

Lesson 1: Scientific Process and Researching the Effects of Media

Grade 8 Science

LESSON DESCRIPTION: Students will research studies relating to the effects of media violence on physical, social and emotional well being. Students will choose among a variety of campaign projects to share their findings with other students, parents and community members.

FOCUS QUESTIONS: What are the effects of media? How do you gather research information? What are effective ways to communicate the results of research?

OBJECTIVES: Students will:

- generate questions, conduct investigations, analyze information and develop solutions to problems through reasoning.
- develop an understanding that science is ongoing discoveries and the process of science includes sharing information.

COMMON CORE STATE STANDARDS

- **READING STANDARDS FOR LITERACY IN SCIENCE & TECHNICAL SUBJECTS 6–12**
 - * **CCSS.6-8.RH.1** Cite specific textual evidence to support analysis of science and technical texts.
 - * **CCSS.6-8.RH.2** Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
 - * **CCSS.6-8.RH.4** Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
 - * **CCSS.6-8.RH.7** Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
- **WRITING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES, SCIENCE, AND TECHNICAL SUBJECTS 6–12**
 - * **CCSS.6-8.WHST.1** Write arguments focused on discipline-specific content.
 - * **CCSS.6-8.WHST.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
 - * **CCSS.6-8.WHST.4** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
 - * **CCSS.6-8.WHST.8** Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

- * **CCSS.6-8.WHST.9** Draw evidence from informational texts to support analysis, reflection, and research.

LENGTH OF LESSON: 10 days

MATERIALS NEEDED:

- "Virus of Violence" Video
- Computers with Internet access and/or copies of research articles
- Works-Cited worksheet and Activity sheets 1-5
- Materials for creating campaign products (possible supplies include computer software i.e., I-movie, PowerPoint, etc., video equipment, camera)
- Source/Citation Collection Sheet
- Before and After Chart

PROCEDURES

Day 1

Activities 1 & 2: Students will be given the activity 1 worksheet “Watching “R” Rated Movies Causes In-Grown Toe Nails” and follow up with a teacher led discussion.

1. Hand out Activity 1 worksheet to each student. Discuss as a class and put responses on the board. Have students copy the list onto their own worksheets.
2. Hand out Activity 2 worksheet “Before and After Chart” and instruct students to fill out the middle “Before” column. Collect and give to the Language Arts teacher or keep in student folder.

Day 2

Activity 3: Design an experiment to test one claim regarding a harmful effect from TV, video game or other media.

1. Hand out Activity 3 worksheet “The Scientific Method of Getting to the Bottom of It.”
2. Review the scientific method and provide an example.
3. Provide time for students to plan individually, with a partner or in small groups.
4. Assign students to research the objective (question) and form a hypothesis for the next class period.

Day 3

Activity 3 (Continued)

1. Discuss and share student’s objectives and hypothesis.
2. Students should finish the Activity 3 worksheet.
3. The experiments do not need to be carried out. (Optional) This activity does not need to go to the Language Arts teacher.

Day 4-8

Activity 4: Students will access information, collect data for research and analyze information on the effects of media violence on our physical, social and emotional well-being.

1. Students will view the video, “Virus of Violence” and take notes. Following the video, students exchange notes and read silently another students notes. Repeat this procedure, so that the students get a chance to look at notes from a number of other students. A class discussion (teacher led) to follow regarding common problems and interesting facts found in student notes.

Teacher's Note: Allow for time in a computer lab to gather information on the topic and encourage students to bring in related articles to use as sources of information. Copy and hand out related articles to students for discussion and note taking throughout the information collection process.

2. Hand out the Activity 4 worksheet "Analyzing Information" to be filled out during the research process. Keep in folder.

Day 9-10

Activity 5: Students will identify four (4) problems related to media and a possible solution to each problem and develop a campaign product to share their research findings with facts supporting each stated problem.

1. Individually or with a partner, students will investigate the topic and come up with four problems found to be related to media and four solutions (one solution for each problem). Students should also have supporting facts or text/study results on each problem. Hand out the Activity 6 worksheet "Public Awareness Campaign: Sharing Your Research" rubric.
2. Share products upon completion.
3. Closure - Hand back the Before and After Chart and have the students fill in the After Column. Then, on the back, students should write a short essay about how Before and After comments compare and why there are differences. (Or, this After activity can take place in English.)

NAME: _____

HR. _____

Activity 1

WATCHING “R” RATED MOVIES CAUSES IN-GROWN TOE-NAILS

What are some of the claims you may have heard regarding television and video games and how they can be bad for you? Use the space below to record your responses and the responses of your classmates.

Name: _____

Activity 2

Before and After Chart

Fill in the middle column only. Turn this in to the teacher.

What I think about...	Before	After
Movie and video game ratings		
Playing video games		
Reducing exposure to media violence		
Video games and violent behavior		
My ability to influence other people		
My skills as a researcher		

Source/Citation Collection Sheet

Name _____ Block _____ Date _____

Website: Online

URL Address http://	Date Accessed	Article Title	Name of Website
Author(s) of Website	Institution Associated with Website		Date Published

Website: Online

URL Address http://	Date Accessed	Article Title	Name of Website
Author(s) of Website	Institution Associated with Website		Date Published

Book: In Print

Book Title	Author(s)	Page Numbers Used	Publisher
City of Publication	Year Published	Edition # / Volume #	Online? Date Accessed

Magazine or Journal: In Print

Name of Magazine/Journal	Title of Article	Author(s)	Date of Publication
Page #s of Article	Volume # (if journal)	Issue # (if journal)	Online? Date Accessed

Encyclopedia or Reference Book: In Print

Encyclopedia/Reference Book	Name of Article	Edition # / Volume #	Author(s)
Publisher	City of Publication	Year Published	Page #s of Article

NAME: _____ HR: _____

Activity 3

THE SCIENTIFIC METHOD OF GETTING TO THE BOTTOM OF IT

Using this form, design an experiment to test one of the claims.

1. Begin by stating the purpose for your experiment. This is called the Objective.
2. You will then need to gather some background information. You need to research previous studies done and construct an educated guess to the question or objective. This educated guess is called the Hypothesis.
3. As you research use the citing sources graphic organizer to keep a record of your sources of information.
4. You will also need to write a step-by-step description of the experiment you would do to test your hypothesis. Be sure to include what the *Independent Variable* is. Caution: Be sure your procedure is well thought out, so that you avoid having any other variables.
5. Create a list of materials needed.

Although we will not be doing the actual experiment you created, you should list the steps that would follow using the scientific method.

OBJECTIVE:

HYPOTHESIS:

INDEPENDENT VARIABLE IN THE EXPERIMENT:

EXPERIMENT (PROCEDURE):

Describe below, using “scientific method” terminology, the steps that would follow (both during and after the experiment).

NAME: _____

HR. _____

ACTIVITY 4

ANALYZING INFORMATION

It is now time for you to analyze the research, studies and experiments others have done. For this you will be asked to read and examine different articles and studies found in magazines, books, newspapers, and on the internet. Will the research on media and its effects be convincing enough to prove a link between harmful physical, social and emotional behaviors and television, movies and video games? You be the judge.

Print, cut out, copy or take notes on the information you gather. It is important that you keep all of your research in a folder. You will asked to turn it all in at the completion of this project. You will be using it in your Language Arts Class.

Summary of Research

I. Source 1 :

A. What is the author concluding?

B. What study or experiment was done to reach this conclusion?

C. What makes this source credible or not credible?

D. Describe a follow up study you could do to further test this conclusion?

E. What interesting information did you gather from this source?

II. Source 2 :

A. What is the author concluding?

B. What study or experiment was done to reach this conclusion?

C. What makes this source credible or not credible?

D. Describe a follow up study you could do to further test this conclusion?

E. What interesting information did you gather from this source?

III. Source 3:

A. What is the author concluding?

B. What study or experiment was done to reach this conclusion?

C. What makes this source credible or not credible?

D. Describe a follow up study you could do to further test this conclusion?

E. What interesting information did you gather from this source?

IV. Source 4:

A. What is the author concluding?

B. What study or experiment was done to reach this conclusion?

C. What makes this source credible or not credible?

D. Describe a follow up study you could do to further test this conclusion?

E. What interesting information did you gather from this source?

Activity 6

Public Awareness Campaign: Sharing Your Research

Student Name: _____

Category	4	3	2	1
Brainstorming-Problems	Students identify more than 4 reasonable, insightful barriers/problems that need to change.	Students identify at least 4 reasonable, insightful barriers/problems that need to change.	Students identify at least 3 reasonable, insightful barriers/problems that need to change.	Students identify fewer than 3 reasonable, insightful barriers/problems that need to change.
Brainstorming-Solutions	Students identify more than 4 reasonable, insightful possible solutions/strategies to encourage change.	Students identify at least 4 reasonable, insightful possible solutions/strategies to encourage change.	Students identify at least 3 reasonable, insightful possible solutions/strategies to encourage change.	Students identify fewer than 3 reasonable, insightful possible solutions/strategies to encourage change.
Research/Statistical Data	Students include 4 or more high-quality examples or pieces of data to support their campaign.	Students include at least 3 high-quality examples or pieces of data to support their campaign.	Students include at least 2 high-quality examples or pieces of data to support their campaign.	Students include fewer than 2 high-quality examples or pieces of data to support their campaign.
Campaign/Product	Students create an original, accurate and interesting product that adequately addresses the issue with effective visuals.	Students create an accurate product that adequately addresses the issue.	Students create an accurate product but it does not adequately address the issue.	The product is not accurate.
Sources-Quality	Students include 4 or more high-quality sources.	Students include 2-3 high-quality sources.	Students include 2-3 sources but some of are questionable quality.	Students include fewer than 2 sources.
Sources-Citation	Information in all source citations is correct and in the format assigned.	Information in all source citations is correct but there are minor errors in formatting.	Information in almost all source citations is correct AND there are minor errors in formatting.	The information is often incorrect OR there are major errors in formatting.

TEACHER GUIDE

Activity 1

WATCHING “R” RATED MOVIES CAUSES IN-GROWN TOE-NAILS

What are some of the claims you may have heard regarding television and video games and how they can be bad for you? Use the space below to record your responses and the responses of your classmates.

(Allow students to brainstorm, while you create a list on the board. For prompting purposes, possible ideas include: the desire to eat more when you see food on TV, weight gain due to lack of physical activity, reduced ability to sustain attention, impaired eyesight if too close to the screen, can make you fearful, the imitating of verbal and physical bullying, loss of weight, eating disorders like anorexia or bulimia due to the desire to be like the images on television, violent behavior for conflict resolution, dressing a certain way, acting or dressing inappropriately, the need for toys and the newest gadgets, being less sociable, retardation of the brain, etc.)

TEACHER GUIDE

Activity 3

THE SCIENTIFIC METHOD OF GETTING TO THE BOTTOM OF IT

Using this form, design an experiment to test one of the claims.

(Use the Activity 1 sheet and let students choose one or you can designate one. This activity can be done individually, with a partner, or in a group.)

1. Begin by stating the purpose for your experiment. This is called the Objective.
2. You will then need to gather some background knowledge. You need to research previous studies done and construct an educated guess to the question or objective. This educated guess is called the Hypothesis.

(Homework: Research their question (homework) to construct a hypothesis.)

3. You will also need to write a step-by-step description of the experiment you would do to test your hypothesis. Be sure to include what the *Independent Variable* is. Caution: Be sure your procedure is well thought out, so that you avoid having any other variables.

4. Create a list of materials needed.

Although we will not be doing the actual experiment you created, you should list the steps that would follow using the scientific method.

(An option is to allow this as extra credit.)

OBJECTIVE:

(Example: Does a person's blood pressure increase when watching a scary scene?)

HYPOTHESIS:

(Example: I believe that a person's blood pressure increases when exposed to frightening stimulus, because the heart rate increases and this has an effect on the blood pressure.)

INDEPENDENT VARIABLE IN THE EXPERIMENT:

(Example: The independent variable would be the amount of frightening visual stimulus received by the viewer.)

EXPERIMENT (PROCEDURE):

(This should describe the procedure taken.)

Describe below, using “scientific method” terminology, the steps that would follow (both during and after the experiment).

(Example:

Observation

Data Collection

Analyzing the data

Conclusion

Follow Up

Sharing the information)

TEACHER GUIDE

ACTIVITY 4

ANALYZING INFORMATION

It is now time for you to analyze the research, studies and experiments others have done. For this you will be asked to read and examine different articles and studies found in magazines, books, newspapers, and on the internet. Will the research on media and its effects be convincing enough to prove a link between harmful physical, social and emotional behaviors and television, movies and video games? You be the judge.

Print, cut out, copy or take notes on the information you gather. It is important that you keep all of your research in a folder. You will be asked to turn it all in at the completion of this project. You will be using it in your Language Arts Class.

(Providing a folder for each student to keep their printed and written information in throughout the activity will help them stay organized. Periodically check that they are collecting information and using this summary page correctly. They will use the information from the folder for the Science final Activity (Number 5 – Sharing Your Information through a Campaign Product). Continue to encourage good organization, as the information in the folder will be collected with the campaign product. Upon Completion of Activity 5, give the folders to the Language Arts Teacher.)

Summary of Research

I. Source 1 :

(Use the Source/Citation Collection Sheets as format examples or have the students fill the Source/Citation Collection Sheets out for every entry, indicating which is for which source number.)

A. What is the author concluding?

Internet Resources

www.cmch.tv Center on Media and Child Health at Boston Children's Hospital, Harvard Medical School and Harvard School of Public Health

www.sosparents.org Center for Successful Parenting

www.media-awareness.ca/english/index.cfm This is the web site of the Media Awareness Network (MNet), home to one of the world's most comprehensive collections of media education and Internet literacy resources. This section is intended to introduce you to our organization and its work.

MNet is a Canadian non-profit organization that has been pioneering the development of media literacy programs since 1996.

www.lionlamb.org This organization was developed by parents for parents, teachers and students. Although the organization no longer exists there are great references on the site.

www.tvturnoff.org The Center for Screen-Time Awareness (CSTA), formerly TV-Turnoff Network is an international nonprofit organization, providing tools for people to live healthier lives in functional families and vibrant communities by taking control of the electronic media in their lives and not allowing it to control them.

www.med.umich.edu/1libr/yourchild/tv.htm



This Website is part of the University of Michigan Health System and has resources including some links to research which is organized by questions, e.g. Does TV affect children's brain development?