To the right are steps you can use to complete a research project. As with any process—but especially with research—these steps look neat on paper but are less so in reality. Sometimes you have to start over when a line of research leads you nowhere or when you simply cannot find anything interesting or motivating. Sometimes you have a purpose in mind but then when you get into the nitty-gritty of writing you find that you have to change your purpose, do more research, and start writing all over again.

Modify this process to make it your own—or develop your own. Pay attention to the actions and ways of thinking (or productively procrastinating) that help you most in developing communications that achieve what matters to you.

In academic writing, the process is one of continually trying to state your overall argument—your purpose—in as clear and precise a manner as possible. You need to be able to state your purpose to yourself, so that you can decide what research you need to do and how to choose among different possible writing strategies. You need to be able to state the purpose clearly in your writing, too, in order to shape an introduction, body, and conclusion to a paper that others will read thoughtfully and with understanding.

In what follows, we suggest approaches to help you keep focused on the goals of academic writing, which certainly include getting a good grade but which also include making careful, supported arguments for positions you want others to consider respectfully.

1. Develop an initial question about what you want to find out.
2. Use your question to help you figure out what you need to research and learn to write your paper.
3. Carry out your research.
4. Use the research to help develop and test a design plan.
5. Produce and test your communication.
DEVELOPING A QUESTION TO ANSWER THROUGH RESEARCH

One way to develop a statement of purpose for a research paper is to get very clear about the question you want to answer through your research. Combining this question with audience and context can help you develop a solid statement of purpose that will help you figure out how to proceed creatively with your research.

Research can really begin with a research question, a question that motivates you to do the research and gives you direction, a question that opens up a complex subject and shows you what you need to do to research your subject successfully, a question that links you to what interests other people.

Research questions evolve as you do the research. Questions lead to other questions, and early answers sometimes lead to new and revised questions.

The question you develop will vary depending on the kind of research you do. You may be doing “friendly” research, for instance, tracing a family genealogy, which calls for an eye for detail rather than a critical eye. But you may also be researching what happened in Palestine in 1948, and that requires a critical eye because there are conflicting accounts of events.

One scheme for developing questions

People who study critical thinking have devised a scheme for questions to help you figure out directions you need to go; this scheme is based on how lawyers have learned to focus the point they are arguing. This schema says that you can ask:

**question-types to guide research**

<table>
<thead>
<tr>
<th>fact</th>
<th>definition</th>
<th>interpretation</th>
<th>consequence</th>
<th>value</th>
<th>policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>What happened?</td>
<td>What is something?</td>
<td>How do we understand and make sense of what happened?</td>
<td>What caused what happened?</td>
<td>Is what is at stake good, useful, worthy of praise—or of blame?</td>
<td>What should we do?</td>
</tr>
<tr>
<td>Who was involved?</td>
<td>What is the accepted way of using the word, title, or expression that is at issue?</td>
<td>How are we to connect facts and definitions into a story that makes sense to us?</td>
<td>What are the effects of what happened?</td>
<td>What rules should we make or enforce?</td>
<td></td>
</tr>
<tr>
<td>Where?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When?</td>
<td></td>
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</tbody>
</table>
How others have used this scheme to develop questions

Your immediate purpose in writing a research paper is to demonstrate to your teacher that you can (or can learn to) write such a paper—but you need to develop for yourself a stronger purpose, one that intrigues you. This is where you can use the question-generating scheme we just described, to get yourself interested by finding a question that matters to you. In a class that Anne taught, Andrew Rajala, a mechanical engineering major, started working toward a research paper by jotting down his initial sense of purpose: he wanted to get others thinking about the loss of manufacturing jobs in the United States. Andrew was interested in this question because his family has been involved in manufacturing for several generations. Here are the kinds of questions that such an initial sense of purpose can generate.

Here are **questions of fact** about the loss of manufacturing jobs in the U.S.:
- How many jobs have been lost?
- Are the jobs being lost in one area of the country or all areas?
- Is the rate of job loss increasing or decreasing?
- Are the jobs simply disappearing, or are they going elsewhere?
- Who makes the decisions that end in job loss?

Here are **questions of definition**:
- What counts as a "manufacturing job"?
- Are manufacturing jobs different in any way from other kinds of jobs in this country?
- What has to happen for a job to be counted as being "lost" in the U.S.?

Here are **questions of interpretation**:
- What causes job losses in the manufacturing sector in the U.S.?
- Why should people care about job loss?
- Is job loss useful in any way to the companies that move their jobs to other countries?
- Is there any way that job loss can be useful to the U.S.?

Here are **questions of consequence**:
- Aside from the loss of a paycheck, what are other consequences of an individual losing a job?
- What are the concrete effects of job loss, besides someone losing a job?
- Who in a community is affected by the loss of one job?
- How is the country’s economy overall affected by job loss?
- Do our actions as individuals in this country contribute to job loss in any way?

Here are **questions of value**:
- Why should we value keeping manufacturing jobs in the U.S.?
- What values lie underneath the willingness of companies to lay off workers?
- What values lie underneath the willingness of companies to move jobs elsewhere?
- What kinds of values would we have to change as individuals and as a country to keep jobs in the U.S.?

Here are **questions of policy**:
- What legal policies encourage companies to move manufacturing jobs out of the U.S.?
- What kinds of legal policies would encourage companies to keep jobs in the U.S.?
TURNING GENERAL QUESTIONING INTO A PRELIMINARY RESEARCH QUESTION

By looking at which questions interested him the most, Andrew could see that he was interested in the effects of job loss on individuals and their families, but also on what we each do as individual citizens and as a country to stop job loss.

He pulled his concerns into one general research question to help him get his thinking started:

What is causing manufacturing job loss in the United States, who is affected by it, and what can the average person do about it?

You can see that Andrew has pulled together an overall question that is a combination of a question of interpretation, a question of consequence, and a question of policy. This is perfectly fine—and the overall question (as you will see in steps 2 and 3) helps Andrew focus the matter of his paper so that he knows what he needs to find out if he is going to develop some sort of answer to the question. The other questions listed on the previous page don’t disappear now; in addition to the research question above, Andrew can use the other questions to be sure he is finding out enough—as you’ll see in step 2.

ANALYZING RESEARCH QUESTIONS

Discuss and write with others: With a partner, use the questions of fact, definition, interpretation, consequence, value, and policy we just described to develop preliminary research questions about the following topics:
- the decline in the frog population around the world
- the military draft in the U.S.
- why women earn less money on average than men in the U.S.
- music downloading
- the drinking age in the U.S.
- religious affiliations in the U.S. over the last century

Use the questions you generate to develop and write down a preliminary research question for each topic.

Compare your question with that of others in class. Discuss what interests you in the potential research—and what doesn’t—and why. How can you modify the question to make it as interesting to you—and to your identified audience—as possible?

Write and discuss with others: Choose a topic that interests you, and write down as many questions as you can about it using the questions of fact, definition, interpretation, consequence, value, and policy.

Exchange your list of questions with others in class. How many questions can you add to the lists of others? Make this trade with two or three other people so that you get a wide range of questions.

Based on the questions you generate and that your classmates contribute, develop a potential research question. Show your questions to others, and get their feedback on how effective they think your approach is going to be.

Write and discuss with others: Imagine studying the organization Mothers Against Drunk Driving (or another organization you know) in your economics class, your history class, and your composition class. With a partner, come up with questions about the organization using the questions of fact, definition, interpretation, consequence, value, and policy scheme we just described.

Compare your questions with others in class and decide which have the most research potential for the different classes we listed above: which look to you like they might lead to interesting results in each area—and why?
THE OBVIOUS RESEARCH INTO THE TOPIC

Andrew's question—

What is causing manufacturing job loss in the United States, who is affected by it, and what can the average person do about it?

—indicates several obvious issues Andrew needs to research. He needs to find out about:

- the causes of job loss in this country
- the effects on people of job loss in this country
- the actions individuals can take

It may seem ridiculously silly to lay out such obvious matters, but in doing research it is important to be as obvious as possible. The best research papers are the papers in which writers make absolutely clear what they are arguing—to themselves as well as to their readers.

Writers who can say to themselves exactly what it is they need to know to answer their question—and who can stay focused on what they asked, with room for discovery of cool additional information to carry the research into deeper and more intriguing questions and directions—set themselves up to write the papers teachers like: focused and well-supported.

NOT SO OBVIOUS RESEARCH: RESEARCHING YOUR AUDIENCE

Research is only worth doing if you learn something from it—and research papers are only worth writing if your audience learns something as well. Because each of us reads or watches differing amounts of news from different sources and is interested in different topics, you cannot count on your audience for a class research paper—the other people in your class—knowing anything, or even caring, about the question you are asking.

How do you learn what they know and care about? You ask them. You can do this formally, by asking your audience to fill in a written survey sheet through which you ask what they know about your topic and what aspects of it matter to them. You can also do this through informal conversations. Sitting down with a group of others to chat about your topic can be a relaxing way to learn quite a lot about how others think. You can also use your topic as a ground for conversation with friends over lunch or dinner—anyone who could be in your class can help you learn how others think about your topic and consequently how you can shape your writing so that others can be persuaded to care about your topic as you do.

NOT SO OBVIOUS RESEARCH INTO THE TOPIC

After you research your audience's knowledge and attitudes toward your topic, you are in a position to figure out what you need to research in addition to the obvious directions suggested by your research question. For example, by chatting informally about his topic with others in class, Andrew learned that were he only to research the three directions indicated by his research question, he would not have all the information he needed. By looking through the whole list of questions he generated on his way to generating a research question, and asking if any touch on what his audience thinks and believes, Andrew understands that he also needs to:

- Research how many jobs have been lost, and where, and whether the trend of job loss looks like it will continue, in order to persuade his classmates that this topic could affect them when they graduate.
- Research how job loss happens, in order to be able to explain to his readers what it is they can do to keep job loss from happening.
- Research what about manufacturing jobs should make them matter to those in his audience.
STAGES OF RESEARCH
You have a research question, and you've learned what your audience does or does not know and does or does not care about relative to your question. It is time to research what others—experts, opinion writers, people who have experienced something relative to your topic—know or think about the topic. As you pursue your research, keep in mind that there are two stages of researching, stages that don't relate in an orderly manner.

1. You research with an open mind to learn more, to see if there are other positions on your topic that matter to you or other possible arguments. Maybe as you research broadly and look into topics you narrow your question or shift its focus.

2. When you feel that your position is focused, you research to find specific support to make your argument.

The first stage needs to come first, but it may sound as though you then move automatically into the second stage and that's it. But often you will think you have a solid position on your topic, but as you research you'll realize that your position changes—and you need to learn more through stepping back into the first stage.

When you are in the first stage, you read just to take in general information, to let your thoughts move back and forth through facts, ideas, and positions put forward by others, to get a sense of a position you yourself want to take; for example, as Andrew does his initial research, he is just simply looking to see who is affected by job loss and how it happens. As he reads this way, he can keep asking himself what he thinks, and what other opinions are persuading him, and why.

When you know your position, you can look quickly through sources, seeking only the specific support you need.

If you know what stage you are in as you research, you know what attitude you need to take toward reading and looking.
WHAT TO RESEARCH?
Once you have the questions you need to research, you can start thinking about where to research.

We assume you've had to write research papers before and that you understand that you need to find sources that you will cite in your paper in support of your arguments. We offer you an approach for thinking about what sorts of sources will be most useful to you depending on the directions your research is taking.

Instead of just taking your questions and plugging them straight into Google (which we will discuss as an approach), there are other approaches that can help you more reliably find trustworthy, appropriate sources.

The categories into which your questions fit can indicate where to research:

<table>
<thead>
<tr>
<th>fact</th>
<th>definition</th>
<th>interpretation</th>
<th>consequence</th>
<th>value</th>
<th>policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>statistics</td>
<td>dictionaries</td>
<td>editorials</td>
<td>statistics</td>
<td>organizational mission statements</td>
<td>governmental decisions</td>
</tr>
<tr>
<td>&quot;hard&quot; news sources</td>
<td>disciplinary dictionaries</td>
<td>opinion pieces</td>
<td>historical accounts</td>
<td>results of votes</td>
<td>organizational policy statements &amp; decisions</td>
</tr>
<tr>
<td>government or organizational documents</td>
<td>first-hand accounts (interviews, autobiographies)</td>
<td>partisan news sources</td>
<td>photographs of the aftermath of events</td>
<td>surveys &amp; polls</td>
<td>business records</td>
</tr>
<tr>
<td>photographs of events</td>
<td>trial transcripts</td>
<td>stories</td>
<td>the items in the &quot;interpretation&quot; column</td>
<td>position statements</td>
<td>trial decisions</td>
</tr>
<tr>
<td>surveys &amp; polls</td>
<td>government archives</td>
<td>artwork: movies, novels, short stories</td>
<td>the items in the &quot;interpretation&quot; column</td>
<td>biographies</td>
<td>politics</td>
</tr>
<tr>
<td></td>
<td>atlases &amp; encyclopedias</td>
<td>position statements</td>
<td></td>
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</tbody>
</table>

This chart is not all encompassing, and some may disagree over exactly where some of these items fit—but nonetheless this chart can get you started doing your research in useful directions.
USING THE "WHAT TO RESEARCH" CHART TO THINK ABOUT WHERE TO LOOK

As we indicated in step 1, Andrew's question—
What is causing manufacturing job loss in the United States, who is affected by it, and what can the average person do about it?
is a combination of a question of interpretation, a question of consequence, and a question of policy.

To help him think in more depth about his question and find support that will help him produce a persuasive paper, the "What to Research" chart helps Andrew see that he can search for useful information by looking for and in the kinds of sources listed under "interpretation," "consequence," and "policy" in the chart; furthermore, the additional questions Andrew saw that he needed to ask—from the work he did in step 2—require him to ask questions of fact (how many jobs are being lost) as well as of interpretation (how job loss happens and why his audience should care about manufacturing job loss).

CHOOSING THE KINDS OF SOURCES TO PURSUE

Eliminating possibilities
It may look to you, from the lists, as though you are going to have to do hours and hours of looking in order to peruse all the kinds of sources that can help you think in more detail about your question. But your question can also help you eliminate some kinds of sources.

Andrew needs facts to persuade his audience that manufacturing job loss is indeed happening in numbers that ought to concern them, and that this is an ongoing condition. As he looks down the list of kinds of sources to seek, he can see that statistics—probably from governmental sources—will be most useful to him. He doesn't need to look in encyclopedias or atlases for that kind of information, and first-hand accounts—although they could show some of the factual consequences of job loss—will not help him make the case that manufacturing job loss is happening to too many people now.

Thinking creatively about possibilities
As Andrew looks over the lists, however, and thinks about first-hand accounts, he thinks that such accounts could help add pathos to his argument: by seeing how job loss affects individuals, Andrew's audience might have a better feeling for the consequences of job loss—and might see how it could affect them, too.

ANALYZING WHAT YOU NEED TO RESEARCH

Write and discuss with others: With a partner, look at the preliminary research questions below; decide what kinds of questions they are (fact, definition, interpretation, consequence, value, policy—or some combination). Make a list of the kinds of sources someone who was asking these questions should turn to for research assistance:

- In what countries do men and women earn close to the same amounts of average pay? What social and working conditions encourage such equitable pay?
- How are television shows rated? How do the ratings affect the kinds of shows that appear?
- How are environmental decisions made about Antarctica?
- What factors led to the popularity of spoken word poetry and poetry slams in past years?
- How is "gun control" different from "gun rights"?
- What causes mad cow disease? How does mad cow disease move into humans? Are current laws about meat production sufficient to keep us safe?
- Is it a good idea to allow young children to play video games?
**WHERE TO RESEARCH?**

Ah, we know that your first impetus is to sit at your desk and Google some keywords tied to your research. We all do this—there are good reasons and good ways to do this. And we’ll discuss this shortly. But keep in mind that when you want to do thorough, creative, persuasive research you need to stretch a bit.

In the illustration above we’ve listed places for carrying out research—and what you can find in those places, which overlap.

On the next pages we step through when and how to take advantage of all the research resources listed above.