

# K-12 IYS Activity



## Summary

For centuries, humans have used plants, soils, and minerals to improve health. Most medicines today are derived from a plant or mineral. For a list of examples, visit <http://publications.nigms.nih.gov/medbydesign/chapter3.html#c1>;

Even today, scientists are still studying the soil to hunt for microbes that can improve human health and fight chronic disease. This activity is about pedology or the study of soil. There are many websites associated with the field of pedology. Some of them are accurate, and others are not. This activity investigates how to evaluate sources of information for credibility and usefulness.

## Learning Objectives/Outcomes

- To learn how to evaluate sources of information for credibility and usefulness based on the author's use of language, graphics, factual vs. opinion statements, and affiliations.
- To explore different careers connected to the field of pedology in relation to health and medicine.

Celebrating the



2015  
International  
Year of Soils

[soils.org/IYS](http://soils.org/IYS)

# Soil Health Scavenger Hunt

## Materials (per student, group etc.)

- Whiteboard or flipchart and markers
- Soil and Health Scavenger Hunt Worksheet
- Option 1—Internet access and ability to project websites
- Option 2—Printouts of websites

## Ages of Audience

4th-6th grades

## Time Needed

45-60 minutes, depending on the number of participants

## Methods/Procedures

1. Ask the group, "Where do we get our medicines from?" Record their responses on a whiteboard or flipchart. "Did you know that many of our medicines come from soil? Pedology is the study of soil, and many scientists study the soil to find medicines that can improve our lives and fight disease. Today, we are going on a scavenger hunt to explore careers related to the field of pedology and human health."
2. Divide the group into teams and distribute the scavenger hunt worksheets. "We will be visiting some websites today to learn about soil and health careers. How do we know if a website has good, accurate information or if it is just someone's opinion? The scavenger hunt worksheet has some clues to help you determine whether or not a website is a good, accurate source of information or not. Some of the things that you should look for include:
  - Spelling mistakes
  - Strong positive or negative statements
  - Scientific terms and facts
  - Data that is referenced, or tells who collected the data (charts, tables, graphs)

- Supported by other organizations (look for logos or links to other groups related to soils and health)
- Lists the author(s) of the information
- Appealing design and is easy to read
- Has been updated recently (within the past 6-9 months)
- URLs that end in .gov or .edu

The language or wording of the site can help you determine whether the website is promoting facts or opinions. Here are some words that signal the reader to be cautious because they are often used when sharing opinions:

Generalizations	Judgments	Must be proven <i>(reference a source when making a statement)</i>
All	Bad	Is caused by
Always	Good	Is responsible for
Every	Likely	Results in
Only	Unlikely	
Never	Significant <i>(when it is not referring to scientific data or a scientific study)</i>	

## OPTION 1—VISIT THE FOLLOWING WEBSITES:

- Soil Science Society of America: <https://www.soils.org/IYS>
- USDA Soil Health Awareness: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/soils/health/>
- Food and Agricultural Organization of the United Nations: <http://www.fao.org/soils-2015/en/>
- Soil and Health Library: <http://soilandhealth.org/>
- Soil Health: <http://soilhealth.com/>
- Soil and Human Health: <http://soil-environment.blogspot.com/2009/05/soil-and-human-health.html>

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## OPTION 2~PROVIDE EACH TEAM/GROUP WITH PRINTOUTS OF THE WEBSITES LISTED ABOVE

3. Instruct the groups to study the websites and complete the scavenger hunt worksheet. Allow 10-15 minutes for the worksheets to be finished, then bring the groups together and allow each group to present their findings. Record a list of careers on a whiteboard or flipchart.

## Discussion Questions

### SHARING

1. What surprised you the most about this activity?
2. What was the most difficult part of the activity?

### PROCESSING

3. What did you learn about the study of soils that you did not know before?
4. What did you learn about evaluating sources of information that you did not know before?

### GENERALIZING

5. How will learning about the study of soils benefit you in the future?

### APPLYING

6. How can you apply what you learned about evaluating sources of information in the future?

# Soil Health Scavenger Hunt

## Soil and Health Scavenger Hunt Worksheet

Working with your partner or team, study your website to find as many careers related to pedology (the study of soils) and health. Caution must be used when doing research on the Internet. Lots of people publish things online and it is important to select sites with information that you can trust. Websites that end in .gov are maintained by a government agency and are usually reliable. So are websites that end in .edu. These sites are maintained by educational institutions. Websites that end in .org are maintained by organizations (usually non-profit), and the information is usually credible but may be presented in a way that promotes their organization's mission or beliefs. Websites that end in .com are business or company websites and may contain a combination of both fact and opinion. The information on these sites may not be scientific or trustworthy.

Use the following checklist to determine if a website is trustworthy:

- Is the site personal or part of an organization or company?
- Does the site have a date? When was the information last updated? Who is responsible for updating the information?
- If the site is from a company, is it a commercial or a non-profit organization? Is there anything for sale on the web site?
- Do the authors of the web site provide a section of references or additional resources or links?

Write the address/name of the website:

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Complete the chart below:

Type of url (.gov, .edu, .org, .com)	
Date last updated	
Lists references or additional links	
Easy to read, photos have captions	
References data or scientific studies	
Spelling or grammatical errors?	
Author(s) listed	
Items for sale	

Answer these questions:

1. Do you think that this website is an accurate source of information? Why or why not?
2. Based on this website, what other careers or fields of study are related to soils and health?