

12.3.1 Lesson 19

Introduction

In this lesson, students construct a research frame to guide their research. Students begin the lesson by refining inquiry questions from 12.3.1 Lesson 15, based on search results from 12.3.1 Lessons 16-18. Students learn to group their inquiry questions thematically to develop inquiry paths. Using the thematically grouped inquiry questions, students learn how to create a research frame, which serves as a springboard and reference for future research. Student learning in this lesson is assessed via a research frame submitted during the lesson's closing. Additionally, students craft a problem-based question based on their area of investigation and inquiry paths to guide the rest of their research.

For homework, students select 1-2 of their strongest inquiry questions to pursue through independent research by following the research steps outlined in 12.3.1 Lessons 16-18 (plan for searches, assess sources, annotate sources, record notes, and evaluate arguments). Additionally, students record another multimedia journal entry in response to the following prompt: Explain how your inquiry paths examine various aspects of your problem-based question.

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Standards

Assessed Standard(s)	
W.11-12.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
Addressed Standard(s)	
W.11-12.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

Assessment

Assessment(s)
<p>Student learning in this lesson is assessed via a research frame, submitted during the lesson closing.</p> <ul style="list-style-type: none"> The Research Frame Tool serves as the assessment for this lesson.
High Performance Response(s)
<p>A High Performance Response should include:</p> <ul style="list-style-type: none"> High-level inquiry paths A range of inquiry paths, encompassing content and coverage of the problem-based question Inquiry paths that are distinct from one another Inquiry paths that are equally important Questions within the inquiry paths that address appropriate scope and utility See the Model Research Frame Tool at the end of this lesson.

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Vocabulary

Vocabulary to provide directly (will not include extended instruction)
• None.*
Vocabulary to teach (may include direct word work and/or questions)
• None.*
Additional vocabulary to support English Language Learners (to provide directly)
• None.*

*In their research and reading, students encounter domain-specific vocabulary related to their individual areas of investigation/problem-based questions. Consider instructing students to use a vocabulary journal to track this vocabulary when conducting independent searches during class and for homework.

Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
Standards: <ul style="list-style-type: none"> Standards: W.11-12.7, W.11-12.8 	
Learning Sequence: <ol style="list-style-type: none"> 1. Introduction of Lesson Agenda 2. Homework Accountability 3. Introduction to Inquiry Paths and the Research Frame 4. Research Frame Tool and Assessment 5. Crafting a Problem-Based Question 6. Closing 	<ol style="list-style-type: none"> 1. 5% 2. 10% 3. 35% 4. 30% 5. 10% 6. 10%

Materials

- Copies of the Research Frame Tool for each student (optional)

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Learning Sequence

How to Use the Learning Sequence	
Symbol	Type of Text & Interpretation of the Symbol
10%	Percentage indicates the percentage of lesson time each activity should take.
no symbol	Plain text indicates teacher action.
	Bold text indicates questions for the teacher to ask students.
	<i>Italicized text indicates a vocabulary word.</i>
▶	Indicates student action(s).
💬	Indicates possible student response(s) to teacher questions.
❗	Indicates instructional notes for the teacher.

Activity 1: Introduction of Lesson Agenda

5%

Begin by reviewing the agenda and assessed standard for this lesson: W.11-12.7. Students begin the lesson by thematically grouping inquiry questions to create inquiry paths. Students then use the categorized inquiry questions to craft a research frame to inform their future research.

- Students look at the agenda.

Activity 2: Homework Accountability

10%

Instruct students to take out their responses to the previous lesson's homework assignment. (Find two potential sources and evaluate the arguments in the sources by using the Evidence-Based Arguments Checklist. Include detailed comments and textual evidence to support your choices in the "Comments" section of the Evidence-Based Arguments Checklist for each potential source.) Instruct students to form pairs and discuss how the checklist deepened their understanding of the argument within one of their sources.

- Student responses vary depending on individual research questions/problems and research.
- Consider collecting the homework to monitor students' research progress.

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Activity 3: Introduction to Inquiry Paths and the Research Frame 35%

Explain to students that the research frame is a formal plan or guide in which students organize their specific inquiry questions by theme in order to create inquiry paths. Each inquiry path explores or investigates one aspect of the area of investigation. Explain to students that the next step in conducting independent searches is to construct a research frame that will guide their searches in the next two lessons (12.3.1 Lessons 20 and 21). Explain that before they can create the research frame, students must refine the inquiry questions developed in 12.3.1 Lesson 15, based on the research they have done thus far.

- Students listen.

Instruct students to take out their specific inquiry questions from 12.3.1 Lesson 15 and use the following guiding questions to refine their specific inquiry questions:

How do the preliminary search results affect your current inquiry questions?

What new inquiry questions are emerging as a result of the preliminary searches? What inquiry questions might need to be eliminated already?

How can the inquiry questions be refined to reflect the search results?

- Students work independently to refine their inquiry questions from 12.3.1 Lesson 15.
- Student responses vary based on their individual research questions/problems and research.
- **Differentiation Consideration:** Consider referring students to the vetting process for inquiry questions taught in 12.3.1 Lesson 15 for additional support.

Explain to students that the next step in developing the research frame is to categorize the refined inquiry questions into inquiry paths. Explain that an inquiry path is a list of specific inquiry questions, categorized thematically by an overarching description or question. Explain that to develop inquiry paths, students should look for common themes or patterns among the various inquiry questions. Then, they can determine a label for this inquiry path with an overarching question or description.

- Students listen.
- **Differentiation Consideration:** Consider providing students with the following definition: *thematically* means “according to topic, subject, or idea.”

Display the following model inquiry questions:

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What kinds of successful training are used to develop a productive workforce?

What is the role of government in ensuring high-quality education for all?

What is the best form of education for people in developing nations to ensure gains in economic prosperity (e.g., traditional classrooms, online learning, vocational training)?

How is technology being used to increase developing nations' participation in global economics?

What forms of technology would be most beneficial for economic development?

In what specific ways does technology stimulate a developing nation's economy?

- Students examine the model inquiry questions.

Model for students how to analyze the inquiry questions for common themes or patterns by annotating the model questions. Explain to students that the first three questions focus on the impact of education on a developing nation's economy. The last three questions focus on the use of technology in a developing nation. Suggest that the inquiry path for the first three questions might include all questions that focus on education and its impact on a developing nation's economy.

- Students follow along.

Instruct students to determine themes or patterns among their inquiry questions and categorize them accordingly. Instruct students to write possible inquiry path questions/ descriptions for the categorized inquiry questions. Explain that although students may be tempted to first come up with the path and then group their questions accordingly, this method would ignore the research they did and create paths that are not based on the research findings. The themes should emerge from the research, rather than the inquiry questions being forced into pre-determined themes.

- Students work independently to create and record inquiry paths from their inquiry questions.
- Students can do this by physically arranging questions on their desk or by taking notes.
- **Differentiation Consideration:** Consider distributing the Research Frame Tool to students who need additional support in constructing the research frame.

Inform students that the next step in constructing the research frame is to record the categories of inquiry questions they grouped as inquiry paths. Each inquiry path should be given a title, written in the form of a question or a description. These inquiry paths should be distinct from each other, but closely related.

Model how to develop the research frame using the model inquiry question and inquiry paths discussed previously in the lesson. Model listing the grouped inquiry questions into inquiry paths beneath a title, written in the form of an over-arching question or description.

- **Model inquiry path:** How does education increase a developing nation's economic prosperity?
- **Inquiry path questions:** What kinds of successful training are used to develop a productive workforce? What is the role of government in ensuring high-quality education for all? What is the best form of education for people in developing nations to ensure gains in economic prosperity (e.g., traditional classrooms, online learning, vocational training)?
- **Model inquiry path:** How does education increase a developing nation's economic prosperity?
- **Inquiry path questions:** How is technology being used to increase developing nations' participation in global economics? What forms of technology would be most beneficial for economic development? In what specific ways does technology stimulate a developing nation's economy?
- Students follow along.

Activity 4: Research Frame Tool and Assessment

30%

Explain that the assessment for this lesson is the independent completion of a research frame. Instruct students to craft a research frame by grouping or categorizing inquiry questions by theme, and titling each inquiry path with an overarching question or description. Instruct students to follow the steps modeled in the previous activity to complete the research frame (W.11-12.8).

- Students independently construct a research frame.
- Remind students that a completed research frame should contain at least three inquiry paths that follow from the problem-based question.
- Some students may be tempted to first come up with the path and then group their questions accordingly. Remind students that when they do that, they ignore their own research and their paths will not be grounded in their findings. Some students may still have problems organizing their questions; you may choose to group these students with peers who are researching similar issues to work together to form inquiry paths.
- Consider reminding students that the research frame is not *static* (meaning “showing little or no change; lacking movement”). The research frame continues to evolve as the research evolves with future searches. Remind students this is the iterative and cyclical nature of inquiry-based research.

Activity 5: Crafting a Problem-Based Question

10%

Explain to students that throughout 12.3.1 they have explored an area of investigation that is composed of multiple claims and issues. Using their completed research frames, students craft a problem-based question that will focus their research for the rest of 12.3.1 and lead to a research-based argument paper in 12.3.2. Explain to students that a problem-based question is an overarching question that is crafted from the area of investigation and the related inquiry paths established in the research frame. Additionally, a problem-based question should lead to the most rich and interesting argument research.

Remind students that the model area of investigation is “increasing wealth in developing nations” and the model inquiry paths for the research frame are as follows:

How does education increase a developing nation’s economic prosperity?

How does technology play a role in a developing nation’s economic prosperity?

How does health care contribute to a developing nation’s prosperity?

Explain that a model problem-based question can be crafted by examining these inquiry path questions and revising the area of investigation as a question that yields argument. For example, explain to students that the three inquiry paths all describe different ways in which a developing nation could increase wealth, leading to the problem-based question:

What is the most effective way for a developing nation to increase its economic prosperity?

Direct students to the model research frame and display the model problem-based question.

Explain to students that, based on the various inquiry paths and all the searches up to this point, this is the problem-based question that yields the richest and most interesting argument research because there are many possible answers that directly address the inquiry questions/paths in the research frame.

- Students follow along.

Activity 6: Closing

10%

Display and distribute the homework assignment. For homework, instruct students to select 1-2 of their strongest inquiry questions to pursue through independent research, following the research steps outlined in 12.3.1 Lessons 16-18 (plan for searches, assess sources, annotate sources, record notes, and evaluate arguments).

Instruct students to select and copy 1-2 of their strongest inquiry questions from the research frame and record these on a separate sheet of paper to take home for homework purposes.

- Students select and record 1-2 of their strongest inquiry questions.

Collect the research frame for assessment purposes.

- See the [High Performance Response](#) for assessment criteria.
- Return research frames to students in the next lesson (12.3.1 Lesson 20).
- **Differentiation Consideration:** If students have been using search tools (Potential Sources Tool), consider distributing additional tools for the homework assignment.

Additionally, instruct students to record another multimedia journal entry by responding to the following prompt:

Explain how your inquiry paths examine various aspects of your problem-based question.

- Consider instructing students to use the [Student Research Plan Handout](#) to guide their multimedia journal entries. The Student Research Plan Handout was distributed in 12.3.1 Lesson 15.
- Students follow along.

Homework

Select 1-2 of your strongest inquiry questions to pursue through independent research by following the research steps outlined in 12.3.1 Lessons 16-18 (plan for searches, assess sources, annotate sources, record notes, and evaluate arguments).

Additionally, record another multimedia journal entry in response to the following prompt:

Explain how your inquiry paths examine various aspects of your problem-based question.

Topic _____

.....

[illegible]

RESEARCH I

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Name

Topic

Area of Investigation What is the most effective way for a developing nation to increase its economic prosperity?

INQUIRY PATH	INQUIRY PATH	INQUIRY PATH
Reference: IP # 1	Reference: IP # 2	Reference: IP # 3
Name this Inquiry Path in the form of a brief description or question: How does education increase a developing nation's economic prosperity?	Name this Inquiry Path in the form of a brief description or question: How does technology play a role in a developing nation's economic prosperity?	Name this Inquiry Path in the form of a brief description or question: How does healthcare contribute to a developing nation's economic prosperity?
List all the questions in this Inquiry Path: 1. How does education relate to the development of human capital? 2. What kinds of successful training are used to develop a productive workforce? 3. What does quality education look like? 4. What is the role of government in ensuring high quality education for all? 5. What societal factors detract from a country's ability to provide its people with high quality education? 6. How can developing nations ensure equity in education? 7. What is the best form of education for people in developing nations to ensure gains in economic prosperity? (e.g. traditional classrooms, online learning, vocational training)? 8. What are the steps needed for developing nations to establish effective education programs? 9. How does education play a role in the development of other human capital areas like technology and healthcare?	List all the questions in this Inquiry Path: 1. How has the development of the internet affected developing nations' economies? 2. How is technology being used to increase developing nations' participation in global economics? 3. What forms of technology would be most beneficial for economic development? 4. What is the most effective way to educate people in developing nations in using new technologies? 5. How does the role of technology affect education? 6. How does gender inequity impact a nation's utilization of technology? 7. How does technology usage benefit all people in a developing country? 8. Who should be most responsible for training people in developing countries to use new technology? 9. What can a developing country do to combat resistance to the adoption of new technology? 10. In what specific ways does technology stimulate a developing nation's economy?	List all the questions in this Inquiry Path: 1. What forms of healthcare are most important in improving the economic prosperity of a developing nation? (e.g. immunizations, education, access to quality emergency medical care) 2. In what specific ways do improvements in healthcare stimulate a developing nation's economy? 3. How can education and technology be used to improve the healthcare of people in a developing nation? 4. What factors contribute to increased life expectancy in developing nations? 5. What are the steps needed to improve the healthcare system in a developing nation? 6. How do issues of gender inequity affect healthcare in developing nations? 7. How can a developing nation improve its healthcare if it has an unstable government? 8. What role can outside nations play in improving the healthcare system of developing nations? 9. How does healthcare play a role when developing nations choose to invest in human capital?

ODELL
EDUCATION

RESEARCH FRAME

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