

# Asking Questions

PH1.11: Ask relevant, rigorous, and probative questions to investigate a problem



## The Question Game:

Find a partner that you don't know very well. Your goal is to ask questions in an attempt to learn as MUCH as you can about this person. The catch is: you cannot answer each other's questions. Therefore, you will NOT really get to know this person right now, but you will leave class with lots of practice asking questions (and you can share answers at lunch)! Read the rules of this game below and then begin:

- (1) You must not answer any question.
- (2) Take turns asking the questions. You must respond to the other person's question with a different question.
- (3) Never repeat a question.
- (4) You must ask your question within 5 seconds of the other person finishing their question.
- (5) Make a tally mark for each time you break one of these rules. The winner is the person with the fewest tally marks.

## DISCUSS

What was challenging about that game? What makes asking questions difficult?

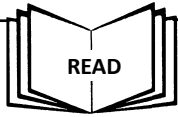


*Questions are designed to probe, to find something that is not already there, to discover relationships and possibilities that are not given.*

*-Matthew H. Bowker, "Teaching Students to Ask Questions"*

When we investigate problems, we must first start by asking questions. Often, we may not even see the real problem *until* we ask the right question. In school, you have probably gotten used to coming up with answers to questions. After all, your teachers have lots of questions for you. But developing the skill of ASKING QUESTIONS is essential to becoming a strong thinker and problem-solver. Using the quote above as a guide, this lesson will explore the art of asking questions based on 3 key qualities of excellent questions:

- 1) **Relevant** ("to find something that is not already there")
- 2) **Rigorous** ("to discover relationships and possibilities that are not given")
- 3) **Probative** ("to probe")



Read the following article and think about the potential health problem that texting may create for teenagers.

### Texting May Be Taking a Toll

May 26, 2009

Source: nytimes.com

They do it late at night when their parents are asleep. They do it in restaurants and while crossing busy streets. They do it in the classroom with their hands behind their back. They do it so much their thumbs hurt.

Spurred by the unlimited texting plans offered by many carriers, American teenagers sent and received an average of 2,272 text messages per month 2008 — almost 80 messages a day, more than double the average of a year earlier. The phenomenon is beginning to worry physicians and psychologists, who say it is leading to anxiety, distraction in school, falling grades, repetitive stress injury and sleep deprivation.

Fill in the table below with information from the article:

<b>Who?</b>	
<b>What?</b>	
<b>When?</b>	
<b>Where?</b>	
<b>Why?</b>	
<b>How?</b>	

### *Excellent QUESTIONS are Relevant.*

After you have identified the basic Who-What-When-Where-Why-How answers from the article, write 3 questions that you would ask to “find something that is not already there.”

1)

2)

3)

## DISCUSS

Share your questions in a small group. Vote on the question that seems most relevant for each person. (If you have extra time, discuss what *other* qualities make questions excellent.)



Watch the TED Talk by Chris Anderson called: "Questions No One Knows the Answers To." [http://www.ted.com/talks/questions\\_no\\_one\\_knows\\_the\\_answers\\_to.html](http://www.ted.com/talks/questions_no_one_knows_the_answers_to.html)

As you watch, jot down the interesting questions you hear in the space below:

### *Excellent QUESTIONS are Rigorous.*

Some of the questions posed in the beginning of the TED talk cannot be answered by science: (Ex: Is there a god? Do we have free will?) There are also some questions that may *someday* be answerable by science, yet we do not have the capability or technology to answer them yet. Then there are also plenty of other questions that have been asked and answered by someone doing research somewhere on this earth, but we just have not read about or learned of their research. After all, thousands of research studies are being conducted everyday and it would be impossible to keep up with everything that is discovered. When we investigate a problem, our goal is to ask questions that will: 1) tap into the existing scientific knowledge; and 2) seek new knowledge that has not been answered yet. In either case, we must be rigorous (thorough and exhaustive) in our thinking.

#### **What might a RIGOROUS question look like?**

##### **Examples:**

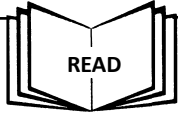
- 1) What is different about the average diet of an obese child and a child of healthy weight?
- 2) Do antidepressants change the likelihood of person having suicidal impulses?
- 3) What are teenagers perceptions of e-cigarettes?

##### **Non-examples:**

- 1) Do obese kids eat too much?
- 2) What causes suicide?
- 3) Why are e-cigarettes popular?

DISCUSS

What is the difference between a rigorous question and one that is not? Do you agree with the lists above demonstrating examples and non-examples of rigorous questions. Why or why not?



“Slip or Trip?”



FIGURE 1.1 “Slip or Trip?”

At five-feet-six and a hundred and ten pounds, Queenie Volupides was a sight to behold. When she tore out of the house after a tiff with her husband, Arthur, she went to the country club where there was a party going on.

She left the club shortly before one in the morning and invited a few friends to follow her home and have one more drink. They got to the Volupides house about ten minutes after Queenie, who met them at the door and said, “Something terrible happened. Arthur slipped and fell on the stairs. He was coming down for another drink—he still had the glass in his hand—and I think he’s dead. Oh, my God—what shall I do?”

The autopsy conducted later concluded that Arthur had died from a wound on the head and confirmed that he’d been drunk.

Materials adapted from: Treat, Lawrence. Crime and Puzzlement 2. Boston: David R. Godone, Publisher, 1982.



Was this murder or an accident? Use your observational skills to examine the scene in the story above. Then write 3-5 questions you want answered. They could be questions about things that can be observed or tested at the Volupides house, or questions you would ask Queenie or her friends.

- 1)
- 2)
- 3)
- 4)
- 5)

*Excellent QUESTIONS are Probative.*

 DISCUSS

The definition of **probative** is: “having the quality or function of proving or demonstrating something; affording proof or evidence.”

Discuss your questions with a partner. Which questions are the most probative? What makes them probative?



Use the following topics to write a rigorous, relevant, and probative question:

1. Increase in diabetes

**Excellent question:**

2. Correct use of asthma inhalers

**Excellent question:**

3. Addiction to cigarettes

**Excellent question:**

4. Sports injuries

**Excellent question:**