

## QFT-Primary Source Lesson Plan Template\*

*\*Feel free to edit, adapt, or amend this template as is most helpful to you.*

LESSON OVERVIEW			
<b>Name:</b> Kristy Moss	<b>Grade:</b> 11th	<b>Subject:</b> Physics	<b>Location:</b> St. Louis Public HS
<p><b>Context &amp; Purpose:</b> Content Topic: Forces and Motion Anchoring Question: “ How will we get to Mars? “</p> <p>OPENING FOR THE UNIT:</p> <ul style="list-style-type: none"> <li>- what it would take to get to Mars. “ How will we get to Mars?”</li> <li>- students work in groups to come up with a list</li> <li>- class discussion</li> </ul> <p>TEACHING OBJECTIVES FOR FEATURED LESSON- MEASURING MOTION:</p> <ul style="list-style-type: none"> <li>- explore measuring motion ( how do we know the rock is moving). The questions from the QFT will lead to the shared experiences that will be applied to answering the QFT questions               <ul style="list-style-type: none"> <li>- distance/displacement ( experience with walking lab- apply)</li> <li>- acceleration of rock ( experience with “How does a pedometer work?”)</li> <li>- velocity/speed ( students design an experiment measuring position, velocity, acceleration of a person’s movement and graph data against time)</li> <li>- force and acceleration relationships (force to move experiment)</li> </ul> </li> </ul> <p>TEACHING OBJECTIVES FOR NEXT PART OF UNIT:</p> <ul style="list-style-type: none"> <li>- explore accelerations (Why did this rock slide occur?)               <ul style="list-style-type: none"> <li>- free fall acceleration</li> <li>- circular motion</li> <li>- projectile motion</li> </ul> </li> </ul>			
<p><b>Lesson Procedure:</b></p> <p><b>FEATURED LESSON</b></p> <ol style="list-style-type: none"> <li>1. Before the QFT, students will have been brainstorming on an anchoring question “What would it take to get to Mars?” Students created a list of what it would take and shared their list. I will use this list to determine gaps in their knowledge. We will be exploring the anchoring question in pieces- motion and forces. The Featured Lesson is on MEASURING MOTION.</li> <li>2. The QFT opens the start of the Measuring Motion portion of the Unit.           <ol style="list-style-type: none"> <li>a. Students will be given a photo of a moving rock and asked to develop questions. During the QFT, I will just encourage students to follow the rules and thank them for their responses. Students will continue in groups changing questions to open/ closed then prioritizing the questions with the directions- <b>Choose 3 questions that you feel help us research and understand the phenomena in the photo.</b> We will share the questions together.</li> </ol> </li> <li>3. After the QFT, I provide a mini-lesson on distance/displacement, velocity/speed, and acceleration as needed. We will circle back after mini-lessons and check on which questions we can answer using our new knowledge. I will continue with mini-lessons and research until all the main topics listed below are covered.           <ol style="list-style-type: none"> <li>a. Topics to cover: displacement/distance, velocity, speed, acceleration, position/time graphs, velocity/time graphs, acceleration/time graphs.</li> </ol> </li> </ol>			

b. Questions will be answered by constructing models, creating illustration explanations, short answers with vocabulary, and small group presentations.

**Next Steps (i.e. how student questions will be used after the QFT):** *Share your tentative plans for using student questions to drive subsequent learning*

- Initially, QFT questions ( missing questions and presented questions) will show where gaps in understanding exist for the students.
- Students' questions will be used after QFT to guide the mini-lessons and research needed to explain the phenomena.

**Question Focus:** *Must include at least one primary source from loc.gov. Whenever possible, please embed the image/primary source here AND include the link. Include additional text or caption only if it is part of your QFocus.*



**LINK:**  
<https://www.loc.gov/resource/highsm.23844/?r=-0.162,-0.003,1.33,0.608,0>

**Reflect on your QFocus:** *You might consider why you chose this image, alternative QFocus options, earlier QFocus drafts or process you went through to develop it, etc.*

In reflection, I would only use the second photo- close up of the rock and its trail initially. After showing the initial photo, I might show the top zoomed out photo to spark additional questions. I chose these photos because the phenomena is interesting and most likely not something that my students have encountered before.

Below are the questions from students when I presented BOTH pictures together. Again, I believe the lower photo sparked the questions on motion and force better than the top photo.

- Who pushed the rock in the dirt?
- Why did the rock move?
- Why is there a big rock in the center?
- Why are there two pictures?
- Are the two pictures related?
- What caused the rock to move?
- Did an animal move the rock?
- Why are there no footprints?
- Did an earthquake move the rock?
- If the land is so flat, how has that boulder rolled all that way?
- Are these pictures of the same place?
- What are the irregularities in the soil/sand?
- Did the boulder break away from the large mass of rock?
- What caused the ripples in the sand?
- Did wind move the rock?
- Are the rocks smooth or rough?
- Why is there darker sand around the large rocks?
- What caused the mountains to form?
- What is causing the rocks fall from the formation?
- Are all the marks on the ground caused by rocks?
- Where is this?
- Is this an exceptional place because of the geological formations?
- Why did the rock stop so far?
- Where is this?
- Are the two pictures of the same place?
- Why did the rock move?

	Did it move? Did someone move it? Is this earth or another planet? How big is the rock? Did an animal move it? Is it on a slope?
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**Tailoring Instructions:** *Share any adaptations or tailoring to the standard QFT process or categorization, prioritization, or reflection instructions that you are planning.*

- **Categorization Instructions:**
  - I will follow the standard QFT instruction to get the priority questions because this is early in the year and the first QFT of the year.
- **Prioritization Instructions:**
  - I will use the prioritization instructions: Choose 3 questions that you feel help us research and understand the phenomena in the photo.
- **Reflection Questions:**

Because this is the first time with QFT, I will ask more process questions than content reflective.

- What do you understand differently now about asking questions?
  - What did you notice about your group’s process?
  - What did you learn from someone else’s question?
  - How did the QFT help you think about the movement of the rock?
- **Other:**

While you are not required to implement your lesson plan to complete the “Teaching Students to Ask Their Own Primary Source Questions” course, we hope that you do! If you do have a chance to implement your lesson plan prior to posting it in the TPS Teachers Network Question Formulation Technique for Primary Source Learning group [album](#), please consider adding and sharing some of the information below in addition to your plan above:

**LESSON OUTCOMES**

**Student Questions:**

Who pushed the rock in the dirt?  
 Why did the rock move?  
 Why is there a big rock in the center?  
 Why are there two pictures?  
 Are the two pictures related?  
 What caused the rock to move?  
 Did an animal move the rock?  
 Why are there no footprints?  
 Did an earthquake move the rock?  
 If the land is so flat, how has that boulder rolled all that way?  
 Are these pictures of the same place?  
 What are the irregularities in the soil/sand?  
 Did the boulder break away from the large mass of rock?  
 What caused the ripples in the sand?

Did wind move the rock?  
 Are the rocks smooth or rough?  
 Why is there darker sand around the large rocks?  
 What caused the mountains to form?  
 What is causing the rocks fall from the formation?  
 Are all the marks on the ground caused by rocks?  
 Where is this?  
 Is this an exceptional place because of the geological formations?  
 Why did the rock stop so far?  
 Where is this?  
 Are the two pictures of the same place?  
 Why did the rock move?  
 Did it move?  
 Did someone move it?  
 Is this earth or another planet?  
 How big is the rock?  
 Did an animal move it?  
 Is it on a slope?

**Student Reflections:**

**NOT IMPLEMENTED**

**TEACHER REFLECTIONS**

**Reflect on your lesson design and how well it achieved your objectives.**

I used the workbook as a guide to create this lesson. I feel confident that I placed the QFT in the lesson in a way that supports my objectives and helps guide the lesson to gaps in knowledge.

**Which student questions stood out to you? Why?**

IS it on a slope? AND Did wind move the rock? This stood out because they are relating it to something that they have seen before perhaps or that they noticed there weren't any prints indicating it was moved by a person/ animals .

Did it move? AND Why did the rock move? I love these questions because it questions what is happening and asking questions that align well with the research/ investigations that I have planned.

**Overall, what did you learn from this experience? What questions do you now have?**

I learned a lot about the Library of Congress and primary sources. I learned about how to determine the best placement of QFT your lesson- based on what you want to accomplish. I also learned from the template how to organize my thoughts on a lesson of this type.