Connecting Youth to Quality Health Information

A Lesson Plan for High School Health and Fitness Education

Developed by the University of Washington
Center for Public Health Nutrition

Funded by the National Network of Libraries of Medicine
Connecting Youth to Quality Health Information

A high-school lesson plan to increase the capacity and capability of high school students to access and evaluate quality health information. This lesson also establishes MedlinePlus as a recognized resource for current and future health information needs.

October 2010

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## Connecting Youth to Quality Health Information

### Grade Level
9 – 12

### Standards Addressed

#### National Health Education Standards:
- Performance Indicator 3.12.1 – Evaluate the validity of health information, products, and services

#### Washington State Health and Fitness Learning Standards:
- GLE 3.2.1 – Evaluates health and fitness information, products, and services

#### Washington State Educational Technology Learning Standards:
- GLE 1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results
- GLE 2.3.2 – Select and use online applications

### Essential Question
How can you determine whether or not a Web site is providing trustworthy and reliable health information?

### Background
Several studies have found that while the majority of youth report using the Internet for health questions, they often do not have the skills to screen the large number of search results or locate information appropriate to a specific query. And although many adolescents question the trustworthiness of Web sources for health information, they are not familiar with the criteria used to identify a site as credible or trustworthy [1]. Previous interventions that integrated quality health information resources like MedlinePlus into lesson plans or school-based activities for high school students have been successful in increasing students’ ability to evaluate health Web sites and locate credible information [2,3].

### Purpose
To increase the capacity and capability of high school students to access and evaluate quality health information while establishing MedlinePlus as a recognized resource for current and future health information needs.

### Objectives
Students will:
1. Identify common sources of health/nutrition misinformation.
2. Identify at least three characteristics of quality health/nutrition information.
3. Cite an example of health/nutrition information found on MedlinePlus that is of interest to them or a family member.

### Recommended Time
45-50 minutes
*(Can easily be divided into two sessions if needed.)*
Materials

- Computers with Internet access, either individual or shared
  - If your classroom does not have Internet access, this lesson can be conducted in a computer lab or library.
- Handouts: Online Health Information Scorecard
  (3 copies per student: 1 for in class and 2 for homework)
- In-Class Case Study Activity (1 per student or group)
- Homework Assignment

Introduction
(2-3 minutes)

Discussion questions:

1. If you have a question about your health or your diet, where do you go?
2. Has anyone ever looked up health or nutrition information on the Internet?
3. How do you know if you are getting trustworthy or reliable information?

Evaluating Online Health Information
(15 minutes)

1. Give each student a copy of the Online Health Information Scorecard and read aloud the nine Site Criteria.
2. Select one of the Web sites to evaluate:
   - www.howtoloseweighthealthy.com
   - www.dietfacts.com
   - www.kidseatgreat.com
     - Note: As online information is constantly changing, test the link before you present it in class to make sure the Web site is still active.
3. Using the Scorecard, assign each of the nine Site Criteria to one or more students/groups.
4. Instruct students to answer every Question to Consider for their assigned number. They should comment on each question and then score each answer according to the Scoring Criteria.
5. Give students 5 to 10 minutes to complete the Scorecard for their assigned number. Circulate around the room to offer help as needed.
6. Once students have completed the task, have them present their findings to the class. Ask each student/group if they felt the site met their criteria. Be sure to correct any errors since this activity models the homework assignment.

Introducing MedlinePlus
(5 minutes)

“Now that you know how to tell whether a Web site is credible or not, let’s talk about how to find the health and nutrition information you are looking for.”

Ask students:

1. When you are searching for health or nutrition information online, who uses Google™ or another search engine?
2. Is it easy to find what you are looking for? Or do you have to visit multiple Web sites to get the information you need (that’s also credible)?

3. Who thinks it would be easier to skip Google™ and go right to a trusted Web site for your health and nutrition information?

Go to: medlineplus.gov

While the MedlinePlus home page is displayed on the screen, present this basic introduction. MedlinePlus…

A. Brings together information from the National Library of Medicine (the world’s largest biomedical library), the National Institutes of Health (funds most medical research), and other government agencies and health-related organizations. Think of it as a gateway.

B. Contains links to information on over 800 health topics. Also provides a database of drug and supplement information, an illustrated medical encyclopedia, a medical dictionary, videos, interactive health tutorials and the latest health news.
C. Click on About MedlinePlus, then click on Quality Guidelines (under the heading “MedlinePlus Policies”)

- MedlinePlus links only to reliable sources that provide original content.
- The links are evaluated and reviewed for quality.
- All the organizations they link to must provide accurate, science-based information that complements or enhances the government information found on MedlinePlus.
- The source of the content is established, respected and dependable. The organization publishes a list of advisory board members or consultants on the site.

Discussion question: “Does MedlinePlus fit all the criteria that we just discussed about credible and reliable Web sites?”

There are several ways you can search for health or nutrition information on MedlinePlus.

**Search by Topic**

A. From any page, click on Health Topics. For information on eating disorders, for instance, locate the “Health and Wellness” heading and click on Food and Nutrition for a list of related topics in alphabetical order.

B. You can also use Health Topics by selecting the first letter of a topic. For example, click on the letter “D” (near the top of the page) for information on Dietary Supplements or Diabetes.
Connecting Youth to Quality Health Information

High School Health

**Search by Age Group**

C. Back on the Health Topics page, you can even find health information for specific age groups including children and teenagers (under the heading “Demographic Groups”). Here, students will find useful links to access information for their health and nutrition questions.

Click on **Children and Teenagers**, then scroll down to “Teen Nutrition” and click on the **Child Nutrition** link next to it. Here is what a typical Health Topics page looks like:

![Health Topics Page](image)

D. Even though the title of this page is “Child Nutrition,” teens can find information specific to them by clicking on **Teenagers** under the “For You” heading.

**Search by Keyword**

E. Searching can also be done by keyword just like Google™ but the difference is that the results have already been screened for you to make sure you are only directed to Web sites that provide high-quality health information. For example, type “fast food” in the search bar (found at the top of every page).

Note: To search phrases, you must surround the phrase in quotation marks.
If you were to type “fast food” in Google™, the Web sites for McDonald’s and Burger King would be at the top of the list. Since MedlinePlus only provides links to reliable health information, McDonalds’ and Burger King’s Web sites do not even show up in the results.

Case Study Role Play (15 minutes)

1. Give each student a copy of the In-Class Case Study Activity and read aloud the Example (E. coli case study) at the top of the page.

2. Walking through this example together as a class (so that you can model the activity and homework assignment), use MedlinePlus to find the information that is helpful to this scenario. If there is time, explore different ways of searching for the information (keyword, alphabetical list of topics, heading, etc.).

3. Working as either individuals or groups (same groups as Scorecard activity), ask each student/group to select one of the case studies from the In-Class Case Study Activity handout. Their task is to use MedlinePlus to answer the questions presented in their chosen scenario. Give students 5 to 10 minutes to work on this activity.

   Suggestion: If students are sharing a computer, assign one person to be the “reporter” (note taker), one person to be the “driver” (controls the mouse), and one to be the “spotter” (searches the page for the information).

4. Have each group present their findings to the rest of the class. Reports should include:
   • The answers to the health questions
   • Their searching methods (what the students did/clicked on to find the answers)
   • The Web site(s) where they found the answers.

Conclusion (2-3 minutes)

1. Prompt students to reflect on their experiences with the case study activity by asking the following questions:
   a. Was it easy or difficult to find what you were looking for? What made it easy or difficult?
   b. How did you know if the information you found was credible?
   c. Would you use MedlinePlus again to search for health and nutrition information? Why or why not?

Student Assessment

This can be done as a homework assignment or in the computer lab during a subsequent class period.

   Suggestion: Students’ access to computers and the Internet outside of school.

1. Distribute the Homework Assignment.
2. Distribute two copies of the **Online Health Information Scorecard** to each student.

3. Assign each student two Web sites to evaluate. Some are grouped together so that one is credible and one is questionable. Some groups have two questionable sites but one appears more reliable and trustworthy. (Do not share this information with the students). If you have a large class, assign some of the Web site groupings twice or simply create a new group by mixing and matching sites.

   www.diet.com  
   www.dietetian.com  
   www.porkandhealth.org  
   www.teenhealthandwellness.com  
   www.ivillage.com/diet-fitness  
   www.kidsnutrition.org  
   www.slimkids.com  
   www.kidshealth.gov  
   www.teenshealth.org  
   teen-health.suite101.com  
   www.cdc.gov/HealthyYouth/  
   www.sparkteens.com  
   www.fruitsandveggiesmatter.gov  
   www.fruits-n-veggies.com  
   www.mayoclinic.com  
   www.everydayhealth.com  
   www.coolnurse.com  
   www.teengrowth.com  
   www.teensportnutrition.com  
   urbanext.illinois.edu/hsnut/  
   www.righthealth.com  
   www.nutrition.gov  
   www.mypyramid.gov  
   www.vitamins-nutrition.org  
   www.nutritionforkids.com  
   www.teenhealthfx.com

   ❧ Note: As online information is constantly changing, test the links before you assign them for homework to make sure the Web sites are still active.

2. Read through the assignment instructions:

   Using the **Online Health Information Scorecard**...
   
   a. For each site, go through all nine Criteria and answer every Question to Consider.
   
   b. Provide a brief comment for each question to justify your answer.
   
   c. Score each answer according to the Scoring Criteria.
   
   d. Calculate a total score for each site.
Reminder: Students will need to complete two (2) Scorecards, one for each Web site.

e. Use the score and the comments to answer the rest of the questions in the homework assignment.

f. For Part 2 of the homework, interview a friend or family member (or yourself) and ask the following question: “What is one thing you would like to know about nutrition?”

g. Use MedlinePlus (medlineplus.gov) to look for the answer.

h. Discuss your searching experience by answering the questions on pages 2 and 3 of the homework assignment.

3. Ask students if they have any questions about the homework.

Resources

Quality Health Information on the Web: A Tool Kit
From the UW Center for Public Health Nutrition Web site. Provides tips for finding accurate health information on the Internet, an overview of MedlinePlus features, and an online tutorial using school health topics as examples. http://www.cphn.org/qhi/toolkit/

Evaluating Health Information

References


## Online Health Information Scorecard

**Web site to evaluate:** ________________________________

<table>
<thead>
<tr>
<th>Site Criteria</th>
<th>Questions to Consider</th>
<th>Comments</th>
<th>Scoring Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consider the Source</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Site is sponsored by a respected, reliable, and unbiased source.</td>
<td>✓</td>
<td>Who is the source? Is it a…</td>
<td>1 point if .gov, .edu or .org</td>
</tr>
<tr>
<td></td>
<td>o Government agency (.gov)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o University or academic institution (.edu)</td>
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<td></td>
<td>o Non-profit or professional organization (.org)</td>
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<tr>
<td></td>
<td>o Commercial organization (.com)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>✓ Is it a source you recognize?</td>
<td></td>
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<tr>
<td></td>
<td>✓ What is the site’s main purpose?</td>
<td></td>
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<tr>
<td></td>
<td>o Main focus should not be to sell products or give slanted opinions. (Advertisements should be clearly labeled as “Advertisement” or “From our Sponsor”)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓ Is it clear who is providing the health information? (Is an author named?)</td>
<td></td>
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<tr>
<td></td>
<td>✓ Is the author a health care professional with credentials? For example, a…</td>
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<tr>
<td></td>
<td>o Physician (MD)</td>
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<tr>
<td></td>
<td>o Registered dietitian (RD)</td>
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<tr>
<td></td>
<td>o Registered nurse (RN)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>o Nurse practitioner (ARNP)</td>
<td></td>
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<tr>
<td></td>
<td>✓ If the author is a journalist or other lay person (not a health care professional), do they refer to a health professional with the proper credentials?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Writers are qualified in a relevant field.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓ Is there a name, title, e-mail address and phone number given for a contact person?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Should be someone other than the Webmaster.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Look for the Evidence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Contact information provides ties to a responsible person.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Information is unbiased.</td>
<td>✓</td>
<td>Does the site provide fair and balanced information (including controversial issues and alternatives)?</td>
<td>1 point if “Yes”</td>
</tr>
<tr>
<td></td>
<td>✓ Does it avoid opinions and testimonials?</td>
<td></td>
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</tr>
</tbody>
</table>

Connecting Youth to Quality Health Information

Scorecard, page 1 of 2
<table>
<thead>
<tr>
<th></th>
<th><strong>Information is accurate.</strong></th>
<th></th>
<th><strong>Site has been reviewed and approved by professionals.</strong></th>
<th></th>
<th><strong>Information is up-to-date.</strong></th>
<th></th>
<th><strong>Protect Yourself</strong></th>
<th></th>
<th><strong>Site has sufficient privacy protection.</strong></th>
<th></th>
<th><strong>Site encourages you to get a second opinion.</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>✓ Is the coverage of topics helpful? Are typical questions answered?</td>
<td></td>
<td>✓ Is the information reviewed by an editorial board that includes medical experts?</td>
<td>✓ Are health claims and benefits supported with references to medical research?</td>
<td>✓ Does the site avoid false or misleading information?</td>
<td>o If it sounds too good to be true, it probably is.</td>
<td></td>
<td>✓ Are the seals of approval reputable and relevant?</td>
<td>o An award for Web site design does not make the health information credible.</td>
<td>✓ Are pages and documents dated?</td>
<td>o This should include the dates the site/page was created and/or when it was last reviewed or updated.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 point if “Yes”</td>
<td>0 points if “No”</td>
<td>1 point if “Yes”</td>
<td>0 points if “No”</td>
<td>1 point if “Yes”</td>
<td>0 points if “No”</td>
<td></td>
<td>1 point if “Yes” or if this does not apply</td>
<td>0 points if “No”</td>
<td>1 point if “Yes”</td>
<td>0 points if “No”</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>✓ Are health claims and benefits supported with references to medical research?</td>
<td></td>
<td>✓ Are the seals of approval reputable and relevant?</td>
<td>o Editorial policy and names/credentials of reviewers should be listed and easy to find (typically on the “About Us” page).</td>
<td></td>
<td>✓ Are all links working?</td>
<td>o Broken links reflect a poorly maintained site.</td>
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<td>1 point if “Yes”</td>
<td>0 points if “No”</td>
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<td>1 point if “Yes” or if this does not apply</td>
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<td>1 point if “Yes”</td>
<td>0 points if “No”</td>
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<tr>
<td>7</td>
<td>✓ Does the site warn you against using online medical advice to replace visits with a health care professional?</td>
<td></td>
<td>✓ Are all links working?</td>
<td>o Broken links reflect a poorly maintained site.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓ Does the site require you to register, enter your e-mail address, or answer personal questions before you can view health information?</td>
<td>o Notice what types of questions you answer—personal information may be sold or shared</td>
<td>✓ If personal information is collected, does the site have privacy policies that clearly state how the information will be used?</td>
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<td></td>
<td>1 point if “Yes”</td>
<td>0 points if “No”</td>
<td>1 point if “Yes”</td>
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<td>0 points if “No”</td>
<td>1 points if “No”</td>
<td>1 point if “Yes” or if this does not apply</td>
<td>0 points if “No”</td>
</tr>
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<td>8</td>
<td>Site encourages you to get a second opinion.</td>
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<td>Does the site warn you against using online medical advice to replace visits with a health care professional?</td>
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**Web site address:** ____________________________

**Total Score** (out of 20 possible points): ____________
Connecting Youth to Quality Health Information  
In-Class Case Study Activity

Example

It is the end of the school day and your stomach isn’t feeling so well. You recently heard about an *E. coli* outbreak on the news so you are convinced you must have gotten *E. coli* from the eggs you ate for breakfast that morning. Is this likely? What foods may contain *E. coli*? How soon would some typically feel symptoms? When should you seek medical attention?

Activity

1. Select one of the following case studies (A, B or C).
   
   A. You heard that chocolate causes acne but other people have told you that it is just a myth or an “old wives’ tale.” Which is it…fact or fiction? Are there other foods that cause/trigger acne? If so, what are they?
   
   B. It is the end of the school year. You are behind on your projects and you haven’t even started studying for finals yet. With your part-time job and extracurricular activities, you cannot seem to find the energy or the time to get your homework done at night. A friend of yours with an equally busy schedule tells you that she drinks three energy drinks a day to help her stay awake and concentrate. You think this might work for you but you are wondering if three drinks a day is too many. Are there any negative side effects? Are there other ways to boost your energy?
   
   C. Prom is two months away and you are worried that you will not fit into the dress that you bought before going on that cruise for spring break. You read about the “cookie diet” in a magazine and it sounds like a great way to lose weight. In fact, it sounds too good to be true. Is there such a thing as a “cookie diet?” Does it work? Is it safe? What is a healthy way to lose weight?

2. Use MedlinePlus (medlineplus.gov) to answer the questions presented in the case study you selected.

3. Present your findings to the rest of the class. Reports should include:
   - The answers to the health questions
   - Your searching methods (what you did/clicked on to find the answers)
   - The Web site(s) where you found the answers

Report/Presentation Notes
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Homework Assignment

Part I: Evaluating Online Health Information

1. Which two Web sites have you been assigned to evaluate?
   1. ____________________________
   2. ____________________________

2. Using the Online Health Information Scorecard...
   a. For each site, go through all nine Criteria and answer every Question to Consider.
   b. Provide a brief comment for each question to justify your answer.
   c. Score each answer according to the Scoring Criteria.
   d. Calculate a total score for each site.
   
   NOTE: You need to complete two Scorecards, one for each Web site.

3. Which of the two sites are you more likely to recommend to a friend or family member? (Which one received the higher score?)
   ____________________________

4. List three traits about the higher scoring site that indicates it is providing higher quality information?
   1. ____________________________
   2. ____________________________
   3. ____________________________

5. List three traits about the lower scoring site that indicates the information may not be reliable or trustworthy.
   1. ____________________________
   2. ____________________________
   3. ____________________________
6. Is there anything about the higher scoring site that makes you question its credibility? Please describe.

________________________________________________________________________

________________________________________________________________________

Part II: Searching MedlinePlus

1. Interview a friend or family member (or you can interview yourself). Ask: “What is one thing you would like to know about nutrition?” Write that question below:

________________________________________________________________________

2. Go to medlineplus.gov and see if you can find the answer.
   a. Where did you go first to look for the answer?
      - [ ] Health Topics
      - [ ] Drugs & Supplements
      - [ ] Videos & Cool Tools
      - [ ] Search Bar
      - [ ] Other

   b. Where did you go next?

      ___________________________________________________________________

      ___________________________________________________________________

3. What was the answer you found?

   ___________________________________________________________________

   ___________________________________________________________________

4. Where did you find it? Write down the exact Web address:

   ___________________________________________________________________
5. Was it easy or difficult to find what you were looking for? Did you have to search more than one way? What made it easy or difficult?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6. How did you know if the information you found was credible?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

7. Would you use MedlinePlus again to search for health and nutrition information? Why or why not?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________