

Performance Task:

Change We Can See: Making the Invisible Visible

Grade Level: 11-12

Referencing Vermont Proficiency-Based Graduation Requirements for Creative and Practical Problem Solving and ELA

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A Note about Problem-Solving

Problem-solving takes time. The more complex the problem being tackled, the more time will be required to understand it deeply. This task has been designed to give students an opportunity to tackle an authentic problem in their school or local community that is of interest to them. Because these problems will tend to be complicated, this project will work best if the students are given at least 4 weeks to work on it. This time need not be spent exclusively on this task – students could be working on other units, reading texts, or practicing other skills during that time period.

Overview

Sometimes, the problems that exist within communities can be highly visible, attracting attention and discussion. However, at other times, the problems within communities may be invisible – unnoticed by the majority, experienced by the few or the powerless. When we discuss literature, current events, and social issues, these discussions can help us perceive problems that may have been invisible before. This project seeks to provide students with the opportunity to tackle an “invisible” problem that impacts their lives, schools, or local communities. After selecting a problem to study, each student will create a product that can make this invisible problem visible, and propose a solution that could address this problem.

The first step of this project requires students to identify a social, emotional, or civic problem that impacts their school community but isn’t currently being acknowledged or addressed. Some students may be tempted to focus on state or national issues; however, these students should be encouraged to focus on local problems. This will ensure students are able to closely examine the problem and propose practical solutions which are within their sphere of influence.

Standards and Learning Targets

TRANSFERABLE SKILLS

Graduation Proficiency: Creative and Practical Problem Solving

- a. Observe and evaluate situations in order to define problems.
- b. Frame questions, make predictions, and design data collection and analysis strategies.
- c. Identify patterns, trends, and relationships that apply to solutions.
- d. Analyze, evaluate, and synthesize evidence, arguments, claims, and beliefs.
- e. Generate a variety of solutions, use evidence to build a case for best responses, critically evaluate the effectiveness of responses, and repeat that process to generate alternate solutions.

NOTE: This task could be used to assess a variety of PBGRs depending on the direction the teacher decides to take and what is most appropriate for the course/students. Some of the standards that could be assessed using this task are listed below, however, it is NOT expected that any teacher would use this task to assess all of these. At minimum, the ELA teacher can apply the Writing standards that are highlighted to the students’ Artist Reflection. However, it may also be possible to use student work created in response to this task to assess Reading or Speaking & Listening standards.

ENGLISH LANGUAGE ARTS & LITERACY

1. READING

- b. Evaluate content and multiple sources of information presented in diverse media and formats (e.g., print, digital, visual, quantitative) to address a question or solve a problem. (7)
- i. Integrate information from diverse sources into a coherent understanding of an idea or event, noting discrepancies among sources. (9)

2. WRITING

- a. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. (1) 11-12.W.8

3. WRITING

- a. 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.
 - c. Draw evidence from literary or informational texts to support analysis, reflection, and research.
- (9)

4. SPEAKING AND LISTENING

- e. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone.

5. SPEAKING & LISTENING

- a. Develop a clear line of reasoning.
- c. Use appropriate organization, development, style, and substance appropriate to a range of purposes and audiences for both formal and informal tasks.
- d. Make strategic use of digital media in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
- e. Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate.

6. LANGUAGE

- a. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Big Ideas/Enduring Understandings

The first step to creative and practical problem solving is openly acknowledging, describing, and addressing the problem.

Focus Questions

What is an intangible or invisible issue that impacts you, your social circle, or your broader community?

Why is this problem invisible to most people?

What is a viable way to expose it?

What are some practical ways to address it or solve it?

Culminating Task

In this Performance Assessment, the student will demonstrate his or her understanding of the complexity of an issue and his or her willingness to expand their knowledge about the topic by completing the following steps:

1. Identify a social, emotional, or civic problem that impacts the school community but isn't currently being acknowledged or addressed.
2. Develop a work plan for how to collect and analyze relevant data about this problem
3. Implement the data collection system (survey, interviews, text-based research) and analyze the data
4. Summarize the results of data collection and the conclusions from analysis
5. Develop and propose a solution that is based on analysis of the data.
6. Create a text or other product that can enable the student to communicate with the community in order to expose the issue or problem that they have studied. This text/product could be a documentary, a performance, (e.g. mini play, composing and recording a song, or performing a monologue), a grant application, a letter to the editor, a public service announcement, a brochure or pamphlet, a poster, a presentation in a community setting, a YouTube video, etc.
7. Write an Artist's Reflection to accompany the product that describes the following things:
 1. The problem-solving process, including:
 - a. What were the guiding research questions?
 - b. What data collection strategies were used and why?
 - c. What data were collected? Describe all observations or realizations.
 - d. What conclusions were drawn from this data?
 2. An explanation of how the data analysis led to the proposed solution:
 - a. What data proved to be most useful in helping understand the problem? Why?
 - b. What relationships appeared among the data?
 - c. What are the three most compelling or important pieces or sets of data or evidence? Discuss in detail and explain how each one leads to the chosen solution.
 - d. Include in-text citations throughout your reflection and a Works-Cited list at the end.
 3. A discussion of the chosen solution and the others that were considered:
 - a. What are the strengths and weaknesses of each possible solution? Compare solutions using evidence to justify which is the best solution.
 - b. What are some of the constraints that might make this solution not work?
 - c. Who is the intended audience for the artwork/product?
 - d. What impact do you hope to have?

Content/Sources/Materials

The students will need access to computers and research materials in order to complete this project.

Formative Tasks, Directions and Instructional Supports

All formative tasks, directions, instructional supports and supporting materials are included on the following pages.

ELA Task Description

Learning Targets (These may vary depending on the standards selected by the teacher.)

Graduation Proficiency: Creative and Practical Problem Solving

- a. Observe and evaluate situations in order to define problems.
- b. Frame questions, make predictions, and design data collection and analysis strategies.
- c. Identify patterns, trends, and relationships that apply to solutions.
- d. Analyze, evaluate, and synthesize evidence, arguments, claims, and beliefs.
- e. Generate a variety of solutions, use evidence to build a case for best responses, critically evaluate the effectiveness of responses, and repeat the process to generate alternate solutions.

2. WRITING

- a. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. (1) 11-12.W.8

3. WRITING

- a. 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.
- c. Draw evidence from literary or informational texts to support analysis, reflection, and research.

6. LANGUAGE

- a. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Texts/Other Materials Needed

Depending on the medium they choose for their final product, students may need access to computers. The Presentation Design Guide will need to be available to students either digitally or on paper.

Teacher Instructions

This project is intended to be the culminating activity after students have identified an issue, designed a data collection strategy, gathered data, analyzed the data, and proposed solutions.

1. Hand out the project rubric and review your expectations with the students.
2. Have the students use the Project Design Guide to plan and design their projects.
3. A Project Overview and Timeline for students are included after the Design Guide.

ELA Student Task Instructions

You have identified an issue that few people think about or see; you have searched for information about it, studied the data, drawn conclusions, and proposed a solution. Now you have a chance to communicate with your community about your ideas and what you have learned.

Your goal in this project will be to present the discoveries that you have made and the conclusions that you have drawn. Your Project Reflection will explain your ideas about possible solutions. You can choose any media to achieve this communication; you could create a documentary film, a live performance, (e.g. a mini play, a song, or a monologue), a grant application, a letter to the editor, a public service announcement, a pamphlet, a piece of art, a presentation in a community setting, a live or animated YouTube video, an essay, or something that you propose and your teacher approves.

Plan your project by filling in each of the sections below. Then use these notes to help you create a project that includes the required information. All of the categories listed here must be addressed.

Your Product must include:

A. Observe and evaluate situations in order to define problems.	What is the problem that you want people to notice or understand? <ol style="list-style-type: none">Your piece of art, writing, video or other media must include at least some of the data that you gathered. These data could be included graphically, in a voice-over, as a section of text, or in any way that you think will be compelling.Your piece of art, writing, video or other media must explain what this data reveals about this problem.
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Your Project Reflection must include these items:

B. Frame questions, make predictions, and design data collection and analysis strategies.	A description of your problem-solving process: <ol style="list-style-type: none">What were your guiding research questions?What were your data collection strategies? Why did you choose them?What data did you collect? Describe your observations or realizations.What conclusions did you draw from these data?
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<p>C. Identify patterns, trends, and relationships that apply to solutions.</p> <p>D. Analyze, evaluate, and synthesize evidence, arguments, claims, and beliefs.</p>	<p>An explanation of how your data analysis led to your proposed solution:</p> <ol style="list-style-type: none"> What data proved to be most useful in helping you understand the problem? Why? What relationships did you notice among the data that you collected or studied? Discuss in detail the three most compelling or important pieces or sets of data or evidence that you collected, and explain how each one leads to your chosen solution. Include in-text citations throughout your reflection and a Works-Cited list at the end.
<p>E. Generate a variety of solutions, use evidence to build a case for best responses, critically evaluate the effectiveness of responses, and repeat the process to generate alternate solutions.</p>	<p>A discussion of the different solutions that you considered:</p> <ol style="list-style-type: none"> In this discussion, compare the strengths and weaknesses of each possible solution, using evidence to justify your choice of the best solution. What are some of the constraints that might cause your solution to fail? How has your understanding of this problem deepened since you started the project? Who is your intended audience for the product that you have created? What impact do you hope to have?

Research Requirements and Project Timeline

I can...

- expose an “invisible” problem and propose a viable solution
- develop a hypothesis about the problem I will investigate
- use my questions to guide my research
- collect enough data to create a text or other product to communicate my findings beyond my classroom. This text or other product will help others see the problem and understand the solution I propose.

Basic Requirements:

I can...

1. Work during class time – check in with my teacher, ask for help from the librarians, access resources available in the library database, etc.
2. Gather at least five (5) sources of information in my research. I will choose a variety of source types (see the back of this sheet for ideas).
3. Develop a plan to gather information. I have been provided with two forms to use: a) The Note-Taking Guide for Text Sources and b) The Note-Taking Guide for Interviews, Observations, or Other Sources. Using those on-line forms, I can develop a system to keep track of the data I gather.
4. Use my data to track my progress and identify patterns and/or generate deeper, probing questions.

5. Use my Presentation Design Guide to help me understand what I need to do.
6. Ask for peer input on my work. I can use what I learn to inform my research and final product.
7. Provide verbal and written peer input, thinking carefully about what I am reading and giving appropriate feedback in a clear, thoughtful and supportive way.

Project Time Line

Note: This time line does not include the time that might be needed in between checkpoints for individual work and research.

Day One:	Research	Before the end of class, I will summarize my work to date, identifying a challenge and a victory in my work thus far and turn it in to Google Classroom.
Day Two:	Research	I will complete Note-Taking Guides #1 & 2.
Day Three:	Research	I will participate in the Initial and Probing Questions peer session; I will complete Note-Taking Guide #3.
Day Four:	Planning	We will examine model work by professional artists to help us generate ideas; I will complete an exit card with an overview of my presentation plan that explains how I will present my learning.
Day Five:	Research	I will complete Note Taking Guides #4 & 5.
Day Six:	Creation	I will work on my presentation piece
Day Seven:	Creation	I will work with a group to peer review others' works-in-progress.
Day Eight:	Creation	I will work on my presentation piece utilizing the feedback I received.
Day Nine:	Final Project Due	

Instructional Activities/Formative Assessments

In order to prepare students to demonstrate proficiency in this task, teachers will need to instruct students in the following areas, creating opportunities for them to practice or receive formative feedback:

- Brainstorming possible issues that are invisible, based on student interest;
- Developing research questions;
- Developing a data collection/research plan;
- Making observations, conducting interviews, using databases, and recording data;
- Summarizing and analyzing data; identifying patterns and trends; answering the question: "What do I see that I never knew before as a result of my research?"
- Writing a preliminary proposal for project, along with a work plan describing how the project will be completed;
- Peer Review of proposal and work plan.

Teachers may want to utilize conferences to help students stay on top of the project:

- Conference with teacher prior to research;
- Conference with teacher to discuss research results and analysis.

The activities and instructional supports on the following pages are **optional** resources that you can use to help prepare students to create their final project.

Literature Connections:

This task would work well as a project to accompany the class study of a book that explored the idea of problems that are invisible or unacknowledged by the dominant society. Some books that might pair well with this project include:

<i>Between the World and Me</i> – by Ta-Nehesi Coates	<i>Persepolis</i> – by Marjane Satrapi
<i>Mad River Rising</i> – by Dana Yeaton	<i>The House on Mango Street</i> – by Sandra Cisneros
<i>The Color Purple</i> – by Alice Walker	<i>Homegoing</i> – by Yaa Gyasi
<i>A Doll House</i> – by Henrik Ibsen	<i>American Born Chinese</i> – by Gene Luen Yang
<i>Invisible Man</i> – by Ralph Ellison	<i>Night</i> – by Elie Wiesel
<i>The Kite Runner</i> – by Khaled Hosseini	<i>An Enemy of the People</i> – by Henrik Ibsen
<i>The Scarlet Letter</i> – by Nathaniel Hawthorne	<i>The Remains of the Day</i> – by Kazuo Ishiguro
<i>To Kill A Mockingbird</i> – by Harper Lee	<i>The Awakening</i> – by Kate Chopin
<i>Speak</i> – by Laurie Hals Anderson	<i>The Bluest Eye</i> – by Toni Morrison
<i>The Heart Is A Lonely Hunter</i> – by Carson McCullers	<i>Fast Food Nation</i> – by Eric Schlosser
<i>Member of the Wedding</i> – by Carson McCullers	<i>Huckleberry Finn</i> – by Mark Twain
<i>The Jungle</i> – by Upton Sinclair	<i>Brave New World</i> – by Aldous Huxley
<i>The Absolutely True Diary of Part Time Indian</i> – by Sherman Alexie	<i>The Omnivore’s Dilemma</i> (young readers version) – by Michael Pollan
<i>The Shame of the Nation</i> – by Jonathan Kozol	<i>Ceremony</i> – by Leslie Marmon Silko

Optional Instructional Activities/Formative Assessments

The following instructional activities and formative assessments are intended as optional resources that teachers can use to prepare students for this task. Teachers can use as many or as few of these resources as they choose. Explore this set of resources before beginning the project to see which ones you may want to use.

Instructional Activity: Inspiration from Art

Learning Targets

Graduation Proficiency: Creative and Practical Problem Solving

- a. Observe and evaluate situations in order to define problems.
- d. Analyze, evaluate, and synthesize evidence, arguments, claims, and beliefs.

Texts/Materials

Links to sample artworks and quotes about art can be found in resource list on the following page.

Teacher Instructions

This set of activities can be conducted within one class period. The class block should be divided into four equal segments. During the first three segments, students will rotate through three stations that will be set up around the room. During the last segment, students will join together as a full-class group to discuss their responses to the three stations.

1. Stations

A. Station #1 – Sphere of Influence

Reproduce the Sphere of Influence graphic on the next page for students, or re-create it on large chart paper or a whiteboard.

1. Students should write in the two areas of the chart things that are within their sphere of influence or outside their sphere of influence.
2. Students should write in their journals about the thoughts, ideas or questions that are inspired by filling out this chart.
3. You may also choose to have students discuss their thoughts with their small group at this station.

B. Station #2 – Model Works by Artists

Allow students to use computers or other devices to examine examples from the Resource List of invisible issues or problems made visible by various artists

- Focus Question for Writing: What issues or problems are being exposed in these images?
- Discussion Question: Which of these works do you think is most effective? Why?

C. Station #3 – Quotations about Activist Art

Give students copies of the two quotes below either on a whiteboard, chart paper, paper, or digitally. Students should respond to these questions in their journals.

- How can art be used to expand one's sphere of influence?
- How can art be used to change the world?

"My aim is always to get hold of the magic of reality and to transfer this reality into painting — to make the invisible visible through reality. It may sound paradoxical, but it is, in fact, reality which forms the mystery of our existence."

—Max Beckmann

"Art does not solve problems, but makes us aware of their existence. It opens our eyes to see and our brain to imagine."

—Magdalena Abakanowicz

2. **Whole Class:** After all of the groups have moved through the three stations, ask students to engage in a chalk talk around the two questions that they addressed in Station Three, along with this additional question:
- What are some invisible problems in our school community?

To facilitate the chalk talk, write the three questions on a large whiteboard, separate pieces of chart paper, or use an online platform like Padlet. Students work in silence, adding their thoughts to the board or drawing lines to indicate connections between ideas. The teacher may want to sum up or debrief the chalk talk in a quick spoken round, but much of the activity is completed in silence.

[Learn more on full instructions for this National School Reform Faculty protocol.](#)

3. **Exit Ticket:** Reflect on the thinking and learning you did today.

Write down:

- a. One thing you learned or a new perspective you gained;
- b. A question you have about something we talked about; and
- c. Something that stopped or stalled your learning: ex. I stopped my learning when...

Resource List

The artists below have dedicated their lives to creating artworks that push their audience to pay attention to problems or issues that might normally be invisible to them.

[Banksy](#)

[Doug Kanter](#)

New Yorker Covers

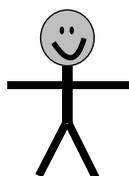
1. [New Yorker Cover Satirizes America's Obsession With Guns After Mass Shootings](#)
2. [All Together Now: Chris Ware Nails It With This New Yorker Cover](#)

Sphere of Influence

Instructional Activity: Activating Prior Knowledge - Journal Prompts

The events, situations and systems that you cannot influence through your efforts or that you can change only minimally.

The events, situations and systems that you can influence or change through your efforts.



Learning Targets

3. WRITING

- a. 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.
- c. Draw evidence from literary or informational texts to support analysis, reflection, and research.
(9)

Texts/Other Materials Needed

No materials are needed except for questions listed below.

Teacher Instructions

The essential questions within this project are:

- **What is an intangible or invisible issue that impacts you, your social circle or our broader community?**
- **What is a viable way to expose and solve it?**

These journaling prompts can be used before students launch into the project to help them move from the study of literature to the study of their own world.

Use any or all of the following questions as invitations for journal writing or starters for informal class discussion in order to activate prior knowledge, help students connect the task with their lives, and generate interest and excitement for the project.

1. Works of literature can sometimes shine light on issues that are generally ignored or unseen. What issues does [the book being read/discussed] illuminate?
2. Describe an issue or challenge that students in our school face which you are uniquely qualified to see and understand.
3. Describe an issue or challenge that people in our town face which you are uniquely qualified to see and understand.
4. Describe an issue or challenge involving the local environment or the natural world which you are uniquely qualified to see and understand.
5. Have you ever felt invisible, or have you ever felt that you were wrestling with a challenge that no one else could see or that no one would acknowledge? When, and why?

Instructional Activity: Writing Research Questions

Learning Targets

Graduation Proficiency: Creative and Practical Problem Solving

- a. Observe and evaluate situations in order to define problems.
- b. Frame questions, make predictions, and design data collection and analysis strategies.

1. READING

- b. Evaluate content and multiple sources of information presented in diverse media and formats (e.g., print, digital, visual, quantitative) to address a question or solve a problem. (7)
- i. Integrate information from diverse sources into a coherent understanding of an idea or event, noting discrepancies among sources. (9)

Texts/Other Materials Needed

Writing Research Questions Worksheet and Peer Conference Guide

Teacher Instructions

Writing good research questions is an art. It is important to spend time in class supporting students in writing and refining good questions. These exercises are intended to get students thinking about how to frame questions that will push them to gather and analyze information in creative ways. Any combination of the following activities, along with the *What Are Your Questions?* sheet on the next page, can be used to help students develop and refine their questions as they conduct their research.

Class Activities

At the beginning of the research process, students should be given two or three class periods to research and take notes on the answers to their initial questions. You can have each student brainstorm their own questions to begin their research, or you can create a basic set that applies to all the students' projects.

Once the students have notes on this basic information, they can begin to craft the questions that will guide them in conducting further study and eventually crafting an original thesis about the causes, impact or implications of the events they studied, along with possible solutions for the future.

Using the *What Are Your Questions?* sheet as a guide, spend time in class having students brainstorm probing questions that will push their research and thinking further. Once students have brainstormed a list of probing questions, you can have them use the Probing Questions Peer Conference sheet on the next page to work in pairs to try to suggest questions for one another. It will take about 20 minutes for each pair of students to complete a peer conference.

After the peer conferences are done, you can do one last activity to help students mine the classroom for good ideas. Go around the room, inviting each student to share their best probing question. Scribe all of these questions on the board. Once everyone has contributed a question, give the students some time to examine them; there may be excellent questions from other students that will apply to their own topics.

What Are Your Questions?

The questions that you choose to investigate are the foundation of your research project.

Deep, complex questions will help you build a finished project that is thorough, original and insightful.

You will need two types of questions to guide you through your research. The first type is **initial questions**. Initial questions are simple questions of fact. You will need this type of question to help you begin your research, so that you can develop a basic understanding of the situation that you are researching. Some examples of possible initial questions for this project:

- What is the demographic breakdown of your school? Your town?
- What different kinds of geographic areas do students come from?
- What different kinds of backgrounds do students come from?
- Who are the key people with whom you will want to talk?
- What are some key documents, data, or artifacts that you might want to examine?

Once you have discovered the answers to these questions and developed a basic understanding of your topic, you will create your next set of questions. Probing questions will push you to develop a more complex and deeper understanding of the implications, effects, connections, or causes of the events you are studying.

Probing Questions are intended to help you think more deeply about the issue at hand. As you develop your probing questions, be careful to avoid creating questions that are just restatements of your opinion. Try to create questions that will push you to seek out new perspectives on your research topic or discover information about it that goes beyond the basic facts.

Here are some tips for creating good probing questions:

- Write questions about possible connections among the factors that you are studying.
- Write questions about the assumptions that people might make which may influence the issue you are studying.
- Write questions about potential implications of the event or issue you are studying.
- Write questions exploring what factors could have caused this situation to exist.
- Write questions about effects – especially the less obvious ones – of this issue or situation.
- Write questions about data – what additional data might help you understand the issue and its meaning more clearly?
- Write questions about what factors would have to change in order to change this situation.
- Write questions about approaches that people have already used to solve the problem that you are researching.

Once you have developed your probing questions, you will begin your second round of research, seeking answers to them. As you continue your research, the information that you find may lead you to ask further questions.

Probing Questions Peer Conference

Goal: The goal of this peer conference is for you and your partner to help each other think of good probing questions that can extend your research and help you find meaning in the topic you are studying.

Materials Needed

The research notes that you have taken so far
Probing questions that you have brainstormed so far

Roles

The student who is presenting their research and questions is the Presenter.
The student who is providing support and ideas is the Listener.
Each student will have a chance to play each role.

Steps

1. **Share Research** (3 minutes): The presenter gives a brief overview of the issue that he/she is studying. Possible items to highlight:
 - The answers that you have found to your initial research questions.
 - The things that you have found most surprising or interesting.
2. **Restatement** (2 minutes): The listener summarizes back to the presenter what he or she heard and identifies the things that he or she found most intriguing.
 - What are the key details that got your attention?
 - What would you like to hear more about?
3. **Reflection** (1 minute): The Listener takes a minute to reflect on what he/she has heard, and brainstorms some probing questions about the Presenter's topic.
4. **Probing Questions** (3 minutes):
 - The Listener shares his/her Probing Questions
 - The Presenter takes some time to note the Listener's questions, adding to their list, connecting them with other questions, or taking parts of them and modifying them.
 - The Presenter thanks the Listener for his/her suggestions.
5. **Switch Roles:** The Presenter and Listener switch roles and repeat the protocol.

Instructional Activity: Seeking and Evaluating Sources

Learning Targets

Graduation Proficiency: Creative and Practical Problem Solving

- a. Observe and evaluate situations in order to define problems.
- b. Frame questions, make predictions, and design data collection and analysis strategies.

1. READING

- b. Evaluate content and multiple sources of information presented in diverse media and formats (e.g., print, digital, visual, quantitative) to address a question or solve a problem.
- i. Integrate information from diverse sources into a coherent understanding of an idea or event, noting discrepancies among sources.

2. WRITING

- a. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. (1) 11-12.W.8

3. WRITING

- a. 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.

Materials Needed

To prepare for this activity, students will need to have read a piece of investigative journalism or commentary bringing to light an issue that is unseen by many. Choose an article with a wide variety of sources – an article that the author has researched by conducting interviews, researching online, looking at print sources, making observations of locations, events or artifacts, or engaging in other information-seeking strategies.

Some potential articles to use:

[“Two Heroes, One Common Dream,”](#) by Aaron Kiersh. Kiersh was 16 years old when he won a Scholastic Gold Medal for this piece of reporting on two people, invisible and unknown to the wider world, trying to make a difference in depressed and violent urban areas.

[“My Little Brother on Drugs,”](#) by Jenny Everett. This 2004 article from Popular Science explores the social stigma around being short, and one boy’s attempt to face it.

[“The College Dropout Boom,”](#) by David Leonhardt. This article explores the issue of students who get into college but leave after a year or two.

Teacher Notes

Ask a roomful of teenagers about what creativity looks like and very few of them will talk about research. Yet the act of conducting research to solve a problem can be tremendously creative. Once students have selected topics and initial questions for their research, it is important to spend some time helping them to see the incredible creativity that researchers can bring to the challenge of seeking

information & perspective on a question. The activities described here can all be used to help students think more broadly and creatively about how they will search for and evaluate sources of information.

Note: These activities are designed with the assumption that by the end of high school, most students will already have learned about the difference between search engines and databases, how to use each effectively, and how to evaluate sources.

Class Activities

Begin class with a journal prompt: “What is creativity?”

After giving students time to write their responses and inviting students to share their thoughts, ask a follow-up question: What does creativity look like when a person is conducting research? Can research be creative? How?

Have students discuss this question and brainstorm with partners or in a group. Scribe their ideas on the whiteboard. A worksheet that can be used to guide the brainstorming is included on the next page.

Have students review the article that they read the previous night for homework. Their goal is to list all of the ways that the author researched his or her topic. Give students a reasonable amount of time to complete this based on the length of the article, then discuss as a class. Either in discussion or as a journal prompt, give students time to think about how they can be creative in searching for sources of information.

After this discussion, the students will be ready to fill out the Research Planning Sheet.

As students launch into their research, it will also be important to review with them the importance of evaluating sources for reliability. Questions 1-5 on the Note-Taking Guide are designed to help them evaluate each source.

The Note-Taking Guide is designed to be shared digitally with students, so that they can type right into it. If you will be sharing it on paper, you should increase the amount of space available for them to write.

Class Brainstorm: Where and How to Research

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.”

-- Margaret Mead, cultural anthropologist

Essential Questions

- What is an intangible or invisible issue that impacts you, your social circle or our broader community?
- What is a viable way to expose and solve it?

The article, “Two Heroes, One Common Dream” by Aaron Kirsch, demonstrates a range of strategies a researcher can use to gather data (information) about a topic. As a class, we identified some of the strategies Kirsch used to gather – and make sense of – information on the topic he chose.

The strategies we discussed in class are listed below:

1. Interview the person profiled (in person, by phone, more than once)
2. Gather information about the location (setting)
3. Use media reports (TV, newspaper, magazine, on-line)
4. Make connections between two unlike people (compare and contrast)
5. Go to the place being written about
6. Provide context (background information)

What other information gathering strategies can we identify from the article or our own experience?

Research Planning Sheet

Creative & Practical Problem Solving: Scoring Criteria for Designing a Data Collection Plan

	BEGINNING	DEVELOPING	PROFICIENT	EXPANDING
B. Frame questions, make predictions, and design data collection and analysis strategies.	I can <ul style="list-style-type: none"> • Ask questions about a situation or phenomenon. 	I can <ul style="list-style-type: none"> • Take information into consideration when making predictions. 	I can <ul style="list-style-type: none"> • Identify tools and design procedures needed for collecting, managing, and analyzing information. 	I can <ul style="list-style-type: none"> • Justify my data collection strategy by analyzing strengths and weaknesses; Or <ul style="list-style-type: none"> • Create alternative evidence that expands upon proficient.

Listed below are some strategies that researchers use to gather data or information about questions:

- Search Engine Searches
- Database Searches
- Library card catalog searches
- Mining the Works Cited pages of sources
- Interviews or email exchanges with experts
- Interviews or email exchanges with people connected with the topic
- Observations of locations, events or artifacts
- Surveys or questionnaires
- Examination of primary sources such as letters, legal documents, transcripts, speeches, art, or videos

In the space below, describe at least three strategies that you will use to gather the information that you will use to help you answer your questions.

Instructional Activity: Creating Surveys

Learning Targets

1. READING

- b. Evaluate content and multiple sources of information presented in diverse media and formats (e.g., print, digital, visual, quantitative) to address a question or solve a problem. (7)
- i. Integrate information from diverse sources into a coherent understanding of an idea or event, noting discrepancies among sources. (9)

Texts/Other Materials Needed

Students will need access to a means by which they can design, circulate and collect student surveys. This could be through Google Forms, Survey Monkey, another online tool, or through photocopied paper surveys.

Teacher Instructions

1. Review the Survey Design Guide with students. Invite students to brainstorm examples of the different question types.
2. Students will select topics and design their surveys. Students can do this as homework or classwork depending on your preference.
3. Students send out their surveys. If you have more than one class doing this project, you can simply have the classes take each other's surveys; you could also have students use a school email system to send their survey out more widely.
4. Once students have analyzed their data, they could discuss their observations as a class; they may also use their results to guide their thinking about their focus for the final project and their proposed solution or initiative.

Survey Design Guide

Surveys are an effective way to gather information from a population (group of people) and to identify health-related challenges. The data gathered from surveys can be used to learn about what is happening in the world that surrounds you. We will be creating surveys about a health-related topic. We will give the surveys to our classmates and analyze and discuss the returned results.

Surveys use several types of questions to get information from people.

Closed Questions

Closed questions require the person completing the survey to choose from pre-set options. This limits the amount of information that can be obtained from the questions, and prevents the researcher from receiving unexpected or unusual responses; however, it also makes the responses easier to categorize. Below you see examples of closed questions.

Yes/No Questions

Do you think that high school should start no earlier than 9:00 AM?

- Yes
- No

Multiple Choice Questions

What is your favorite ice cream flavor? (choose one)

- Chocolate
- Vanilla
- Strawberry
- Mint chocolate chip

“Check All That Apply” Questions

Which of the following have you used to help you study for a test? (select all that apply)

- Flashcards
- Having a friend quiz me
- An online study site like Quizlet
- Reviewing notes
- Explaining the material to someone else
- Reading the text

Open-Ended Questions

Any question that allows people to fill in their own answer is an open-ended question. For example, if your survey asks “What do you think is the thing that high school students worry about most?” the students who answer can fill in any answer they like.

Note-Taking Guide for Sources

Fill out a separate Note-Taking Guide for each source you use.

Citation information for this source:
(author or source's name, date of publication or interview, etc.)

Why do you think this source is reliable?

In the space below, write important information and direct quotes from your source. Place quotes or paraphrased information on the left, and your responses on the right.

Quotes/Information from Source	Your Responses to this Source

What is the central message of this source?

How does this source relate to something else you have learned?

How does this source influence your view of the issue you are researching?

Instructional Activity: Engaging with Sources

Learning Targets

Graduation Proficiency: Creative and Practical Problem Solving

- c. Identify patterns, trends, and relationships that apply to solutions.
- d. Analyze, evaluate, and synthesize evidence, arguments, claims, and beliefs.

1. READING

- b. Evaluate content and multiple sources of information presented in diverse media and formats (e.g., print, digital, visual, quantitative) to address a question or solve a problem. (7)
- i. Integrate information from diverse sources into a coherent understanding of an idea or event, noting discrepancies among sources. (9)

2. WRITING

- a. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. (1) 11-12.W.8

3. WRITING

- a. 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.

Texts/Other Materials Needed

Around the Table worksheet found on the following page

Teacher Instructions

This activity is intended to help students engage with the various sources they have found. The goal is to push them to think about how each of the authors they have read or central figures that they have read about would respond to their own emerging views on the issue. This activity is helpful for pushing students to refine their thinking about complex problems. It can be assigned for homework or completed in class with breaks for discussion or sharing.

The worksheet is designed to be shared digitally with students, so that they can type right into it. If you will be sharing it on paper, you should increase the amount of space available for them to write.

Around the Table

You have now found and taken notes on at least five sources which provide information about the issue you are researching. Some of these sources may be articles, essays, or other texts; some may be interviews or observations. Some may be primary documents, videos, or other kinds of sources. After reading and thinking about them, you have probably developed some opinions in response to the central question of this project:

- What is an intangible or invisible issue that impacts you, your social circle or our broader community?
- What is a viable way to expose and solve it?

In the space below, describe the views that you have developed so far in response to this question.

Now imagine that the authors or central subjects of each of your sources are seated around a conference table. You present your position on the issue to each of the authors of your sources. Now imagine how each one would respond to you. In the space below, write the name/names of each of these authors or subjects, and then summarize how they would respond to your position. Would each one agree with your position? Why? Disagree? Why? Want to qualify it in some way? Why and how? Write your imagined response from each author. For each author or subject, include one quote that connects with or supports how you think they would respond to your views.

On the basis of this imagined conversation between you and the authors you read, finesse or refine your views. Having thought about each of your sources in this way, is there any revision you want to make in your opinion? Explain below:

Now you are ready to argue your position in your paper. Develop the case for your position by incorporating your thinking about the “conversations” you’ve had with the authors or subjects of your sources. In your paper, you should feel free to say things like, “_____ takes a similar position or _____ offers a slightly different perspective ...

Instructional Activity: Research Peer Interview

Learning Targets

Graduation Proficiency: Creative and Practical Problem Solving

- c. Identify patterns, trends, and relationships that apply to solutions.
- d. Analyze, evaluate, and synthesize evidence, arguments, claims, and beliefs.

1. READING

- b. Evaluate content and multiple sources of information presented in diverse media and formats (e.g., print, digital, visual, quantitative) to address a question or solve a problem. (7)
- i. Integrate information from diverse sources into a coherent understanding of an idea or event, noting discrepancies among sources. (9)

2. WRITING

- a. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. (1) 11-12.W.8

3. WRITING

- a. 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.

Texts/Other Materials Needed

Research Interview instructions and Data Analysis Worksheet, found on the following pages

Teacher Instructions

This activity is intended to help students synthesize and analyze the data they have found to arrive at their own conclusions.

The worksheet is designed to be shared digitally with students, so that they can type right into it. If you will be sharing it on paper, you should increase the amount of space available for them to write.

Research Peer Interview Student Guide

	BEGINNING	DEVELOPING	PROFICIENT	EXPANDING
C. Identify patterns, trends, and relationships that apply to solutions.	<p>I can</p> <ul style="list-style-type: none"> Determine whether my data are sufficient or if I need to gather more data. 	<p>I can</p> <ul style="list-style-type: none"> Identify the most important or relevant data I have gathered. 	<p>I can</p> <ul style="list-style-type: none"> Explain patterns and/or trends (including outliers) in the data and the relationship to the proposed solution. 	<p>I can</p> <ul style="list-style-type: none"> Prioritize the significance of the patterns, trends, and relationships as they impact the design of possible solutions; <p>Or</p> <ul style="list-style-type: none"> Create alternative evidence that expands upon proficient.

You have now found and taken notes on at least five sources which provide data about the issue you are researching. Some of these sources may be articles, essays, or other texts; some may be interviews or observations. Some may be primary documents, videos, or other kinds of sources.

Materials Needed

You will need all of the notes you have taken.

Instructions

In this activity you will work with a partner to think about your data. Decide who will be the interviewer first. This person will ask their partner each of the following question, giving the partner plenty of time after each question to look at their data and respond.

Steps

- The presenter shares their notes digitally with the interviewer or gives him/her a paper copy. The presenter uses the attached worksheet to review their notes, filling out their responses. The interviewer reads through the notes and annotates them by highlighting key ideas, noting patterns, and writing down questions.
- The interviewer asks the presenter each of the following questions. After the presenter responds to each question, the interviewer may ask clarifying questions or share their own observations.
 - What are the most important, surprising or relevant pieces of data that you have discovered through your research?
 - Have you collected enough data to increase your understanding of this issue?
 - If you answered "NO," switch partners and conduct the interview for your partner; you will need to collect more data before you continue.

- If you answered “**YES,**” justify this response by telling your partner about the different sources you used.
 - What patterns or trends do you see in these data?
 - How do those patterns or trends inform you in thinking about possible solutions to this issue?
 - When you look at your data, what factors do you see that might limit or affect possible solutions?
3. Switch roles and repeat the process.

Data Analysis Worksheet

1. What are the most important, surprising or relevant pieces of data that you have discovered through your research?
2. Have you collected enough data to increase your understanding of this issue? Justify your response.
3. What patterns or trends do you see in these data?
4. When you look at your data, what factors do you see that might limit or affect possible solutions?
5. What did you learn or notice from doing this Research Interview?

Optional Scoring Criteria

Below are optional scoring criteria for use in scoring students' creative process and presentation. These scoring criteria were developed by Emily Titterton, the Vermont Agency of Education's Art Content Specialist. Melissa Kristiansen, an art teacher from Poultney High School in Rutland Southwest Supervisory Union, was a piloting teacher and a contributing author of this task.

NCAS Anchor Standard	Beginning	Developing	Proficient	Expanding
1: Generate and conceptualize artistic ideas and work.	I can plan/sketch out my ideas to gain a better understanding of what I am going to create.	I can learn and make adjustments during the art-making process.	I can design an artistic investigation, for an aspect of my choosing representing present-day life.	I can create evidence that expands upon proficient.
5: Develop and refine artistic techniques and work for presentation.	I can explore materials, research, and make progress toward a product.	I can use my experience with different art forms and techniques to control my product and inform my choices.	I can make deliberate and conscientious choices in my art-making and in the way in which I exhibit and/or present my work.	I can create evidence that expands upon proficient.
6: Convey meaning through the presentation of artistic work.	I can choose a discipline and medium/genre which will communicate my ideas.	I can focus my art and/or presentation to communicate an idea.	I can apply my understanding of social, cultural, or political perspectives to create an exhibition or presentation.	I can create evidence that expands upon proficient.