

Lesson 12: Sources and Search Engines

Overview

This lesson encourages students to think more critically about how web searches work and how to find relevant and trustworthy information online. After viewing and discussion a video about how search engines work, students will search for information about several unlikely animals. They'll need to analyze the sites they find for reliability in order to identify which of the animals is actually a hoax.

Purpose

As students are finishing up their own websites, this lesson encourages them to also think about their responsibilities as consumers of information. By the end of this lesson, students should have developed strategies for determining which websites are more trustworthy and tie these strategies back to their own role of content producers by looking for ways to make their own sites appear more trustworthy.

Agenda

Warm Up (10 minutes)

Internet Scavenger Hunt

Activity (30 minutes)

Relevant and Trustworthy Sites The Trustworthiness Checklist

Wrap Up (5 minutes)

Human versus Computer Searching

View on Code Studio

Objectives

Students will be able to:

- Use basic web searching techniques to find relevant information online
- Identify elements that contribute to a website's trustworthiness or untrustworthiness

Preparation

- Print a copy of **Internet Scavenger Hunt - Activity Guide** for each pair of students.
- Print a copy of **Strange Yet True Animals - Activity Guide** for each pair of students.
- Create a blank poster titled **Trustworthiness Checklist** and place it on the wall.

Links

Heads Up! Please make a copy of any documents you plan to share with students.

For the Teacher

- **Strange Yet True Animals** - Key

For the Students

- **How Search Works** - Video (**download**)
- **Internet Scavenger Hunt** - Activity Guide
[Make a Copy](#)
- **Strange Yet True Animals** - Activity Guide
[Make a Copy](#)

Vocabulary

- **Algorithm** - A precise sequence of instructions for processes that can be executed by a computer
- **Relevant** - Closely connected or appropriate to the matter at hand
- **Search Engine** - A program that searches for and identifies items in a database that correspond to keywords or characters specified

by the user, used especially for finding particular sites on the World Wide Web.

- **Trustworthy** - Able to be relied on as honest or truthful

Teaching Guide

Warm Up (10 minutes)

Internet Scavenger Hunt

Group: Place students in pairs.

Distribute: Each group will need a copy of **Internet Scavenger Hunt - Activity Guide**

Transition: Send students to the computers to prepare for the scavenger hunt.

Remarks

When I start the clock you will have exactly 7 minutes to complete as much of this scavenger hunt as you can. Your goal isn't to answer *every* question on this list, but to find as much *accurate* information as possible in the time you've been given.

Prompt:

- Which things were hardest to find?
- Which were easiest to find?
- What strategies did you use to find things online?
- How did you know the information you found was correct?

Discuss: Student pairs share out what they were able to discover about the scavenger hunt and what strategies worked well for finding information.

Discussion Goal

Goal: The first three prompt questions are intended to help students identify any searching techniques that they currently use. If students *don't* have clear strategies, you may want to spend some time discussing basic search techniques. Keep track of search strategies on the board for reference later.

The last question gets to the focus of the activities in this lesson. It's likely that students didn't consider whether or not their information was accurate, but if they do come up with some ideas, make sure that you track them in a place where they can be referred to later in the lesson.

Activity (30 minutes)

Relevant and Trustworthy Sites

Display: Watch the **How Search Works - Video** with the class.


Remarks

Now that we know a little bit more about how search engines work, we're going to search for some information about some of the world's strangest animals.

Group: Place students in pairs.

Distribute: Give each pair one copy of **Strange Yet True Animals - Activity Guide**

Unlikely Animals

 **Search:** Give student pairs some time to search online and fill in the table on the activity guide. They should have little difficulty finding this information by just searching for the names of each animal.

Share: Ask student pairs to share out their answers for each of animals. If, during any point in the share out, others in the class disagree with an answer encourage them to discuss where and how they found their information.

Vocab: It's likely that students found websites that were relevant to their topics, but how do we know if they are trustworthy?

Teaching Tip

The purpose of this exercise is not to trick the students, but rather to give them an opportunity to explore which aspects of websites can help users to evaluate their trustworthiness. If students have completed similar activities before, encourage them to use what they have learned to complete the activity to more depth, explaining in more detail how they can decide whether a website is trustworthy.

Remarks

You did a great job finding websites that were relevant to your search. You found a lot of interesting information about those strange animals, but is any of it real? You and your partner have five minutes to decide which of these animals are real, and which are made up. For each of your decisions you'll need some supporting evidence that shows why your source websites are either trustworthy, or untrustworthy.

💡 **Search:** Give students five more minutes to look through their source sites to try to figure out whether or not they're trustworthy.

Share: Allow each pair to share out their assessment of trustworthy and untrustworthy sites. Push students to give detailed reasons for why they trust a site or not, and keep track of them on the board. Once all of the pairs have had a chance to share, reveal that the Tree Octopus was the only fake animal. Depending on how accurate your students were, consider visiting the site as a class to explore some of the clues that it's not quite right.

💡 Teaching Tip

Students may come upon sites that explain that the Pacific Northwest tree octopus is in fact a fictional animal. If so, you can ask them to think about why they believe some sites over others, and how they are sure that the other two animals are real. Have them continue filling out the worksheet with these questions in mind, and let them know that they will be able to share their thoughts later in the activity.

You can find more untrustworthy websites in **this forum post**.

💡 Teaching Tip

Just in Case: The Pacific Northwest Tree Octopus is the fake animal.

The Trustworthiness Checklist

Set Up: Start a poster on the wall labeled **Trustworthiness Checklist**.

Group: Place students in groups of 4-5.

Prompt: Now that we've identified some sites that are, and are not, trustworthy, work with your group to come up with a list of things to check for when trying to determine whether or not to believe a website.

💡 **Share:** Have groups share out their lists. As a class, generate a class Trustworthiness Checklist on a poster. You can refer back to this in the future whenever asking students to find information online.

💡 Teaching Tip

Prompting Conversation: If your students are struggling to come up with ideas, consider prompting them with any of the following:

- What does the web address of a trustworthy or untrustworthy site look like?
- Is a well designed site more likely to be trustworthy, or untrustworthy?
- Would you expect a trustworthy site to have easily found contact information?
- Can you learn anything from the kinds of ads that a site displays?

Wrap Up (5 minutes)

Human versus Computer Searching

🗣️ **Journal:** Think about your own websites - do you think people would find your site trustworthy or untrustworthy? What changes could you make to your site to encourage users to trust your content?

Standards Alignment

View full course alignment

CSTA K-12 Computer Science Standards (2017)

- ▶ **IC** - Impacts of Computing



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