

Literacy Design Collaborative

Literacy Context:

SCIENCE

Writing Mode:

INFORMATIONAL/EXPLANATORY

ANCHOR PAPERS

FOR

MIXED MODULE

Middle School

(Grades 6 – 8)

Overview

Overview | Roller Coaster Motion



Roller Coaster Motion

by [REDACTED]

Students use a ride on a roller coaster to help describe Newton's Laws of Motion and determine whether they feel it would be personally acceptable for them to ride the roller coaster.

Grades: 7 8

Discipline: Science

Course: null

Section 1: What Task?

TEACHING TASK

*Task Template 11 — [2 Levels]**Informational & Definition*

L1: After researching your textbook chapter on Newton's Laws, the article on, "Scared to Death" and one of the two other articles provided on The Laws of Motion, write an article for Science News that defines the 3 Laws of Motion and explains the effect each of the 3 laws have on a roller coaster and your personal choice to ride or not to ride a roller coaster. Support your discussion with evidence from your research.

STUDENT BACKGROUND

Students have just completed a 3 week unit on Newton's Laws of Motion(3). While most are comfortable explaining the definition of each law, they struggle with applying the laws to an example in real-life.

EXTENSION

Resources

Selected Articles**SCARED TO DEATH.**

Popular Mechanics (Aug2003)—Ruben, Paul

Reports on dangers associated with roller coaster rides.

1100L

**Move over, Einstein.**

New Scientist (3/19/2011)—Mullins, Justin

The article focuses on the use of evolutionary computing to determine equations that can discover the laws of nature. It states that doctoral student Michael Schmidt and his supervisor Hod Lipson created the Eureqa algorithm that uses experimental data to determine which mathematical equations best describe the data, and discovered an equation describing the motion of a double pendulum. It mentions that biologist Gürol Süel used Eureqa to examine cell differentiation in *Bacillus subtilis*.

1090L

**Inertia.**

Columbia Electronic Encyclopedia, 6th Edition (11/1/2011)—

Inertia (nûr'sh?), in physics, the resistance of a body to any alteration in its state of motion, i.e., the resistance of a body at rest to being set in motion or of a body in motion to any change of speed or change in direction of motion. Inertia is a property common to all matter. This property was first observed by Galileo and restated by Newton as his first law of motion, sometimes called the law of inertia. Newton's second law of motion states that the external force required to affect the motion of a body is proportional to that acceleration. The constant of proportionality is known as the mass, which is the numerical value of the inertia; the greater the inertia of a body, the less is its acceleration for a given applied force.

1240L

**THE LONG ARM OF THE SECOND LAW.**

Scientific American (Nov2008)—Rubí, J. Miguel

The article focuses on ways in which order emerges from chaos in nature, despite the second law of thermodynamics, which states that a system in equilibrium tends toward chaos, and not the reverse. Nature rarely finds a perfect equilibrium, and the author states that even in chaos, there can be smaller pockets of equilibrium. The author discusses a theory for nonequilibrium thermodynamics, which would explain instances where apparent chaos leads to order.

1070L

**High Rollers.**

Sports Illustrated (08/09/99)—Rushin, Steve

Focuses on roller coasters. Effect of roller coasters on the popularity of amusement parks in the United States; History of roller coasters; Statistics; Varieties and their descriptions; Reasons for roller coasters' popularity; Records and record holders for roller-coaster riding; Items lost on roller coasters; Comments from Jim Futrell of the National Amusement Park Historical Association (NAPHA) and others.

1160L

[Motion Sickness.](#)

Scholastic Choices (Sep2002)—

Provides information about motion sickness. Inability of the inner ear to control the balance of the body; Symptoms of motion sickness; Efficacy of taking medications to prevent motion sickness.

740L

Uploaded Files

[Day One Newtons Laws Quick Write on Prompt Thoughts.pdf](#)

Quick Write of Student Thoughts on Prompt.

[Reading for Meaning Agree Disagree Worksheet Scared to Death.pdf](#)

Reading for Meaning Agree/Disagree "Scared to Death" article with support/dispute statements

[All Article Readins for Law of Motion Modular.pdf](#)

All Articles in Packet for Students

[Blank Bibliogrpahy Worksheet.pdf](#)

Blank Bibliography

[Law of Motion Draft of Opening Paragraph.pdf](#)

Law of Motion Draft of Opening Paragraph

[Law of Motion Identifying Central Texts.pdf](#)

Law of Motion Indentifying Central Texts and Information worksheet

[Law of Motion Outline.pdf](#)

Law of Motion Outline

[Law of Motion Revision focusing on Conventions.pdf](#)

Law of Motion Revision focus on conventions

Keywords

Literacy Design Collaborative Anchor Paper Annotation Form

Content Area: ☒ Science

☐ History-Social Studies

☐ English Language Arts

Mode: ☐ Argumentation

☒ Informational/Explanatory

Grade Level: 7-8

Template Task #: 11

Module Title: **Roller Coaster Motion**

Teaching Task: After researching your textbook chapter on Newton's Laws, the article on "Scared to Death," and one of the two other articles provided on the Laws of Motion, write an article for Science News that defines the 3 Laws of Motion and explains the effect each of the 3 laws has on a roller coaster and your personal choice to ride or not to ride a roller coaster. Support your discussion with evidence from your research.

Work Sample ID: **MS-SCI.I11.Sample 39**

Dimension	Score	Explanation of the Score / Evidence
Focus	2	The prompt is partly addressed with three brief definitions of the Laws of Motion. There are few connections between the science and the desire to ride or not to ride a roller coaster.
Reading/Research	2	The student presents some details about the Laws, but dangers of riding a roller coaster are missing. Supporting details are simple statements like "This applies with a roller coaster .. ." and "How this deals with a roller coaster ..."
Controlling Idea	1.5	Information about the Laws, while minimally described, are not developed in relationship to the student's knowledge of roller coasters. The last paragraph shows the beginnings of a purpose, but "I would ride a roller coaster every day" is not supported prior. It is a small attempt to combine scientific knowledge with "every day" situations, but is not fully supported.
Development	1	Connections between the roller coaster and the Laws are minimally addressed. "This [inertia] applies in a roller coaster when you go around a turn your body wants to keep moving in a straight line" does not explain why the student "would ride a roller coaster," and in fact might convince someone otherwise. This is also confusing because "this article . . . will tell you how the three laws of motion keeps you in the cart." Details are too focused on retiering Newton's Laws to provide an explanation about the safety or enjoyment of being on a roller coaster. In the fourth paragraph, the action and reaction dscirption is not developed when "equal and opposite force" is mentioned. Overall, implications are forced and imprecise.
Organization	2	Movement from one Law to another is appropriate. There are no useful transitions to move the reader from one Law to the next, or to tie them together in relationship to the roller coaster.
Conventions	1.5	Commas are lacking, and needed, throughout. Sentences are therefore lengthy, and sometimes the main idea/subject is confusing: "How this deals with a roller coaster is as the cart pushes down on the track the track pushed up with equal and opposite force." The concluding sentence punctuates a question correctly, but it is missing in the first sentence. Sources are not cited.
Content Understanding	2	The response does note each of Newton's three laws of motion and give an example of how each applies to the scenario, but the explanations are very brief and do not go beyond the the definitions of the laws.

This student would benefit from feedback, discussion and/or instruction in the following areas:

- Elaborating on existing ideas
- Making connections between research and personal ideas
- Experimenting with transitions and vocabulary
- Editing techniques, especially in punctuation and sentence structure

Hang Tight

Have you ever wanted to ride a roller coaster, but you were afraid that you would fall out. If you read this article it will tell you how the three laws of motion keeps you in the cart.

Newton's first law of motion is Inertia. Inertia is the force of your body that makes you want to move in a straight line. This applies in a roller coaster when you go around a turn your body wants to keep moving in a straight line.

Newton's second law of motion deals with Net force, Mass, and Acceleration. The relationship among the quantities force, mass, and acceleration can be written in one equation.

$\text{Force} = \text{Mass} * \text{Acceleration}$. This applies with a roller coaster by if the cart has less mass in it then it needs less force to move it. If there is no one in the cart it will also have a higher acceleration.

Newton's third law of motion deals with action and a reaction. How this deals with a roller coaster is as the cart pushes down on the track the track pushes up with equal and opposite force.

After researching newton's three laws of motion and its effects on a roller coaster I would ride a roller coaster every day. What about you?

Information Sheet

Module Title: Erosion Control

Module Description (overview):

This module is designed for students to learn the techniques of research while extending their scientific knowledge in the area of erosion control. They will complete the FOSS Earth History Unit and research paper simultaneously. The students will be reading; *Water on Mars*, in the Earth History Resource book, watching the video; *Weathering and Erosion*, and using the internet to the research erosion control throughout this module.

Template Task (include number, type, level)	Teaching Task
Task 11 After researching _____(informational texts) on _____(content), write a _____ (report or substitute) that defines _____ and explains _____(content). Support your discussion with evidence from your research. L2 What implications can you draw? All levels include a bibliography	Prompt: L1 After researching internet sources on erosion control, write an essay that defines “erosion” and explains the reason for minimizing erosion. Support your discussion with evidence from your research. L2 What implications can you draw?

Grade(s)/Level: 6

Discipline: Science

Course: Earth History

Materials, references and supports

For Teachers	For Students
Earth History – FOSS unit FOSS Notebook Sample Computer Access Internet sources: ipl.org science-class.net/Geology/weathering_erosion.htm http://www.teachersdomain.org/resource/ess05.sci.ess.earthsys.erosion/	FOSS Earth Science Resource Book FOSS Notebook Computer access Internet sources: computer access/erosion control internet sources: kidsgeo.com (search geology) watersheds.org/earth/erosion.htm http://www.historyforkids.org/scienceforkids/geology/rocks/sedimentary/erosion.htm http://ezinearticles.com/?The-Effect-of-Erosion-On-Our-Earth&id=635661 http://www.geography4kids.com http://www.rocksforkids.com/RFK/howrocks.html#Erosion http://science.nationalgeographic.com/science/earth/the-dynamic-earth/weathering-erosion-article/ http://www.nature.nps.gov/geology/usgsnps/misc/gweaero.html (weathering vs. erosion)

Literacy Design Collaborative Anchor Paper Annotation Form

Content Area: ☒ Science
☐ History-Social Studies
☐ English Language Arts

Mode: ☐ Argumentation
☒ Informational/Explanatory

Grade Level: 7

Template Task #: 11

Module Title: **Erosion Control**

Teaching Task: **After researching internet sources on erosion control, write an essay that defines “erosion” and explains the reason for minimizing erosion. Support your discussion with evidence from your research. What implications can you draw?**

Work Sample ID: **MS-SCI.I11.Sample 62**

Dimension	Score	Explanation of the Score / Evidence
Focus	2	Beginning sentence creates a weak focus, saying soil erosion is “hurting the environment” before explaining what it is. A subsequent list of reasons for erosion – chemicals in the ground, “all the plants being taken out of the forest” – is separated by where it occurs (“slopes, rivers, streams and farms”) and is confusing. Thereafter, the focus shifts unevenly between damage and prevention. The focus overall remains on varying aspects of erosion.
Reading/Research	1.5	Information from reading materials is not referenced, though the bibliography suggests some research. It is not clear if the circling of key words is mimicking textbook or implying research. Lack of development coupled with nonspecific statements like “Why would you do that when you can just down straw” and “woodstraw can not fail and it if is possible it won’t make a big mess” do not clearly demonstrate interaction with outside reading.
Controlling Idea	2	A general purpose – defining erosion and its preventions – establishes a controlling idea. Writer tries to speak about the harm of erosion with some conviction.
Development	2	In the second paragraph, soil erosion “is harmful because it carries diseases. It also decreases the ability to grow food” but it is not explained how that occurs. That a “cover crop is a crop used during the offseason” necessitates prior knowledge on the reader’s part, because farming-related erosion is not explained. Generic, unexplained details like “a big mess” and “when we move plants around” do not add information to the writing. The overall conclusion is confusing because “These are reasons why we need to stop erosion” does not summarize the preceding sentences about methods to control erosion. Some relevant implications are touched upon: “chemicals [to control erosion] . . . can cost a lot of money. Also the chemicals can damage the food we eat.” Helpful but unexplained statements occur throughout.
Organization	2	From the first paragraph on, details move back and forth between defining erosion and treating it. Paragraphing provides a functional structure, but ideas within them are not necessarily related. Within the third paragraph, ideas move from farming to clearing forests and back to terracing.
Conventions	2	Missing punctuation and/or grammatical errors make some sentences confusing: “We can plant thing in a step like formation.” Incorrect verb use occurs in “Retaining walls is another method you can compare it to.” The “soil erosion” phrase is overused, as is “it.” For the most part, sentences are correct, but excess “and” coordination and lack of commas or varied sentences demonstrates control of only a small portion of English conventions. Periods are used consistently. Repetitive language and sentences do not contribute to audience understanding. Sources are not cited.

Content Understanding	2	Best practices for minimizing erosion are discussed (cover crops, wood straw, “stop clearing forests”, terracing) with some development to show basic understanding. The reasons for needing erosion control are minimally included showing uneven understanding. Implications are stated without explanation (“is hurting the environment,” “is damaging human life,” “is a harm to human health,” and “decreases the ability to grow food”) which shows basic understanding of science content.
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This student would benefit from feedback, discussion and/or instruction in the following areas:

- Using outside resources in writing to develop main points
- Focusing paragraphs individually, and linking them together
- Word choice and sentence fluency

Help Stop Erosion.

Section 2

Soil erosion needs to be controlled because it is hurting the environment. Soil erosion is when soil erodes away because of plants getting planted and taken out of the soil. Erosion can be started by chemicals in the ground that react with the soil. Erosion happens in many different places. Such as slopes, rivers, streams and farms. This happens because of all the plants being taken out of the forest. Soil erosion is damaging human life. It can be controlled by using woodstraw instead of regular straw on highways in forest and in other natural places.

Soil erosion is a harm to human health. It is harmful because it carries diseases. It also decreases the ability to grow food. When you try to control erosion by yourself it can cost a lot of money.

2

Section
2

Also the chemicals can damage the food we eat.

There are many ways we can control erosion. One way is using a cover crop. A cover crop is a crop used during the off season.

We can also use woodstraw which is an organic straw that is safer for the environment. We could stop clearing forest because when we move plants around it creates erosion. We can plant thing in a step like formation. This is also known as terracing.

Woodstraw is the best way to control erosion. Retaining walls is another method you can compare it to. When you build retaining walls it takes alot of time. Why would you do that when you can just lay down straw. Retaining

Walls can fail and cause a big mess. On the other hand, Woodstraw can not fail and if it is possible it won't make a big mess.

Woodstraw is the best erosion control method because, it is more natural. It is an innovative control material. It is a heavy straw and weed free. These are reasons why we need to stop erosion.

Bibliography

encyclopedid.kids.net.edu, N.p N.d.

Print, 16, August 2009

erosioncontrol.com, N.p, August 2009

Print, 15 July 2010

Sciencedaily.com Controlling Soil Erosion.

N.p. N.d, print, 15 October 2007

Sciencedaily.com. N.p, N.D, April 2009

Print, 15 July 2010

Sciencedaily.com. N.p 2006 3 Print.

15 July 2010

Information Sheet

Module Title: Organ Systems

Module Description (overview):

Students have been learning about the levels of organization inside the body. They understand that cells come together to make tissues and tissues to make organs and lastly, organs form organ systems. In this task, they will research various organ systems and give an informational report on the function and importance of a specific organ system.

Template Task (include number, type, level)	Teaching Task
Task 1 I/SCI/(Informational or Explanatory/Definition L1) After researching _____ (informational texts) on _____ (content), write a _____ (report or substitute) that defines _____ and explains _____ (content). Support your discussion with evidence from your research. L2 What implications can you draw?	After researching scientific articles on your organ system, write a report that defines and explains the function and importance of your organ system. Support your discussion with evidence from your research.

Grade(s)/Level: 6th grade

Discipline: Science

Course: General Science

Reading Process

I. Reading “habits of mind”	Ability to use appropriate texts and understand necessary reading strategies needed for the task.	Pacing plan: Day 2
Mini-task	Prompt: 1) Identify sources you will use and note how each source relates to your task. 2) Note sources in bibliographic format (if applicable); Digestive System: http://biology.about.com/library/organs/bldigestoverview.htm http://digestive.niddk.nih.gov/ddiseases/pubs/yrdd/ Circulatory System: http://kidshealth.org/kid/htbw/heart.html Nervous System: http://kidshealth.org/kid/htbw/brain.html Skeletal System: http://yucky.discovery.com/flash/body/pg000124.html Muscular System: http://yucky.discovery.com/flash/body/pg000123.html	Product: List or Bibliography

Literacy Design Collaborative Anchor Paper Annotation Form

Content Area: ☒ Science

☐ History-Social Studies

☐ English Language Arts

Mode: ☐ Argumentation

☒ Informational/Explanatory

Grade Level: 6

Template Task #: 11

Module Title: **Organ Systems**

Teaching Task: **After researching scientific articles on your organ system, write a report that defines and explains the function and importance of your organ system. Support your discussion with evidence from your research.**

Work Sample ID: **MS-SCI.I11.Sample 25**

Dimension	Score	Explanation of the Score / Evidence
Focus	3	Focus on the heart is apparent throughout, with some interaction with other aspects of the circulatory system.
Reading/Research	2	Details are not credited to sources, but most of the information is relevant. Lapses show lack of development in some areas, where further research could demonstrate academic knowledge: "It kind of goes in a circle, because oxygen-rich blood flows into a vein or vessel, and oxygen-poor blood comes out."
Controlling Idea	2.5	The importance of the organ system is presented, though the reasons are more generic. It contributes to an overall general purpose, with some moments of clarity: that without the circulatory system, "there would be . . . nothing to provide oxygen and nutrients." Further elaboration about how it affects daily life, or perhaps longevity, is not discussed.
Development	2.5	More development of another "way that the circulatory system and another system work together to keep you moving" is needed to fulfill the informational aspect. Student brings up interesting detail about people who "used to think the heart controlled emotions" but simply leaves it at "Now we know it doesn't." Expansion on the historical details could add information.
Organization	3	Structure highlights three main ideas about the heart/circulatory system. Each paragraph has a specific, if not fully developed, focus; the last body paragraph has a minor shift when it reverts back to blood movement, which was also addressed in the second paragraph. Some rearranging of details would make the organization contribute more to the main idea. In the last paragraph, emphasis that "Your blood flows around your body every day!" adds some level of intrigue, while keeping with the theme of the heart. Transitions are functional but do not enhance the presentation: "First," "Now," "Next."
Conventions	3	Commas are used in various correct ways: "Here, it collects oxygen and is pumped back to the heart where, again, it is pumped to all parts of the body." Diverse mechanical elements, such as varied terminal punctuation, parentheses, and hyphenation are used correctly, and command of sentence structure is evident. Use of second person is maintained throughout and creates an appropriate informational tone. Minor verb error is present in "There is also veins, vessels, arteries . . ." For the amount of details supplied, sources are identified but not cited.
Content Understanding	2	Definition of circulatory system is included in paragraph 4 with a partial list of the parts of the organ system with little development. Function of the organ system is explained in the second paragraph showing a basic understanding of the science content as specific details are not included. The importance of the system is included. Overall lack of scientific evidence indicates a basic understanding.

This student would benefit from feedback, discussion and/or instruction in the following areas:

- Paragraph transitions
- Adding details to explain, and citing sources

Title:

A Fantastic System!

Name:

When someone tells you to think of an organ, do you think of the heart? Well, have you ever thought a little deeper? Ever think what body system it is in? If you haven't, then this report will tell you all you need to know about the Circulatory System. It works with other systems helps us, and even forms scabs! Now that is a fantastic system!

The first thing I am going to tell you about is what the Circulatory system does. This system pumps oxygen-rich blood throughout the body. It kind of goes in a circle, because oxygen-rich blood flows to a vein or vessel, and oxygen-poor blood comes out. If you had no Circulatory System then you would not live, because there would be nothing to pump blood through the body, and nothing to provide oxygen and nutrients.

Now, I am going to tell you how it works together with other organ systems in the body. The heart, (an organ in the circulatory system) pumps oxygen-poor blood to the lungs (an organ in the Respiratory system). Here, it collects oxygen and is pumped back to the heart where, again, it is pumped to all parts of the body. This cycle repeats all day. This is only one way that the Circulatory system and another system work together to keep you moving.

Next, I will tell you what the circulatory system consists of. The #1 Organ in this system is the heart. But the heart is not the only thing in this system. There is also veins, vessels, arteries, and arterioles. These make up the Circulatory system. The largest artery is the aorta, the smallest is the arterioles. They measure 0.004 inches across! The average human has about 5 one liter bottles of blood inside your body. The heart is a muscle, and mainly consists of 2 pumps. One to pump oxygen-rich blood, and one to

Title:

A Fantastic System!

Name

Pump oxygen-poor blood. A long time ago, people used to think the heart controlled emotions. Now we know that it doesn't, it controls all the blood in your body. That's Really a Fantastic System!

Now that you have finished reading my report, you know that the heart pumps blood, and doesn't control emotions. And the heart is a muscle. It also consists of 2 pumps. You also learned that the Circulatory System flows in a circle. Your blood flows around your body every day! This system also works with the Respiratory system to give you oxygen. To me, this sounds like a fantastic system!

Sources

The Heart in Action, by: Richard Walker

Your Heart and the Circulatory System @ <http://kid'shealth.org>

Information Sheet

Module Title: Scientific Method

Module Description (overview):

This module focuses on the development, components, and importance of scientific methods. Key questions include:

1. What are key components to successful scientific inquiry?
2. What are methods and tools that scientists use to investigate?
3. What are the parts to a generic controlled experiment?
4. How do you build and evaluate the effectiveness of scientific models?

Template Task (include number, type, level)	Teaching Task
Task 11, Informational/Definition, LI After researching ____ (informational texts) on ____ ____, (content) write a/an ____ (report or substitute) that defines _____ and explains _____. (content) Support your discussion with evidence from the research.	After researching scientific articles, lab reports, and other assigned documents on scientific method, write an essay that defines –scientific method and explains its development, steps, and importance. Support your discussion with evidence from the research.

Grade(s)/Level: 8th Grade

Discipline: Science

Course: Physical Science

E. Materials, references and supports:

For Teachers	For Students
1. Hawkhill (1999). <i>Scientific Methods and Values</i>- Available from www.Hawkhill.com 2. Science Buddies: www.sciencebuddies.org 3. BrainPop: www.brainpop.com 4. Holt, Rinehart and Winston (2007). <i>Holt Science and Technology: Physical Science</i>. 6. Expository text structure sheets to outline the different types for students 7. <i>How to Read a Science Text</i>. Available from go.hrw.com/resources/go_sc/hst/HSTSW081.PDF	

Literacy Design Collaborative Anchor Paper Annotation Form

Content Area: ☒ Science

☐ History-Social Studies

☐ English Language Arts

Mode: ☐ Argumentation

☒ Informational/Explanatory

Grade Level: 8

Template Task #: 11

Module Title: **Scientific Method**

Teaching Task: After researching scientific articles, lab reports and other assigned documents on scientific method, write an essay that defines “scientific method” and explains its development, steps and importance. Support your discussion with evidence from your research.

Work Sample ID: **MS-SCI.I11.Sample 83**

Dimension	Score	Explanation of the Score / Evidence
Focus	4	Introduction succinctly defines scientific method and touches upon its importance, even relaying that it is “essential in solving daily problems, as well as major phenomena.” Focus is maintained throughout, and new details about scientific methods build upon finding answers and solving problems.
Reading/Research	2.5	Sufficient detail is incorporated into the text, but beyond the bibliography, consultation of sources is not clear. The first two body paragraphs contain some evidence of research, but there are lapses in completeness -- the “common idea” and “scientific method” that Francesco Redi used is not described. More specific details are needed to demonstrate interaction with the sources.
Controlling Idea	4	Purpose of introducing, defining, and making scientific methods – or the learning about those methods – is clear and accessible to the reader. The idea the scientific methods are all around us is maintained. In the conclusion, the writer even encourages all to “go out into the world and make some observations.” Throughout the writing, the reader is implored to understand and get involved.
Development	3	The middle paragraph attempt to support to the main idea. Steps relate the process to the reader, though contemporary examples could help define a scientific method. Statements help clarify without becoming heavily worded: “After that, it is important to research the topic so you have a better understanding of it, before making a hypothesis, or an educated guess.” Recognizing that “there are many possible combinations of scientific methods, but they all have the same goal” helps reveal the writer’s authority. Some specific details are missing, but the groundwork for elaborating is there: “Also, scientific methods help save and prolong human life, treat diseases, and come up with new technology and inventions . . . scientific breakthroughs. . .” Search for an AIDS cure is mentioned in the last paragraph; external resources could be consulted to offer more specific processes. The fourth paragraph touches upon examples – crime scenes and recipes – but does not present a specific instance. Overall, details about ancient history, inclusion of relevant, rhetorical questions, and some lists of reasons why “scientific methods have become extremely important” answer some questions the reader might have.
Organization	3.5	The progression of background information, possible methods, and their significance and purpose effectively communicates the importance of scientific methods. The conclusion revisits the personable tone about people and learning, just as presented in the introduction’s questions. Organization within the three body paragraphs builds upon ideas and concludes with more global understanding: “this, scientific methods were created,” “. . . they all have the same goal,” “scientific methods have many different purposes and are used every day.”

Conventions	3.5	Few errors are present, and a variety of punctuation and language choices demonstrate command. Sentences are varied in length and in structure, contributing to the overall tone. Control of transitions like “since then,” “thus” and “finally” are examples of control at the mechanics (comma) level, as well as an understanding of various grammatical devices. Sources, if used, are never cited.
Content Understanding	2.5	Definition in the first paragraph shows basic understanding; use of plural “methods” reveals imprecise conceptual understanding. A brief description with undeveloped details (“ <u>common</u> idea... <u>a</u> scientific method”) is outlined in paragraph two. The steps of the process are included with basic explanations. The importance of the scientific method is unclear in paragraph four, displaying uneven understanding of content. There is no mention of inquiry, controlled experiments, or scientific models, which demonstrates uneven understanding of the content.

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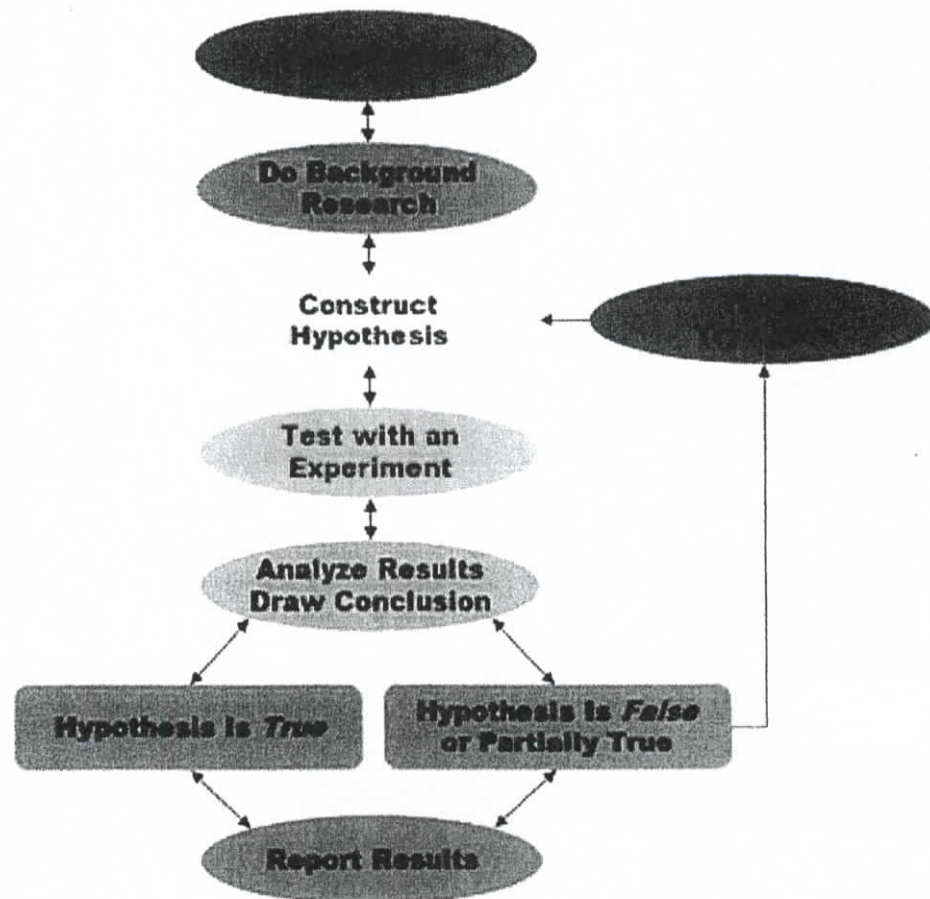
This student would benefit from feedback, discussion and/or instruction in the following areas:

- Providing specific examples to illustrate points
- Incorporating reading materials within content writing

Scientific Method

8-3

January 4, 2011



Have you ever wondered why it only snows in the winter? Or why the sky is blue? All over the world, people have questions like these. The best way to answer them is to use a scientific method. Scientific methods are tools that help everyone to solve problems in a logical format. Also, they are easy-to-follow processes for doing research. To end, scientific methods are helpful in every aspect of life and are essential in solving daily problems, as well as major phenomena.

In ancient times, cavemen discovered fire. They observed their surroundings, tested their thoughts, and were able to create a source of light and warmth that would benefit everyone who lived after their time. Throughout the years, scientists followed this pattern to solve problems and called it a scientific method. The ancient Greeks used gods and goddesses to explain the world around them. During the 1600s, Francesco Redi, an Italian physicist, disagreed with a common idea and used a scientific method to prove the idea false. Since then, scientists have used his same formula to solve their problems. Thus, scientific methods were created.

There are many different forms of scientific methods to follow, however there is no specific form you have to follow. First, make observations, in other words, make statements about a topic and its characteristics. Next, come up with questions or problems about the topic. After that, it is important to research the topic so you have a better understanding of it, before making a hypothesis, or an educated guess. Following that step, create an experiment or procedure that will test your hypothesis. At the end of the experiment, analyze the results and draw conclusions about them. For more accurate results, repeat the experiment, or perform trials. Finally, share the data gained from your experiment with the scientific community by writing papers about your experiment. As you can see, there are many possible combinations of scientific methods, but they all have the same goal.

As a result of many questions about the world, scientific methods have become extremely important. They help people to come up with recipes, fix broken or non-functioning items, and create science experiments. In crime scenes, a scientific method could determine what really happened. Without scientific methods, it would be very difficult to prove conflicting viewpoints wrong, and to sort out fact from fiction. Also, scientific methods help save and prolong human life, treat diseases, and come up with new technology and inventions. Perhaps the most important reason for using scientific methods is to make scientific breakthroughs. In conclusion, scientific methods have many different purposes and are used every day.

Scientific methods are used daily and are helpful in solving all problems. Though they were created long ago, scientific methods are still useful in life today. Over all those years, scientists created various steps for scientific methods. We know so much more about the world because of these methods. For instance, scientists are using a scientific method to work on finding a cure for AIDS. Finally, scientific methods help us to understand the world around us and discover new things about our world. Now that you have more knowledge about scientific methods, go out into the world and make some observations.

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