

Penicillin: A Study with NGSS Skills

TASK

by Susan Weston

Students trace a development process that began with answering questions, continued with rapid iterations of potential solutions to design problems, and culminated in the Nobel-prize-winning, health-care-transforming medication. Then they organize what they have learned into a succinct but engaging explanation of how the breakthrough developed. Throughout, instruction is structured to develop skills from the "Menu-Module with NGSS Skills," emphasizing reading and writing for understanding the distinctive disciplinary practices of science and engineering.

The writing product uses the *Smithsonian Tween Tribune* as a source of examples and organizational expectations. As a result, students work on a distinctively informational way to constructing their piece, being sure to identify the main topic early on, but providing little or no other "here's what I'm going to say" overview of the piece before jumping in. That follows the distinctive way Common Core Writing Standard 2 calls for students to "write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content." In that statement, there is no specification of a single right way to begin a piece. It's different from argumentation, where a claim is the essential starting point and the rest of the piece is judged by how well it backs up that claim. In informational/expanatory, what matters is choosing some effective way to organize the pieces, but there can be many options. Trying out this journalistic organization introduces one real-world approach, and it also introduces the idea that there are multiple alternatives to the classic essay and the thesis-first course-assignment writing most valued in English and history classes.



Section 1: What Task?

Teaching Task

Task Template IE7 - Informational or Explanatory

How did mold become medicine? After reading Fleming's Nobel Prize Lecture and the American Chemical Society's report about the research and development process, write an article for the Smithsonian Tween Tribune in which you relate how penicillin was developed. Support your discussion with evidence from the text/s.

Standards

Next Generation Science Standards (NGSS Comprehensive)

MS-LS2-4.

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

Next Generation Science Standards

MS-LS1-5

Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

MS-LS2-4

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

MS-ETS1-1

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints.

Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how many data are needed to support a claim.

Texts

% Penicillin (Nobel Lecture by Alexander Fleming, 1945)

Solution Solution States Content of Penicillin (American Chemical Society, 1999)

Student Work Rubric - Informational or Explanatory Task - Grades 6-8

	Emerging	Approaches Expectations	Meets Expectations	Advanced
	1	2	3	4
Controlling Idea	Presents an unclear or unfocused controlling idea.	Presents a general controlling idea that addresses the prompt , with an uneven focus .	Presents and maintains a clear controlling idea that addresses all aspects of the prompt.	Presents and maintains a clear and specific controlling idea that addresses all aspects of the prompt and takes into account the complexity of the topic .
Selection & Citation of Evidence	Includes minimal details from sources. Sources are used without citation.	Includes details, examples, and/or quotations from sources that arerelevant to the controlling idea. Inconsistently cites sources.	Includes details, examples, and/or quotations from sources that are relevant to the controlling and supporting ideas . Consistently cites sources with minor formatting errors .	Includes well-chosen details, examples, and/or quotations from sources that support the controlling and supporting ideas. Consistently cites sources using appropriate format.
Development / Explanation of Sources	Explanation of ideas and source material is irrelevant, incomplete, or inaccurate.	Explanation of ideas and source material is minimal or contains minor errors .	Accurately explains ideas and source material and how they support the controlling idea.	Thoroughly and accurately explains ideas and source material, using reasoning to support and develop the controlling idea.
Organization	Lacks an evident structure. Makes unclear connections among ideas, concepts, and information.	Groups ideas and uses some transitions to connect ideas, with some lapses in coherence or organization.	Groups and sequences ideas to develop the controlling idea. Uses transitions to clarify the relationships among ideas, concepts, and information.	Groups and sequences ideas logically to develop the controlling idea and create cohesion. Uses varied transitions to clarify the relationships among ideas, concepts, and information.
Conventions	Major errors in standard English conventions interfere with the clarity of the writing. Language or tone is inappropriate.	Errors in standard English conventions sometimes interfere with the clarity of the writing. Uses language and tone that are sometimes inappropriate to the audience and purpose.	Consistently applies standard English conventions; minor errors, while noticeable, do not interfere with the clarity of the writing. Uses language and tone appropriate to the audience and purpose.	Consistently applies standard English conventions, with few errors. Demonstrates varied syntax and precise word choice. Consistently uses language and tone appropriate to the audience and purpose.
Content Understanding (Generic)	Attempts to include disciplinary content in explanation or argument but understanding of content is weak; content is irrelevant, inappropriate, or inaccurate.	Briefly notes disciplinary content relevant to the prompt; shows basic or uneven understanding of content; minor errors in explanation.	Accurately presents disciplinary content relevant to the prompt with sufficient explanations that demonstrate understanding.	Integrates relevant and accurate disciplinary content with thorough explanations that demonstrate in-depth understanding.

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Background for Students

Not provided

Extension

Not provided

Section 2: What Skills?

Preparing for the Task

EXPLORING PHENOMENA: Ability to ask questions about observed phenomena

TASK ANALYSIS: Ability to ask questions to clarify a major assignment (developing answers for one self, by conferring with others, or by checking the person who set the assignment)

Reading Process

READING FOR CENTRAL IDEA: RESEARCH QUESTION: Ability to determine the central question that led to an experiment or series of experiments

READING FOR DETAILED OBSERVATIONS: EXPERIMENTS AND RESULTS: Ability to summarize key patterns and evidence about the natural or designed world described in a scientific text

READING GRAPHICAL FEATURES: Ability to use graphical features (maps, diagrams, charts, tables, and so on) to build understanding of a scientific text.

READING FOR CENTRAL IDEA: PROBLEM TO BE SOLVED: Ability to identify the central problem addressed by a design process

READING FOR DETAILED OBSERVATIONS: SEQUENCE OF SOLUTIONS: Ability to trace how a design process tried and tested a series of possible solutions to a problem

Discussion of the Evidence

ANALYZING EVIDENCE AND CONCLUSIONS: Ability to analyze how the reported data provides evidence to support claims about the phenomenon, explanation, model, theory, or solution

Writing Process

ORGANIZATION: Ability to organize ideas, concepts, and information into broader categories as appropriate to achieving purpose

DEVELOPMENT: Ability to develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples

ACADEMIC INTEGRITY: Ability to avoid plagiarism and use an appropriate form of citation **REWRITING**: Ability to develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach

Section 3: What Instruction?

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
Prepariı	ng for the Task			
15 mins	EXPLORING PHENOMENA: Ability to ask questions about observed phenomena	QUESTION LIST Imagine that a scientists has noticed a new plant in the woods and wants to figure out if it can work as a medicine. What are the questions the scientist needs to investigate? We're going to see how big a list of questions we can generate. With a partner, see how many questions you can generate on a sheet of paper. Then trade with another group, read theirs, and add more. Trade one more time, and then we'll share.	None	 Debrief by having one pair read their list, and then have other groups add ones they've thought of. As they read, be listening for a few key issues: Desired Effects: Does it change/fix/heal/kill off something that makes people (or animals) unhealthy? Undesired Effects: Does it have bad side effects? Methods: Do we need to cook/change/purify the plant to use it? Doses: How would the patient take/use it? How much? Feasibility: Is there/can we grow enough of the plant to be useful? Make a master list of all the questions, and share it with the class the next day.
20 mins	TASK ANALYSIS: Ability to ask questions to clarify a major assignment (developing answers for one self, by conferring with others, or by checking the person who set the assignment)	NOTES What puzzles do you see in this prompt? What do you need to figure out in order to answer it well? Make a list of all the questions you can think of. When you've got your individual ideas on paper, draw a line beneath your questions, and then you can add more questions based on our shared discussion.	 Student work meets expectations if: Initial list identifies some elements of assignment Expanded list identifies richer set of elements. 	Not Provided
Reading	g Process			
30 mins	READING FOR CENTRAL IDEA: RESEARCH QUESTION: Ability to determine the central question that led to an experiment or series of experiments	SUMMARY OF FLEMING LECTURE Skim Alexander Fleming's Nobel Prize speech and then work with a partner to summarize his main research question in 20 words or less. Then identify two sentences that support your summary. (Do notice that the idea is to skim: you're getting a rough idea of what the piece is about now, and	Student work meets expectations if: The summary captures the main point reasonably well The summary suggests that students looked lightly over the whole article, rather than bogging down	As students begin, emphasize the notion of skimming rather than reading deeply. It's a distinct skill that's useful at the beginning of many different kinds of studies. If you tell students explicitly that they'll be reading more closely soon, that may also help them see skimming as an approach that makes strategic sense. After no more than 10 minutes, urge all pairs to be developing their summaries and choosing sentences. After 15 minutes, move into sharing out, so that students get further insight from one another (and sharpen their understanding what skimming can do.)

		later we'll dig in to read more carefully.)	 in the early paragraphs The selected sentences provide reasonable support for the summary. 	
1 hr	READING FOR DETAILED OBSERVATIONS: EXPERIMENTS AND RESULTS: Ability to summarize key patterns and evidence about the natural or designed world described in a scientific text	 QUESTION-METHOD- RESULT CHART Break down Fleming's experiments in three steps: 1. Read each passage, putting an M next to sentences that describe the method he used and an R next to sentences about results. 2. Decide what question the experiment was designed to answer, and write out that question to the left of the passage. Use the experiment and the results as clues. 3. Decide why the results matter, using clues from the text. 	Student work meets expectations if the organizer: accurately distinguishes between methods and results for each experiment reasonably identifies or infers the question each experiment was trying to answer shows understanding of the significance of the results	 Lead students in a brief review of the attached vocabulary sheet. These are words that they need to understand this reading, but many of them are not essential vocabulary for other work. Bacteria and microbes are useful in wider studies, and agar and the distinctive meaning of culture in this context could also be helpful to learn and remember. Here, the main idea is that when they come to the word, they have an easy way to check what it means. Lead students through a quick process of numbering off Fleming's experiments. That can be done asking them to decide, or time can be saved by telling them where to mark or even giving out marked copies. Demonstrate how to mark the first experiment yourself, then ask the class to look at the second experiment and tell you how to mark it. Direct students to mark the remaining experiments either individually or in pairs. Debrief to by asking different pairs to say how they marked each experiment, using the discussion to clarify the differences between question, method, results, and discussion of importance. Added note: The mini-task could also be done asking students to figure out the question before the method and result. That would follow the order in which scientists do their work. However, the way Fleming tells the story, method and results are often easiest to find, with the question sometimes needing students to make inferences. Putting method and results first can give students a clearer sense of the basics before they try to identify the question.
	Additional Attachments:	x		
30 mins	READING GRAPHICAL FEATURES: Ability to use graphical features (maps, diagrams, charts, tables, and so on) to build understanding of a scientific text.	 ILLUSTRATION ANALYSIS Alexander Fleming shared photos on pages 84 and 85 of his lecture. For the first photo, work with your classmates to answer two questions together: What does the picture show? How does it help you 	Student work meets expectations if it: • Notes that two kinds of bacteria (staph and strep) grow right up to the pencillin, showing that it didn't hurt them.	The lecture text offered at the Nobel Prize site has pictures that are not perfectly unclear, check out http://europepmc.org/scanned? pageindex=15&articles=PMC2479220 to see a different version of the same photos. This mini-task an also be extended to consider Fleming's other pictures, if desired. You may want to tell students at the beginning and end that science text illustrations are always important to figuring out what the author is saying. They aren't just for entertainment, so it's important to look at them and

		understand Fleming's words? For the second photo, work with a partner to answer the same questions in writing, and be ready to share in class discussion.	 Notes that the other four kinds stopped some distance from the penicillin, showing that it did hurt those. Provides some comment about what's clearer once they see the photo. 	figure out how they relate to the words.
30 mins	READING FOR CENTRAL IDEA: PROBLEM TO BE SOLVED: Ability to identify the central problem addressed by a design process	PROBLEM SUMMARY After skimming the American Chemical Society's article, work with a partner to summarize the overall problem that the researchers needed to solve in 20 words or less. Then identify two sentences in the article that support your summary. (Do notice that the idea is to skim: you're getting a rough idea of what the piece is about now, and later we'll dig in to read more carefully.)	 Student work meets expectations if: The summary captures the main point reasonably well The summary suggests that students looked lightly over the whole article, rather than bogging down in the early paragraphs The selected sentences provide reasonable support for the summary. 	As students begin, emphasize the notion of skimming rather than reading deeply. After no more than 10 minutes, urge all pairs to be developing their summaries and choosing sentences. After 15 minutes, move into sharing out, so that students get further insight from one another (and sharpen their understanding what skimming can do.)
20 mins	READING FOR DETAILED OBSERVATIONS: SEQUENCE OF SOLUTIONS: Ability to trace how a design process tried and tested a series of possible solutions to a problem	WHOLE CLASS NOTES (PENICILLIN AT OXFORD) We'll read the the four paragraphs on pages 3 and 4, from "Fleming found" to "on the battlefield." The first time, we'll put a "P" next to each problem, and then list it on the board. The second time, we'll look for a solution to each problem, and if we find find one, we'll mark it with an S, and list that on the board, too.	None	List each problem in a column on the board in a few words. Then as solutions are described, list each beside its problem, again in a few words. When students hit truly complex chemistry terms, give them permission to mark those words to look up later. (To get the main sense of multiple issues being solved, they need the big idea of challenge after challenge, not the detail of each technique.)
30 mins	READING FOR DETAILED OBSERVATIONS: SEQUENCE OF SOLUTIONS: Ability to trace how a design process tried and	PAIR NOTES (PENICILLIN PRODUCTION) With a partner, read the section on "Penicillin Production in the United States." Make notes	None (but circulate during pair work and listen during class discussion for indications of what students are figuring out)	Choose a pair to report on the first problem they found, and then ask another pair how that was solved. Repeat until all student identified problems are solved.

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possible solutions to a problem	one column, and its solution (if you find it) in another column. Be ready to share with the class.		
READING FOR DETAILED OBSERVATIONS: SEQUENCE OF SOLUTIONS: Ability to trace how a design process tried and tested a series of possible solutions to a problem	PAIR NOTES (INCREASING THE YIELD) With a partner, read the section on "Increasing the Yield." Make notes listing each problem in one column, and its solution (if you find it) in another column. Again, be ready to share with the class.	Pair work meets expectations if it:	 Pair work meets expectations if it notes problem (continued) of increasing yield (growing more) solutions: lactose, corn-steep liquor, penicillin precursors, submerged culture problem that Florey's penicillin strain grew poorly in submerged culture solution: strain found by NRRL, and then strain found on cantaloupe and radiated.
READING FOR DETAILED OBSERVATIONS: SEQUENCE OF SOLUTIONS: Ability to trace how a design process tried and tested a series of possible solutions to a problem	PAIR NOTES (PHARMAEUTICAL COMPANIES, SCALING UP, OR COMMERCIAL PRODUCTION) With a partner, read the additional section you are assigned. Make notes listing each problem in one column, and its solution (if you find it) in another column. Again, be ready to share with the class. This time, also be ready to take notes as other groups report, so that you'll know about their sections as well.	 Pair work meets expectations if it identifies: Reasonable list of problems in assigned text section Reasonable list of solutions shared in that assigned section. 	Not Provided
sion of the Evidence			
ANALYZING EVIDENCE AND CONCLUSIONS: Ability to analyze how the reported data provides evidence to support claims about the phenomenon, explanation, model, theory, or solution	SCIENTIFIC PRACTICES ORGANIZER How did Fleming's work apply important scientific practices? Review your notes and find examples of how he carried out the listed practices.	Student work meets expectations if it includes one or more reasonable examples of each listed practice.	Use the first row of the organizer to model in a whole class discussion.
Additional Attachments:			
SciPracticesOrganize	er.docx		
ANALYZING EVIDENCE AND CONCLUSIONS: Ability to analyze how the reported data provides evidence to	ENGINEERING PRACTICES ORGANIZER How did the researchers after Fleming work through a design cycle of creating	Student work meets expectations if it includes one or more reasonable examples of each listed practice.	Before students begin work on this organizer, ask them to compare the information at the top of the science version and the engineering version. It's an opportunity to reinforce the NGSS distinction between scientific work to answer questions and engineering work to solve problems.
	 possible solutions to a problem READING FOR DETAILED OBSERVATIONS: SEQUENCE OF SOLUTIONS: Ability to trace how a design process tried and tested a series of possible solutions to a problem READING FOR DETAILED OBSERVATIONS: SEQUENCE OF SOLUTIONS: Ability to trace how a design process tried and tested a series of possible solutions to a problem sion of the Evidence ANALYZING EVIDENCE AND CONCLUSIONS: Ability to analyze how the reported data provides evidence to support claims about the phenomenon, explanation, model, theory, or solution Additional Attachments: SciPracticesOrganiza 	possible solutions to a problemone column, and its solution (if you find it) in another column. Be ready to share with the class.READING FOR DETAILED OBSERVATIONS: SEQUENCE OF SOLUTIONS: Ability to trace how a design process tried and tested a series of possible solutions to a problemPAIR NOTES (INCREASING THE YIELD) With a partner, read the section on "Increasing the Yield." 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Reasonable list of solution if that you'll know about their section.ston of the EvidenceSCIENTIFIC PRACTICES ORGANIZER How about their section. adsigned tax pulse of how he carried out the listed practice.Student work meets expectations fit includes one or more reasonable examples of each listed practice.ADALYZING EVIDENCE AND CONCLUSIONS: Ability to analyze how the reported data provides evidence to support claims about the phenomenon, explanation, model, theory, or solutionSCIENTIFIC PRACTICES ORGANIZER How did the resea

	support claims about the phenomenon, explanation, model, theory, or solution Additional Attachments: EnginPracticesOrga	better and better solutions? Review your notes and find examples of the listed engineering practices.		
50 mins	ANALYZING EVIDENCE AND CONCLUSIONS: Ability to analyze how the reported data provides evidence to support claims about the phenomenon, explanation, model, theory, or solution	 ELEVATOR SPEECHES Form four teams, as equal as possible. Huddle with your team for five minutes and discuss how you'd explain the penicillin story to a stranger in one minute. Think about what's most important and most exciting about what you've read. Now, meet with another team. One person tells the story, stopping dead at the end of one minute, and everyone takes notes for one minute about what was good and what could be better. Then someone from the other team tells the story, and everyone takes notes again. Meet with a different team, and do it all again. Finally, using your notes but not talking to classmates, write down the main points that would be in your elevator speech. You can use bullet points or write out full sentences, so long as the ideas are clear.	Student work meets expectations if the final speech or speech notes includes thought about: • Why penicillin mattered • How Fleming found it • How multiple people and organizations figured out how produce lots of it in a form that could be used as medicine.	Not Provided
Writing	Process			
30 mins	ORGANIZATION: Ability to organize ideas, concepts, and information into broader categories as appropriate to achieving purpose	LIST OF ARTICLE FEATURES Skim several articles in the <i>Smithsonian Tween</i> <i>Tribune,</i> and then choose one to look at more closely. Think about the parts of the article. How long is the whole article? How long are the	 Student work meets expectations if it identifies reasonable features including: Many short paragraphs An opening that tells what the 	The big point of this task is that an informational article doesn't haven't to built like an argumentation essay. It doesn't have to start with a big idea and then provide paragraphs that each support that idea. It can begin by more simply identifying the topic and then jump right into providing the explanation. Also, journalistic writing can use paragraph breaks almost like a pause for breath, rather than as a way to divide the three or four main points supporting a claim.

How long are the

		paragraphs? Does the article have an introduction and conclusion of the kind you'd use for an essay or report in your English class? If not, how does the author let you know what the parts of the article will be? How does the author let you know what the article is about and why it matters? What else do you notice? After you've thought about the questions, work with a partner to make a list of the features that make a good <i>Tween Tribune</i> article.	 article will be aboutbut doesn't give the reader an idea of what the parts will be. A conclusion that says something about what's important or what will happen next. 	(Okay, when I was in high school, this difference was the cause of a major brawl. I hand-wrote a major report following essay rules, and my mother used the electric typewriter at work to type it up following journalist rules, and i nearly died of embarrassment. This mini-task gives students much clearer opportunity to see that sometimes the rules followed by reporters are appropriate.)
20 mins	ORGANIZATION: Ability to organize ideas, concepts, and information into broader categories as appropriate to achieving purpose	OUTLINE Make a list of the most important information to share in your article, and put them in the order you want to share them. You can use just a few words for each think you want to share. (You'll add details in the next step).	 Work meets expectations if paragraph topics: Connect to teaching task. Relate to the evidence students have studied. 	 Invite students to compare their lists in small groups Assure students that they can change their topics if they have an Aha! As they talk with classmates.
30 mins	ORGANIZATION: Ability to organize ideas, concepts, and information into broader categories as appropriate to achieving purpose	ANNOTATED NOTES Hunt through your notes, finding the three to five best pieces of evidence for each of your paragraphs.	Work meets expectations if annotations identify support for each paragraph.	As needed, invite individual students to change paragraph ideas if they find that a first idea lacks evidence. Let the whole class hear you congratulate the first student who switches on spotting the problem and then share the solution.
1 hr	DEVELOPMENT: Ability to develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples	BODY PARAGRAPHS Working from your notes, create a set of paragraphs that tell the story, putting them in an order that you think will make sense for your readers.	 Work meets expectations if each paragraph: Reflects the student's plan for topics. Includes information from students' notes. 	A simple clarification: this mini-task is deliberately before the one for writing an introduction, so that students can have a clear flow of information before they decide how to give their readers the first opening statement of what their article will address.
10 mins	DEVELOPMENT: Ability to develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples	OPENING PARAGRAPH Introduce your topic so that your readers will have a clear idea of what your article is about as they begin reading, including some sense of why it deserves their attention.	Student work meets expectations if it: • Orients the readers to the topic of the article • Orients readers	Not Provided

			to the importance of the topic • Uses clear and readable prose	
20 mins	DEVELOPMENT: Ability to develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples	CONCLUSION Provide a concluding statement that follows from and supports the information or explanation provided in your earlier product and gives a sense of why the issue matters.	Work meets expectations if conclusion provides a fresh, short summary of the main thinking of the piece.	Not Provided
15 mins	ACADEMIC INTEGRITY: Ability to avoid plagiarism and use an appropriate form of citation	REFERENCE LIST (APA) Review the summary directions at === and then create your reference list. Work independently, so that you think through the issues for yourself.	 Student work meets expectations if Entries show the first line flush to the left margin, with the rest indented half an inch List is alphabetized by author's last name Authors are list with last name first, followed by first initial. Capitalization is used only for the first word in a title, the first word in a title, the first word after a semicolon or dash, and proper nouns. Students either find the name of the book that included Fleming's lecture and underline it or note that they do not know the book name. Students either treat the Development piece as a web page or treat it as article or note that they are uncertain how to handle that. 	Not Provided

30 mins	ACADEMIC INTEGRITY: Ability to avoid plagiarism and use an appropriate form of citation	IN-TEXT CITATIONS (APA) For each sentence, add a parenthetical citation by author and page number). If you use parts of any sentences from one of your sources, be sure that those are in parentheses, and the sentence makes it clear that someone else said that part. (Note that in many published magazine articles, the citations would not be includedbut a good editor would insist on knowing that you had a sound source for every piece of evidence you offer.)	 Student work meets expectations if: Evidence is linked to the appropriate page in a source. No phrases are lifted from the assigned text or other sources. 	Not Provided
20 mins	REWRITING: Ability to develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach	FEEDBACK FOR A CLASSMATE Read a classmate's essay, noting five strong points and three ways you think could be stronger. Be helpful!	Work meets expectations if feedback is: • Clearly stated • Helpfully stated.	Before students begin their reviews, have some discussion about what kinds of feedback is most helpful to the person who receives it.
30 mins	REWRITING: Ability to develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach	FINAL DRAFT After considering the feedback, revise your essay. You may consult with your reviewer for further advice on addressing identified issues.	None (Scored with LDC Rubric)	Not Provided

Instructional Resources

No resources specified

Section 4: What Results?

Student Work Samples

No resources specified

Teacher Reflection

Not provided