



LANGUAGE ARTS

Thinking About a Change?

by Jennifer Ahn

Overview

Students will:

- Learn the differences between deductive and inductive research.
- Decide whether one person can change the world.
- Write a paper using both inductive and deductive research.

Terrain Article: “One Rad Room,” pages 10-11, Spring 2006

Introduction

If someone asked you to share your thoughts on a controversial topic, like abortion, chances are you’d have a strong opinion. Maybe you’d feel that women have a fundamental right to choose what happens to their bodies. Perhaps you’d feel that abortion is a legalized form of murder. Or maybe, you’d have a qualitative opinion: you’d agree with some aspects of both sides.

Much of our lives are guided by a system of beliefs — our opinions about the world. Many factors have led us to our opinions: family, friends, school, religion, the list goes on. But these factors alone do not dictate our opinions. If they did, we would be mindless automatons.

Thankfully we’ve been given the ability to think for ourselves. Though many different factors contribute to our opinions, it is the way we look at these factors that ultimately forms our opinions.

Deductive and inductive (or top down and bottom up) **research** are two ways we do this.

Let’s say you want to buy a car, not just any car — a new Honda Civic. You really like the way it looks. Your mother and brother both drive Hondas and swear by them. You’ve heard they are reliable cars and within your price range. You

decide that the Honda Civic is for you. This is an example of **deductive** or **top down research** because you decided that you wanted that Honda Civic first. Then, you came up with reasons to support your opinion.

On the other hand, let’s say that you want to buy a car in a particular price range, but you’re open to many different kinds. You research online for gas mileage and reliability. You begin to notice what your friends drive and start asking them questions about their cars. You explore new and used cars. You even go to the dealership to test drive a few models. After an extensive search, you narrow your options to two or three cars. This is an example of **inductive** or **bottom up research** because you started with the research and then you made up your mind.

There are pros and cons to both **deductive** and **inductive research**. Both have their place in the world and in our lives.

As you explore **deductive** and **inductive research**, consider which method you use to formulate your opinions about the world.

If we become more aware of how we formulate our opinions about the world, we gain further control over our thoughts, ultimately leading to more control over our lives. Who doesn’t want that?



CA LANGUAGE ARTS STANDARDS, GRADES 11-12: *Reading Comprehension 2.4 Make warranted and reasonable assertions about the author's arguments by using elements of the text to defend and clarify interpretations. Literary Criticism 3.8 Analyze the clarity and consistency of political assumptions in a selection of literary works or essays on a topic. Writing Applications 2.2 Write responses to literature: c. Support important ideas and viewpoints through accurate and detailed references to the text and to other works. e. Identify and assess the impact of perceived ambiguities, nuances, and complexities within the text.*



Introducing Deductive and Inductive Research

Warm-up Activity

Students will use a journal prompt as a springboard to a deductive and inductive research lecture.

Teacher Directions

1. Ask students to take out paper and a pen. Provide the students with the journal prompt below. Give students approximately 10-15 minutes to complete their journal entry. The purpose of this activity is to generate ideas that will eventually lead into a discussion and mini-lecture on deductive and inductive reasoning.
2. Draw a T-chart like the one below on the board, on an overhead, or on a large piece of butcher paper. Ask the students to call out their responses.

Reasons why one person CAN change the world

Reasons why one person CANNOT change the world

3. Call on a student to give a particular reason for why one person can or cannot change the world, write the reason in the appropriate square of the T-chart.
4. After conducting the discussion, ask the students if any of them have changed their minds. If so, ask them why. Also ask why some students did not change their minds. Tell students that even though they may not have been aware of it, in this activity, many probably used deductive research to complete the task. This means that they formulated their opinions first and then found examples to support their belief. This is a kind of top down thinking. If, on the otherhand, the students could not come up with a concrete answer but responded that they needed to do more thinking or research, they were using a kind of bottom up thinking.

Student Directions

Take 10-15 minutes to respond to the following prompt in at least one page of writing. When you're finished, read what you wrote to the classmate closest to you. Discuss the similarities and differences of your journals.

Do you think a single person can change the world? Why or why not? Use clear examples or observations to support your opinion.





The Heart of It All

Mini-lecture

Students will learn the definition of deductive and inductive research, and the pros and cons of each.

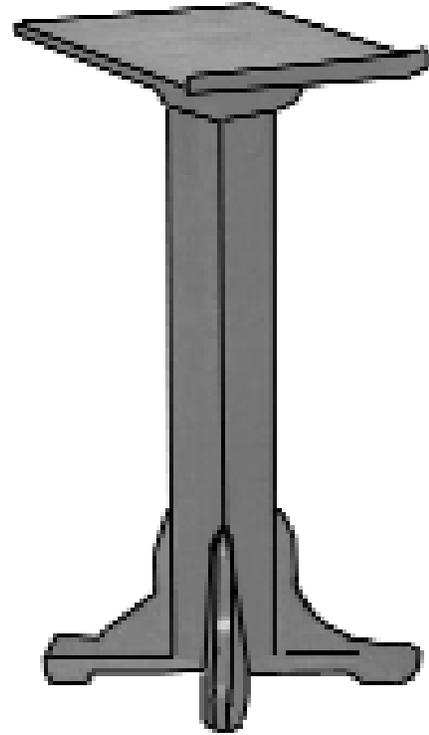
Teacher Directions

1. Ask students to take a piece of paper for notes. Define deductive and inductive research. (See **handout on page 21.**)
2. Explain that when students wrote their journals, many of them used a kind of deductive research. This is because they drew their conclusions first. After they came to their conclusions, they began finding examples to support their conclusions.

However, once the class held the discussion, the students could hear many examples supporting both sides of the T-chart. Some of the students probably changed their minds, while others did not. This discussion actually acted as a type of inductive research. Students either amended or stayed with their conclusions after an exploration of different observations and examples given to them by their peers. This is a bottom up approach: finding examples and then deciding an opinion or belief.

Since deductive research or top down thinking starts with a belief and then moves to examples that support that belief. The discussion was not a form of deductive research.

3. Ask the student to give examples of deductive and inductive thinking in their everyday lives. For example, when a student tells a parent that she should be allowed to go to a party, she probably uses deductive research to explain why. On the other hand, a student may use inductive research when deciding whom to ask to a school dance.
4. Provide the pros and cons of deductive and inductive research below. Ask the students what they think is the more common approach to thinking for them and the world in general.



Inductive (Bottom up) Research

Pro

It is more exploratory and open-ended. It elicits creative thinking. It is less directive than deductive inquiry.

Con

Inductive research may require more time in the long run. Because it is focused on data generation, it does not provide anything that is necessarily conclusive.

Deductive (Top Down) Research

Pro

Deductive research is formulaic. There is only one conclusion. It is a safer form of research because it is confined to one belief or one opinion.

Con

Deductive research may be faulty because it does not acknowledge contrasting examples or research.

5. Tell the students that both types of inquiry are used to develop theories about the world. Deductive research is simply theory testing. Inductive research is theory/opinion generating. Now, in one half page of writing, have them to come up with one opinion that resulted from top down thinking and another that resulted from and bottom up thinking. When they are done have them read this informal writing aloud.

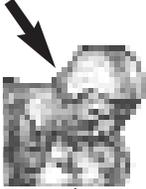


What It Looks Like

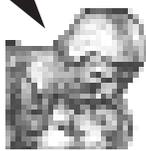
Handout



Theory/Belief



Testable Hypothesis



Observation



Confirmation

Deductive Research

works from the general to the specific. This is also called a "top-down" approach to research. First, we begin with a theory, say "everyone who wears glasses is smart." Then, we narrow our general idea down into something we can test—a hypothesis, something like "all people at school with glasses are smart." Then we collect observations to address the hypothesis we made. Maybe we develop a five question IQ test and administer it to all the students in the hall during passing period. After we give the test, we go back to our original theory. Did our findings support our theory? In this way, we come up with a confirmation (or not) of our original theory. But don't let the term "research" mislead you. This deductive research method is often how we all develop our ideas and opinions about something even when we're not doing formal "research."

Inductive Research

works the other way, moving from specific observations to broader generalizations and theories. This is also called a "bottom up" approach. In inductive research, we begin with specific observations and measures. For instance, maybe we begin to notice the dress code

of the teachers. During lunch, we remark upon these outfits to our friends. Some teachers always "dress up," while others wear jeans and T-shirts. After laughing for a while, we might begin to detect patterns in dress codes. We notice that all the English teachers in the lunchroom who are under 30 wear jeans. Half of the math teachers always wear ties. Art and PE teachers generally wear sweats. Soon we formulate some tentative hypotheses that we can test, like: teacher dress is first affected by subject, then by age. We test this tentative hypothesis, by recording the age, subject, and style of dress. After we look at our data, we end up developing some general conclusions or theories about teacher dress.

Neither inductive nor deductive research work in a vacuum. We may have a tendency to think one way or the other, but we often use both when we are really trying to make up our mind about something or trying to convince some one else of something. In fact, if you look closely at these diagrams, you can see that they could very easily be combined.

Theory/Belief



Tentative Hypothesis



Discovering a Pattern



Making Observations



Sources: William M.K. Trochim, *Research Methods Knowledge Base*; Partnership of the Higher Education Academy's Centre for Sociology, Anthropology and Politics, the Centre for Social Work and Policy and Sheffield Hallam University



Reading to Reiterate

Talking to the Text

Students will find examples from a *Terrain* article to help further their responses to the question: “Can one person change the world?”

Teacher Directions

1. Share the purpose of this activity with the students: to foster inductive research and further explore the journal prompt, which will eventually lead to paper.
2. Pass out the *Terrain* magazine article, “One Rad Room.”
3. Model annotating the text. Place a copy of the first paragraph of the *Terrain* article on an overhead. Read the article aloud. Say and write down the thoughts you’re having while reading the text: your questions, criticisms, connections, etc. When you find a section of the paragraph regarding how Rachael Robertson and the Green Room are trying to change the world, draw a box around it.
4. Allow the students some time to read and annotate.
5. When it is clear that most of the students are done discussing, ask each to share one opinion and the observation from the reading that led them to this opinion. Point out that the students are using inductive research.
6. Then, ask the students to call out one item on their list and its impact on the world. List these on a chalkboard, an overhead, or a large piece of butcher paper.



Student Directions

1. Read “One Rad Room” in *Terrain*, pages 10-11. While you’re reading, mark up the text. Write your thoughts, your feelings, your criticisms, your connections, etc. right on the article. At the same time, make sure to draw a box around any sentence that discusses how Rachael Robertson and the Green Room are trying to change the world.
2. When you’re finished reading and annotating the text, take out a piece of paper and fold it in thirds lengthwise and label it like the one below.

My impressions of the article	How Robertson and the GR try to change the world	How they actually impact the world

3. Fill in the columns. Once you’re done, pick a partner with whom to share your list. Fill in any gaps that may exist. Be ready to discuss your findings.



Putting It All Together: Student Directions

Essay

Students will write a two page paper, using inductive research, to state an opinion about a *Terrain* article.

You are going to write a two-page paper with a partner in which you use inductive research to re-examine the question: “**Can one person change the world?**” The *Terrain* article, “One Rad Room,” and the list you just generated will be your sources for this paper.

Here’s what you’ll do:

1. With your partner, look again at the list you’ve generated. Together, come up with an answer to the bolded question above. (It does not need to be definitive. Qualitative responses are welcome.)
2. Circle those areas of your list that may support your answer. Do any of your circles relate to each other? If so, draw a line between all related circles. These will be the heart of your paragraphs.
3. If you don’t have multiple observations to support your response, re-think your response and re-read the article.
4. Now that you have a few ideas that support your answer return to the article. Look at the boxes you have already drawn. Could you use these boxed areas to support the ideas you generated on the list? If so, draw another box around the quotes you’d like to include in your paper.
5. Determine where you want to place your paragraphs and split up the duty to write these paragraphs. One person has to write the introductory paragraph, the other the concluding paragraph. Determining the rest of the writing duty is up to you. Be aware: you will be graded separately for your work. If only one student does his share and the group ends up with only half a paper, he/she can still get an A.
6. Remember to use formal writing conventions and grammar. Here are some quick and easy guidelines:
 - Make sure that the first paragraph contains your thesis statement (your answer to the question).
 - Make sure that each paragraph after the initial one supports the thesis statement.
 - Transition phrases like therefore, moreover, thus, as a result, etc. help your paper flow. Use them.
 - Make sure that your conclusion actually concludes your thesis. This is place in your paper in which you restate and remind your audience of all your points.

