



Advanced | Exemplar Essay

## Investigating Change

### Evolving Ideas with Authority, Evidence, Logic, and Intuition



#### Claim and Focus

The essay offers a precise and significant claim that is clearly based on the topic of the prompt (“Even though it can take a while, authority, logic, evidence, and, to a certain extent, intuition become major factors...”). A strong focus on this topic is maintained throughout the essay, as the writer addresses one aspect of the claim at a time. A counterclaim, or in this case, the weakest portion of the claim, is addressed clearly (“Finally, intuition can be a contributing factor to whether or not someone changes their mind about something. Admittedly, it is not usually the main reason...”).



#### Analysis and Evidence

The essay incorporates the most valid, relevant, and significant evidence, taken from multiple sources provided with the prompt (Sources 2, 3, 4, 6, 7, 8). Each piece of evidence that is included is followed by a strong analytical explanation (“This caused a tremendous amount of fear in many scientists, which in turn affected how certain people viewed new ideas and whether they changed their minds, particularly about the geocentric and heliocentric views”), creating connections for the reader between each statement and the claim.



#### Organization

A sophisticated organizational structure is employed in this essay, offering a strong introduction and conclusion, as well as body paragraphs that clearly follow the order of discussion put forth in the claim. Clear and precise transitions are used throughout the essay (“Like stated before,” “Often times,” and “Even more so”), effectively demonstrating the relationships between ideas included within and among paragraphs.



#### Language and Style

A formal style and an objective tone are established and maintained throughout the essay, furthering the “write like a historian” feeling that this author brings to his or her writing. Sentence structure is varied and interesting throughout, and a wide variety of domain-specific words are incorporated to enhance the language (“hypotheses,” “heliocentric theory,” and “geocentric view”).



#### Using Exemplars in Your Lessons

Exemplar essays are tools to take abstract descriptions and make them more concrete for students. One way to use them is to print the clean copies of the essays and allow students to use the rubric to make notes or even find examples of important elements of an essay - thesis statements, introductions, evidence, conclusions, transitions, etc. Teachers can also use exemplars to illustrate what each score point within a trait ‘looks like’ in an authentic student essay. For additional ideas, please see “25 Ways to Use Exemplar Essays” by visiting the Curriculum Resources page in Help.

## Investigating Change



### Evolving Ideas with Authority, Evidence, Logic, and Intuition

Throughout history, scientists have made hypotheses and theories about the workings of the universe. As time continued, many of those ideas were challenged, but in ways that helped us all learn and grow. For any field of knowledge to expand, people must be willing to accept new information and ideas, and that happens most when ideas are challenged and discussed and when people's minds are changed, so new information can be incorporated into the theories. Even though it can take a while, authority, logic, evidence, and, to a certain extent, intuition become major factors in persuading others to change their mind on a certain topic and to come to a consensus on theories.

Based on the story of Ptolemy, Copernicus, and Galileo and the transition from the geocentric to the heliocentric view of the universe, it is evident that one reason people are influenced to change their thinking is authority. Because the Roman Catholic Church was what most people supported and believed in during that time, their authority was seen above everything else. In 1633, the Roman Catholic Church banned the teaching of the heliocentric theory, stating "The proposition that the Sun is the center of the world and does not move from its place is absurd and false... The proposition that the Earth is not the center of the world and... that it moves... is equally absurd and false... and at least an error of faith" (Source 8). This caused a tremendous amount of fear in many scientists, which in turn affected how certain people viewed new ideas and whether they changed their minds, particularly about the geocentric and heliocentric views.

Secondly, logic can play a big part in changing people's minds on something.

As people think through things in a logical manner, they can begin to ask questions about theories and ideas that have been simply accepted. When those questions are further investigated, it can effectively fuel the changing of a person's mind. Copernicus is a very strong example of this idea. "Even though his professors believed that the Earth was in the center of the Universe and did not move, Copernicus began to question those ideas" (Source 4). Like stated before, he later found mathematical errors in what Ptolemy had theorized, which made him really begin to change his mind. Rather than simply believing everything that his teachers told him, Copernicus used his own brain power to really think about the issue and recognized when things didn't logically add up. Because he was willing to question the logic of an accepted theory, he was able to change his own mind, and in turn, the minds of many others later on.

Additionally, evidence is a large factor in convincing people of new ideas. New evidence can change people's minds by giving concrete proof to challenge their opinion. For example, in Source 2 it says that "scientists called the movement of the planets 'retrograde motion.' 'Retrograde' means backward." This evidence is different from what other people later thought, because of the different evidence they were able to find. People had new evidence that suggested that "as Mars and the other planets moved around the Earth, they also made smaller orbits called 'epicycles'" (Source 3).

Because of the new evidence about the motion of the planets that people were able to find, they were able to update the things that were considered facts. Often times, people are very skeptical of certain subjects and choose to stay stern with a certain belief until provided strong evidence, but like Galileo and Copernicus, when people use strong evidence to really examine an idea, it can end up changing how they see things.

Finally, intuition can be a contributing factor to whether or not someone changes

their mind about something. Admittedly, it is not usually the main reason someone changes their mind, but rather intuition may be what drives someone to pursue an investigation on a certain subject. Other factors, like evidence, are needed to really get someone to change their mind. In Source 7, when talking about how Galileo discovered the moons of Jupiter, it states that “at first, Galileo thought the moons were “fixed stars” and did not move, but then he changed his mind” (Source 7). His intuition told him one thing, but then after observing the stars with his new telescope (Source 6) and gathering actual evidence, he was able to change his own mind about how things with the stars and moon worked. Even more so, intuition allowed Galileo to feel right about his discoveries and to be strong enough to continue researching until he found evidence that proved what he was questioning.

In conclusion, as the stories of Ptolemy, Galileo, and Copernicus demonstrate, people will most often change their minds when authority, evidence, logic, and to a certain extent, intuition are presented. The story of the geocentric and heliocentric views of the universe very clearly demonstrate how even scientists and people who work with scientific things for a living can use these four things to affect how they change their minds about things. All people, not just scientists, are able to see new ideas clearly when they employ all four of these elements, and then change their minds appropriately according to the new information and experiences that they have gathered.