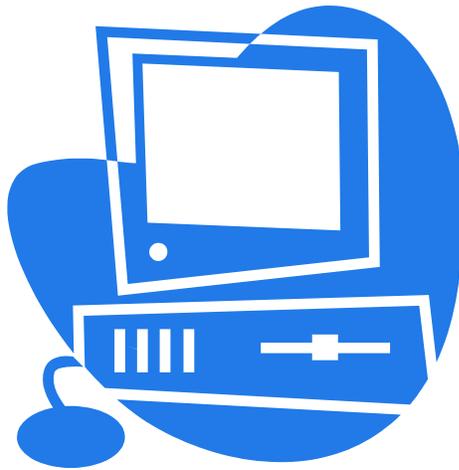


Evaluating Online Resource Reliability

Instructor Manual



**Created by the Blue Group Educational Consulting
For William Watson Middle School**

Please Note: The notes written in blue throughout this manual are intended for the instructor's use and should not be read verbatim to the students.

OVERVIEW:

PreInstructional Activities:	5 minutes
Lesson 1: Define Research: Objective 1	10 minutes
Lesson 2: Learn key terms and concepts: Objective 2.1	10 minutes
Lesson 3: Establish a rubric: Objective 2.2	15 minutes
Lesson 4: Apply the rubric: Objective 2.3	15 minutes
PostInstruction: Q&A,	5 minutes

Pre and posttest will be administered outside of the instructional time frame.

PREPARATION FOR INSTRUCTION:

Prior to instruction, the instructor should insure that students will have access to individual computers with Internet access during the workshop and that the links for the lessons are readily available on those computers. The teacher materials should be loaded for projection on a computer with Internet access that is also connected to the projection system.

PRE-INSTRUCTIONAL ACTIVITIES: (5 MIN)

Use PowerPoint slide two.

Prior to instruction, the students will have taken a pre-test in their classes which will measure their understanding of the key terms and concepts needed to establish the reliability, credibility, and/or quality of an Internet source.

The activities that are presented here are sequential to give the students an opportunity to build their understanding of the terms and evaluation strategies to successfully evaluate the reliability of an internet source. Review the objective with them at the beginning of the instruction. **There is a five minute allotment for the pre-instructional activities.**

Notes to the instructor:

The illustration of the fake/misleading websites is designed to generate motivation for the students prior to the instruction beginning.

After the initial overview in the pre-instructional activities, you will start and stop four lessons plus conduct the Post-Instruction session.

Questions to stimulate interest:

Do you think a person or an organization would put anything online that would be untrue or misleading?

Have you ever looked up a topic online and found it difficult to locate information that was helpful?

On the overhead computer screen, bring up a misleading website. Here are some examples you can use: (Note: these links are available on the instructional PowerPoint for easy access during the presentation.)

<http://home.inreach.com/kumbach/velcro.html> -- an article about Velcro crops in California

<http://www.ufos-aliens.co.uk/cosmicapollo.html> -- information about how NASA faked the moon landings.

<http://www.buydehydratedwater.com/> -- a website that sells dehydrated water. Click on "In the News." Fake press releases. You can show how there are no names referenced or links to the original sources.



Lesson 1: Define Research (10 Min.)

Use PowerPoint slides 3 - 20.

What is research?

Have students begin by writing a personal definition of research and a brief explanation of why they do research. Then refer to the informal definition on the PowerPoint. (slide 3)

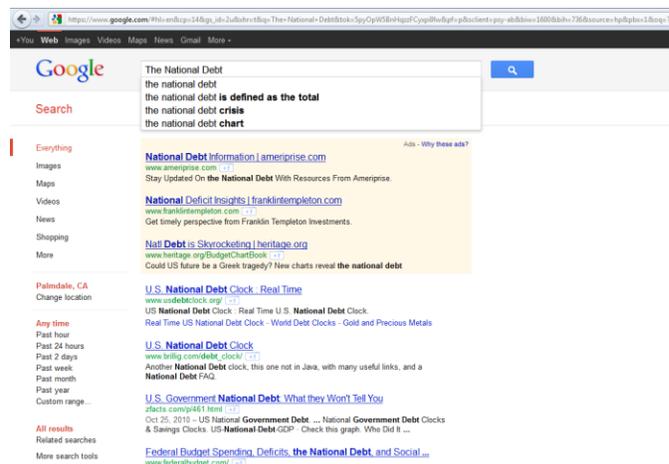
Why do we research topics?

Suggested answer for instructor: We research a subject or a topic so we can find out more information. We want to make sure that the information we find is true or reliable.

During our workshop we will define research as: Refer to slide four and allow students to copy the definition in their workshop packet as you discuss it. Use slide 5 to introduce the purpose of this workshop.

Let's get started with a topic: The National Debt

After typing the topic, The National Debt, this is the first screen you'll see.



Are you given a list of resources? **Yes**

Now let's compile the Internet sources.

Based on the list of sources you found, which ones would you use for your research? Circle four sites and rank order the sites on the screen shot below: Allow students to think about the sources listed and write their rankings on the screen shot. Briefly review the students' opinions

The screenshot shows a Windows Internet Explorer browser window displaying a Bing search for "the national debt". The search results are organized into several sections:

- Monetization the National Debt**: A list of links including "United States public debt - Wikipedia, the free encyclopedia", "The National Debt Problem", "The National Debt Relief Plan", and "The National Debt by Presidential".
- SEARCH HISTORY**: Lists recent searches like "youtube.com", "empower", and "See all".
- NARROW BY DATE**: Options for "All results", "Past 24 hours", "Past week", and "Past month".
- the national debt - Bing News**: A news section with a featured article "Fighting the debt, out of their own pockets" from the Seattle Times, and other news items like "The Debt Election" and "Time to tighten the national belt and pay down Canada's debt".
- Videos of the national debt**: A section for video results with thumbnails and titles such as "Toomey: Terribly Disappoi...", "Roundtable: Super Failure", "Swan: foreshadows toug...", and "Wash. Times: distorted Richard...".
- Fighting the national debt, out of their own pockets**: A news snippet from Nov 26, 2011, about the federal Bureau of Public Debt.
- U.S. National Debt Clock - Ed Hall's Home Page**: A link to a website providing a National Debt clock and FAQ.
- National Debt**: A snippet stating "It really is hard to find the words to describe the true horror of the national debt. The U.S."

At the bottom right, there is a "Use Bing. Earn Rewards." advertisement with a "Try it now" button. The Windows taskbar at the bottom shows the date as 11/29/2011 and the time as 10:22 AM.

All websites are not equally reliable for research. Let's take a look at some of the most common types of sources.

Examples of Online Sources
Organization
Expert Opinion / Professional Blog
Magazine / Non-peer reviewed publication
Advertisement
Wikipedia
Personal Blog / Commentary (opinion) / Criticism
News Reporting Source
Peer – Reviewed Journal

How would you rank these sites for research? (One is the first one you would use. Eight is the last.) [Read through these sources with the students and ask them to rank them according to reliability.](#)

Now look at the PowerPoint slides. How does your ranking compare?

[Use the charts on slides 10 & 15 and the screen shot examples on slides 11-14 and 16-20 to discuss the reasons for the ranking on the charts. Note: Slide 17 shows the home page. Slide 18 shows what students will see if they click “about” on the site. Reading here reveals that this is a personal website hosted by Steve Stoft.](#)

Suggested answers for the instructor: The instructor needs to inform the students that an Internet source is a website that provides information. That information can be an article, a blog, an advertisement, a video, interview, etc., and that peer-reviewed sources are the best for research. To evaluate whether the site is peer-reviewed, the student should refer to the home page of the website. The instructor may bring up an example on the computer and project it to the students. This is optional as they will be analyzing the sources in depth at the conclusion of the lessons.

Here there are no right and wrong answers at this point. If the sources are not appropriate, then the students will learn that in the rest of the module. These questions are designed to get them

thinking about research, sources, and what may be a good source or not. However, you will be providing them with a review of the correct and incorrect answers.

Look back at the screen shot of our Google search. Using the chart above, can you label any of these sites by looking at the URL and description? Write the label beside the site.

Note to Instructor: Briefly discuss the students' responses to this activity.

Lesson 2: Learn Key Terms for Evaluating Online Sources

(10 Min.)

Use PowerPoint slides 21 - 31.



The following terms will help you to evaluate the information you find when you research a topic. It is important to understand these key terms. Think about your answer to each of these questions.

Note to instructors: Review the vocabulary terms, possibly asking students to write a synonym for each word they know. Then have students refer to the glossary of terms in the back of the student packet. Have students circle words or phrases in the definitions that stand out to them as important and easy to remember as you read the definitions with them. This activity is designed to reinforce the definitions given for the five key terms that build the rubric for evaluation and to give the students a vocabulary to understand the terms that are used in the evaluation process. They have 7 minutes for this activity.

- What does reliable mean?
- What does it mean to be accurate?
- What is a bias?
- What is a credible source?
- What is a primary source?
- What is a secondary source?
- What does it mean if something is verifiable?

Look at the glossary in the back of your instructional packet.

Does your answer match the definition? Put a checkmark by those words.

Let's circle or highlight key words or phrases in these definitions.

The five concepts that you need to be able to identify in order to analyze online sources for reliability in using them for research are:

Author Audience Purpose Content Design

Let's take a closer look at each of these concepts: [Students should copy the definition on the PowerPoint as you discuss each concept.](#)

Author - the author of a source is the person, organization, or group that writes the source.



It is important in establishing reliability because the author of a source to be used in your research should be unbiased and credible.

1. Is the author's name listed on the source? **Yes**
2. Is the author affiliated with an organization? **The sponsor of the site is CBS News.**

Audience - The audience of a source is the person or group for whom the information is intended.

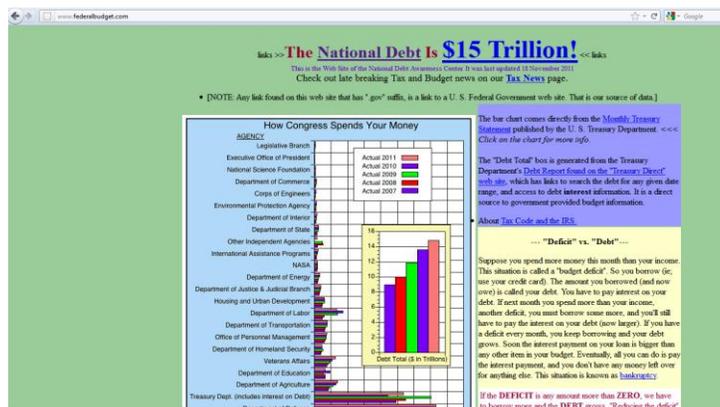


Knowing the audience is important in establishing reliability because the audience of a research source should not only be the author's friends, family or any single group of people. The intended audience for a research source should be the general public.

Consider these questions when thinking about the audience.

1. **Whom was the source written for?** The general public. Subscribers to US News.
2. **Who is the intended audience?** The general public. Subscribers to US News.

Purpose - The purpose of the source is the reason why it was written or created.



The purpose is relevant in establishing reliability because the purpose of a research source should be to inform, not to entertain, persuade, mislead, or exaggerate.

Consider these questions when thinking about purpose:

1. **Why was the source written?** To inform people about the National Debt and how Congress spends your money.
2. **What is the purpose?** To inform people about the National Debt and how Congress spends your money.

Content - The content of the source is the information that is contained in the source.

The screenshot shows the Wikipedia article for 'United States public debt'. The article text explains that the debt is the money borrowed by the federal government through the issue of securities. It details the components of the debt, including Treasury securities held by investors and intragovernmental debt. A table of contents is visible, listing sections such as 'History', 'Valuation and measurement', and 'Ownership of debt'. On the right side, there is a 'Part of a series of articles on United States budget and debt topics' sidebar with various sub-topics like 'Federal budget', 'Public debt', and 'Contemporary issues'.

The content is relevant in establishing reliability because the content should be credible, current, and accurate.

Consider these questions when thinking about content.

1. **What is this article about?** The U.S. Public Debt.
2. **Is the content current and based on credible sources?** Information about the U.S. Public Debt.

Design - The design of the content is the layout and look of the website and the information it contains.



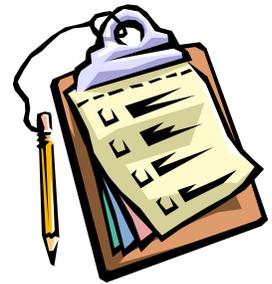
Design is important in establishing reliability because a site that is not designed in a professional manner may not be a credible source to be used in your research.

Consider these questions as you think about design.

1. Does the website look professional? **Yes**
2. Is the look misleading, creating the impression the source is more reliable than it actually is? **Yes /no.** Discuss this possibility with the students using the Zfacts site as an example. (slides 17 & 18) This site looks very professional and the title implies a factual basis, but research into the author reveals a possible bias since this is, in fact a personal site.
3. Is it designed well? **Yes**

Lesson 3: Establishing a Rubric (15 min.)

Use PowerPoint slides 32 - 41.



Note to instructor: You can show the video to the students on the overhead computer screen, or you can have the students watch the video at their individual stations. Inform the students that this next step of activities is designed to help develop their understanding of the key concepts and apply them to online sources. This will assist them in building the rubric to use for evaluation.

Establishing a rubric for evaluating online resources will help you decide which resources are reliable. Click on this link to watch a short video about evaluating online resources.

<http://www.screencast.com/users/LisaSB/folders/Jing/media/65d3696a-6f89-4c13-b169-f1d568da7a6f>

For these exercises, assume you have been given the assignment to research the topic of the bird flu. Use the links provided and answer the questions about them. These questions are the ones you will use as you learn how to evaluate online sources.

Author



http://www.who.int/csr/disease/avian_influenza/en/

After completing a search on Avian (bird) flu, this is one of the first links that may appear. Look over this screen shot or click on the URL for this page and answer the following questions.

- 1) Is the author clearly identified? Yes/No
- 2) Is the site sponsored by a respected organization?

- 3) Does the site contain a link to the author's home page or other contact information? Yes/No
 - 4) Does the author have an academic or professional affiliation? Yes/No
 - 5) Does the author's background suggest the possibility of bias in the information presented? Yes/No
- Why? _____

Suggested answers for the instructor:

Who is the author of the site?

The author of this site is an international nonprofit organization, the World Health Organization. If you click on the "About WHO" link on the left-hand side of the page, you will learn that the WHO is a specialized agency for world-wide health established in 1948 by the United Nations. The "About" link also details the mission and governance of the WHO.

Does the page contain a link to the author's home page or other contact information?

Not visible on this screen shot. However, if you click on the link to the Media Centre, then to Contacts, you will see contact information for various World Health Organization officials and offices.

Does the author have an academic or professional affiliation?

Yes. The officials of the World Health Organization have relevant credentials in public health policy and medicine.

Does the author's background suggest the possibility of bias in the information presented?

The World Health Organization is a multi-national organization, reflecting the public health interests of its nearly 200 member -states. While the breadth of its membership suggests that the WHO is not biased by the subjective needs of any one member -state, it also may mean that the WHO's policies will reflect the compromises negotiated among its members.

For this particular research project, the WHO site is a good source of basic information about avian flu and the planned response to a pandemic. Its focus is global, however, so it may not examine the United States' situation in great depth. Moreover, its interest is educating the public about avian flu and promoting preparation measures, not critiquing any country's preparedness.

Audience



<http://www.nature.com/nature/journal/v435/n7041/full/435400a.html>

This is a blog about avian flu provided by the science journal *Nature*. Look over this screen shot or click on the URL for this page and answer the following questions.

1) Who is the intended audience for this site?

2) What level of audience does this site appear to be written for?

- a) Academics
- b) Professionals in the field
- c) General public
- d) Students

3) If the site allows comments from users, whom are the comments from? _____ How substantial do they seem?

4) What other sites link to this Web page or blog? _____

Suggested answers for the instructor:

Who is the intended audience for this site?

This blog is accessible through the science journal *Nature*, which offers recent scholarship on a wide variety of topics to a highly educated audience. The blog entry featured in the screen shot, however, suggests an effort to communicate with a more general audience, as evidenced by the informal tone and diction of the entry.

What level of audience does this site appear to be written for?

The entries are informal and do not emphasize technical and scientific terminology, though the author does assume interest in and knowledge about avian flu. She also refers to current news events.

If the site allows for comments from users, whom are the comments from? How substantial do they seem?

This blog doesn't allow comments; however, that doesn't necessarily undermine its credibility.

What other sites link to this Web page or blog?

A crucial point, in this case! If you use www.technorati.com to search for links to this blog, you will find that the Blogger's Blog has posted comments on the *Nature* site—and describes it as a *fictional* blog. Follow the link provided to the Blogger's Blog entry (you will arrive on a page with a long list of entries, but can find the right one by searching for a key word) and you will read that the *Nature* blog pictured above was in fact a fictional blog written by a senior *Nature* correspondent exploring what could happen in a global outbreak of avian flu!

Returning to the screen shot, notice that the President is quoted as referring to "a pandemic of bird flu" in a speech given the day after Christmas, 2005. There has been no avian flu pandemic so far—a clear tip-off that this blog is fictional.

Purpose

<http://www.qiagen.com/default.aspx>

Along with multiple links to public health organizations, a search for "avian flu" also generates lots of "sponsored" hits that provide links to commercial sites.

This is one example. Look over this screen shot or click on the URL for this page and answer the following questions.



- 1) What is the purpose of the site?
 - a) To inform
 - b) To entertain
 - c) To persuade
 - d) To sell
- 2) Who sponsors this site?
 - a) An academic/professional organization
 - b) A business
 - c) A publication (newspaper, magazine, journal)
 - d) A government agency
 - e) A political action committee
 - f) A nonprofit institution or agency
- 3) Does the mission of the sponsoring organization suggest the possibility of bias in the information presented? Yes/No Why?

-
- 4) Does the site contain advertisements? Yes/No

Could this indicate bias? Yes/No

Suggested Answers

What is the purpose of this site?

Clicking on the "About/Jobs" tab reveals that Qiagen is a company that specializes in creating and selling products for various types of medical testing.

Who sponsors this site?

The company sponsors its own Web site.

Does the mission of the sponsoring organization suggest the possibility of bias in the information presented?

Qiagen hopes to sell its products; therefore it is likely to present its research and product lines positively. Because one of its products is a test for avian flu, it will most likely argue that testing is an essential part of pandemic control; it may even overstate the danger of a flu pandemic in order to sell more tests.

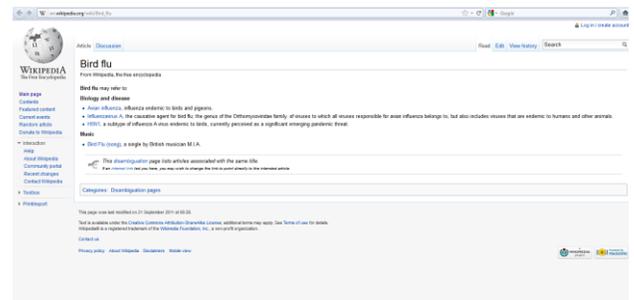
Although you could use this site to show an example of the types of medical tests now available to detect avian flu, the site is probably too biased to help you realistically evaluate the United States' current level of preparedness.

Do advertisements exist on the site? If they do, this could be indicative of a bias or that the purpose of the site is to present material from the sponsor or sell space.

Content

http://en.wikipedia.org/wiki/Bird_flu

Another type of link that comes up during a search for avian flu is this site: the Wikipedia entry on the topic. Look over this screen shot or click on the URL for this page and answer the following questions.



- 1) Is the site updated regularly? Yes/No
- 2) Can you find a date for the information on the site? Yes/No
- 3) How are sources documented?

-
- 4) Is enough information presented so that you can find and read the sources cited by the site? Yes/No

5) On what basis have the internal links been selected?

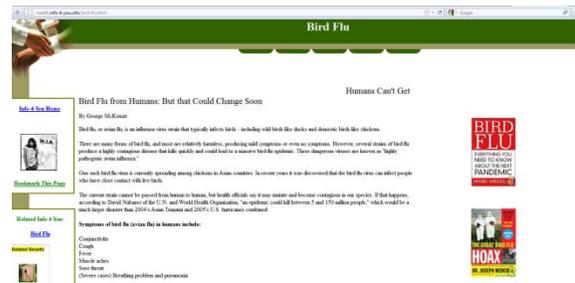
Are these links current? Yes/No

6) Has the information been reviewed by experts in the field?
Yes/No

Design

<http://health.info-4-you.info/bird-flu.html>

This is a health information site with an article on avian flu. Look over this screen shot or click on the URL for this page and answer the following questions.



- 1) Is the site easy to navigate and use? Yes/No
- 2) Does the site use correct and appropriate language? Yes/No
- 3) Does the site follow principles of good design? Yes/No
- 4) Does the site look professional? Yes/No

Suggested answers for the instructor:

Is the site updated regularly?

At the top of the entry, Wikipedia posts a disclaimer that states, "This article documents a current event. Information may change rapidly as the event progresses." If you scroll down to the bottom of the entry, you can see the date of last update. By clicking on the History button, you can see that between April 6 and 13, 2006, the article was altered 50 times. Most of these alterations are minor.

Can you verify the accuracy of the information presented?

The avian flu entry itself provides no list of sources, so the accuracy of this site cannot be verified. However, the detailed H5N1 entry cites multiple scientific studies published in academic journals and cutting-edge scientific publications. You could therefore use this site as a source of basic information about avian flu, as well as a way to find other relevant sources dealing with preparedness.

Most importantly, if you click on the Main Page link, then click on Wikipedia, you will learn that Wikipedia is a free online encyclopedia, available in multiple languages, and open to editorial changes by any registered user. As such, Wikipedia notes, its reliability and accuracy have been questioned. Wikipedia

does strive for a neutral stance, and the editors provide detailed information about how entries are changed, by whom, and when they are updated.

How are sources documented?

On the related H5N1 site, sources are given in endnotes and cited in a list of references.

On what basis have the internal links been selected? Are these links current?

The site contains dozens of internal links that lead to related Wikipedia entries, feature articles, and more. The links are current, and a useful way of finding additional information on this vast site. [On the H5N1 site, links under Sources lead to articles and sites referenced by the article. The links are mostly current. All seem chosen to lead the reader to additional sources of information about avian flu.]

Has the information been reviewed by experts in the field?

It's possible, but since anyone can modify this page, there is no way of determining each editor's credentials. You would have to verify the information on this site carefully before you cited it in your research.

Does strive for a neutral stance, and the editors provide detailed information about how entries are changed, by whom, and when they are updated.

Lesson 4: Applying the Rubric (15 minutes)

Use PowerPoint slides 42 - 45.

Note to Instructor: This section should be completed independently by the learners with the instructor remaining available to assist students in navigating the websites and interpreting the rubric questions. At the end of the allotted time, the instructor should bring the group back together for a brief discussion of the learners' conclusions. Five minutes is allotted for this activity as a post instructional activity.

Now, you are ready to evaluate online sources for yourself. To do this, all of the questions that you have been using to establish Author, Audience, Purpose, Content, and Design will be used as your rubric to evaluate the reliability of a source. You will be using two sources for this purpose. Both were found when we did our initial search on "The National Debt."



Source #1 = <http://zfacts.com/p/461.html>

Source #2 = <http://money.usnews.com/money/personal-finance/articles/2011/03/31/how-the-national-debt-affects-you>

Author. Determine whether the author is qualified to provide credible information. Answer all questions for both sources.

	Source 1	Source 2
Who is the author of the site? Is he or she clearly identified?	Yes.	Steve Stoft. With a little searching. No biography or credentials are linked,

Are credentials or a biography provided?		though he writes that he has a Ph. D. in Economic
Does the site contain a link to the author's home page or other contact information?	Yes.	Yes, it links to his blog.
Does the author have an academic or professional affiliation?	Yes. She is a reporter for US News and World Report.	He writes that he is a Ph. in Economics and works for CA PJM.
Does the author's background suggest the possibility of bias in the information presented?	No.	Yes, he is a consultant for an energy company, and he receives funding for his website.

Based on the notes in your rubric, which source is reliable? **Answers will vary based on student evaluation.**

Why? _____

Which source is unreliable?

Why? _____

Audience Decide whether the information is appropriate for the level of work you are doing based on the intended audience. Answer all questions for each source.

	Source 1	Source 2
Who is the intended audience for this site?	The general public.	The general public.
What level of audience does the site appear to be written for (fellow professionals, children, college students, etc.)?	Adults, college students, the readers of US News.	Adults. US Citizens.
If the site allows comments from users, whom are the comments from?	Yes. The comments are from subscribers to the paper.	No.

How substantial do they seem?		
What other sites link to this Web page or blog?	Other article links appear on the article.	A blog. Advertisements from Google and Camry.

Based on the notes in your rubric, which source is reliable? **Answers will vary based on student evaluation.**

Why? _____

Which source is unreliable?

Why? _____

Purpose: Identify the reason that this information has been posted. Answer all questions for both sources.

	Source 1	Source 2
What is the purpose of the site? <ul style="list-style-type: none"> To inform? To argue for a position? To solicit business or funding? 	The article was written by a reporter to inform.	It appears that the author takes funding. He writes that he is trying to expose issues in the press and government.
Who sponsors this site? <ul style="list-style-type: none"> An academic or professional organization? A business? A publication? A government agency? A political action committee? A nonprofit institution or agency? 	US News and World Report.	This is the author's private website, but he does accept funding.
Does the mission of the sponsoring organization suggest the possibility of bias in the information presented?	Not necessarily. It is a reporting organization.	Yes. Exposing misleading information but with very little supporting evidence. The author creates the charts and graphs.

Based on the notes in your rubric, which source is reliable? **Answers will vary based on student evaluation.**

Why? _____

Which source is unreliable?

Why? _____

Content: Determine how much effort has been made to verify the information and keep it up-to-date.

	Source 1	Source 2
Is the site updated regularly? Can you find a date for the information on the site?	Yes.	Yes.
Can you verify the accuracy of the information presented?	Yes.	Yes.
How are sources documented? Is enough information presented that you could find and read the sources referred to by the site?	Yes.	Yes.
On what basis have the internal links been selected? Are these links current?	Yes.	Yes.
Has the information been reviewed by experts in the field? Does anything on the site allow you to determine this?	Yes. Interviews with experts in the field. References to additional articles and research.	Yes. Interviews with experts in the field. References to additional articles and research.

Based on the notes in your rubric, which source is reliable? **Answers will vary based on student evaluation.**

Why? _____

Which source is unreliable?

Why? _____

Design: Evaluate how professionally the information is being presented. Answer all of the questions for both sources.

	Source 1	Source 2
Is the site easy to navigate and use?	Yes.	Yes.
Does the site use correct and appropriate language?	Yes.	Yes.
Does the site follow principles of good design?	Yes.	Yes.

Based on the notes in your rubric, which source is reliable? **Answers will vary based on student evaluation.**

Why? _____

Which source is unreliable?

Why? _____

Overall, after applying the rubric, which source would be the best to use in a research paper about the national debt?

Why? _____

Suggestions for the instructor:

Source 1 is a questionable website from ZFacts. The author information can be located but not substantiated. The author writes: I'm Steve Stoff and this is my web site. I'm building it with a little help from my friends and volunteers, but so far, it's mostly my work. I'm a Ph.D. economist and my day job is consulting for electricity markets—California, PJM, ISO-NE. That provides

99.9% of the funding for this site. (Google ads are now providing about \$12 / day). My professional web site is stoft.com, my blog is zReason.

Source 2 is the US News and World Report website. Based on the rubric, students should conclude that this is the more reliable resource.

Overall, after applying the rubric, which source would be the best to use in a research paper about the national debt?
Why?

POST-INSTRUCTIONAL ACTIVITIES (5 minutes)

Review the students' answers for Lesson 4. Review why using Source #2 would be better based on Author, Audience, Purpose, Content, and Design.

Ask the students if they have any questions about evaluating the reliability of an online source.