

*“Arlington Springs Man”*

**Resource Summary:** Using the Question Formulation Technique students will refine their ability to ask open and close-ended questions, while developing their curiosity. Furthermore, students will research and develop research skills, culminating with an in-class presentation.

**Subject Areas:** Science, Social Studies, Language Arts

**Grade Level Range:** 4 – 6

**Standards:**

CCSS.ELA-Speaking and Listening. CC 5-1

1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others’ ideas and expressing their own clearly.
  - a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
  - b. Follow agreed-upon rules for discussions and carry out assigned roles.
  - c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
  - d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

CCSS.ELA-Speaking and Listening. CCKI 5-2

Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-Speaking and Listening. CCKI 5-4

4. Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
  - a. Plan and deliver an opinion speech that: states an opinion, logically sequences evidence to support the speaker’s position, uses transition words to effectively link opinions and evidence (e.g., consequently and therefore), and provides a concluding statement related to the speaker’s position. CA
  - b. Memorize and recite a poem or section of a speech or historical document using rate, expression, and gestures appropriate to the selection. CA

NGSS. ESS1.C The history of planet Earth

Rock strata and the fossil record can be used as evidence to organize the relative occurrence of major historical events in Earth’s history.

## LS4.A Evidence of common ancestry and diversity

Some living organisms resemble organisms that once lived on Earth. Fossils provide evidence about the types of organisms and environments that existed long ago.

### NGSS Science and Engineering Practice 1. Asking Questions and Defining Problems

“Students at any grade level should be able to ask questions of each other about the texts they read, the features of the phenomena they observe, and the conclusions they draw from their models or scientific investigations.”

**Resources Provided By:** Tim Barker, Hope Elementary School, Hope Elementary School District

#### **Resource Details:**

Cut up the following quotes and pass them out. Have students think about the underlying message behind all of these quotes as they walk around the room sharing with each other. As they go around listening to each other, they should attempt to get into groups with no repeated quotes. They can't say anything to each other except to read their quote. They will stay in these groups for the remainder of the lesson.

Finish this activity with a discussion about questions and how questioning is a learned skill that we can get better at.

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Introduce the *West of the West* Tale “*Arlington Springs Man*.” As they watch the tale, ask them to write down any questions that come into their minds that are connected with the film.

After the film, assign a scribe for each group. Run the groups through the Question Formulation Technique, as cited and explained in detail at <http://rightquestion.org/education/>. This is a Visible Thinking Strategy in which students improve their curiosity and questioning skills.

The Question Formulation Technique (QFT) is a simple step-by-step, rigorous process that facilitates the asking of many questions. The process includes the following steps:

1. A Question Focus (QFocus)
2. The Rules for Producing Questions
3. Producing Questions
4. Categorizing Questions
5. Prioritizing Questions
6. Next Steps
7. Reflection

1. The Question Focus (QFocus) – A stimulus; a springboard you will use to ask questions. The QFocus can be a topic, image, phrase or situation that will serve as the “focus” for generating questions. An effective QFocus should be clear, should provoke and stimulate new lines of thinking and should not be a question.

2. The Rules for Producing Questions – Each of the four rules supports a behavior that facilitates effective question formulation.

- Ask as many questions as you can
- Do not stop to discuss, judge, or answer any questions
- Write down every question exactly as it is stated
- Change any statement into a question

The first step for producing questions is to review the rules and name potential challenges in following them.

The rules can be difficult to follow at times because you are being asked to work in a way that might be new or different from what you are accustomed to. The goal here is to create awareness of the difficulties and help you abide by the rules as you work producing questions.

3. Produce Questions- You will use the Question Focus (QFocus) to formulate as many questions as you can. Ask all kinds of questions about the topic, phrase, image, situation, etc. presented. Please make sure to follow the rules.

This part of the process allows you to think freely without having to worry about the quality of the questions you are asking.

4. Improving the Questions – Once you have a list of questions, the next step is to learn about two different types of questions you might have on your list: *closed-ended questions*– questions that can be answered with a “yes” or “no” or

with one word - and *open-ended questions* –questions that require an explanation.

This part of the process develops as follows:

- First, please review your list and identify the closed-ended questions with a “C” and the open-ended with an “O.”
- Second, think about and name the advantages and disadvantages of asking each type of question. You will see that there is value in asking both types of questions.
- Third, practice changing questions from one type to another. Changing the questions will help you learn how to edit your questions to meet your purpose.

5. Prioritizing Questions – You might have a lot of questions on your list. It will be easier to work with the questions if some priorities are established. You will now choose three questions based on actions you want to take. For example, three most important questions, three questions you would like to address first, three questions you want to explore further, etc.

After choosing the priority questions your next step is to name a rationale for choosing.

As a last step in prioritizing, please pay attention to the numbers of your priority questions. Are your priority questions at the beginning, in the middle or at the end?

After running through the QFT, ask each student to pick one open-ended question that they created as a group to use for further research. They will spend 20 minutes researching that topic, taking notes so that they can relay that information to their group. They will present what they’ve learned from their research to their small groups.

After each presentation of information, students must come up with at least one open -ended question for the researcher. S/he will write these down.

The teachers can go in one of two directions. The class can both stop here and reflect on the process. Or, students can then research one of those questions to report back to their group, to hear yet again another set of questions. Either way, it’s fun to create a question spider map, diagraming where the questions were generated, each arm representing the journey of one of the student’s quests for knowledge. At the center, the body of the spider, each group would write “Arlington Springs Man.” Groups would then share the poster to the whole class. Students will be amazed by the many different questions that were postulated.

### **Additional Resources:**

<http://rightquestion.org/education/> The creators of the Question Formulation Technique have plenty of additional resources on their home page.

<https://www.youtube.com/watch?v=Mox0WRGGk0Y> Youtube video of the Question Formulation Technique.

<https://www.edutopia.org/blog/help-students-become-better-questioners-warren-berger> This Edutopia article gives some wonderful advice on how to encourage your students to ask better questions.

<https://www.nps.gov/chis/learn/historyculture/arlington.htm> This site gives students additional background into the Arlington Springs Man, produced by the National Parks Service.

<https://www.sbnature.org/crc/325.html> This site provides additional information in regards to the remains found at Arlington Springs, produced by the Santa Barbara Natural History Museum.

<http://cogweb.ucla.edu/Chumash/EntryDate.html> This site provides data and information regarding the bone record for the Americas and where the Arlington Springs Fossils fit.