Unit 4: Inquiry Research

Content Area: **English Language Arts**
Course(s):
Time Period: **Trimester 3**
Length: **5-7 sessions**
Status: **Published**

Brief Summary of Unit

Students, with assistance, will locate, access, evaluate, and use information effectively and efficiently to conduct research and solve problems using digital and visual media.

Possible Inquiry Research Projects are:

Inquiry Research Project 1-Inventor/Inventions

Students will be doing an invention/inventor research unit. Students will learn about inventors and their inventions. They will research an invention using different sources, and then design/create an invention of their own using the knowledge they've gained in their research. In addition they will learn about and demonstrate their understanding of the inquiry research method. At the end of the unit, students will design and create their own invention that can help others. They will build/construct their new invention using the knowledge they've gained in their research.

Inquiry Research Project 2-Landmark with 3D TinkerCad Design

Students will be doing a landmark research unit building on what they learned in 3rd grade. Students will learn what a landmark is, take virtual field trips around the world, research a landmark using different sources, and then design/create a landmark using the knowledge they've gained in their research. In addition they will learn about and demonstrate their understanding of the inquiry research method. At the end of the unit, students will design and create their own landmark using the knowledge they've gained in their research. They will learn how to use TinkerCad to design a 3D model of their landmark.

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 2023

Standards

This unit challenges students to locate, access, evaluate, and use information effectively and efficiently to conduct research and solve problems using digital and visual media. 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; the

difference between facts, points of view, and opinions, accessing print and digital library resources.

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.

LA.RI.4.3	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
LA.RI.4.4	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
LA.RF.4.4.A	Read grade-level text with purpose and understanding.
LA.W.4.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
LA.W.4.6	With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.
LA.W.4.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic.
LA.W.4.8	Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
LA.SL.4.1	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.
LA.SL.4.1.A	Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
LA.SL.4.1.C	Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
LA.SL.4.4	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.
LA.L.4.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
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.1	Using evidence to investigate questions.
I.B.3	Generating products that illustrate learning
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.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.A.1	Reading widely and deeply in multiple formats and write and create for a variety of purposes
V.A.3	Engaging in inquiry-based processes for personal growth.
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.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.3	Open-mindedly accepting feedback for positive and constructive growth.
II.B.2	Evaluating a variety of perspectives during learning activities.
II.C.2	Contributing to discussions in which multiple viewpoints on a topic are expressed.
II.D.1	Seeking interactions with a range of learners.
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.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.1	Accessing and evaluating collaboratively constructed information sites.
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.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.1	Ethically using and reproducing others work.
VI.B.2	Acknowledging authorship and demonstrating respect for the intellectual property of others.
VI.C.2	Disseminating new knowledge through means appropriate for the intended audience.
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.
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.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.1	Soliciting and responding to feedback from others.
III.D.1	Actively contributing to group discussions.
III.D.2	Recognizing learning as a social responsibility.
SEL.PK-12.1.4	Recognize the importance of self-confidence in handling daily tasks and challenges
SEL.PK-12.2.2	Recognize the skills needed to establish and achieve personal and educational goals
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals
SEL.PK-12.3.1	Recognize and identify the thoughts, feelings, and perspectives of others
SEL.PK-12.3.2	Demonstrate and awareness of the differences among individuals, groups, and others' cultural backgrounds
SEL.PK-12.3.3	Demonstrate an understanding of the need for mutual respect when viewpoints differ
SEL.PK-12.4.1	Develop, implement and model effective problem-solving, and critical thinking skills
SEL.PK-12.4.3	Evaluate personal, ethical, safety, and civic impact of decisions
SEL.PK-12.5.1	Establish and maintain healthy relationships
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others
WRK.K-12.P.1	Act as a responsible and contributing community members and employee.
WRK.K-12.P.4	Demonstrate creativity and innovation.
WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
WRK.K-12.P.6	Model integrity, ethical leadership and effective management.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
WRK.K-12.P.9	Work productively in teams while using cultural/global competence.
TECH.8.1.2.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.9.4.5.CI.1	Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).
TECH.9.4.5.CI.3	Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).
TECH.9.4.5.CI.4	Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6).
TECH.9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
TECH.9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
TECH.9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
TECH.9.4.5.DC.1	Explain the need for and use of copyrights.
TECH.9.4.5.DC.2	Provide attribution according to intellectual property rights guidelines using public domain or creative commons media.

TECH.9.4.5.DC.3	Distinguish between digital images that can be reused freely and those that have copyright restrictions.
TECH.9.4.5.DC.4	Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).
TECH.9.4.5.TL.1	Compare the common uses of at least two different digital tools and identify the advantages and disadvantages of using each.
TECH.9.4.5.TL.5	Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d).
TECH.9.4.5.IML.1	Evaluate digital sources for accuracy, perspective, credibility and relevance (e.g., Social Studies Practice - Gathering and Evaluating Sources).
TECH.9.4.5.IML.2	Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).
TECH.9.4.5.IML.6	Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions (e.g., RI.5.7, 6.1.5.HistoryCC.7, 7.1.NM. IPRET.5).

Essential Questions

- How can a variety of skills and strategies facilitate inquiry research?
- How can I access information in a safe, legal and proper manner?
- How can I identify the information I need to complete a specific task?
- How can information be accessed and used in a safe, legal, and proper manner?
- How can students use technology to communicate information and ideas using a variety of digital media and formats?
- How does the appropriate choice of media allow for more effective communication?
- What skills and strategies are needed to gather information effectively, solve problems, and conduct inquiry research?
- Where can students find relevant and authoritative information?
- Why are exploration and creation an important part of learning?
- Why do we give credit to the author or creator of any created work?
- Why must credit be given to the creator of work used during research?
- Why should you use questions to guide inquiry research?

Students Will Know/Students Will Be Skilled At

- that selecting the right resource is key to locating the right information
- that information from different resources must be synthesized to answer a question or solve information problems
- that asking the right questions is an important tool for research
- that information needs to be accessed and used in a safe, legal and proper manner
- How to access information properly

- A researcher must give credit to the author or creator of any created work.
- how to access information properly.
- Identify and author and illustrator as a creator of a work.

- Identifying the appropriate resources to help them answer their questions.
- Identifying the information needed and what resources will address those needs.
- Illustrating and communicating original ideas and stories using digital tools and resources.
- Information can be shared in a variety of formats.
- Presenting their information in a format appropriate to the topic and/or audience. exploration.
- Reading or viewing the appropriate resources critically and finding the information they need to answer their questions
- Requires a variety of skills and strategies facilitate inquiry research.
- Research is a way to locate information for a specific purpose.
- Showing they can perform basic navigation around appropriate websites or databases.
- Synthesizing the information gathered from different sources and answering the questions they asked.
- that asking the right questions is an important tool for research.
- that information needs to be accessed and used in a safe, legal and proper manner.
- Understand that the library media center has online resources to help with inquiry research.
- using age-appropriate research resources that are available through the library media center.
- Using books/pre-selected online resources/observations to gather information for a purpose.
- Utilizing the OPAC and Library Media Center's Symbaloo to locate relevant materials.

Evidence/Performance Tasks

Students demonstrate differentiated proficiency through both formative and summative assessments in the classroom. Based on individual student readiness and performance, assessments can be implemented as formative and/or summative.

Developmental progression across years in media is evidenced through benchmark assessments as part of the media specialist's Student Growth Objective (SGO). Student proficiency allows for additional or alternative assessment based on demonstration or absence of skill.

The performance tasks listed below are examples of the types of assessments teachers may use in the classroom and the data collected by the district to track student progress.

In addition to the "possible assessments" provided in the Learning Plan section, teachers may consider the performance tasks listed below:

- Formative: Construct questions to help solve their information problem
- Formative: Define an information problem.
- Formative: Locate and select appropriate print and digital resources.
- Formative: Locate information within selected resources.

- Formative: Make a list of resources used.
- Formative: Share their information in an appropriate format
- Formative: Use appropriate note-taking skills.
- Formative: Use the information they find to answer their questions.
- Summative: Design, Plan, and Build.

Learning Plan

Media Specialists may personalize instruction during this unit and address the distinct learning needs, interests, aspirations, or cultural backgrounds of individual 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 use different books and electronic sources depending on the library media center's collection.

Inquiry Research Project 1-Inventor/Inventions

Fourth grade students, with assistance, will locate, access, evaluate, and use information effectively and efficiently to conduct research and solve problems using digital and visual media. Students will be doing an invention/inventor research project. Students will learn about inventors and their inventions. They will research an invention using different sources, and then design/create an invention of their own using the knowledge they've gained in their research. In addition they will learn about and demonstrate their understanding of the inquiry research method. At the end of the unit, students will design and create their own invention that can help others. They will build/construct their new invention using the knowledge they've gained in their research.

Suggested activities are listed below for this unit:

Week 1:

What is an inventor? What is an invention? Define an inventor. Define an invention. Talk about famous inventions. Watch Youtube video of 20 Inventions that changed the world. Discuss. What invention do you think changed the world the most? Have students to go to Epic and read Inventions and Inventors by Darren Sechrist.

Week 2: Review Inventors and Inventions. Have students go to Epic and read books in the Invention Collection. Students can pick areas of interest that they would like to learn more about. Students need to be thinking about what invention they would like to research next week.

Week 3:

Give students a list of inventions. Review with students how to use Facts4me Website (https://facts4me.com/facts_users) and Fact Monster (https://www.factmonster.com/). Talk about what a database is. Show students how to go to Inventions and Inventors in Facts4Me. Students need to pick an invention/inventor in Facts4me and research the person and invention. Students will start completing the Invention handout.

Week 4:

Review from last week. Tell students that they need to be thinking about an invention that they would like to invent that would help people. Watch Youtube Video of How to be an Inventor by Kid President. Students need to continue filling out their Invention Handout. They need to be thinking about an area of interest that they would like to create an invention and how it can help people.

Week 5:

Review last week. Students need to finish page Invention Research handout page. When the handout is complete students need to start working on an invention that they want to create. They need to think of how the invention could help others. Students need to give a name to their invention. And answer these questions: What can the invention do? Why do we need this invention? Why

would the invention be revolutionary? What might their invention replace or make life easier for people? Why did you want to create this invention? Students may do research to develop and explain the need for the invention.

Week 6:

Students need to finish Your Invention Handout. After completing the questions, students will draw what their invention and label and describe what the invention does. If students have time, they can start planning how they will build their invention.

Week 7:

Students will build their invention from supplies in the library media center or materials they bring from home.

Week 8 and 9

Students will present their invention to the class.

Landmark Research and Design

Fourth grade students, with assistance, will locate, access, evaluate, and use information effectively and efficiently to conduct research and solve problems using digital and visual media. Students will be doing a landmark research unit. Students will learn what a landmark is, take virtual field trips around the world, research a landmark using different sources, and then design/create a landmark using the knowledge they've gained in their research. In addition they will learn about and demonstrate their understanding of the inquiry research method. At the end of the unit, students will design and create their own landmark. They will design their landmark in TinkerCad using the knowledge they've gained in their research.

Suggested activities are listed below for this unit:

Week 1:

Introduce the Landmark Research unit and explain that this year we will expand on what students learned last year during the project and will learn how to use TinkerCad. Students will review what is a Landmark? Define a Landmark. Talk about famous landmarks around the world. Watch Youtube video of 15 Most Famous Landmarks around the World and discuss. Have students to share what landmarks that they have visited.

Week 2: Review a Landmark and the Youtube Video of 15 Most Famous Landmarks around the World. If you could travel anywhere in the world, what landmark would you visit first and discuss. Show students the Let's Take a Trip Around the World with Virtual Field Trips. Show students how to navigate the Buncee and go to the three pages of virtual field trips, and how to view the field trips. Have students to go to the Media Google Classroom and open the Buncee. Students can pick new virtual field trips to view. Tell students that they need to be thinking of what landmark that they would like to research for next week.

Week 4:

Review with students how to use Facts4me Website (https://facts4me.com/facts_users) and Fact Monster (https://www.factmonster.com/). Review what a database is. Show students how to go to landmarks in the database. Students need to pick a landmark in Facts4me and research. Students will start completing the Building Landmark handout.

Week 5:

Review last week and have students to finish page 1 and 2 of the Building Landmark handout. Remind students that they will be creating a landmark of their own. Students need to give a name to the landmark, who or what the landmark is named after, what the landmark will be made of, and where the landmark will be located. When students finish page 1 and 2, they may start working on designing their landmark. Students may do research on the person or location for their landmark and start page 3 and 4 of the Your Landmark handout.

Week 6:

Introduce TinkerCad to students. Show students how to login and demonstrate how to use TinkerCad. Have students to login and complete a simple task in TinkerCad so they are familiar with the program and how to use it. Students need to finish page 3 and 4 of Your Landmark Handout. After completing the handout, students can start designing their landmark in TinkerCad.

Week 7:

Students will continue to work on their landmark design in TinkerCad.

Week 8 and 9

Students will present their landmark to the class.

Media Specialists may personalize instruction during this unit and address the distinct learning needs, interests, aspirations, or cultural backgrounds of individual 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 use different books and electronic sources depending on the library media center's collection.

- Media specialist will assist students as they select a format to share their information
- Media specialist will assist students in locating the resources they need.
- Media specialist will model how to develop good questions.
- Media specialist will work with students to help them develop the questions necessary to guide their research.

Materials

The materials used in this course integrate a variety of leveled 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.

Suggested Supplemental Materials:

Invention Project

Inventions A-Z from Teacher Pay Teachers (Link to Invention Folder on Google Drive with PDF)

Youtube Video 20 Inventions that Changed the World https://www.youtube.com/watch?v=FS47A45b7xg

Inventions A-Z-List of inventions (Google Doc)

Invention Research Page (Google Doc)

Inventions and Inventors by Darren Sechrist (Epic eBook)

Invention Collection on Epic

Youtube Video How to be an Inventor by Kid President https://www.youtube.com/watch?v=75okexRzWMk

Youtube Video All About Cool Inventions https://www.youtube.com/watch?v=EpePecE9qvU

Landmark Project

What is a Landmark?

Youtube Video of What is a landmark? https://www.youtube.com/watch?v=MdEkwdmI38M&t=8s

Youtube Video of Famous Landmarks in the United States
https://www.youtube.com/watch?v=LnlbDbrQwOg

Youtube Video 15 Most Famous Landmarks around the World
https://www.youtube.com/watch?v=UTGvUjhCcro&t=3s

https://www.getepic.com/collection/31765342/landmarks?utm_source=t2t&utm_medium=link&utm_campaign=collection&share=23683200334

Youtube Video of World Landmarks https://www.youtube.com/watch?v=Ru51XZX3Koc&t=1s

Let's Take a Trip Around The World Virtual Field Trip Buncee

Facts4me Website (https://facts4me.com/facts_users)

Fact Monster (https://www.factmonster.com/

Build a Landmark/Your Landmark (Google Doc)

TinkerCad https://www.tinkercad.com/

Strategies for Accommodations and Modifications

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.