Proposal: Writing About Problems and Solutions

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FIGURE 6.1 Mathematician Katherine Johnson (https://openstax.org/r/katherinejohnson) (1918–2020) was a NASA employee. Her calculations of orbital mechanics led to the success of the first spaceflight and many others. One of the first Black women hired at the agency, she stood out for her curiosity and desire to fully understand the work she was assigned. She is best known for calculating the trajectory for the first moon landing. Given the problem of when to launch, she proposed solving the problem by saying: "You tell me when you want it and where you want it to land, and I'll do it backwards and tell you when to take off." Not only a mathematician, Johnson wrote or cowrote 26 research articles during her 33 years with the space program. She was made famous by Hidden Figures (2016), a book later made into a film. (credit: "Katherine Johnson at NASA, in 1966" by NASA/Wikimedia Commons, Public Domain)

CHAPTER OUTLINE

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INTRODUCTION You are likely familiar with the term **proposal**—people propose toasts to celebrate occasions and make marriage proposals. Businesses create proposals to describe the services they will provide and at what cost—from electricians, plumbers, and decorators to advertising firms, website designers, and caterers.

Sometimes the proposals are for a specific project; sometimes they are general. In these types of real-world proposals, the problem being solved is straightforward, but often it is not stated directly: for example, someone needs an extra bathroom built in their house, a revision to their website, or food for a gathering, and the person needing a service will contact a provider.

The **purpose** of the kind of proposal you will write in this chapter is to propose, or suggest, a solution to a problem, usually one whose solution is not straightforward. Proposals of this type call on writers to explain the problem so that readers understand it is real and needs a solution. Because these problems are often complex, they usually have more than one solution, and sometimes the writer will recommend several possible solutions. For example, imagine you are studying food science. You likely pay more attention to food than most people do, and perhaps you've noticed a lot of food being thrown away in a cafeteria on your campus. You believe it is important to reduce food waste. Solving this problem of wasted food will require investigation and research into what food is being thrown away; why students, faculty members, and employees are throwing it away; possible ways to reduce the amount of wasted food; and a recommendation to the people who can put your proposal—that is, your proposed solution— into action. This is one example of the kind of problem you might write about in this chapter.

6.1 Proposing Change: Thinking Critically About Problems and Solutions

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Ask critical-thinking questions about problems to explore an idea for a proposal.
- Distinguish between fact and opinion.
- Recognize and locate bias in reading and in yourself.

As a proposal writer, you will offer factual evidence to show a problem exists and needs to be addressed. Then you will present and recommend one or more solutions, again providing evidence to show that your solution or solutions are viable. To accomplish this task, you'll need to think critically about problems and potential solutions, know the difference between fact and opinion, and identify bias.

Adopting a Problem-Solving Mindset



As you start thinking about a problem you would like to explore, gather information by reading, viewing, or talking with others. Is there a local problem you have noticed—perhaps you think your campus needs better transportation, more diverse food options, more mental health services, or a new student organization related to a cause you care about? Or is there a larger issue that is important to you, such as funding for public schools, better access to health care, or helping the environment?

As you gather ideas, think critically about what you are learning. Asking questions like the ones below can help you get into a problem-solving mindset:

Questions about Problems

- What is/was the cause of the problem?
- What is/was the effect of the problem?
- What makes this problem a problem?

Questions about Solutions

- Have solutions to this problem been proposed in the past? What are they?
- Why have the solutions proposed in the past succeeded or not succeeded in solving the problem?
- Who can put the solutions into action?

The proposal that appears in Annotated Student Sample of this chapter, written by student Shawn Krukowski, takes on a large, complex problem: climate change. At the start of the project, Shawn thought about his topic in terms of the questions above:

- What is the cause of climate change?
- What is the effect of climate change?
- What makes climate change a problem?
- What are some possible solutions to climate change?
- What solutions to climate change have been tried in the past?
- Why have the solutions tried in the past been unsuccessful in solving climate change?
- Who can put the solutions into action?

In writing answers to these questions, Shawn identified what he needed to learn about climate change before he began his reading and research.

Distinguishing Fact from Opinion

A proposal contains both fact and opinion. Proposal writers use facts as evidence to show that the problem they are writing about is real. They use facts to show that the proposed solution can work. They give opinions (based on evidence) when they recommend a solution to their audience and call them to action. See Argumentative Research: Enhancing the Art of Rhetoric with Evidence for more about facts and opinions.



It can sometimes be difficult to distinguish fact from opinion, allegations, and fake news. Social media platforms, in particular, make it hard for many people to distinguish between sources that are credible and those that are not. As a writer, you need to use a critical eye to examine what you read and see.

Facts are statements that can be proven or whose truth can be inferred. They are built on evidence and data. The following are examples of factual statements:

- The first mass-produced hybrid vehicle was the Toyota Prius, which was launched in Japan in 1997.
- Americans born after 1996 are considered Generation Z.

Facts that use numbers are called **statistics**:

- According to the Pew Research Center, 50 percent of Gen Z-ers aged 18–23 reported that they or someone in their household had lost a job or taken a pay cut in March 2020, the first month of the COVID-19 pandemic.
- The six-year graduation rate for full-time undergraduate students was 62 percent in 2018.

Opinions are statements of belief or value. Opinions form the basis of recommended solutions in proposals. Below is an opinion that precedes a list of recommendations to raise the graduation rate:

- The six-year graduation rate for full-time undergraduate students, which was 62% in 2018, can and should be improved by taking the following steps...

Recognizing Bias



Critical thinking and reading of information involve recognizing bias. **Bias** is commonly defined as a preconceived opinion, or a prejudice, about something—a subject, an idea, a person, or a group of people, for example. As a proposal writer, you will need to recognize bias in the information you read as you learn about the problem and to recognize possible bias in your own thinking as well.

Bias in Sources

Some writing is intentionally biased and intended to persuade, such as editorials and opinion essays, also called op-eds (because of their placement *opposite* the *editorial* page in print newspapers). Writing meant to persuade is generally not used as source material in a proposal. Instead, seek out informative, neutral sources that consider more than one aspect of a problem. Be aware, however, that even sources that seem impartial may contain some bias. Bias becomes a problem when a source that seems objective and trustworthy contains language and images intended to sway your opinion, or when a source downplays or ignores one or more aspects of a topic.

The evidence you use to support the discussion of a problem or the worth of a solution should not be heavily biased. As you consider sources for your proposal, the following tips can help you spot bias and read critically:

- **Determine the purpose of the source.** Is the writing intended to inform you or to persuade you?
- **Distinguish between fact and opinion.** Mark facts and opinions when gathering information from the source.
- **Pay attention to the language and what the writer emphasizes.** Does the language include inflammatory words or descriptions intended to sway readers? What do the title, introduction, and any headings tell you about the author's approach to the subject?
- **Research the author.** Is the writer an impartial expert? Or is the writer known for being biased?
- **Read multiple sources on the topic.** Learn whether the source is omitting or glossing over important information and credible views.
- **Look critically at the images and any media that support the writing.** How do they reinforce positive or negative treatment of the subject?

Bias in Yourself

Most individuals bring what psychologists call **cognitive bias** to the interactions in their lives, whether with information or with other people. Cognitive bias refers to how humans' thinking patterns affect how they take in and process new information. As you research information for a proposal, also be aware of **confirmation bias**, which is the tendency to seek out and accept information that supports (or confirms) a belief you already have and to ignore or dismiss information that challenges that belief.

For example, perhaps you believe strongly that the graduation rate at the college you attend is too low and that more students would graduate if the college provided more financial aid in the form of grants. With that belief, you would likely be more receptive to facts and statistics showing that students who receive financial aid in the form of grants, not loans, are more likely to graduate. However, if you believe that more students would graduate if they took advantage of the academic support services the college offers, then you would likely be more receptive to facts and statistics showing that students who work hard and use academic support services graduate in higher numbers.

As you read about problems and solutions, the best way to guard against bias is to be aware that bias exists, to question what you read, and to challenge your own beliefs. You can learn more about bias, especially in language, in Spotlight on … Bias in Language and Research.



6.2 Trailblazer

Proposal Trailblazer: Atul Gawande

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Describe a particular problem and a proposed solution.
- Discuss the process of identifying a problem and proposing a solution.
- Articulate how proposals to solve problems reach their intended audience.



FIGURE 6.2 Atul Gawande (https://openstax.org/r/atulgawande) thinks graphically about solving problems. (credit: "Sketched Book - The Checklist Manifesto - How to Get Things Right" by Sacha Chua/ flickr, CC BY 2.0)

"What do you do when expertise is not enough?"

Medical Problem Solver

Born in New York City, surgeon and author Atul Gawande (b. 1965) graduated from Stanford University in 1987 with a degree in biology and political science. A Rhodes Scholarship enabled him to study at the University of Oxford, where he earned a master's degree in philosophy, politics, and economics. Returning to the United States from England, Gawande entered politics and worked for Al Gore**'s** (b. 1948) presidential campaign and later served as a health care adviser during the Clinton administration (1993–2001). Gawande graduated from Harvard Medical School with an MD in 1995 and an MPH (master of public health) in 1999. Among his main concerns and frequent topics of his written work have been patient care and medical ethics.

In the mid-2000s, Dr. Gawande came across a simple idea for improving medical care. Another physician, Peter Pronovost (b. 1965), a critical care specialist, had identified a solution to the problem of patients in intensive care units (ICUs) developing infections after having central intravenous lines inserted. The cause of the problem was human error. Doctors knew the steps they needed to follow to prevent infection when they inserted a central line, but some of them skipped at least one of the steps. When they did, the risk of a dangerous infection increased, which in turn increased the likelihood of a poor outcome for the patient—longer illness, additional surgery, or death.

Borrowing a method from airplane pilots, who must go through a checklist before being cleared for takeoff, Dr. Pronovost proposed a similar solution for ICU doctors: a checklist of five things they needed to do when inserting a central intravenous line. Dr. Pronovost ran an experiment in the ICU at the hospital where he worked. Doctors were instructed to follow the steps on the checklist, and nurses who assisted during the procedure were told to observe and speak up if a doctor skipped a step.

The checklist worked. The infection rate dropped dramatically, reducing ICU stays, saving lives, and saving money. Dr. Pronovost began writing checklists for other ICU situations. These checklists were successful as well in addressing particular problems.

Approached by the World Health Organization, Dr. Gawande worked with a team around the world to develop a checklist to improve the safety of surgery. As a surgeon, he was well aware of complications that could occur as a result of mistakes before, during, and after surgery. The team created a 19-point "safe surgery" checklist that was tested at eight hospitals around the world, including one in the United States. The checklist worked again—all eight hospitals saw the rate of significant postsurgical complications and deaths drop by an average

of more than 35 percent, with no additional costs.

The problem the two doctors identified is both simple and complex. The problem is not that doctors lack knowledge; the problem is that because the situations they encounter are often complicated and urgent, doctors do not always correctly apply what they know.

The solution proposed by Dr. Gawande and Dr. Pronovost is similarly both simple and complex: to improve accuracy, use a checklist. However, other doctors needed to be convinced that a simple change like this would improve medical care. To persuade others, Gawande and Pronovost wrote articles for medical journals in which they presented the problem they studied, the methods they used, the results of their experiments, and the solution they recommended. Dr. Gawande then went on to apply the checklist solution to preventable problems in fields outside of medicine in his book *The Checklist Manifesto: How to Get Things Right* (2009), which became a best seller.

Discussion Questions

1. How did Drs. Pronovost and Gawande define the problems they were trying to solve?
2. What evidence did Drs. Pronovost and Gawande use to support their proposed solutions?
3. Who was the audience for the doctors' proposals? Why might some audience members be hesitant about accepting the checklist solution?
4. Think about the relationship between doctors and nurses. Who has more authority in a medical setting? How might the doctors' and nurses' reactions to using the checklist differ?
5. In what ways is the problem the doctors tackled both simple and complex?
6. In what ways is the solution the doctors proposed both simple and complex?

6.3 Glance at Genre: Features of Proposals

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Discuss the roles of purpose and audience in writing a proposal.
- Define key features and characteristics of proposals.

As you think about the problem for your proposal, it is important to understand the rhetorical situation, or the circumstance in which a writer communicates with an audience of readers, including your purpose, audience expectations, and the key elements of the proposal genre. The rhetorical situation and its relationship to writing your proposal is discussed more fully in Writing Process: Creating a Proposal.

Defining Your Purpose

Your purpose is your reason for writing. The broad purpose for most academic and real-world proposals is to offer a solution to a problem. You, the writer, are tasked with identifying a problem and recommending a solution. You may need to write a proposal for a research project in a sociology class, or you may need to write a business proposal for a marketing class or a business you've started. Many topics are suitable for a proposal in a college writing class. For example, some problems are local and can be acted on directly, such as improving access to mental health services on your campus, offering a new food delivery option to campus buildings, designating quiet study spaces in your library, or bringing a farmer's market to your campus. Others are large-scale, research-oriented proposals such as reducing automobile emissions, providing broadband Internet access nationwide, or reforming immigration policies in the United States. Read your assignment carefully, and be sure you know the requirements and the amount of flexibility you have.

Tuning in to Audience Expectations

The **audience** for your writing consists of the people who will read it or who could read it. *Are you writing for your instructor? For your classmates? For students or administrators on your campus or people in your community?* Think about the action they can take to solve the problem. For example, if the problem you're presenting is a lack of diverse food options on your campus, a proposal to other students would perhaps ask students to join you in calling for change in dining options, whereas a proposal to administrators would request specific changes.

Whoever your readers are, they expect you to do the following:

- **Address a specific, well-defined problem.** As the writer, ensure that your readers know what the problem is and why it needs to be solved. Some problems are well-known, whereas others need to be explained.
- **Have an idea of what they already know.** It is up to you as the writer to learn as much as possible about your audience. You need to know how receptive your audience may be to your suggestions and what they know about the problem you're proposing to solve. Their knowledge—or lack thereof—will require you to adjust your writing as needed. If readers are new to the problem, they expect you to provide the necessary background information. If they are knowledgeable about the problem, they expect you to cover background information quickly.
- **Provide reliable information.** in the form of specific facts, statistics, and examples. Whether you present your own research or information from sources, readers expect you to have done your homework and present trustworthy information about the problem and the solution.
- **Structure your proposal in a logical way.** Open with an introduction that tells readers the subject of the proposal, and follow with a logical structure.
- **Adopt an objective stance.** Writing objectively means adopting a position and tone that are neutral and free from bias, personal feelings, and emotional language. In doing so, you show respect for your readers' knowledge and intelligence, and you build credibility and trust, or **ethos**, with your readers.
- **Tell them what you want them to do in response to your proposal.** Do you want them to engage other members of the community? Build something? Contact their legislators? Although they may not do what you want, they are unlikely to act at all if you don't tell them what you would like them to do.

Exploring the Genre

A formal proposal may include the components addressed in Analytical Report: Writing from Facts. If you're writing a business proposal (a document that proposes a transaction between a business and a client and also spells out deliverables, a schedule, costs, and payment), you can find a full discussion in OpenStax's forthcoming *Business Communications* text.

The following are key terms and characteristics of problem-solution proposals:

- **Abstract or executive summary:** paragraph that summarizes the problem and recommended solution. The purpose is to present information in the most concise and economical way possible for your readers.
- **Audience:** readers of a proposal or any piece of writing.
- **Bias:** a preconceived opinion about something, such as a subject, an idea, a person, or a group of people. As a reader, be attentive to potential bias in sources; as a writer, be attentive to bias in yourself.
- **Body:** main part of a proposal; appears between the introduction and the conclusion and recommendation. The body of a proposal consists of paragraphs that discuss the problem and present a solution or solutions.
- **Citation of sources:** references in the text of a proposal to sources the writer has used as evidence. The sources are also listed, with full bibliographic information, at the end of the proposal. Citing sources is essential to avoid plagiarism.
- **Conclusion and recommendation:** last part of a proposal. The conclusion restates the problem and recommends a solution. This paragraph often issues a call to action.

- **Critical thinking:** ability to look beneath the surface of words and images to analyze, interpret, and evaluate.
- **Ethos:** also known as ethical appeal; the sense that the writer or other authority is trustworthy and credible.
- **Evidence:** statements of fact, statistics, examples, and expert opinion or knowledge that support the writer's points.
- **Facts:** statements whose truth can be proven or verified.
- **Introduction:** first part of a proposal, in which the writer introduces the problem to be addressed. Often, the thesis appears at the end of the introduction.
- **Objections:** questions or opposition readers may have about a proposed solution. These also are known as **counterclaims**.
- **Objective stance:** writing that is free from bias, personal feelings, and emotional language. An objective stance is especially important in a proposal.
- **Problem:** central topic to be discussed in a proposal.
- **Purpose:** reason for writing the proposal, usually to examine a problem and propose a solution.
- **Solution or solutions:** proposed resolution or resolutions to the problem, the central topic of a proposal.
- **Statistics:** factual statements that include numbers and often serve as evidence in a proposal.
- **Synthesis:** making connections between ideas and combining them to arrive at an original conclusion. Synthesizing draws from others' opinions and ideas, facts, statistics, and the writer's information based on research or original thought.
- **Thesis:** the main idea you will convey in your proposal and to which all paragraphs in the paper should relate.
- **Topic sentence:** a sentence that states the main idea of each paragraph.

6.4 Annotated Student Sample: "Slowing Climate Change" by Shawn Krukowski

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Identify the features common to proposals.
- Analyze the organizational structure of a proposal and how writers develop ideas.
- Articulate how writers use and cite evidence to build credibility.
- Identify sources of evidence within a text and in source citations.

Introduction



FIGURE 6.3 Student author Shawn Krukowski (credit: "Reading in Tulane University Library New Orleans July

2003" by Tulane Public Relations/Wikimedia Commons, CC BY 2.0)

The proposal that follows was written by student Shawn Krukowski for a first-year composition course. Shawn's assignment was to research a contemporary problem and propose one or more solutions. Deeply concerned about climate change, Shawn chose to research ways to slow the process. In his proposal, he recommends two solutions he thinks are most promising.



FIGURE 6.4 This U.S. Coast Guard photograph shows the flooding in New Iberia, Louisiana, after Hurricane Ike in September 2008. Scientists attribute increased hurricane severity to climate change. (credit: "Hurricane Ike New Iberia" by Coast Guard Jayhawk 6031/Wikimedia Commons, Public Domain)

LIVING BY THEIR OWN WORDS

A Call to Action

> The earth's climate is changing. Although the climate has been changing slowly for the past 22,000 years, the rate of change has increased dramatically. Previously, natural climate changes occurred gradually, sometimes extending over thousands of years. Since the mid-20th century, however, climate change has accelerated exponentially, a result primarily of human activities, and is reaching a crisis level.

> Critical as it is, however, climate change can be controlled. Thanks to current knowledge of science and existing technologies, it is possible to respond effectively. Although many concerned citizens, companies, and organizations in the private sector are taking action in their own spheres, other individuals, corporations, and organizations are ignoring, or even denying, the problem. What is needed to slow climate change is unified action in two key areas—mitigation and adaptation—spurred by government leadership in the United States and a global commitment to addressing the problem immediately.

Introduction. *The proposal opens with an overview of the problem and pivots to the solution in the second paragraph.*

Thesis Statement. *The thesis statement in last sentence of the introduction previews the organization of the proposal and the recommended solutions.*

Problem: Negative Effects of Climate Change

Heading. *Centered, boldface headings mark major sections of the proposal.*

Body. *The three paragraphs under this heading discuss the problem.*

Topic Sentence. *The paragraph opens with a sentence stating the topics developed in the following paragraphs.*

> For the 4,000 years leading up to the Industrial Revolution, global temperatures remained relatively constant, with a few dips of less than 1°C. Previous climate change occurred so gradually that life forms were able to adapt to it. Some species became extinct, but others survived and thrived. In just the past 100 years, however, temperatures have risen by approximately the same amount that they rose over the previous 4,000 years.

Audience. *Without knowing for sure the extent of readers' knowledge of climate change, the writer provides background for them to understand the problem.*

> The rapid increase in temperature has a negative global impact. First, as temperatures rise, glaciers and polar ice are melting at a faster rate; in fact, by the middle of this century, the Arctic Ocean is projected to be ice-free in summer. As a result, global sea levels are projected to rise from two to four feet by 2100 (U.S. Global Change Research Program [USGCRP], 2014a). If this rise actually does happen, many coastal ecosystems and human communities will disappear.

Discussion of the Problem. *The first main point of the problem is discussed in this paragraph.*

Statistics as Evidence. *The writer provides specific numbers and cites the source in APA style.*

Transitions*. The writer uses transitions here (first, as a result, and second in the next paragraph) and elsewhere to make connections between ideas and to enable readers to follow them more easily. At the same time, the transitions give the proposal coherence.*

> Second, weather of all types is becoming more extreme: heat waves are hotter, cold snaps are colder, and precipitation patterns are changing, causing longer droughts and increased flooding. Oceans are becoming more acidic as they increase their absorption of carbon dioxide. This change affects coral reefs and other marine life. Since the 1980s, hurricanes have increased in frequency, intensity, and duration. As shown in Figure 6.5, the 2020 hurricane season was the most active on record, with 30 named storms, a recording-breaking 11 storms hitting the U.S. coastline (compared to 9 in 1916), and 10 named storms in September—the highest monthly number on record. Together, these storms caused more than $40 billion in damage. Not only was this the fifth consecutive above-normal hurricane season, it was preceded by four consecutive above-normal years in 1998 to 2001 (National Oceanic and Atmospheric Administration, 2020).

Discussion of the Problem. *The second main point of the problem is discussed in this paragraph.*

Visual as Evidence. *The writer refers to "Figure 6.4" in the text and places the figure below the paragraph.*



FIGURE 6.5 An overview of the 2020 hurricane season in the Atlantic Ocean. From "Record-Breaking Atlantic Hurricane Season Draws to an End," NOAA National Weather Service. Copyright 2020 by the National Oceanic and Atmospheric Administration.

Source Citation in APA Style: Visual. *The writer gives the figure a number, a title, an explanatory note, and a source citation. The source is also cited in the list of references.*

Solutions: Mitigation and Adaptation

Heading. *The centered, boldface heading marks the start of the solutions section of the proposal.*

Body. *The eight paragraphs under this heading discuss the solutions given in the thesis statement.*

Topic Sentence. *The paragraph opens with a sentence stating the topics developed in the following paragraphs.*

> To control the effects of climate change, immediate action in two key ways is needed: mitigation and adaptation. Mitigating climate change by reducing and stabilizing the carbon emissions that produce greenhouse gases is the only long-term way to avoid a disastrous future. In addition, adaptation is imperative to allow ecosystems, food systems, and development to become more sustainable.

> Mitigation and adaptation will not happen on their own; action on such a vast scale will require governments around the globe to take initiatives. The United States needs to cooperate with other nations and assume a leadership role in fighting climate change.

Objective Stance. *The writer presents evidence (facts, statistics, and examples) in neutral, unemotional language, which builds credibility, or ethos, with readers.*

Mitigation

Heading. *The flush-left, boldface heading marks the first subsection of the solutions.*

Topic Sentence. *The paragraph opens with a sentence stating the solution developed in the following paragraphs.*

> The first challenge is to reduce the flow of greenhouse gases into the atmosphere. The Union of Concerned Scientists (2020) warns that "net zero" carbon emissions—meaning that no more carbon enters the atmosphere than is removed—needs to be reached by 2050 or sooner. As shown in Figure 6.6, reducing carbon emissions will require a massive effort, given the skyrocketing rate of increase of greenhouse gases since 1900 (USGCRP, 2014b).

Synthesis. *In this paragraph, the writer synthesizes factual evidence from two sources and cites them in APA style.*

Visual as Evidence. *The writer refers to "Figure 6.5" in the text and places the figure below the paragraph.*

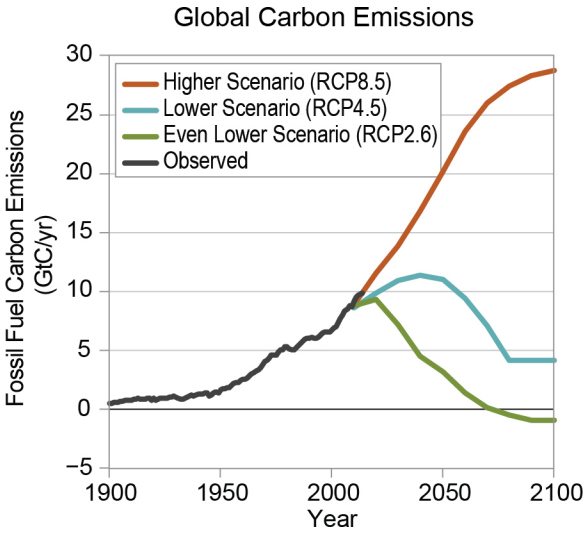


FIGURE 6.6 Increases in carbon by the burning of fossil fuels since 1900. From "Our Changing Climate," National Climate Assessment (https://nca2018.globalchange.gov/chapter/2/). Copyright 2014 by the U.S. Global Change Research Program.

Source Citation in APA Style: Visual. *The writer gives the figure a number, a title, an explanatory note, and a source citation. The source is also cited in the list of references.*

> Significant national policy changes must be made and must include multiple approaches; here are two areas of concern:

Presentation of Solutions. *For clarity, the writer numbers the two items to be discussed.*

> 1. Transportation systems. In the United States in 2018, more than one-quarter—28.2 percent—of emissions resulted from the consumption of fossil fuels for transportation. More than half of these emissions came from passenger cars, light-duty trucks, sport utility vehicles, and minivans (U.S. Environmental Protection Agency [EPA], 2020). Priorities for mitigation should include using fuels that emit less carbon; improving fuel efficiency; and reducing the need for travel through urban planning, telecommuting and videoconferencing, and biking and pedestrian initiatives.

Statistics as Evidence. *The writer provides specific numbers and cites the source in APA style.*

Source Citation in APA Style: Group Author. *The parenthetical citation gives the group's name, an abbreviation to be used in subsequent citations, and the year of publication.*

> Curtailing travel has a demonstrable effect. Scientists have recorded a dramatic drop in emissions during government-imposed travel and business restrictions in 2020. Intended to slow the spread of COVID-19, these restrictions also decreased air pollution significantly. For example, during the first six weeks of restrictions in the San Francisco Bay area, traffic was reduced by about 45 percent, and emissions were roughly a quarter lower than the previous six weeks. Similar findings were observed around the globe, with reductions of up to 80 percent (Bourzac, 2020).

Statistics as Evidence. *The writer provides specific numbers and cites the source in APA style.*

Source Citation in APA Style: One Author. *The parenthetical citation gives the author's name and the year of publication.*

> 2. Energy production. The second-largest source of emissions is the use of fossil fuels to produce energy, primarily electricity, which accounted for 26.9 percent of U.S. emissions (EPA, 2020). Fossil fuels can be replaced by solar, wind, hydro, and geothermal sources. Solar voltaic systems have the potential to become the least expensive energy in the world (Green America, 2020). Solar sources should be complemented by wind power, which tends to increase at night when the sun is absent. According to the Copenhagen Consensus, the most effective way to combat climate change is to increase investment in green research and development (Lomborg, 2020). Notable are successes in the countries of Morocco and The Gambia, both of which have committed to investing in national programs to limit emissions primarily by generating electricity from renewable sources (Mulvaney, 2019).

Synthesis. *The writer develops the paragraph by synthesizing evidence from four sources and cites them in APA style.*

> A second way to move toward net zero is to actively remove carbon dioxide from the atmosphere. Forests and oceans are so-called "sinks" that collect and store carbon (EPA, 2020). Tropical forests that once made up 12 percent of global land masses now cover only 5 percent, and the loss of these tropical forest sinks has caused 16 to 19 percent of greenhouse gas emissions (Green America, 2020). Worldwide reforestation is vital and demands both commitment and funding on a global scale. New technologies also allow "direct air capture," which filers carbon from the air, and "carbon capture," which prevents it from leaving smokestacks.
>
> All of these technologies should be governmentally supported and even mandated, where appropriate.

Synthesis. *The writer develops the paragraph by synthesizing evidence from two sources and cites them in APA style.*

Adaptation

Heading. *The flush-left, boldface heading marks the second subsection of the solutions.*

Topic Sentence. *The paragraph opens with a sentence stating the solution developed in the following paragraphs.*

> Historically, civilizations have adapted to climate changes, sometimes successfully, sometimes not. Our modern civilization is largely the result of climate stability over the past 12,000 years. However, as the climate changes, humans must learn to adapt on a national, community, and individual level in many areas. While each country sets its own laws and regulations, certain principles apply worldwide.
>
> 1. Infrastructure. Buildings—residential, commercial, and industrial—produce about 33 percent of greenhouse gas emissions worldwide (Biello, 2007). Stricter standards for new construction, plus incentives for investing in insulation and other improvements to existing structures, are needed. Development in high-risk areas needs to be discouraged. Improved roads and transportation systems would help reduce fuel use. Incentives for decreasing energy consumption are needed to reduce rising demands for power.

Statistics as Evidence. *The writer provides specific numbers and cites the source in APA style.*

Source Citation in APA Style: One Author. *The parenthetical citation gives the author's name and the year of*

publication.

> 2. Food waste. More than 30 percent of the food produced in the United States is never consumed, and food waste causes 44 gigatons of carbon emissions a year (Green America, 2020). In a landfill, the nutrients in wasted food never return to the soil; instead, methane, a greenhouse gas, is produced. High-income countries such as the United States need to address wasteful processing and distribution systems. Low-income countries, on the other hand, need an infrastructure that supports proper food storage and handling. Educating consumers also must be a priority.

Statistics as Evidence. *The writer provides specific numbers and cites the source in APA style.*

Source Citation in APA Style: Group Author. *The parenthetical citation gives the group's name and the year of publication.*

> 3. Consumerism. People living in consumer nations have become accustomed to abundance. Many purchases are nonessential yet consume fossil fuels to manufacture, package, market, and ship products. During World War II, the U.S. government promoted the slogan "Use It Up, Wear It Out, Make It Do, or Do Without." This attitude was widely accepted because people recognized a common purpose in the war effort. A similar shift in mindset is needed today.

> Adaptation is not only possible but also economically advantageous. One case study is Walmart, which is the world's largest company by revenue. According to Dearn (2020), the company announced a plan to reduce its global emissions to zero by 2040. Among the goals is powering its facilities with 100 percent renewable energy and using electric vehicles with zero emissions. As of 2020, about 29 percent of its energy is from renewable sources. Although the 2040 goal applies to Walmart facilities only, plans are underway to reduce indirect emissions, such as those from its supply chain. According to CEO Doug McMillon, the company's commitment is to "becoming a regenerative company—one that works to restore, renew and replenish in addition to preserving our planet, and encourages others to do the same" (Dearn, 2020). In addition to encouraging other corporations, these goals present a challenge to the government to take action on climate change.

Extended Example as Evidence. *The writer indicates where borrowed information from the source begins and ends, and cites the source in APA style.*

Source Citation in APA Style: One Author. *The parenthetical citation gives only the year of publication because the author's name is cited in the sentence.*

Objections to Taking Action

Heading. *The centered, boldface heading marks the start of the writer's discussion of potential objections to the proposed solutions.*

Body. *The writer devotes two paragraphs to objections.*

Topic Sentence. *The paragraph opens with a sentence stating the topics developed in the following paragraphs.*

> Despite scientific evidence, some people and groups deny that climate change is real or, if they admit it exists, insist it is not a valid concern. Those who think climate change is not a problem point to Earth's millennia-long history of changing climate as evidence that life has always persisted. However, their claims do not consider the difference between "then" and "now." Most of the change predates human civilization, which has benefited from thousands of years of stable climate. The rapid change since the Industrial Revolution is unprecedented in human history.

> Those who deny climate change or its dangers seek primarily to relax or remove pollution standards and regulations in order to protect, or maximize profit from, their industries. To date, their lobbying has been successful. For example, the world's fossil-fuel industry received $5.3 trillion in 2015 alone, while the U.S. wind-energy industry received $12.3 billion in subsidies between 2000 and 2020 (Green America, 2020).

Statistics as Evidence. *The writer provides specific numbers and cites the source in APA style.*

Source Citation in APA Style: Group Author. *The parenthetical citation gives the group's name and the year of publication.*

Conclusion and Recommendation

Heading. *The centered, boldface heading marks the start of the conclusion and recommendation.*

Conclusion and Recommendation. *The proposal concludes with a restatement of the proposed solutions and a call to action.*

> Greenhouse gases can be reduced to acceptable levels; the technology already exists. But that technology cannot function without strong governmental policies prioritizing the environment, coupled with serious investment in research and development of climate-friendly technologies.

> The United States government must place its full support behind efforts to reduce greenhouse gasses and mitigate climate change. Rejoining the Paris Agreement is a good first step, but it is not enough. Citizens must demand that their elected officials at the local, state, and national levels accept responsibility to take action on both mitigation and adaptation. Without full governmental support, good intentions fall short of reaching net-zero emissions and cannot achieve the adaptation in attitude and lifestyle necessary for public compliance. There is no alternative to accepting this reality. Addressing climate change is too important to remain optional.

References

Biello, D. (2007, May 25). Combatting climate change: Farming out global warming solutions. *Scientific American.* https://www.scientificamerican.com/article/combating-climate-change-farming-forestry/

Bourzac, K. (2020, September 25). COVID-19 lockdowns had strange effects on air pollution across the globe. *Chemical & Engineering News.* https://cen.acs.org/environment/atmospheric-chemistry/COVID-19-lockdowns-had-strange-effects-on-air-pollution-across-the-globe/98/i37

Dearn, G. (2020, September 21). Walmart said it will eliminate its carbon footprint by 2040 — but not for its supply chain, which makes up the bulk of its emissions. *Business Insider.* https://www.businessinsider.com/walmart-targets-zero-carbon-emissions-2040-not-suppliers-2020-9

Green America (2020). Top 10 solutions to reverse climate change. https://www.greenamerica.org/climate-change-100-reasons-hope/top-10-solutions-reverse-climate-change.

Lomborg, B. (2020, July 17). The alarm about climate change is blinding us to sensible solutions. *The Globe and Mail.* https://www.theglobeandmail.com/opinion/article-the-alarm-about-climate-change-is-blinding-us-to-sensible-solutions/

Mulvaney, K. (2019, September 19). Climate change report card: These countries are reaching targets. *National Geographic.* https://www.nationalgeographic.com/environment/2019/09/climate-change-report-card-co2-emissions/

National Oceanic and Atmospheric Administration (2020, November 24). Record-breaking Atlantic hurricane season draws to an end. https://www.noaa.gov/media-release/record-breaking-atlantic-hurricane-season-draws-to-end

Union of Concerned Scientists (2020). Climate solutions. https://www.ucsusa.org/climate/solutions

U.S. Environmental Protection Agency (2020). Sources of greenhouse gas emissions. *Greenhouse Gas Emissions.* https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

U.S. Global Change Research Program (2014a). Melting ice. *National Climate Assessment.* https://nca2014.globalchange.gov/report/our-changing-climate/melting-ice

U.S. Global Change Research Program (2014b). Our changing climate. *National Climate Assessment.*

https://nca2014.globalchange.gov/highlights/report-findings/our-changing-climate#tab1-images

References Page in APA Style. *All sources cited in the text of the report—and only those sources—are listed in alphabetical order with full publication information. See the Handbook for more on APA documentation style.*

The following link takes you to another model of an annotated sample paper (https://openstax.org/r/annotatedsamplepaper) on solutions to animal testing posted by the University of Arizona's Global Campus Writing Center.

Discussion Questions

1. How is the proposal organized? Make an informal outline of the main points.
2. Identify types of evidence that the writer uses in the text of the proposal, such as statements of fact, statistics, examples, and visuals. What are the sources of his evidence? Are the sources credible and reliable?
3. Analyze the writer's stance. Is he objective? Does he reveal bias? Give examples of objectivity and/or bias that you see.
4. Climate change is a broad topic for a proposal of this length. In fact, Shawn Krukowski's instructor suggested that he narrow it. What advice would you give about narrowing the topic?
5. Discuss the proposal in terms of its purpose and audience. What is the purpose of the proposal? What action does Shawn want readers to take after reading it? How effective is his call to action?
6. What are three strengths of the proposal? What are three weaknesses?

6.5 Writing Process: Creating a Proposal

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Describe the elements of the rhetorical situation for your proposal.
- Apply prewriting strategies to discover a problem to write about.
- Gather and synthesize information from appropriate sources.
- Draft a thesis statement and create an organizational plan.
- Compose a proposal that develops your ideas and integrates evidence from sources.
- Implement strategies for drafting, peer reviewing, and revising.

Sometimes writing a paper comes easily, but more often writers work hard to generate ideas and evidence, organize their thoughts, draft, and revise. Experienced writers do their work in multiple steps, and most engage in a **recursive** process that involves thinking and rethinking, writing and rewriting, and repeating steps multiple times as their ideas develop and sharpen. In broad strokes, most writers go through the following steps to achieve a polished piece of writing:

- **Planning and Organization.** Your proposal will come together more easily if you spend time at the start considering the rhetorical situation, understanding your assignment, gathering ideas and evidence, drafting a thesis statement, and creating an organizational plan.
- **Drafting.** When you have a good grasp of the problem and solution you are going to write about and how you will organize your proposal, you are ready to draft.
- **Review.** With a first draft in hand, make time to get feedback from others. Depending on the structure of your class, you may receive feedback from your instructor or your classmates. You can also work with a tutor in the writing center on your campus, or you can ask someone else you trust, such as a friend, roommate, or family member, to read your writing critically and give honest feedback.
- **Revising.** After reviewing feedback from your readers, plan to revise. Focus on their comments: Is your

thesis clear? Do you need to make organizational changes to the proposal? Do you need to explain or connect your ideas more clearly?

Considering the Rhetorical Situation

Like other kinds of writing projects, a proposal starts with assessing the **rhetorical situation**—the circumstance in which a writer communicates with an audience of readers about a subject. As a proposal writer, you make choices based on the purpose for your writing, the audience who will read it, the **genre**, and the expectations of the community and culture in which you are working. The brainstorming questions in Table 6.1 can help you begin:

Rhetorical Situation Element	Brainstorming Questions	Your Responses
Topic Are you free to choose your own problem and solution to write about, or is your topic specified?	What do you want to know more about? What requirements do you have? Do you need to do research?	
Purpose What is the purpose of the proposal?	Is the purpose to examine a problem and explain possible solutions? Or is it to recommend a specific solution?	
Audience Who will read your writing?	Who is your primary audience—your instructor? Your classmates? Other students or administrators on your campus? People in your community? How will you shape your writing to connect most effectively with this audience? Do you need to consider secondary audiences, such as people outside of class? If so, who are those readers?	
Presentation In what format should you prepare your proposal?	Should you prepare a written proposal or use another medium? Should you include visuals and other media along with text, such as figures, charts, graphs, photographs, audio, or video? What other presentation requirements do you need to be aware of?	

TABLE 6.1 Brainstorming Questions about the Rhetorical Situation

Rhetorical Situation Element	Brainstorming Questions	Your Responses
Context How do the time period and location affect decisions you make about your proposal?	What problems in your city, county, state, area, nation, or the world need a solution? What current events or new information might relate to the problem? Is your college or university relevant to the problem?	
Culture and Community What social or cultural assumptions do you or your audience have?	How will you show awareness of your community's social and cultural expectations in your writing?	

TABLE 6.1 Brainstorming Questions about the Rhetorical Situation

Summary of Assignment

Write a proposal that discusses a problem you want to learn more about and that recommends a solution. The problem you choose must be a current problem, even though it may have been a problem for many years. The problem must also affect many people, and it must have an actual solution or solutions that you can learn about through research. In other words, the problem cannot be unique to you, and the solution you recommend cannot be one you only imagine; both the problem and the solution must be grounded in reality.

One way to get ideas about a problem to write about is to read a high-quality newspaper, website, or social media account for a week. Read widely on whatever platform you choose so that you learn what people are saying, what a newspaper's editorial board is taking a stand on, what opinion writers are making cases for in op-eds, and what community members are commenting on. You'll begin to get a handle on problems in your community or state that people care about. If you read a paper or website with a national or international audience, you'll learn about problems that affect people in other places.

You will need to consult and cite at least five reliable sources. They can be scholarly, but they do not have to be. They must be credible, trustworthy, and unbiased. Possible sources include articles from reputable newspapers, magazines, and academic and professional journals; reputable websites; government sources; and visual sources. Depending on your topic, you may want to conduct a survey, an interview, or an experiment. See Research Process: Accessing and Recording Information and Annotated Bibliography: Gathering, Evaluating, and Documenting Sources for information about creating and finding sources. Your proposal can include a visual or media source if it provides appropriate, relevant evidence.

Another Lens. Another way to approach a proposal assignment is to consider problems that affect you directly and affect others. Perhaps you are concerned about running up student loan debt. Or perhaps you worry about how to pay your rent while earning minimum wage. These concerns are valid and affect many college students around the United States. Another way is to think about problems that affect others. Perhaps students in your class or on your campus have backgrounds and experiences that differ from yours—*what problems or challenges might they have encountered during their time in college that you don't know about?*

As you think about the purpose and audience for your proposal, think again about the rhetorical situation, specifically about the audience you want to reach and the mode of presentation best suited to them and your purpose. For example, say you're dissatisfied with the process for electing student leaders on your campus. If your purpose is to identify the problems in the process and propose a change, then your audience would include other students, the group or committee that oversees student elections, and perhaps others. To reach other students who might also be dissatisfied, you might write an article, editorial, or letter for the campus newspaper, social media page, or website, depending on how students on your campus get news. In addition, you might organize a meeting of other students to get their input on the problem. To reach the decision makers, which may include elected students, faculty, and administrators, you might need to prepare an oral presentation and a slide deck.

Below in Figure 6.7 are three slides from Shawn Krukowski's proposal that he adapted for a presentation: the title slide, a slide on one aspect of the problem, and a slide introducing one of the proposed solutions.

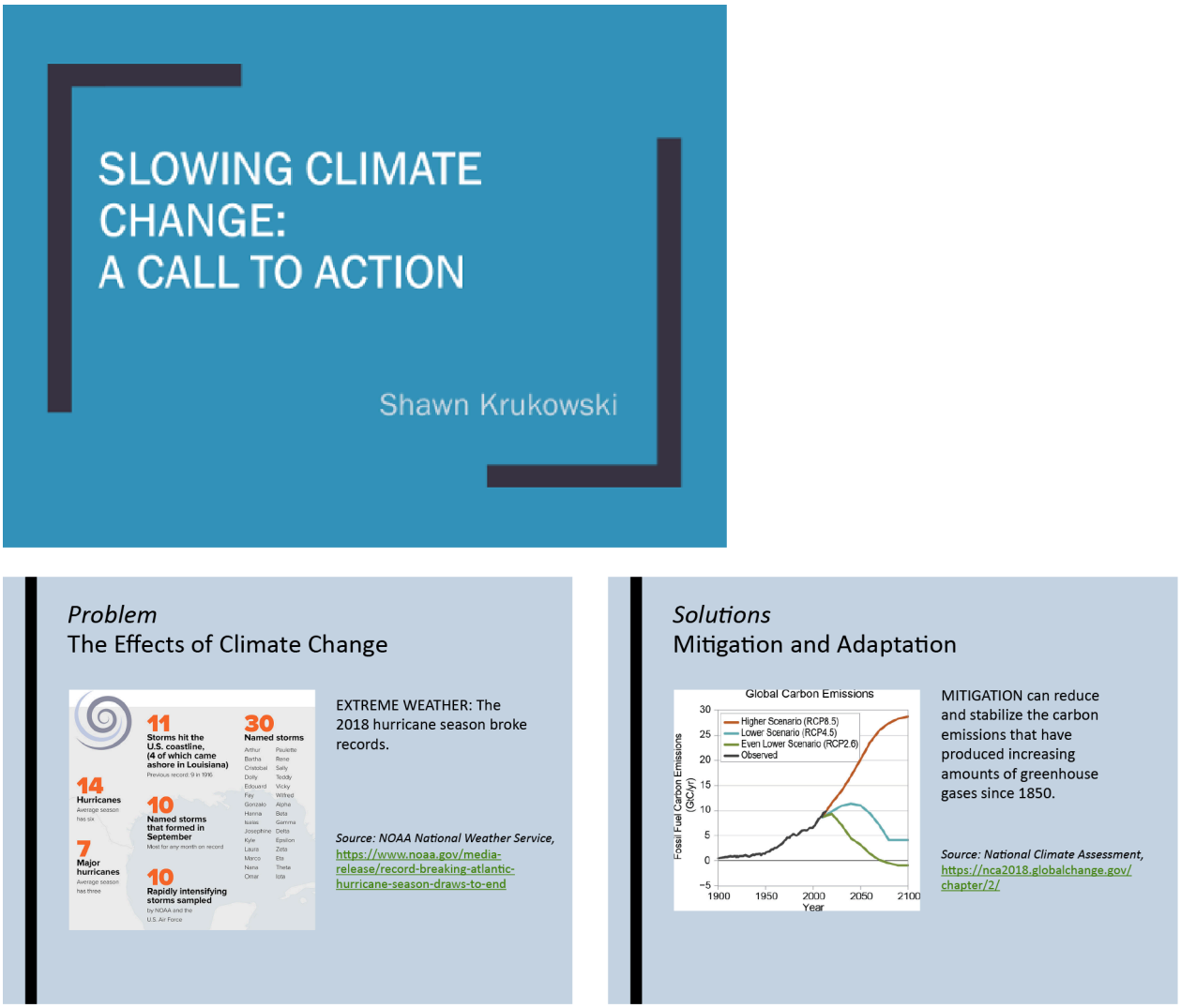


FIGURE 6.7 Presentation Slides (attribution: Copyright Rice University, OpenStax, under CC BY NC-SA 4.0 license)

Quick Launch: Finding a Problem to Write About

A proposal must address a real-life problem and present one or more workable solutions. Usually, problems worth writing about are not easily solved; if they were, they would no longer be considered problems. Indeed, problems in proposals are often complex, and solutions are often complicated and involve trade-offs.

Sometimes people disagree about whether the problem is a problem at all and whether any proposed solutions are viable solutions.

Exploring a Problem

One way to generate ideas about a problem is to brainstorm. To explore a topic for your proposal, use a graphic organizer like Table 6.2 to write responses to the following statements and questions:

Exploring Questions	Your Responses
What problem am I interested in learning about?	
How do I know this is a problem?	
What are a few examples of the problem?	
What causes the problem?	
Who is affected by the problem?	
What are some negative effects of the problem?	
Why should the problem be solved?	
What are the potential consequences of the problem if nothing is done?	
What are some realistic solutions to the problem?	

TABLE 6.2 Exploration Questions

For example, perhaps you're considering a career in information technology, and you're taking an IT class. You might be interested in exploring the problem of data breaches. A data breach is a real-world problem with possible solutions, so it passes the first test of being an actual problem with possible solutions. Your responses to the questions above might look something like those in Table 6.3:

Exploring Questions	Sample Responses
A problem I'm interested in learning more about is...	Data breaches
How I know data breaches are a problem...	In my class, we're spending a lot of time on data security and breaches. Also, data breaches are in the news almost constantly, and a Google search turns up many that don't make the news.
What are a few examples of data breaches?	I've heard about people getting their information stolen. I've heard about foreign governments, like Russia, stealing national security information and trying to interfere in recent elections. In my class, I'm learning about businesses that have customer and employee information stolen.

TABLE 6.3 Exploration Questions on Data Breaches

Exploring Questions	Sample Responses
What causes data breaches?	Hackers have a variety of methods to break into websites, to get people to click on links, and to lure people to give out information.
Who is affected by data breaches?	Individual people, businesses, utility companies, schools and universities, governments (local, state, and national)—pretty much anyone can be affected.
What are some negative effects of data breaches?	Identity theft, financial theft, national security, power shutdowns, and election interference. Data breaches cause chaos and cost a lot of money.
Why should the problem of data breaches be solved?	People need the personal, financial, and medical information they share with businesses and other organizations to remain private. Businesses and organizations need to keep their operations secure. Governments need to keep national security secrets from getting into the hands of people who want to harm them.
What are the potential consequences of data breaches if nothing is done?	People will continue to be victims of identity theft and all that goes with it, including losing money, and they will lose trust in institutions they used to trust, like banks, hospitals, and the government.
What are some realistic solutions to data breaches?	Increased security for individuals, like two-factor authentication, stronger passwords, and education to avoid getting scammed. For companies and governments, stronger protections on websites. I need to learn more.

TABLE 6.3 Exploration Questions on Data Breaches

Narrowing and Focusing

Many problems for a proposal can be too broad to tackle in a single paper. For example, the sample above reveals that data breaches are indeed a problem but that several aspects can be explored. If you tried to cover all the aspects, you would be left writing general paragraphs with little specific information. The topic needs to be narrowed and focused.

The data breaches example above could be narrowed to the following problems—and possibly even more. Note that the questions start to zero in on possible solutions, too. In your own writing, as you brainstorm, try placing subtopics you discover into their own categories and asking more questions, as shown in Table 6.4.

Narrowing a Problem	Focusing Questions
Problem: Hackers get into computer systems and steal information.	What tactics do hackers use? What do they steal? What do they do with what they steal? How successful are they? How can hacking be stopped or reduced?
Problem: Data breaches harm individuals.	What happens to people when their information is stolen? In what ways is their information used? What should people do when they discover their information has been stolen? Are there steps they can take to protect their information?
Problem: Data breaches harm businesses, organizations, and medical systems.	What happens to businesses, organizations, and medical systems when hackers break in? What kind of information is stolen? How is the information used? What do businesses, organizations, and medical systems do, or what should they do, when they know about a breach? How can data breaches be prevented?
Problem: Data breaches harm governments.	What happens to governments when hackers break into their systems? What kind of information is stolen? How is the information used? What should governments do when they know about a breach? How can data breaches be prevented?

TABLE 6.4 Focusing on a Topic

Sample Proposal Topics



The following broad topics are potentially suitable as a start for a proposal. Choose one of these or one of your own, and ask the exploring questions. Then look at your responses, and ask focusing questions. Continue to focus until you have a specific problem that you can discuss in sufficient depth and offer a concrete solution or solutions.

- **Health fields:** cost of medical and dental care for uninsured people, management of chronic conditions and diseases, infection control, vaccinations, access to mental health care, drug use and addiction, sports injuries, workplace safety
- **Education:** gaps in academic achievement, curriculum, recruitment and retention of staff and/or students, buildings and grounds, graduation rates, cocurricular activities
- **Environment:** forest management and fires, hurricanes and other extreme storms, water and air pollution, sustainable development, invasive species, waste management, recycling and composting, community gardening
- **Engineering and computer science:** robotics, vehicles and transportation, digital divide, online privacy, misinformation and misbehavior on social media, video games
- **Business and manufacturing:** quality improvement, process improvement, cost control, communication, social media, pay equity, fundraising, sourcing of materials, net-zero energy processes, workplace safety
- **Policy and politics:** public institutions, such as public schools, libraries, transportation systems, and parks; taxes, fees, and services; donations to political campaigns; healthcare, such as Medicare and Medicaid; social security; unemployment insurance; services for active military and veterans; immigration policy
- **Society and culture:** social media and free speech; inequality in housing, employment, education, and more; cancel culture; bullying; wealth and poverty; support for the arts; athletes and sports; disparities related to race, sex, gender identity and expression, age, and/or ability

Gathering Information

Proposals are rooted in information and evidence; therefore, most proposal assignments require you to conduct research. Depending on your assignment, you may need to do formal research, an activity that involves finding sources and evaluating them for reliability, reading them carefully and taking notes, and citing all words you quote and ideas you borrow. See Research Process: Accessing and Recording Information and Annotated Bibliography: Gathering, Evaluating, and Documenting Sources for detailed instruction on conducting research. If you are proposing a solution to a problem in your local community or on your campus, you may need to conduct primary research as well, such as a survey or interviews with people who live or work there.

Whether you conduct in-depth research or do background reading, keep track of the ideas that come to you and the information you learn. You can write or dictate notes using an app on your phone or computer, or you can jot notes in a journal if you prefer pen and paper. Then, when you are ready to begin to organize what you have learned, you will have a record of your thoughts and information. Always track the source of the information you gather, whether from your reading or a person you interviewed, so that you can return to that source if you need more information and can credit the source in your paper.

Kinds of Evidence

You will use **evidence** to demonstrate that the problem is real and worthy of being solved and that your recommended solution is workable. Choose evidence for your proposal that is rooted in facts. In addition, choose evidence that best supports the angle you take on your topic and meets your instructor's requirements. Cite all evidence you use from a source. Consider the following kinds of evidence and examples of each:

- **Definition:** an explanation of a key word, idea, or concept.

  The Personal Data Notification & Protection Act of 2017 defines a security breach as "a compromise of the security, confidentiality, or integrity of, or the loss of, computerized data that results in… (i) the unauthorized acquisition of sensitive personally identifiable information; or (ii) access to sensitive personally identifiable information that is for an unauthorized purpose, or in excess of authorization."

- **Example:** an illustration of an idea or concept.

  Every month, university staff members receive a fake phishing email from the IT department. The goal is to train employees of the university to be critical readers of every email they receive.

- **Expert opinion:** a statement by a professional whose opinion is respected in the field.

  In The Sixth Extinction, *science writer Elizabeth Kolbert observes that humans are making the choice about "which evolutionary pathways will remain and open and which will be forever closed" (268).*

- **Fact:** information that is true and can be proven correct or accurate. Statements of fact are built on evidence and data.

  In March and April of 2020, 43 states in the United States issued orders directing residents to stay home except for essential activities.

- **Interview:** a person-to-person, phone, or remote conversation that involves an interviewer posing questions to another person or group of people.

  During an interview, I asked about parents' decisions to vaccinate their children. One pediatrician said, "The majority of parents see the benefits of immunizations for their children and for public health. For those who don't, I talk to them and try to understand why they feel the way they do."

- **Quotation:** the exact words of an author or speaker.

  According to the Federal Aviation Administration, SpaceX was required to conduct a "comprehensive

review of the company's safety culture, operational decision-making, and process discipline," in addition to investigating the crash of its prototype spacecraft (Chang).

- **Statistics:** numerical fact or item of data.

  According to the Environmental Protection Agency, more than 40 million tons of food waste were generated in 2017, comprising 15.2% of all trash sent to landfills (DeSilver).

- **Survey:** a structured interview in which respondents are all asked the same questions and their answers are tabulated and interpreted. Surveys reveal attitudes, beliefs, or habits of the general public or segments of the population.

  In a survey of adults conducted in July 2020, 64 percent of respondents said that social media have a mostly negative effect on American society (Auxier).

- **Visuals** and other media**:** graphs, figures, tables, photographs, diagrams, charts, maps, videos, audio recordings, etc.

Thesis and Organization

Drafting a Thesis

When you have a solid grasp of the problem and solution, try drafting a **thesis**. A thesis is the main idea that you will convey in your proposal and to which all the paragraphs in the paper should relate. In a proposal, you will likely express this main idea in a **thesis statement** of one or two sentences toward the end of the introduction.

For example, in the thesis statement Shawn Krukowski wrote for his proposal on climate change, he identifies the problem and previews the solutions he presents:

> *What is needed to slow climate change is unified action in two key areas—mitigation and adaptation—spurred by government leadership in the United States and a global commitment to addressing the problem immediately.*

Here is another example that identifies a problem and multiple solutions:

> *The number of women employed in the IT field is decreasing every year, a trend that can be changed with a multifaceted approach that includes initiatives in middle schools, high schools, and colleges; active recruitment; mentoring programs; and flexible work arrangements.*

After you draft a thesis statement, ask these questions and revise it as needed:

- Is it engaging? A thesis for a proposal should pique readers' interest in the problem and possible solutions.
- Is it precise and specific? If you are interested in curbing the spread of invasive plant species, for example, your thesis should indicate which environment the plant or plants are invading and that you are proposing ways to stop the spread.

Organizing Your Ideas



A proposal has a recognizable shape, starting with an introduction, followed by discussions of the problem, possible solutions, potential objections to the solutions, and a conclusion with a recommendation. A graphic organizer like Table 6.5 can help you organize your ideas and evidence.

Proposal Section	Content	Your Notes
Introduction (usually one paragraph, but can be two)	Draw readers in with an overview. Provide necessary background here or in the description of the problem, defining terms as needed. State the thesis.	
Description of the Problem (one or more paragraphs)	Explain the problem, establishing it as a problem in need of a solution. Develop the paragraph(s) with evidence.	
Possible Solution or Solutions (one or more paragraphs)	Describe possible solutions, one at a time. Develop the paragraph(s) with evidence.	
Objections (one or more paragraphs)	Explain objections readers are likely to raise to the solutions given in the previous paragraph(s). Develop the paragraph(s) with evidence.	
Conclusion and Recommendations (one or more paragraphs)	Conclude with a summary of the points and recommend a solution or a course of action.	

TABLE 6.5 Proposal Organization

Drafting a Proposal

With a tentative thesis, an organization plan, and evidence, you are ready to begin drafting your proposal. For this assignment, you will discuss a problem, present possible solutions, address objections to the solutions, and conclude with a recommendation.

Introduction

You may choose to write the introduction first, last, or midway through the drafting process. Whenever you choose to write it, use it to draw readers in. Make the proposal topic clear, and be concise. End the introduction with your thesis statement.

Opening a proposal with an overview of your topic is a reliable strategy, as shown in the following student-written example on women working in IT. The thesis statement, which appeared earlier in this section, is underlined:

> People who work in the information technology (IT) field often start their careers fixing computers and other electronic devices for others. Through experience and education, an IT worker's career path can branch out to specialize in everything from programming new software to setting up and maintaining networks. The IT field is growing because of the constant development of technology, and the demand for employees also is growing. Yet the number of women employed in the IT field is decreasing every year, a trend that can be changed with a multifaceted approach that includes initiatives in middle schools, high schools, and colleges; active recruitment; mentoring programs; and flexible work arrangements.

Body Paragraphs: Problem, Solutions, Objections

The body paragraphs of your proposal should present the problem, the solution or solutions, and potential

objections to the proposed solution(s). As you write these paragraphs, consider using the **point**, **evidence**, and **analysis** pattern:

- The point is the central idea of the paragraph, usually given in a topic sentence stated in your own words at or toward beginning of the paragraph.
- With the evidence you provide, you develop the paragraph and support the point given in the topic sentence. Include details, examples, quotations, paraphrases, and summaries from sources. In your sentences and paragraphs, synthesize the evidence you give by showing the connections between sources. See Position Argument: Practicing the Art of Rhetoric and Argumentative Research: Enhancing the Art of Rhetoric with Evidence for more information on quoting, summarizing, paraphrasing, and synthesizing.
- The analysis comes at the end of the paragraph. In your own words, draw a conclusion about the evidence you have provided and relate it to the topic sentence.

The paragraphs that follow show the point-evidence-analysis pattern in practice.

Body Paragraphs: Problem

Follow the introduction with a discussion of the problem. Using paragraph structure, define the problem and discuss it, drawing on evidence from your sources. This paragraph (or paragraphs) should answer these questions: *What is the problem? Why is this a problem?* The following example, from the proposal on women working in IT, answers the first question:

> The information technology (IT) field is continuously expanding, with many more positions available than workers to fill them. In fact, the pool of IT professionals was so small that in 2001, Congress raised the visa limit in an effort to fill the gap with employees from overseas (Varma, 2002). And yet the number of women represented in the occupation is decreasing. From 1990 to 2020, the percentage of women in IT declined from 31 percent to 25 percent, even though women make up 47 percent of all employed adults in the United States. According to White (2021), only 19 percent of women pursue a computer science major in college, compared to 27 percent in 1997. Of those women who graduated with a computer science degree, 38 percent are working in the field compared to 56 percent of men, a statistic that indicates women are not staying in the field. Although gender diversity supposedly is valued in the workplace, the underrepresentation of women in IT is clearly a problem.

The writer then goes on to answer the second question: *Why is this a problem?* The writer discusses stereotypes, lack of encouragement and role models, workplace culture, pay, and prospects for advancement (not shown here).

Body Paragraphs: Solutions

After presenting and explaining the problem, use specific information from the sources you consulted to present the solution or solutions you have discovered through your research. If you are proposing more than one solution, present them one at a time, using headings as appropriate.

The solutions section will likely be the longest part of your proposal. Below are two paragraphs from the proposal about women working in IT. Note how the first paragraph introduces the solutions and how the second paragraph uses evidence to develop the first proposed solution. Also note the informative boldface headings.

> The following suggestions are ways to encourage women to enter IT and build their careers, with the eventual goal of achieving gender balance in the field. The solutions discussed include encouraging interest in computer technology among girls in middle school and high school, actively recruiting college-age women to study IT, and within the field, mentoring women and expanding workplace flexibility to improve retention.

> The National Center for Women & Information Technology (NCWIT) is an organization that encourages girls in middle school and high school to explore their interest in IT. One program, the NCWIT's Aspirations in Computing, supports women in high school by showing them that they can succeed in technology and introducing them to other students with similar interests. The same program matches middle-school girls with female high-school and college students and awards scholarships for computing and programming competitions. In addition, internships and IT courses in middle school and high school provide opportunities to learn what a career in IT entails, with or without a degree in IT. Opportunities like these give girls and women support and a sense of belonging.

The paragraphs that follow (not shown here) continue the discussion of the possible solutions.

Body Paragraphs: Objections

Depending on the problem and solution, consider the objections readers may raise, and explain why your proposal is necessary and worthwhile. For example, the proposal on women in IT does not discuss objections because few people would object to the writer's proposal. Shawn Krukowski, however, in his proposal on climate change, includes a section on objections to taking action. He focuses the discussion on people who deny that climate change is a problem. *Would you do the same?* Consider whether this section of Shawn's proposal might have been stronger had he addressed objections to the solutions he proposed—mitigation and adaptation—instead of objections to the problem.

> Despite scientific evidence, some people and groups deny that climate change is real or, if they admit it exists, insist it is not a valid concern. Those who think climate change is not a problem point to Earth's millennia-long history of changing climate as evidence that life has always persisted. Most of the change, however, predates human civilization, which has benefited from thousands of years of stable climate. The rapid change since the Industrial Revolution is unprecedented in human history.

> Those who deny climate change or its dangers seek primarily to relax or remove pollution standards and regulations in order to protect, or maximize profit from, their industries. To date, their lobbying has been successful. For example, the world's fossil-fuel industry received $5.3 trillion in 2015 alone, while the U.S. wind-energy industry received $12.3 billion in subsidies between 2000 and 2020 (Green America, 2020).

Conclusion and Recommendation

The conclusion and recommendation section of your proposal is the part in which you interpret your findings and make a recommendation or give a call to action. At this point, focus on the solution that will best solve the problem, suggesting or summarizing specific actions.

Below is the recommendation section from the proposal about women in IT. In the full conclusion (not shown here), the writer summarizes the main points of the proposal. In the recommendation paragraph that follows, the writer calls for specific actions:

> Many researchers have studied why few women choose IT as a career and why some decide to leave the field. Although the numbers cannot be improved immediately, the following changes in school and the workplace could recruit and retain more women in IT:

- Include technology education courses and formal IT programs in middle- and high-school curricula to give girls and young women opportunities to develop an interest at an early age.
- Develop internship and mentor programs in high schools and colleges to combat stereotyping and encourage women to enter the field.
- Develop and encourage workplace mentor programs, flexible work options, and open communication for professional growth and retention.

> With time and effort, these actions may result in more women seeing themselves in long-term IT careers.

References or Works Cited Page

Including any data you gathered through primary research, such as a survey you created and administered, interviews you conducted, or observational notes you took, you must cite the sources you consulted. These sources appear in the text of your proposal and in a bibliography at the end. The paragraphs in the previous section, including Shawn Krukowski's proposal, use APA documentation style. For more on documenting sources, see Index and Guide to Documentation, MLA Documentation and Format, and APA Documentation and Format.

Abstract or Executive Summary

An abstract (or executive summary) summarizes your proposal. The purpose is to present information briefly and economically so that readers can decide whether they want to read further. Include your main points, but not the evidence.

Although an abstract or executive summary comes first in a proposal, it is advisable to write it after you have completed your proposal and are certain of your main points. The example below is the abstract from the proposal about women in IT.

> The purpose of this proposal is to raise awareness of the small number of women working in the information technology (IT) field, to examine the factors that contribute to discouraging women from entering IT, and to propose ways to draw women into the field and retain them. Although the IT field is growing, the number of women employed within it remains low. Women may be reluctant to pursue a career in IT because of stereotypes, few role models, and lack of encouragement. Women who have already established a career in IT report leaving the field for these reasons, as well as family responsibilities and lack of advancement. There are several potential ways to raise the number of women in IT. Encouraging interest in computer technology among girls in middle school and high school, recruiting college-age women to study IT, mentoring young professional women, and improving workplace flexibility will, over time, break down stereotypes and increase the number of women in the IT field.

Peer Review: Getting Feedback from Readers

With a complete draft in hand, you may engage in **peer review** with your classmates, giving feedback to each other about the strengths and weaknesses of your drafts. For peer review within a class, your instructor may provide a list of questions or a form for you to complete as you work together.

Conferencing in Writing Groups

Other people can provide feedback on your writing beside your classmates. If you have an on-campus writing center, it is well worth your time to make an online or in-person appointment with a tutor at any point in your writing process. You will get valuable comments and improve your ability to review your own writing.

Another way to get fresh eyes on your writing is to ask a friend or family member to read your draft. To get useful feedback, provide a list of questions or a form such as the one shown in Table 6.6 for them to complete as they read.

Question for Reviewer	Comment or Suggestion
Does the introduction interest you in the problem?	
Can you find the thesis statement? Underline it for the writer.	

TABLE 6.6 Peer Review Questions

Question for Reviewer	Comment or Suggestion
Does the thesis state the problem and suggest that a solution will be proposed?	
Can you identify a paragraph or paragraphs that define and explain a problem?	
Can you identify a paragraph or paragraphs that propose one or more solutions to the problem?	
Does the writer address possible objections to the solution or solutions? If not, are there objections the writer should consider?	
Does each paragraph start with a point stated in the writer's own words, and does that point relate to the thesis? Mark paragraphs that don't have a clear point.	
Does each paragraph support the main point of the paragraph with details and evidence, such as facts, statistics, or examples? Mark paragraphs that need more support and/or explanation.	
Does each paragraph end with analysis, in the writer's own words, that draws a conclusion? Mark paragraphs that need analysis.	
Is there a clear conclusion that makes a recommendation and connects to the thesis statement?	
Where do you get lost or confused? Mark anything that is unclear.	
Does the proposal flow from one point to the next?	
Does the essay have a clear, descriptive title?	

TABLE 6.6 Peer Review Questions

Revising Your Proposal

A strong college paper is rarely written in a single draft, so build in time to revise your work. Take time with the comments you receive from your readers, and read your own work with a critical eye.



FIGURE 6.8 Whether you choose to do all your work on a computer or do some by hand, writing is nonetheless recursive, and revising is a major part of the process. (credit: Geschäftsfrau sitzt am Laptop und schreibt auf Notizblock mit Stift by Ivan Radic/flickr, CC BY 2.0)

Responding to Reviewers' Feedback

When you receive feedback from readers—whether from your instructor, your classmates, a writing tutor, or someone else—read each comment carefully to understand what the reader is communicating. Do your best not to become defensive, and be open to suggestions for improvement. Remind yourself that your readers are trying to help. As someone who hasn't thought about your proposal as much as you have, a new reader can often see strengths and weaknesses that you cannot. Analyze each response, and decide whether acting on a suggestion will make your writing better. Remember that you remain the author, and you make the final call on your writing.

As you read, keep track of the comments your readers make. Pay special attention to strengths and weaknesses that more than one reader identifies. Use that information to improve later assignments as well as your proposal.

Revising on Your Own

The following revising strategies can help you read your draft critically and carefully:

- **Read your draft aloud.** Read the entire text from the beginning slowly and carefully, marking spots that need revision. Reading in this way allows you to see areas that need clarification, explanation, or development that you may have missed when you wrote the first draft. You can also have someone read your draft aloud to you.
- **Make a paragraph outline.** The most common unit of thought in writing is the paragraph, a group of sentences set off from other groups because they focus on a single idea. Writing a paragraph outline creates a map of your whole paper that can help you determine whether the organization is effective or needs changing. Number each paragraph and write a phrase describing its topic or focus. Check that each paragraph has a topic sentence that states the main idea of the paragraph.
- **Test your evidence.** Check whether each piece of evidence is factual and supports the main idea of the paragraph. Check that each piece of evidence is introduced, woven into your sentences, and cited.
- **Listen for your voice.** In most college papers, your language should sound like a real person. If your instructor requires a formal style for the assignment, the language should be objective and in **third-person point of view**.
- **Let go if you need to.** View change as good. Learn to let go of words, sentences, paragraphs, and maybe even your entire first draft. Sometimes the best way to revise is to start fresh. The knowledge you have built in writing a first draft will serve you well if you need to start over.
- **Create a new file for each revision.** Each time you revise a draft, save the new version with a new file name so that you don't lose your previous work. That way, you can return to an earlier version of your draft if you are not happy with the revision.
- **Edit and proofread.** When you are satisfied with the overall shape of your paper, reread it once again to check for sentence-level errors in grammar, punctuation, spelling, and source citations.

Taking It Public: Publishing or Presenting Your Proposal

Publishing is a final step in the writing process. You may want to consider publishing your full proposal in your campus newspaper (or rewriting it as a letter to the editor) if your topic is related to your school. Or you may want to present it to an organization or committee on campus that can help you make your solution a reality. If your topic is related to the community in which you live, consider submitting your proposal to the local newspaper or presenting it at a city council meeting. (Note that if you decide to present your proposal orally, you'll need to figure out in advance the procedure for speaking or getting on a meeting agenda.) If your topic is more general and involves substantial research, consider submitting your proposal to one of these journals that publish undergraduate research work in all fields:

- American Journal of Undergraduate Research (https://openstax.org/r/americanjournalofugreasearch)
- *Midwest Journal of Undergraduate Research* (https://openstax.org/r/midwestjournalugreasearch)

- *PURSUE Undergraduate Research Journal* (https://openstax.org/r/pursuejournalugreasearch)

6.6 Editing Focus: Subject-Verb Agreement

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Identify subjects and verbs in sentences.
- Distinguish between subjects and verbs that agree and those that do not.

Readers of formal documents such as proposals expect writers to be aware of the conventions of grammar and punctuation. One such convention is **subject-verb agreement**.

The **subject** of a sentence names something. The predicate contains the **verb**, which expresses an action, an occurrence, or a state of being. The subject and verb in a sentence must agree. In standard English, "agreement" means that a singular subject must have a singular verb (*The bus leaves in five minutes*) and a plural subject must have a plural verb (*The buses leave in five minutes*). However, some English dialects omit the *-s* ending for singular verbs or use a singular verb with a plural subject: *The man ask for help. Property taxes was raised last year.*

Subject-verb agreement gets tricky in several sentence constructions, which are described below. To check for subject-verb agreement in your writing, proofread your final draft by finding each subject and verb. Then use the following questions to test whether the subject and verb agree. For more on subject-verb agreement, see Verbs.

Is the subject compound? Two or more subjects joined by *and* take a plural verb in most sentences:

> Basketball and wrestling are my favorite sports.

However, when the parts of the subject form a single idea or unit, the verb is singular:

> Red beans and rice is my favorite meal.
>
> Ten dollars is enough money for lunch.

When compound subjects are joined by *or* or *nor,* the verb should agree with the word closest to it:

> Either your uncles or your mother remembers your grandmother's gumbo recipe.
>
> Either your mother or your uncles remember your grandmother's gumbo recipe.

Do other words come between the subject and verb? The verb must agree with the subject even when words and phrases come between them:

> The price of these shoes at all stores is unbelievable.
>
> A suitcase containing sweaters, coats, and jackets was found in the street.

Does the verb come before the subject? The subject and verb must agree even when the verb comes before the subject:

> Are Daniela and Juliana waiting at the restaurant?
>
> There were three dogs in the yard, all barking at the same time.
>
> In my pocket are a wallet and two pens.

Is the subject an indefinite pronoun, such as* everyone*? Indefinite pronouns do not refer to specific people or things. Most indefinite pronouns take a singular verb, but not all.

The indefinite pronouns that take a singular verb include *anybody, anyone, anything, each, either, everybody, everyone, everything, neither, nobody, no one, nothing, one, somebody, someone,* and *something.*

Everyone on the team practices all season.

Neither of the wide receivers feels ready for the season to end.

These indefinite pronouns take a plural verb: *both, few, many, others,* and *several.*

Several of the athletes on the team come from the same high school.

Both wide receivers have excellent stats.

A few indefinite pronouns take a singular or plural verb depending on whether the word they refer to is singular or plural. These include *all, any, enough, more, most, none,* and *some.* With these pronouns, use a singular or plural verb that fits the context of your sentence.

All of these students take at least one class in science or math. (plural)

Most of his work is original. (singular)

Is the subject a collective noun? Collective nouns, such as *audience, band, class, crowd, family, group,* or *team,* can take a singular or a plural verb depending on the context. When group members act individually, use a plural verb. Writers often add the word *members* for clarity. When the group acts as a single unit, which is the most common construction, use a singular verb:

The band rehearses every Thursday.

The union (members) still disagree on the contract terms.

Practice Subject-Verb Agreement

Select the correct verb to complete each sentence.

1. Under the table _____ his slippers and socks. (is, are)
2. The choir usually _____ in the auditorium. (meets, meet)
3. Some of the actors _____ two roles. (performs, perform)
4. Some of this song _____ familiar. (sounds, sound)
5. Either my brother or my sisters _____ the keys to the truck. (has, have)
6. _____ Whitney and her friend need a ride to the station? (does, do)
7. The situation concerning the reports and their authors _____ under investigation. (is, are)
8. Fifteen dollars and 40 cents _____ the amount of change she received. (is, are)

6.7 Evaluation: Conventions, Clarity, and Coherence

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Evaluate and implement formal feedback on all aspects of your writing.
- Reflect on another reader's response to the rhetorical choices you made as a writer.

When you have revised and edited your proposal, ask a friend or classmate to read and evaluate the final draft using the following rubric, which is similar to one your instructor might use. The rubric is designed to be a critical review based on the instruction and suggestions given in this chapter. At the end of the rubric is a section for your reader to offer additional comments. Read feedback closely, reflecting on suggestions and asking any questions you have. Then read your paper again, implementing the feedback you find helpful to revise.

Rubric

Narrowing a Problem	Focusing Questions		
5 **Skillful**	The text always adheres to the "Editing Focus" of this chapter: subject-verb agreement as discussed in Section 6.6. The text also shows ample evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The introduction sparks interest and leads expertly to the thesis. Problem-and- solution paragraphs have a central point and are developed fully; the recommendation is appropriate. Evidence is integrated smoothly and skillfully into sentences; transitions clearly connect ideas and evidence. The language is consistently clear and appropriate.	The proposal topic demonstrates a superior understanding of purpose. The proposal itself shows expert awareness of audience, context, and community expectations. The presentation is highly appropriate to the content. The writer's voice is consistently objective and trustworthy.
4 **Accomplished**	The text usually adheres to the "Editing Focus" of this chapter: subject-verb agreement as discussed in Section 6.6. The text also shows some evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The introduction sparks interest and leads smoothly to the thesis. Problem-and- solution paragraphs have a central point and are developed adequately; the recommendation is appropriate. Evidence is integrated smoothly into most sentences; transitions make some connections among ideas and evidence. The language is usually clear and appropriate.	The proposal topic demonstrates understanding of purpose. The proposal itself shows awareness of audience, context, and community expectations. The presentation is appropriate to the content. The writer's voice is sufficiently objective and trustworthy.
3 **Capable**	The text generally adheres to the "Editing Focus" of this chapter: subject-verb agreement as discussed in Section 6.6. The text also shows limited evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The introduction is somewhat interesting; the transition to the thesis could be smoother. Problem-and-solution paragraphs have a central point but are marginally developed; the recommendation is fairly clear. Evidence is integrated into sentences inconsistently; the connections among ideas and evidence are inconsistent. Language may be confusing or inappropriate at times.	The proposal topic demonstrates some understanding of purpose. The proposal itself shows some awareness of audience, context, and community expectations. The presentation is mostly appropriate to the content. The writer's voice strays occasionally from objectivity and trustworthiness.

TABLE 6.7

Narrowing a Problem	Focusing Questions		
2 **Developing**	The text occasionally adheres to the "Editing Focus" of this chapter: subject-verb agreement as discussed in Section 6.6. The text also shows emerging evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The introduction may be mildly interesting; the transition to the thesis is lacking. Problem-and-solution paragraphs often lack a central point and are poorly developed; the recommendation is weak. Evidence is poorly integrated into sentences, with few connections among ideas and evidence. The language is often confusing or inappropriate.	The proposal topic demonstrates a weak understanding of purpose. The proposal itself shows minimal awareness of audience, context, and community expectations. The presentation is somewhat appropriate to the content. The writer's voice is only occasionally objective and trustworthy.
1 **Beginning**	The text does not adhere to the "Editing Focus" of this chapter: subject-verb agreement as discussed in Section 6.6. The text also shows little to no evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The introduction may be mildly interesting; no discernible thesis is stated. Problem-and-solution paragraphs lack a central point and are undeveloped; the recommendation is either inappropriate or absent. Evidence is not integrated into sentences; there are no clear connections among ideas and the minimal amount of evidence that is present. The language is confusing or inappropriate.	The proposal topic demonstrates little or no understanding of purpose. The proposal itself shows little or no awareness of audience, context, and community expectations. The presentation is inappropriate to the content. The writer's voice is neither objective nor trustworthy.

TABLE 6.7

6.8 Spotlight on … Technical Writing as a Career

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Describe technical writing as a career path.
- Explore the field of technical writing in greater depth.

If you like science and technical fields and you like to write, you may want to explore technical writing as a career path. Technical writers usually have a degree in English, journalism, or communication. Often, they also have knowledge, college coursework, or a degree in a specialized field such as computer science, engineering, medicine, biology, agriculture, and other technical fields, such as manufacturing, construction, welding, and plumbing; however, companies will usually train technical writers on the subject needed and the style in which the writers they employ need to write.



FIGURE 6.9 Technical writers create a variety of content, including texts such as detailed procedural guides and various government publications. Though technical writers often face tight deadlines, they usually have flexibility in their working environments. (credit: "Woman working behind computer" by Pxhere/Wikimedia Commons, CC0)

Although the work varies depending on the industry, organization, and specific position, technical writers typically perform the following tasks:

- **Create content.** Technical writers create an array of documents, such as product information, operating and assembly instructions, "how-to" and "owner's" manuals, technical documentation, business proposals (solicited and unsolicited), lists of frequently asked questions (FAQs), grant proposals, and journal articles. (For more on how to write a business proposal, which contains specific sections that often are not included in an academic proposal paper, see the OpenStax *Business Communications* text.)
- **Research.** Technical writers conduct research to gather the information they need to write accurate, professional, and helpful content.
- **Edit.** Technical writers edit and standardize content prepared by other writers in their organization.
- **Adapt content for multiple platforms.** Technical writers create paper-based and digital content, using text, graphics, images, sound, and video to be distributed across different platforms, including an organization's website and social media.

In addition, technical writers develop and use the following skills:

- **Writing.** Technical writers spend extended periods of time in front of a computer writing complicated information in clear and concise language.
- **Audience awareness.** Technical writers are highly aware of the audience for their writing. They plan, organize, and distribute the content they create with their readers, viewers, and users in mind.
- **Communication and collaboration.** Technical writers typically work on teams and collaborate with technical experts, coworkers, and clients.
- **Problem-solving.** Technical writers often need to figure out how something works in order to write documents their audience can understand.
- **Time management.** Technical writers often work on multiple projects with tight deadlines. Setting priorities to keep projects on track is a key skill.

To learn more about technical writing as a career, including average pay, employment outlook, and more, see the U.S. Bureau of Labor Statistics *Occupational Outlook Handbook (https://openstax.org/r/occupationaloutlookhandbook)*. You can also read job descriptions and search for internship opportunities at job sites such as Indeed, Monster, or Snagajob.

6.9 Portfolio: Reflecting on Problems and Solutions

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Reflect in writing on the development of your writing process.
- Reflect in writing on how the writing process affected your work.
- Reflect in writing on your objectivity as a writer.

As you complete your proposal, think critically about your writing process. Reflect on what you created from the first steps of discovering ideas to the last steps of writing and editing the final draft.

Reflecting on Your Proposal

Respond to the following questions to reflect on your writing process for your proposal:

- How did you choose the problem you wrote about? Did you have to narrow or expand it?
- What methods did you use to gather ideas about the problem and possible solutions? What outside sources did you consult for information?
- How did you settle on your thesis? Did you rewrite it multiple times?
- What strategies did you use to organize the information for your proposal?
- What strategies did you use to develop paragraphs? What difficulties, if any, did you encounter?
- Were you satisfied with the recommendation(s) you made and how you ended the proposal?
- How challenging was it for you to adopt an objective stance? How did you adapt your language as you drafted and revised your proposal?
- How did input from peers and other readers affect your drafting and revising processes? What specific constructive criticism did you receive that helped you?
- In what ways was this proposal easier or harder to write than other papers you have written?
- What could you have done differently to make writing your proposal easier or more effective?

Further Reading

These texts might be useful for you when writing proposals.

Ann, Lee, et al. "Research Proposal: The Association Between Serum Vitamin D Levels and Childhood Obesity." *Centers for Disease Control and Prevention*, CDC, 1 May 2020, http://www.cdc.gov/rdc/data/b3/SampleProposal.pdf.

Johnson-Sheehan, Richard. *Writing Proposals.* Pearson, 2007.

Pinkert, Laurie A. "Writing Reports, Proposals, and Technical Documents." *Purdue Online Writing Lab,* Purdue University, https://owl.purdue.edu/owl/subject_specific_writing/professional_technical_writing/technical_reports_and_report_abstracts/reports_proposals_and_technical_papers.html.

RaiseMe. "Technical Writers: Salary, Career Path, Job Outlook, Education, and More." *Raise.me*, https://www.raise.me/careers/media-and-communication/technical-writers.

Skopinski, T. H., and Katherine G. Johnson. "Determination of Azimuth Angle at Burnout for Placing a Satellite Over a Selected Earth Position." *NTRS—NASA Technical Reports Server*, NASA, 1 Sept. 1960, http://ntrs.nasa.gov/citations/19980227091.

Works Cited

Gawande, Atul. *The Checklist Manifesto: How to Get Things Right.* Picador, 2009.

Shetterly, Margot Lee. *Hidden Figures: The American Dream and the Untold Story of the Black Women Mathematicians Who Helped Win the Space Race.* William Morrow, 2016.

Varma, Roli. "Women in Information Technology: A Case Study of Undergraduate Students in a Minority-Serving Institution." *Bulletin of Science, Technology & Society*, vol. 22, no. 4, 2002, pp. 274-282. www.unm.edu/~varma/print/BSTS_Women%20in%20IT.pdf.

White, Sarah K. "Women in Tech Statistics: The Hard Truths of an Uphill Battle." *CIO,* IDG Communications, 8 Mar. 2021, www.cio.com/article/3516012/women-in-tech-statistics-the-hard-truths-of-an-uphill-battle.html.