lesson

# in-credibly informed

**InCtrl**

## about this lesson

**In-Credibly Informed** is part of **InCtrl**, an engaging collection of hands-on lessons covering seven key **digital citizenship** topics. These free lessons, for grades 4–8, empower students to be smart, safe and effective participants in a digital world. Get **InCtrl** at **www.ciconline.org/InCtrl**.

### LESSON SUMMARY

We live in an information-surplus world – and we can access much of it online in seconds. If you ask your students to "Google" something, they'll know what to do. But the first search result is *not* always the best source…and not all information found online is necessarily credible. In this lesson, students will gain/improve their practical research skills by exploring different ways to **search** for information online, discovering how to critically **evaluate the reliability** of web sources, and gain tools to help them **manage and organize** content.

> **TEACHER TIP!**
> This lesson is designed to work for 4th-8th grade students and be adaptable to varying abilities. Activities build upon one another and increase in depth and complexity as the lesson progresses.

### LEARNING OBJECTIVES

*Students will…*

- Practice and apply various online search and research techniques
- Evaluate information found online to determine its credibility
- Develop and contribute to a user-generated website

### BACKGROUND

In preparation for the lesson, watch the following teacher video, then show the student video during Activity 2:

**In-Credibly Informed/Teacher Video**
[3 minutes]
Students have easy access to a wide variety of information sources through the Internet. They are being asked to take on a more proactive role in determining the quality and reliability of information. This video discusses some of the new skills students need to develop in order to find, evaluate, and manage information.

**In-Credibly Informed/Student Video**
[2.5 minutes]
Prem has found his ideal smartphone. Now he needs to convince his parents to buy it for him. Watch as Prem embarks on a research project about the phone and see some of his success and failures in effective searching. Would you do the same search as Prem?

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**• LESSON LINKS** • • • • • • • • • • • • • • • • • • • •

Check out these lessons to explore these digital citizenship topics in-depth:

**Media: Between the Lines**
(Media Literacy)

**What's Mine Isn't (Necessarily) Yours**
(Creators' Rights/ Copyright)

**Working Together Digitally**
(Digital Collaboration and Communication)

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# essential questions

## • WORDS TO KNOW • • • •

**Information:** Any piece of knowledge, intelligence, data, or fact that is told, read, or communicated.

**Research:** A systematic search, investigation, examination or study of information to collect or discover more data, interpret facts or opinions, and evaluate information.

**Literacy:** The ability to read, understand, or have knowledge of a subject or field.

*Note:*
- **Information Literacy** focuses on from where or whom information came, and why it was constructed. It is concerned with the words used, and whether the information is accurate, timely, and useful; not with the way the content is delivered.

- **Media Literacy** focuses on how something was constructed, and what creative techniques were used. (See the lesson **Media: Between the Lines** for more information about media literacy.)

**Search Engine:** Software that is designed to search the World Wide Web for information that lives online (such as web pages, news updates, blogs, archival information, video, images, downloadable files, directories). Commonly used search engines are **Google**, **Bing**, or **Yahoo**; and their predecessors, **AltaVista**, **Lycos**, **Scroogle**, **AlltheWeb**. Search engines scan rapidly through web content using an algorithm, or an automatic mathematical calculation, to find real-time information.

**User-Generated Content (UGC):** Category of content in digital media technologies and web publishing, where users (or the public) can contribute to or create content. Wikis (such as **Wikipedia**), social media (such as **Facebook**, **Twitter**, **Pinterest**), forums, Q&A sites, blogs, podcasts, and video sites (such as **YouTube** or **Vimeo**) are all examples of UGC.

## introduction [40 minutes]

> **TEACHER TIPS!**
> • Collaborate with your school librarian on this lesson to help your students with the development/improvement of their research skills.
>
> • Check out **Project Information Literacy** and Ohio State University's **Info Lit Toolkit** for practical research tips for educators, librarians, and students.

**Brainstorm!** Start the lesson by asking students to name everything that they consider to be "information." Build a collaborative list using an interactive brainstorming tool such as **Mindmeister**, **Scribblar**, or **Evernote**, or by drawing a mind map on the board. "Information" includes facts, data, images, video, files, books, news, and other material.

**Share.** Next, invite students to share where they find information: first offline, then online. Go over the terms and definitions in the Words To Know sidebar. Ask: *What search engines do you use? What websites do you go to the most? Why?* Add their responses to the mind map.

**Discuss.** Ask your students whether anything changes in their habits depending on the type of information they are looking for. For example, do they look in the same place or use the same search techniques if trying to find the latest movie, a historical fact for a school assignment, or an image from today's news? Why or why not?

Explain that while search engines are very useful tools, they are not smarter than people, and it helps to know how to use them to get the information you want or need.

**Search Engine Scavenger Hunt.** Have students play a short scavenger hunt game to practice finding information online. Have them work in pairs or small groups, using different search engine tips and tricks (see sidebar). For example, you could have students find facts about a historical figure, the name of a famous artwork hanging in a major museum, a specific quote or lyric, definition of a new vocabulary word, or a funny national holiday related to food. Either demonstrate using a projector, or have students use their own computers, tablets, or devices to try on their own.

First ask students what topic they want to get more information about (for example, "Lady," "Green" or a common first name like "Michael.") Start broadly, using one word (to show how many results they get), and then add more descriptors (like Lady "Gaga," Lady "Marmalade," or Lady "Diana") to see how that changes results.

After the initial word search, ask students to describe anything they notice. For example, with **Google**, the search engine will make suggestions for you after you type in the first word or make a spelling error by showing *"Did you mean Lady Gaga?" "I'm feeling lucky"* will

## SEARCH ENGINE TIPS

- Search engines are not case sensitive, so it doesn't matter if you capitalize or not (for example: *tokyo japan* or *LOL*)

- "A," "it," "the" are not needed

- Most punctuation is ignored by search engines (for example: *?!@#%^()+[]\*)

- Short searches will give you the broadest results (for example: *book* versus *book club* versus *book club list 2013*)

- The more descriptive words you can use, the narrower your results (for example: *new york* versus *new york times* versus *new york times august 2 2013*)

- Use "quotations" when searching for a specific phrase (for example: "*abraham lincoln*" will find results with both names together)

- Use the + sign before a word you want to appear in results, aka "with" (for example: *alicia keys song lyrics +empire*)

- Use the – sign before a word you don't want to appear in results, aka "without" (for example: *lasagna recipe -cheese*)

- Search for a specific file type by adding the 3-letter file abbreviation (for example: *ecology lesson filetype:pdf*)

- Get the time anywhere in the world by adding the word "time" before any city or country (for example: *time stockholm*)

- Get definitions by adding "define:" in front of any word (for example: *define:cerebral*)

Check out **Google's Inside Search** for even more tips and tricks on how to use **Google Search** effectively.

- Search engines frequently change their algorithms that determine how they find information and come up with search results. Read **Google's Search Story** with your students (using a projector) to learn more about how **Google** works behind the scenes.

also appear in the search bar offering guesses as to what you're looking for.

It is important to draw your students' attention to the search results that appear on the top of the page, often in a shaded box, or in the right hand column. Explain that these are often sponsored or paid ads.

Next, have them add quotations to a phrase, the plus/minus sign, file type, and other search keys (noted in the sidebar) to demonstrate how students can optimize what search engines can do for them.

## activity 1  [40 minutes to research. 40 minutes to discuss and create.]

You may have discovered by now that your students can be pretty savvy when it comes to searching for information online! But an important skill for them to have is to know how to evaluate the credibility and reliability of a website and its content.

**Information Evaluation.** Distribute the student handout **iEvaluate: A Closer Look At Websites** to your students. Students can work individually, in pairs or in small groups (no more than 4 students) to complete the activity. They will need to have access to computers/tablets and the Internet. The research portion of the activity can be done for homework in advance, followed by completing the evaluation and discussion in class.

**STEP 1: RESEARCH** Explain to students that they will be doing research, which requires more analysis than simply "finding" information online. Research involves using multiple and valid sources and evaluating the information found in each. Students will visit and evaluate three* websites from the list provided on the handout. They should answer the evaluation questions in their process journals.

> **TEACHER TIP!**
> List the sites from the handout on your class wiki or blog to make it easier for students to access.

*Note: For older or more advanced students, have them find five websites instead of three.

### ● RESEARCH HABITS ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

Research from a national study over 11,000 college students' research habits revealed that:

- 7 out of 10 students use **Wikipedia**
- Only 30% use librarians as a source
- 84% say that the most difficult part about research is getting started
- 12 adjectives students use to describe how they feel about research assignments: **fear, tired, angst, dread, excited, anxious, annoyed, stressed, disgusted, intrigued, confused & overwhelmed**

This is all the more reason to help your students gain and practice the important skills needed for research, evaluation, and management of information!

Source: **Project Information Literacy**

**STEP 2: SHARE & DISCUSS** Regroup after students have researched and evaluated the websites. Go through the websites and ask students to share their evaluation (based on the questions.)

After all students have shared, or all sites have been covered, reveal that at least one of the websites is a hoax. Allow students to share their guesses and rationale with the class.

Then, reveal that actually, *all* of the websites listed on the handout are hoaxes!
  Explain:
  • Anyone can create a website and publish information online.
  • It is often hard to figure out who created or authored a website.
  • Web resources rarely have editors or fact checkers.
  • There are no web standards to ensure accuracy.
  • Unlike those in print resources, publication or revision dates for online content are rarely noted.
  • As found in the introductory activity, some information is "sponsored" or paid to appear higher
    in search results.

**STEP 3: EVALUATE** Ask students: *How does it make you feel to know that these are a hoax? What would happen if you used information from a hoax site as "factual" in a research paper or assignment?*

Ask students if they have ever heard, or can guess, what "user-generated content" (UGC) is. Provide the definition and examples listed in the Words To Know (on p. 2.) Ask students: *How often have you used Wikipedia to research something? What other UGC sites have you used for research?*

To give students a better glimpse of user-generated content; demonstrate by visiting a variety of UGC sites. (For example: **Facebook, Twitter, MySpace, Wikipedia, Yahoo Answers, YouTube**.) Ask: *What do you notice about UGC sites? Have you ever contributed to a user-generated website? Are some more or less reliable than others? What makes you think so?* For example, they may notice more opportunities for users and visitors to leave comments, and post their own opinions, ideas and content.

While there UGC sites contribute a lot of interesting, current, and useful information and content to the world wide web, it is important to have a healthy skepticism about an author's intent, and evaluate what type of information one is looking for. Discuss when opinion-based content could be useful (such as in a debate) and when more reliable, fact-based content is useful (such as a research paper.)

> **TEACHER TIP!**
> See Extension Activities (on p. 6) for a fun Wikipedia activity that will not only give students an understanding of how this major UGC site works, but also give them an opportunity to contribute to the world wide web by editing an existing, or authoring a new, Wikipedia entry!

Source: *Beck, Susan. The Good, The Bad & The Ugly: or, Why It's a Good Idea to Evaluate Web Sources. 1997.*
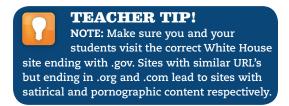
## activity 2 [40 minutes]

**Create Guidelines.** Explain that in this next activity, students will use what they have learned thus far to collaborate on and create guidelines they can use and share to help each other with research.

**Watch.** First, show the **In-Credibly Informed/Student Video** to your class prior to starting the activity. Invite students to share what questions they have after watching. Ask: *What is Prem concerned about? How can he evaluate his web sources to determine whether or not they are credible?*

Next, students will revisit the hoax websites explored in the last activity, and compare them to other types of legitimate, more reliable websites. Have students work in pairs or small groups and give them time to revisit all the websites on the handout (or to cut down on time, assign each group just two or three of the websites.) As in Activity 1, you may want to publish active links on your class wiki, blog, or website to avoid having students typing in the URLs.

Add the following links to the list to help them in comparison:
- The United States Government: **www.usa.gov**
- The Official Page for the U.S. White House: **www.whitehouse.gov**
- CNN: **www.cnn.com**
- The New York Times: **www.nytimes.com**
- Mayo Clinic: **www.mayoclinic.com**
- Harvard University: **www.harvard.edu**
- Digital Public Library of America: **www.dp.la**

As they look through the content again, and compare to the new sites you have provided, have students create a list of differences of features they observe.

## Ask the following questions to prompt students' analysis of a site:
- *Do you know who the author, creator, or sponsor is? How?*
- *Is that person, group of people, or organization trustworthy, or are they qualified experts on the topic? How do you know?*
- *What topics are covered? What information does this website offer that cannot be found elsewhere? Is it in-depth?*
- *Is the information current? Do you know when the website was created or information was updated? Is there a date on the page? Are links current or expired?*
- *Is the information on the website error-free? How do you know?*
- *Is the content consistent? Or, is there conflicting information?*
- *What different domain name or URL endings do you notice? What can you learn from page titles or the URL address?*
- *Does the information reflect an opinion or proven facts?*
- *Is there advertising on the page?*

**Share & Analyze.** Re-assemble as a class and invite all student pairs or groups to share their tips. As a class, analyze each group's list of tips and then compile a master checklist of "Site Evaluation Guidelines" that will help them evaluate a site's credibility.

**Collaborate.** You and your students may want to collaborate with other students or classes, either online or offline. Use a **Google Doc** or **Wiki** format to allow online collaboration to make this possible. Once your class is happy with the list, publish it on the class wiki or blog, print it out and share with other students, or display in the computer lab or library.

## reflection  [40 minutes]

Now that students have built skills for finding information online, recognized the need to carefully evaluate the credibility of online information, and learned how to do so, they are probably also realizing that it is important to manage and organize the information once they have found it. Ask: *As you gathered online research (in the scavenger hunt, Activity 1, or for another school project), how did you keep track of it? What do you usually do with information that you find and would like to share or save for future reference?*

Have students compare and contrast different online bookmarking and filing tools, such as:
- **Pinterest**
- **Visualize.Us**
- **Evernote Web Clipper**
- **Delicious**
- **Google Bookmarks**
- **Diigo**
- **Bit.ly**

Ask: *Which do you prefer? What tool is best for images? What tool is best for bookmarks? Are there more that you can add to the list? Can you categorize these tools in a useful way?*

Have students organize what they have learned and the sources they have used, using an online tool such as a spreadsheet or document on **Google Docs**, a list on **Evernote**, or a class blog or wiki.

● **EXTENSIONS** ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

**Wiki-Creators:** Your students most definitely use **Wikipedia**, but do they know that they can also be *contributors* to it, too? Explain that **Wikipedia** is a "collaboratively edited, multilingual, free Internet encyclopedia." It is a user-generated website featuring over 30 million articles in 287 languages written by volunteers from around the world. Almost all of the articles can be edited by anyone who has access to the site. Even your students!

Give your students a better understanding of **Wikipedia** through the following activities:

- Discuss the pros and cons to the **Wikipedia** model of online information in a debate.

- Research cases of vandalism, and contributors adding false or unsubstantiated information, and how the collaborative model opens the site up to such risks.

- Have your students contribute to an article or create an original one. What knowledge or expertise can your students contribute? Examples include a local landmark or festival, a noteworthy holiday/event, or a celebrity your students may wish to write about. Learn more about how to **start an article**.

# iEvaluate: A Closer Look At Websites

Visit and evaluate at least three of the websites listed, then answer the following questions in your process journals or using a collaborative document or spreadsheet:

1. **Havidoll:** The first and only treatment for dysphoric social attention consumption deficit anxiety disorder (DSACDAD). **http://havidol.com**

2. **DHMO:** A dangerous or useful chemical? **http://www.dhmo.org/facts.html**

3. **Pacific Northwest Tree Octopus:** An endangered species! **http://zapatopi.net/treeoctopus**

4. **Furnetics:** The world's only provider of customized genetic body modifications. **http://www.furnetics.com**

5. **Buy Hydrated Water:** Save yourself from harmful pollutants. **http://www.buydehydratedwater.com**

6. **Dog Island:** Let your dog live happily ever after! **http://www.thedogisland.com**

7. **Boilerplate:** Learn about the first robotic man ever built. **http://www.bigredhair.com/boilerplate/intro.html**

8. **Uncyclopedia:** The content free encyclopedia. **http://uncyclopedia.wikia.com/wiki/Main_Page**

9. **Petrol Direct:** Save money by buying gasoline online. **http://www.petroldirect.com**

10. **California's Velcro Crop:** An important crop under stress from drought, disease, and pests. **http://www.umbachconsulting.com/miscellany/velcro.html**

## EVALUATION QUESTIONS:

- Website Name: _____

- URL: _____

- Date Visited: _____

- What did you learn from this website? _____

- What is the website's purpose?
  - ❏ Sell a product or service
  - ❏ Research
  - ❏ News reporting/facts
  - ❏ Opinion (blog)
  - ❏ Other: _____

- Who is the creator or author? _____

- How can you tell that the information is reliable? _____

## Common Core ELA Standards
**Reading:** Key Ideas and Details; Integration of Knowledge and Ideas
**Writing:** Production and Distribution of Writing; Research to Build and Present Knowledge
**Speaking and Listening:** Comprehension and Collaboration; Presentation of Knowledge and Ideas
**Language:** Vocabulary Acquisition and Use

## American Association of School Librarians
**Standard 1:** 11.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 1.4.1, 1.4.2, 1.4.3
**Standard 2:** 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.1, 2.3.2, 2.3.3, 2.4.1, 2.4.2, 2.4.3, 2.4.4
**Standard 3:** 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 3.2.1, 3.2.2, 3.2.3, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, 3.3.7, 3.4.1, 3.4.2
**Standard 4:** 4.1.5, 4.1.7, 4.1.8, 4.3.1, 4.3.2, 4.3.4, 4.4.2, 4.4.6

## National Education Technology Standards (NETS), ISTE
**1. Creativity and Innovation:** a, b
**2. Communication and Collaboration:** a, b, d
**3. Research and Information Fluency:** a, b, c, d
**4. Critical Thinking, Problem Solving, and Decision Making:** a, b, c, d
**5. Digital Citizenship:** a, b, c, d
**6. Technology Operations and Concepts:** a, b, d

## Partnership for 21st Century Skills (P21)
**Learning and Innovation Skills:**
   **1.** Creativity and Innovation
   **2.** Critical Thinking and Problem Solving
   **3.** Communication and Collaboration
**Information, Media and Technology Skills:**
   **1.** Information Literacy
   **3.** ICT Literacy
**Life and Career Skills:**
   **1.** Flexibility and Adaptability
   **2.** Initiative and Self-Direction
   **4.** Productivity and Accountability
   **5.** Leadership and Responsibility