**Fact or Fiction?**  
*Teacher Lesson Guide*

**Objectives**
1. To introduce students to data collection through surveys.
2. To help students learn about urban legends and reflect on why so many people believe in them.
3. To generate discussion about our sources of information and beliefs, and the times when we accept as “fact” information that we receive from vague authorities.
4. To introduce students to snopes.com and other resources they can use to investigate the validity of urban legends, as well as reflecting on other ways we can evaluate the credibility of claims made in the media and by others (including applying critical thinking and common sense, prior scientific knowledge, etc.).

**Materials**
Survey sheets with different urban legends to investigate (attached).

   >> modify or substitute urban legends to match your curriculum goals as much as possible (e.g., using other science-related urban legends from the snopes.com website)

Online access to snopes.com

**Procedures**
1. Distribute the survey sheets to students (working individually or in pairs).
2. Have each student (or pair) survey 10 other students as to whether they think their urban legend is true, false, or they are unsure.
3. Students should then calculate the percentages for true, false or unsure (out of 10), and then write about (or discuss among the pair) their own conclusions about the urban legend based on their survey results and own opinions.
4. Hold a whole class discussion in which students share their results. For each urban legend, ask:
   - How many students had heard of this urban legend before? If time, explore how or where they heard it.
   - Did the interviewer (or pair) agree with their survey findings or not? And if not, why not?
5. Introduce snopes.com as a good resource for investigating the credibility of urban legends. Show the site, and show several examples of urban legends (some false, some true) to explain how the website discusses each one.

*(optional extension – see below)*
6. Give the answers for each urban legend (see attached), showing the relevant web reference from *snopes.com* or other sources. Identify other sources where students could go to confirm whether the urban legend is true or not, and stress the importance of applying your own common sense/critical thinking as well as prior knowledge from science or general experience.

7. During the discussion, raise possibilities for how the urban legend came to exist, and/or why people would believe it. Frame the discussion around:
   - could it be that this *was* true at one time, but now it isn’t (because something has changed)?
   - could it be once believed to be true, but then better scientific investigation and tools have proven it be false?
   - was this perpetuated by a particular group for a particular reason (e.g., as propaganda)?
   - is it the result of a mistaken inference on the part of the audience?
   - is it due to lack of scientific knowledge on the part of most people?

8. Discuss how students might consider other claims and urban legends in the future. Use the urban legends in this lesson as examples, frame the discussion around what questions they could have asked about the claim. For example:
   - does cocoa mulch actually have chocolate in it? and is it the chemical present similar to dark or bakers chocolate (which is know to be harmful to dogs)?
   - do they mean seeing (from the moon) with the naked eye?
   - what amount (e.g., of poppy seeds) would be necessary for that effect?
   - how could they possibly know or measure that (e.g., what men think about, and how often)?

9. Make clear connections between this activity and the general process of scientific discovery, evaluation of evidence, and gathering information about a topic. Refer back to this lesson as the students investigate other scientific topics throughout the school year.

**Extensions and Alternative Approaches**

- Between steps 5 and 6, have students (in class or as a homework assignment) investigate the credibility of their urban legend by first doing a general google search about it and then seeing what it says about the urban legend on *snopes.com*. Have each pair report in the next day as to what they found out about the credibility of that legend, and discuss the findings that were surprising.
- Have the students collect survey results from all other students in the class or in several classes (i.e., a larger number than just 10) and graph the results for different urban legends to illustrate which legends are most heavily believed
and which not. Create a display in the hallway reporting these results, including the “truth” about each urban legend. Include in the display information about snopes.com.

• Instead of having students gather data by conducting face-to-face surveys, use “clickers” when showing each urban legend on a power point slide. Show the results of the class’s opinions, and then the “true” answer from snopes.com.

• Relate your discussion to a general conversation about credibility of information from various sources, including the credibility of websites.

• When discussing specific urban legends, delve into the sources of those legends and widespread beliefs in them, along with media portrayals that have reinforced them. For example,
  o Concerning Lemmings, show the clip from Disney’s “White Wilderness” which you can access through Project Look Sharp. Discuss why the filmmakers would have made the lemmings jump off the cliff.
  o Concerning Tarantulas, discuss why the relatively safe tarantula spider might be used in TV shows and movies, portrayed as dangerous, instead of using other spiders (brown recluse, black widows) that actually are dangerous.
  o Concerning Hair & Fingernail Growth, discuss why this might be something that would be included in horror stories or films to increase the horror or fear created in the reader or viewer.

• Follow up with additional relevant scientific discovery on related topics. For example, investigate what foods or environmental elements are toxic to dogs and birds (e.g., balloons), or what can be seen from the moon.

• Have students explore one or more urban legends from the “Lost Legends” section of the snopes.com website (e.g., that Mister Ed was really a zebra, not a horse). [see attached]

Other urban legends that you could include:

Anything from the “science” section of snopes.com (http://www.snopes.com/science/science.asp)

The Marlboro Man died of lung cancer. TRUE

Subliminal messages (like backward lyrics in rock music and hidden messages in advertising) can affect people’s attitudes and behaviors. FALSE

“Little Mikey” from the Life cereal commercials died because he ate pop rocks and drank Coke and exploded. FALSE
“Lost Legends” on snopes.com
Was Mister Ed really a zebra?

The “Lost Legends” section of the snopes.com website is cleverly devoted to presenting “the truth” in misleading ways, so that what snopes.com says is actually wrong – but there are lots of clues in their explanation that should indicate that the information is wrong, if the reader applies common sense or critical thinking skills. At the bottom of each explanation there is an attachment that says “Additional Information” and if you open it and read it, it says that you should never blindly believe anything you read and accept it as truth without question, even if it’s on this website.

This is a brilliant and important lesson – but be cautious in how you use it. You don’t want to make students who “fall for” the wrong answer feel stupid or wrong. If you ask students to look at this site in class or as a homework assignment, begin the discussion by asking:

What did snopes say about Mister Ed?
Do you think that is true?
[Probe for specific clues in the explanation that are questionable – like the claim that because the TV show was in black & white, viewers couldn’t tell that it was a zebra, or the picture you can click on to show how the zebra would look in black & white (which is identical to the picture of the horse).
Could snopes be wrong about this?
Did anyone read the attachment at the bottom? What did it say?
What was snopes’ purpose in creating this section of their website?
What’s the lesson about trusting sources?
Fact or Fiction?

Lemmings are small animals that commit suicide by jumping off cliffs.

FALSE.

See http://www.snopes.com/disney/films/lemmings.asp
Fact or Fiction?

Tarantulas are poisonous, and their bites can kill humans.

FALSE.

See numerous websites and science books for further information.
Fact or Fiction?

Men think about sex every 7 seconds.

FALSE.

Fact or Fiction?

Alligators thrive in the sewers under New York City.

FALSE.

See http://www.snopes.com/critters/lurkers/gator.asp
Fact or Fiction?

Coca-cola used to contain cocaine.

TRUE.

See http://www.snopes.com/cokelore/cocaine.asp
Fact or Fiction?

Poppy seeds on bagels & muffins can result in positive drug tests.

TRUE.

See http://www.snopes.com/medical/drugs/poppysseed.asp
Fact or Fiction?

Raisins and grapes can be harmful to dogs.

TRUE.
See http://www.snopes.com/critters/crusader/raisins.asp
Fact or Fiction?

Theobromine, a chemical found in cocoa mulch, is harmful to pets.

PARTLY TRUE.
See http://www.snopes.com/critters/crusader/cocoamulch.asp
Fact or Fiction?

Rice thrown at weddings is dangerous to birds.

FALSE.

See http://www.snopes.com/critters/crusader/birdrice.asp
Fact or Fiction?

The Great Wall of China is the only man-made object visible from the moon.

FALSE.
See http://www.snopes.com/science/greatwall.asp
Fact or Fiction?

Hair and fingernails continue to grow after one’s death.

FALSE.

See http://www.snopes.com/science/nailgrow.asp
Fact or Fiction?

We only use ten percent of our brains.

FALSE.

See http://www.snopes.com/science/stats/10percent.asp