

Uncover: Broaden Perspectives

Actions of Innovation



Grades 6-8

Science, English Language Arts, Social Studies

Driving Question

When working through the “Uncover” phase of an innovation journey, how can an innovator broaden his/her perspective to best understand the problem or need?

Learning Objectives

Students will be able to:

- Develop critical thinking skills to gain appreciation for a need/problem
- Build empathy to understand a need/problem
- identify a problem’s source and substantiate their observations with facts

Why This Matters

Teaching students to be deliberate in their evaluation of information can guide them to becoming logical thinkers, as well as building empathy for a deeper understanding of a problem or need. To gain perspective, students must suspend judgement until evidence and facts are presented and supported by logic. Doing so will aid in a truer sense of a problem’s source(s). By using a historical photograph to teach observational techniques, including substantiating opinions with factual observations, students will build their critical thinking skills. The post-activity will help students learn that there is always more to learn about a situation.

Standards

Common Core: CCSS.ELA-LITERACY.SL6, 7, 8.1; CCSS.ELA-LITERACY.SL6, 7, 8.2; CCSS.ELA-LITERACY.SL6, 7, 8.3; **NGSS:** MS-ETS1-3; **C3 Framework:** D3.1; D3.2; D4.2; D4.4; D4.5.

Prep Activities

Students will analyze a historical image and make observation on what they see in the image and what they think is happening.

Core Activities

Formative Performance Task:

Students will engage in a discussion of what makes “good” information and how critical thinking, including the importance of logic and evidence, is necessary to support claims. Following the discussion, students will re-analyze a historical image.

Follow-Up Activity

Students will write a question about something in the photograph that they want to learn more about, then conduct research to learn the information.

Model i

Throughout this lesson, there will be opportunities to practice and develop Model I's Habits of an Innovator and Actions of Innovation. Listed below are the Habits and Actions that students will be developing and practicing.

Developing Habits of an Innovator



Stay Curious

Students will ask questions and wonder with their peers about a problem/need in a historical image.



Collaborate

Students will work together to understand a problem/need presented in a historical image.



Challenge the Rules

Students will challenge what they think they know as they discover new ideas from a historical image.



Be Empathetic

Students will walk in someone else's shoes as they work to understand the underlying facts of a problem/need.

Practicing Actions of Innovation



Uncover

Students will gain insight and a deeper understanding for a problem or need in a historic image.



Define

Students will use their new perspectives to name a specific problem/need.

Prep Activities

Find a historic photograph that is interesting to look at and tells a complex story that is not easily discernable, but relatable for students' ages.

If preferable, find a photograph that relates to and support classroom content. Search for your own historic photograph at <https://www.thehenryford.org/collections-and-research/digital-collections/>

Examples of possible photographs:

Edison Institute Schools – Students Weaving, 1935:

Image: <https://www.thehenryford.org/collections-and-research/digital-collections/artifact/356544#slide=gs-191898>

Ford Model A Chassis Assembly Line, Ford Rouge Plant “B” Dearborn, MI, 1928:

Image: <https://www.thehenryford.org/collections-and-research/digital-collections/artifact/372584#slide=gs-391092>

Testing the Lunar Capsule Built by Ford Motor Company Aeronutronic Division, 1960:

Image: <https://www.thehenryford.org/collections-and-research/digital-collections/artifact/488027/#slide=gs-484476>

John Borroughs and Henry Ford Sawing Down a Tree, Fort Myers, FL, 1914:

Image: <https://www.thehenryford.org/collections-and-research/digital-collections/artifact/24445>

Tell students that they are going to work on exercising their critical thinking brains to study a photograph. Do not give students any background on the photograph. Display the photograph.

Ask student to study the photograph, then answer the questions on paper. Encourage students to write as many details as they can in one minute.

Who do they see in the photograph?

What do they see happening in the photograph? Be sure students understand there is no right/wrong answer.

Ask for volunteers to share.

As students share, push their thinking by asking probing questions, such as:

What do you see that makes you say that?

How do you know this is happening?

What don't you see?

What do you wonder about?

Core Activities

Formative Performance Task:

Explain to students that what they were doing was using something called “critical thinking.” Questioning what we see and what we think about what we see are important life skills.

Suggest a silly example to students that is easily relatable, for example: Your classmate told you the principal is outside giving ice-cream treats to anyone who sneaks out of class.

Use this silly story to discuss:

- Skepticism: Suspending judgement until we examine reasoning and factual evidence behind them. (Why might my classmate say the principal is outside giving away ice-cream? Does my classmate have anything to gain from me going outside when I’m not supposed to? Does my classmate have any evidence to support the claim?)

- Examining Assumptions: Assumptions are made when accepting something as true or untrue without proof. Everyone makes assumptions when they see or think about something. Assumptions can be helpful or hurtful. Give the students examples to help them understand.

- Challenging Reasoning: Using logic, a person evaluates arguments and reasoning, and strives to distinguish between good and bad reasoning. (Does it make sense that my principal is outside with ice-cream? Is it logical?)

- Uncovering Biases: We all have experiences that shape the way we see things. Where does bias come from? Culture? Upbringing? Experiences? (Do I have an experience that will help me decide if my principal is outside with ice-cream for kids who break the rules?)

What make “good” information?

- a. It needs to be guided by evidence that fits with reality—even if it refutes out beliefs or wishes. (I really wish my principal was outside giving ice-cream to kids who broke the rules, but he/she has never done that before and it doesn’t make sense. In addition, my classmate doesn’t have any evidence to support the story.

Now return to the historical photograph (or choose a new one if you’d like).

- a. Begin again, this time as a group discussion—what is happening in this photograph.
- b. Continue to challenge the students’ assumptions and comments, using the same questions from the Prep-Activity. Insist they back up their observations with facts or logic.

As students work through each part of the project, encourage them to reflect on how they are using or might use the Model i Habits and Actions to guide their project building.

Follow-Up Activity

Working with a partner, students will write a question about something they see in the photograph that they'd like to learn more about.

If time permits, students can conduct research to learn this information and use it in the "Design" lesson.

Standards

Common Core State Standards In English Language Arts

CCSS.ELA-LITERACY.SL.6, 7, 8.1. Engage effectively in a range of collaborative discussions with diverse partners on grade appropriate topics and texts, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.6, 7, 8.2. Analyze the purpose of information presented in diverse media and formats and evaluate the motives behind its presentation

CCSS.ELA-LITERACY.SL.6, 7, 8.3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.

Next Generation Science Standards

K-2-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

College, Career and Civic Life (C3) Framework for Social Studies State Standards

D3.1.6-8. Gather relevant information from multiple sources while using the origin, structure, context, and corroborative value of the sources to guide the selection.

D3.2.6-8. Evaluate the credibility of a source by determining its relevance and intended use.

D4.2.6-8. Construct explanations using reasoning, correct sequence, examples and details with relevant information and data, while acknowledging the strengths and weaknesses of the explanations.

D4.4.6-8. Critique arguments for credibility.

D4.5.6-8. Critique the structure of explanations.