

TPS Professional Development Activity

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School or Institution: Albert Einstein Distinguished Educator Fellowship Program - LOC

Projected Date for Implementation: TBD

Title of Activity	STEMtastic Resources for Inquiry
Overview	Participants will use primary sources from the Library of Congress to create claims, cite supporting evidence, and explain their reasoning. Claim, Evidence, and Reasoning writing is used in scientific writing and relevant to the overall inquiry process of analyzing primary sources. This is an initial lesson in inquiry thinking for the purpose of creating science/engineering notebooks. Additional lessons will build upon this initial inquiry that will delve further into inquiry and hands-on lessons that can then be recorded in participant/student notebooks using the claim, evidence, reasoning writing.
Essential or Investigative Question	How do we use existing knowledge to make claims supported by evidence? How do we prove or disprove the claims?
Audience	<p>This activity is best suited for educators of the following grade levels</p> <ul style="list-style-type: none"> • Grades 3-5 <p>This activity is best suited for educators of the following content areas</p> <ul style="list-style-type: none"> • Mathematics • Science • Technology • Other - Engineering



Time Required	This lesson will be used in a single 45-minute block to introduce the Claim, Evidence, Reasoning connection with primary sources. Additional lessons can be used in multiple or longer sessions to build inquiry skills.
Goal	<p>Inquiry Driven by Questioning and Critical Thinking</p> <p>Focus the inquiry experience on big ideas and themes</p> <p>Frame the learning experience with an inquiry process</p> <p>Explicitly teach and scaffold the critical thinking and information skills of inquiry</p> <p>Confront students with both conflicting and corroborating evidence</p> <p>Claim, Evidence, and Reasoning Scientific Writing</p>
Standards	<ul style="list-style-type: none"> • 21st Century Learner Standards http://www.ala.org/aasl/standards-guidelines/learning-standards Resources: Professional learning that increases educator effectiveness and results for all students requires prioritizing, monitoring, and coordinating resources for educator learning. • ISTE Standards for Teachers http://www.iste.org/standards/standards-for-teachers Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. • Learning Forward The Professional Learning Association http://learningforward.org/standards#.U8amn_IdUk0 Build new knowledge through inquiry and thinking critically.
Objectives	<p>By the end of this PD Activity, participants will be able to:</p> <ul style="list-style-type: none"> • Access teaching tools and primary sources from loc.gov/teachers. • Access primary sources and teaching resources from loc.gov for instructional use. • Analyze a set of related primary sources in order to identify multiple perspectives. • Demonstrate how primary sources can support at least one teaching strategy (e.g., literacy, inquiry-based learning, historical thinking, etc.). • Create primary source-based activities that help students engage in learning, develop critical thinking skills and construct knowledge.
Digital Resources	<p>Primary sources from loc.gov:</p> <ul style="list-style-type: none"> ○ Joe Kachler measuring stock at his tool box; the tool box and all of the tools are the machinist's; many of Joe's tools are from his father who was also a machinist. ○ 1994-08-06 ○ Kachler, Joe (Depicted) ○ McCarl, Robert (Photographer) ○ http://www.loc.gov/item/afcwip003386/ ○ Diaries and Notebooks: 1902, Orville Wright ○ 1902 ○ Orville Wright ○ https://cdn.loc.gov/master/mss/mwright/01/01005/0004.jpg

Classroom Materials	<p>Classroom materials can vary depending upon what is available for use by both the educator and the students.</p> <p>For this lesson, the instructor needs:</p> <ul style="list-style-type: none">ProjectorComputerWi-Fi/Internet AccessSeesaw AccountPrint out of Seesaw barcodeBags of anonymous garbage for each group to use <p>Participants need:</p> <ul style="list-style-type: none">Personal device (scanning Seesaw code and submitting entry, and loc.gov access)Wi-Fi/Internet AccessPaper and pencil can be substituted for personal device
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Preparation	<ul style="list-style-type: none"> • Reading of necessary background material • Download images for the activity to computer • Example sentence starters for claim, evidence, and reasoning • Examples of acceptable claim, evidence, and reasoning for each image
Procedure	<ol style="list-style-type: none"> 1. Project image, Joe Kachler measuring stock at his tool box; the tool box and all of the tools are the machinist's; many of Joe's tools are from his father who was also a machinist. Have participants view the picture and think about what they know by looking at the picture. Then have them share with a neighbor or reflect on their ideas. Ask for volunteers to share what they claim the photo is about. An example claim may be, this is a picture of a mechanic. Ask what evidence they used in the image to make the claim. Ex. The man has coveralls on and is standing in front of a tool box. Ask how these two pieces of evidence support the claim of a mechanic. Ex. Mechanics wear coveralls to stay clean in a dirty work environment and use tools to fix things. Have participants reflect on the picture a little more. Is the drawer filled with tools? What are those things? See if anyone would like to revise their claim. Explain that Joe is a machinist, and a machinist is defined as someone who makes or repairs machinery. Is that the same thing as a mechanic? 2. Introduce participants to Seesaw and use of digital portfolios. Seesaw allows students to share school work with family members. Demonstrate teacher and student views/uses of Seesaw. Have participants scan the prepared student barcode to enter Seesaw as a student and experiment with the various entries available. 3. Project the next image, Diaries and Notebooks: 1902, Orville Wright. Have participants write a claim based on the image. Next, they should add their evidence and explain how the evidence supports their claim (reasoning). The entries can be made via Seesaw which then can be viewed as a whole group with anonymity and discussed. After discussion, allow participants to submit revised claims, evidence, and reasoning. Explain that sketches or diagrams can be added to these entries when applicable. 4. Have participants share possible sentence starters they might want to use with their students when creating entries. Remind them that sentence starters need to be modified to meet appropriateness for their students so that students can use them independently. Have participants share possible ideas for encouraging use of sentence starters (ex. Table tents, posters, page in their notebook, etc.). Share sentence starters for writing claim, evidence, and reasoning. 5. Project loc.gov. Share different ways to access resources. Have participants identify at least one resource that would be relevant to their classroom for teaching their students claim, evidence, and reasoning notebook entries. Share out and allow more time for exploration. 6. Have participants get into groups of their choosing. Supply each group with a bag of anonymous "garbage" (no garbage should have names or addresses and shouldn't be dirty). At school/work, ask coworkers to clean out their cars and place it in a plastic grocery bag. Make sure there is no identifiable materials inside. Ask participants to examine their bags. Submit a claim, evidence, and reasoning entry on Seesaw for the group. Review and discuss these as a class.

Assessment/ Reflection	<ul style="list-style-type: none"><li data-bbox="383 201 1458 338">• Informal formative assessment of participants will be used to determine levels of understanding. Instructor should monitor discussions to determine areas of confusion. In addition, participants will create a Seesaw or paper and pencil notebook entry using claim, evidence, and reasoning.<li data-bbox="383 380 1458 472">• This lesson can be used in the same manner in a classroom setting with educators reinforcing their own classroom strategies. Additional supports may be needed if used with younger grade levels.
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