

## **Selecting Sources: Teaching Students to Become Effective Consumers of Internet Sources**

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### **Abstract**

One of the hardest topics to teach is research. Students often believe that if it's on the internet, it must be true. After conducting a search that yields thousands of results, finding the correct websites for the tasks they are assigned is daunting. They struggle with paraphrasing information they read. They often forget to cite their sources.

Young students are prone to trusting authority without questions. If their teachers and parents tell them something, they believe it to be the absolute truth. As an extension, when young students find information on the internet, they trust it to be true, as though it were coming from an authority. They don't differentiate between the different types of websites. They use search engines to find information, they uncritically select one of the first few resulting sites, and they use what they read there to answer the questions asked. Their research skills are very unrefined.

This unit starts with teaching internet vocabulary to students. Many studies have shown that there is a 4,000 to 6,000 word discrepancy in the active vocabulary knowledge between low performing students and high performing students.<sup>4</sup> Giving our students exposure to and practice with internet vocabulary will help them begin understand how the different parts of the internet work together.

Next, students will look at a variety of websites and identify the elements that they have in common and those that are different. Elements they will be examining are the name of the website, the name of the sponsoring organization, advertisements, journal articles, comments, and many others. They will consider whether any of these elements make a given website more or less reliable.

Finally, students will be given a variety of tasks and choose which type of website would best complete the task. They will decide whether or not a website can be trusted to give factual information that answers certain questions. They will look for specific information and choose the best sources for that information.

By the end of the unit, students will be able to look at websites through a more critical eye. They will begin to decide whether a website is trustworthy or unreliable. They will decide which sites are better for different tasks.

## **Introduction**

Moore's Law states that the number of transistors on integrated circuits doubles every two years.<sup>1</sup> This phenomenon has had exponential impact on all our lives. It has produced smaller and smaller digital devices that allow our students non-stop access to information. This does not guarantee they are proficient in using the using the information.

Everyone seems to have a favorite search engine he or she uses when looking for answers. Some like Google, others like Ask, and there are many more. Teachers often direct their students to kid-friendly sites like Kids Click and Fact Monster. Students quickly accept the first few results these search engines produce as true and move on. Researchers Hargittai et al<sup>2</sup> have found that

rather than simply evaluating content based on the features of the destination Web site, users put considerable trust in the online equivalent of traditional gatekeepers: search engines. Users exhibit a great amount of trust in these tools, independent of whether they lead to the most relevant content.

As students relinquish the use of print materials and turn to digital ones, they need to develop the skills necessary to distinguish between reliable sources and questionable ones. We, their teachers, need to help them do that.

According to a study done at Northwestern University, even college students lack the skills necessary to evaluate the validity of websites.<sup>3</sup> Twenty-five percent of the students trusted and used search results simply because they were listed first. Only ten percent of the students mentioned the name of the author as being important in evaluating a website, and none of those students actually followed up to verify the author's credentials. This certainly shows that educators need to do a much better job of preparing our students to be better consumers of the internet.

Alistair Smith of the Victoria University of Wellington has developed a toolbox of criteria that can be used when evaluating internet information sources for use in libraries.<sup>4</sup> It looks at the scope, content, design, purpose, reviews, and workability of the site. The toolbox is complex and meant to be used at the University level. However, we can use some of the criteria and adapt them for young students.

Smith talks about the scope of the site. Simplifying the scope for elementary students is a matter of looking at how much detail is given about the topic. When they look at

content, students can examine if the site contains facts or opinions, if the website is updated regularly, and if the links it contains are active. Even the youngest of students can decide if a website is esthetically appealing, although they may place too much emphasis on looks. Finally, young students understand the difference between a website that is easy to use and those that are not.

## **Rationale**

I am a technology teacher at Highlands Elementary School in Wilmington, Delaware. There are 346 students currently enrolled. Approximately 85% of our students are members of racial minorities and 87% are from low-income families. Many of the students I work with do not have computers and internet access at home. When they first start at Highlands in kindergarten, they do not have basic computer skills like mouse control and keyboard awareness. They may have had some access to the internet, but we start with the basics and proceed from there. By the time they leave at the end of fifth grade, they are expected to be comfortable with the Microsoft Office Suite, internet use, and many other programs.

In my experience as a technology teacher, I have found that one of the hardest topics to teach is research. Students often believe that if it's on the internet, it must be true. After conducting a search that yields thousands of results, finding the correct websites for the tasks they are assigned is daunting. They struggle with paraphrasing information they read. They often forget to cite their sources.

Young students are prone to trusting authority without questions. If their teachers and parents tell them something, they believe it to be the absolute truth. As an extension, when young students find information on the internet, they trust it to be true, as though it were coming from an authority. They don't differentiate between the different types of websites. They use search engines to find information, they uncritically select one of the first few resulting sites, and they use what they read there to answer the questions asked. Their research skills are very unrefined.

Students use research skills for as long as they are in school, and for many years afterwards. We need to help them become as effective at evaluating the reliability of internet resources as possible. They need to know that just because they read something on the internet, it isn't necessarily true. We need to show them the different types of websites and help them decide which are more reliable than others.

Children grow over the course of their first ten years from irreverent acceptance of authority to beginning to question what they are told. In kindergarten, they will believe whatever their teachers tell them. As they grow, we want to encourage them to question what they read while still accepting their teachers' authority.

Students in Kindergarten begin to develop very basic research skills. They can identify topics, ask questions about those topics and get answers from books and streaming media. However, often teachers need to point out the information that answers their questions. At the first grade level, students begin to develop KWL charts. They have some background knowledge on many topics that the teachers can draw out. From there, students can think about what they would like to learn about a topic. Students begin to find the information on their own from books and other media sources. Second graders are becoming better and more independent readers. This allows them to read more complex text in order to find answers on their own. Students are allowed to choose from preselected websites that are readable and easy to navigate. They are starting to pick out answers to questions they have developed or have been given by the teachers. Third graders make huge leaps in developing research skills. They can be much more independent in their reading and writing. They can begin making their own choices about the websites they find helpful. They can read to find information more fluently. They can then present information through the use of different vehicles like PowerPoint, Prezi, and written reports. They have become more comfortable with the basics of research. They have begun using search engines to find answers to questions.

This unit will focus on fourth graders. Most fourth graders are independent readers, and have experience reading non-fiction. They have used search engines to find answers. However, they are not yet able to judge whether the information is accurate or not. They are not able to evaluate the reliability of websites. That is what this unit aims to do. This unit will teach the fourth graders how to be better consumers of internet sources.

## **Objectives**

Kathy Schrock has developed the ABC's of website evaluation where she lists 26 criteria for using the internet effectively.<sup>5</sup> She asks students to decipher the authority behind the websites that ensure the information is correct. She explains that biased sites are meant to persuade the readers as opposed to informing them. Additionally, she has developed a checklist of the 5 "W's" of website evaluation where students examine the who, what where when and why's of websites.<sup>6</sup> It is not possible for students to master all of these criteria in fourth grade. This is a beginning for students.

This unit starts with teaching internet vocabulary to students. Many studies have shown that there is a 4,000 to 6,000 word discrepancy in the active vocabulary knowledge between low performing students and high performing students.<sup>7</sup> Giving our students exposure to and practice with internet vocabulary will help them begin to understand how the different parts of the internet work together. We will start with the definition for search engine and study several choices of search engines. Students will learn what blogs, podcasts, chat rooms, and wikis are. They will understand that homepages are a starting point to which other pages are linked by hyperlinks. We will

learn what browsers are, and that there are more than one to choose from. Students will learn the differences between social media sites and social networking sites.

Next, students will look at a variety of websites and identify the elements that they have in common and those that are different. Elements they will be examining are the name of the website, the name of the sponsoring organization, advertisements, journal articles, comments, and many others. They will consider whether any of these elements make a given website more or less reliable.

Finally, students will be given a variety of tasks and choose which type of website would best complete the task. They will decide whether or not a website can be trusted to give factual information that answers certain questions. They will look for specific information and choose the best sources for that information.

By the end of the unit, students will be able to look at websites through a more critical eye. They will begin to decide whether a website is trustworthy or unreliable. They will decide which sites are better for different tasks.

## **Student Lesson 1**

2 sessions – 45 minutes each

Students will be introduced to the unit by looking at the two ways they are able to access the internet at school, Internet Explorer and Firefox. We will look at the similarities and the differences between them. We will then go to Flips n' Flops as an example of a homepage. We will access hyperlinks to Google, an example of a search engine.

Students will use the internet to search for the definitions of the words below. They can use Google, Dictionary.com, or any of the websites listed in the resource section. Students will create an Excel spreadsheet and record the definitions there.

Next, the students will visit the ReadWriteThink website. They will select the Crossword Puzzle generator in the student interactives section. The students first enter the words into the generator. Next the students will create clues for the puzzle. Students must be careful to create clues that will help others solve the puzzle. Once the students have completed their puzzles, they will print them. Students will trade puzzles with other students and solve each other's puzzles.

Vocabulary Words:

- Blog
- Browser
- Chat Room
- Homepage

Hyperlinks  
Podcast  
Search Engine  
Social Media Site  
Social Networking Site  
Wiki

## Student Lesson 2

3 sessions – 45 minutes each

I will introduce the lesson by showing the students the Driver's License Search website (<http://www.license.shorturl.com/>.) I will follow the directions to get a driver's license to show it is a spoof site. Next I will show the male pregnancy website (<http://www.malepregnancy.com>). We will explore the site. I will lead them to see that this website is a spoof. Once they all understand this is a spoof, we will discuss what clues they found to show the information may not be true. As a follow-up activity, students should look at the Ova Prima website (<http://www.ovaprima.org/>). We will find the clues that show this is also a spoof website.

Next students will work in pairs to identify elements found on websites. Students will visit the websites listed below. They will create a list of the elements on the website. Examples of these elements are the title of the website, advertising, any awards won, hyperlinks, opinions, comments, sponsoring organizations, and videos. The class will compile a list of these elements.

As a whole group, the class will discuss whether the presence of these elements on a website makes it more trustworthy, less trustworthy, or neither. The class will be broken up into nine groups and each group assigned one of the websites below. They will then complete the chart included in the appendix evaluating the reliability of the websites they were assigned. Students should present their findings to the class.

Websites:

Flipsnflops.net  
Wikipedia.org  
Highlands.redclay.k12.de.us  
Starfall.com  
Coolmath.com  
Udel.edu  
whitehouse.gov  
kidsclick.org  
Netsmartz.org

### Student Activity 3

In general, the students I work with like to use Google to complete any work involving research and answering questions. They retype the question in the search bar and select the first result that appears. They look at the first couple of lines for the answer. If it looks to them like a good answer, they copy what is said there. If not, they look at the next few results. If they still come up empty, they announce that the answer is not available online.

In this lesson, students will examine the type of task they must complete and choose the type of website that will most likely help them complete the task. Students as a group will examine the websites listed below and create a T-chart listing the websites on one side and the type of information they can find on the other side. I will discuss with the students whether each site contain facts or opinions, whether the site is trustworthy or unreliable, and whom the information is meant for.

Website:

- Yale University
- Weather.com
- Hole in the doughnut travel blog
- National Archives

Students will then look at the chart in the appendix. They will look at the type of information that they need to find. They will name a website that will give them the information they are looking for.

As the follow up, we will use the Internet Search Challenge ([http://21cif.com/rkit/timed\\_sc1.html](http://21cif.com/rkit/timed_sc1.html)) to practice finding information. Students will follow the instructions that tell students which search engine to use and what information they are looking for. The searches require students to use keywords to find the necessary information.

## Teaching Strategies

The students I will be teaching this unit to are fourth grade students. I see these students once per week for 45 minutes. I teach all students from kindergarten through fifth grade, so I have had most of these student for four years. I am pretty familiar with these students' technology skills even though I only see them weekly.

Students in fourth grade are comfortable with keyboarding and mouse skills, web browsers, and basic use of search engines. Students will use the skills they already have to work with the websites in these lessons. They are also very familiar with the Flips n' Flops website. It is a website I developed to store links for student use. It is convenient for students from Kindergarten through fifth grade to easily access the websites they need to complete research, learning activities, and whatever else is necessary for student success.

I will be using a Smart board, a projector, and a document camera to present these lessons. I will be presenting some of the materials to the whole group as the students sit in learning time. Students sit away from the computers so that their attention is directed to the instruction. They will watch streaming media clips to introduce the internet and search engines.

Students will then work in cooperative pairs as well as collaborative groups to complete work. This allows students to assist each other, to collaborate, and to share differing ideas about the websites. Students may have differing ideas on what elements of a website are important. Students will be examining websites and discussing which websites are reliable and why. Pairs will then share with the class so that all opinions are considered.

Students will work independently to examine websites. This will allow me to determine what progress the students have made in the evaluation of websites. Students who are successful will be able to move on to conducting research to create presentations. Students who are still unable to decide on the reliability of websites will be provided with more websites to look at, and more individual attention.

## Common Core Standards

**CCR Anchor Standard 6:** Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

**Grade 4 -** With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and



collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.

**CCR Anchor Standard 7:** Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

**Grade 4 -** Conduct short research projects that build knowledge through investigation of different aspects of a topic.

**CCR Anchor Standard 8:** Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

**Grade 4 -** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.

## Appendix

Chart for Lesson 2

<b>Student Names</b>			
<b>Website Evaluated</b>			
<b>Element</b>	<b>Increases Trustworthiness</b>	<b>Decreases Trustworthiness</b>	<b>No Impact</b>

Chart for Lesson 3

<b>Student Names</b>	
<b>What is the Question?</b>	<b>Where can I find the answer?</b>
<b>What is the quickest route to Cape Cod.</b>	
<b>What will the temperature be in St. Thomas in February?</b>	
<b>What do travelers think is the most beautiful place in Vietnam?</b>	
<b>Is there any research on the best way to teach internet safety?</b>	
<b>Who is the US Senator from Rhode Island?</b>	

## Teacher Resources

Computer & Internet Vocabulary <http://www.impact-alliance.org/download/pdf/resource-centre/cop/ikeepsafe/teacher%20supplements/Internet%20Vocabulary%20List%20v2.0.pdf>

Cool Math <http://coolmath.com/>

Crossword Puzzle Generator <http://www.readwritethink.org/classroom-resources/student-interactives/crossword-puzzles-30068.html>

The Dog Island <http://thedogisland.com/>

Flips n' Flops <http://flipsnflops.net/>

Highlands Website <http://www.highlands.redclay.k12.de.us/>

Hole in the doughnut <http://holeinthedonut.com/>

Internet Safety Vocabulary <http://www.netsmartz.org/safety/definitions>

Kathy Schrock's Guide to Everything – Critical Evaluation Resources <http://www.schrockguide.net/critical-evaluation.html>

Kids Click Search Engine <http://kidsclick.org/>

National Archives <http://www.archives.gov/>

NetSmartz <http://www.netsmartzkids.org/>

New Castle County Library <http://www2.nccde.org/libraries/default.aspx>

The Ova Prima Foundation website <http://www.ovaprime.org/>

Red Clay Consolidated School District Website <http://www.redclay.k12.de.us/>

Star Fall <http://www.starfall.com/>

University of Delaware <http://www.udel.edu/>

The White House <http://www.whitehouse.gov/>

The Weather Channel <http://www.weather.com>

Yale University <http://www.yale.edu/>

### Notes

<sup>1</sup>Wikipedia contributors, "Moore's Law," *Wikipedia, The Free Encyclopedia*, [http://en.wikipedia.org/wiki/Moore%27s\\_law](http://en.wikipedia.org/wiki/Moore%27s_law) (accessed October 10, 2012).

<sup>2</sup>Hargittai, Eszter, Lindsay Fullerton, Erick Menchen-Trevino, and Kristin Yates Thomas. "Trust Online: Young Adults' Evaluation of Web Content." *International Journal of Communication*. 4. (2010): 468–494.

<sup>3</sup>Perez, Sarah. "So-Called "Digital Natives" Not Media Savvy, New Study Shows." *Read Write*. (2010). [http://readwrite.com/2010/07/29/so-called\\_digital\\_natives\\_not\\_media\\_savvy\\_new\\_study\\_shows](http://readwrite.com/2010/07/29/so-called_digital_natives_not_media_savvy_new_study_shows) (accessed January 4, 2013).

<sup>4</sup>Alistair , Smith. Victoria University of Wellington, "Criteria for evaluation of Internet Information Resources." Last modified 27 October 2005. Accessed January 3, 2013. [http://www.vuw.ac.nz/staff/alastair\\_smith/evaln/index.htm](http://www.vuw.ac.nz/staff/alastair_smith/evaln/index.htm)

<sup>5</sup>Kathy Schrock, "Teaching Media Literacy in the Age of the Internet," Classroom Connect (1999), <http://kathyschrock.net/eval/pubs/weval.pdf> (accessed January 5, 2013).

<sup>6</sup> Kathy, Schrock. "THE FIVE W'S OF WEB SITE EVALUATION." Last modified 2009. Accessed January 5, 2013. <http://kathyschrock.net/abceval/5ws.pdf>.

<sup>7</sup>Marzano, Robert. "A Comprehensive Approach to Vocabulary Instruction." *Voices from the middle*. 20. no. 1 (2012). [http://www.missionliteracy.com/page79/page87/assets/marzano\\_vm0201comp\\_vocab.pdf](http://www.missionliteracy.com/page79/page87/assets/marzano_vm0201comp_vocab.pdf) (accessed November 01, 2012).

**Curriculum Unit Title**

**Selecting Sources: Teaching Students to Become Effective Consumers of Internet Sources**

**Author**

Stella Evans

**KEY LEARNING, ENDURING UNDERSTANDING, ETC.**

Students will be able to identify elements included on websites.  
They will begin to evaluate whether a website is trustworthy or unreliable.  
They will decide which websites are better for different tasks.

**ESSENTIAL QUESTION(S) for the UNIT**

What elements are included in different types of websites?  
Do certain elements add to the reliability of websites? Do some elements reduce the reliability of websites?  
Which websites should you use for a variety of tasks?

**CONCEPT A**

Students will be able to identify elements included on websites.

**CONCEPT B**

They will begin to evaluate whether a website is trustworthy or unreliable.

**CONCEPT C**

They will decide which websites are better for different tasks.

**ESSENTIAL QUESTION A**

What elements are included in different types of websites?

**ESSENTIAL QUESTION B**

Do certain elements add to the reliability of websites? Do some elements reduce the reliability of websites?

**ESSENTIAL QUESTION C**

Which websites should you use for a variety of tasks?

**VOCABULARY**

Blog                      Browser                      Chat  
Room      Homepage                      Hyperlinks  
Podcast  
Search Engine      Wiki  
Social Media Site  
Social Networking Site

**WEBSITES**

Flipsnflops.net                      Udel.edu                      http://holeinthedonut.com/  
Wikipedia.org                      whitehouse.gov                      www2.nccde.org/libraries  
Starfall.com                      Netsmartz.org                      Weather.com  
Coolmath.com                      kidsclick.org                      factmonster.com  
Highlands.redclay.k12.de.us      Yale.edu                      www.archives.gov