Formative: Students will present both informally and formally prototypes and plans.
- Formative: Students worked collaboratively with others in the group.
- Summative/Alternative: Students will present both formally and informally products and creations in teams and individually.

Learning Plan

Media Specialist may personalize instruction during this unit and address the distinct learning needs, interests, aspirations, or cultural backgrounds of individual students.

During makerspace time, students are given tasks or challenges using the available materials rather than use the time to free play. While there is intrinsic value in play, a makerspace is intended to explicitly teach valuable life skills. According to Laura Fleming, A makerspace is "a metaphor for a unique learning environment that encourages tinkering, play, and open-ended exploration for all." Following the concept of a future-ready school, it "encourages and facilitates students to become increasingly self-directed as they create products of their learning that engage them in critical thinking, collaboration, and authentic problem solving." This unit is intended to teach design thinking, prototyping, and critical thinking. It fosters play, creativity, and team building. Most importantly, it bolsters social and emotional learning among students.

Media Specialists at the elementary level design their own unique lesson plans in order to incorporate the essential questions provided in this unit. The order in which this information is presented is dependent upon the variables specific to each elementary school community. For example, students may be called to the carpet for a lesson followed by guided practice, then independent practice. After the lesson, students will check out books and go to a makerspace station.

First grade students will be introduced to makerspace or innovation stations at the beginning of the year. Procedures and behavioral expectations for the kindergarten students while participating at a makerspace station will be introduced, modeled, and practiced. They will have the opportunity to interact in a fixed makerspace or portable innovation stations which allows for collaboration and creativity while fostering necessary twenty-first century skills. After the inital orientation, students will be able to go to a makerspace or innovation station after the library lesson. The library class usually starts with a lesson and students take turns checking out books and creating at a makerspace at the end of the library period throughout the school year. The makerspace stations for the week are usually the same for all grade levels. The students' ability to create and make more advanced creations in each makerspace change with the grade level and ability of the students. Suggested activities are listed below for this unit:

- Engage in mini-lessons, such as: What is a makerspace? How do we use makerspace materials safely and responsibly? What activities and tools are available at the different makerspace stations? How do we collaborate and solve problems while creating?
- Explore the unit's essential questions and make connections to learning throughout the unit.
- Learn and use key vocabulary (e.g., makerspace, innovation station).

- Participate in a makerspace orientation that introduces procedures, routines, and behavioral expectations for safe and responsible use.
- Participate in creative and innovative learning experiences at makerspace and innovation stations.

Materials

The materials used in this course allow for integration of a variety of instructional, enrichment, and intervention materials that support student learners at all levels in the school and home environments. Associated web content and media sources are infused into the unit as applicable and available. Library media spaces are housed with a rich collection of core materials to use in the Makerspace area or at innovation stations.

Suggested Supplemental Resources:

Select this link to view the first grade Google Folder under media in the Grades K-5 folder.

Instructional Material:

Legos

Lego bases

Marble Run

Keva Plank

Power Clix

Magna tiles/Picasso tiles/Plagmags- Amazon, $66.99, 100 piece set

Dot and Dash Robots

Ozobots

Samsung Tablets

- Samsung Tablets necessary for Dash & Dots
- access online resources using QR code
- stop motion animation
- coding apps

Botley the Coding Robot

Hand Magnifiers

Survive the Quake Engineering Kit

Snap Circuits

Quibits

Popsicle Sticks

Straws

Origami paper

Pipe cleaners

Craft sticks

Pom-poms

Stress-free coloring books

Colored Pencils

Crayons

Markers

Gear Stencils

Rainbow loom

Stick Together

Cricut Explore Air Wireless Cutting Machine

Duct tape creation station

5 Boogie Boards (doodling) https://www.myboogieboard.com

Crossword puzzles

Games/Puzzles

Magnetic Poetry

Puzzles

Checkers/Chess

Brain puzzles

Materials

Cardboard

Toilet paper rolls

Duct tape

Hot Glue guns

Cups

Suggested Strategies for Modifications and Accommodations

Content specific accommodations and modifications as well as Career Ready Practices are listed here for all students, including: Special Education, English Language Learners, At Risk of School Failure, Gifted and Talented, Students with 504.