

Asking Good Scientific Questions

Questions are an essential part of science. What makes a good scientific question is that it can be answered by direct observations or with scientific tools. Examples of questions that are not scientific are based on values or opinions like what people believe is right or wrong, or beautiful or ugly.

Scientists may start with a broad question such as “Why do people get colds?” Next, they break the question down into smaller questions: Can you catch a cold from someone else? Is there a relationship between getting chills and catching a cold? They state the final question in a way that can be answered by investigation or experiment. A good scientific question is “Does getting chilled cause colds?”

Tips on Asking Good Scientific Questions

1. Begin by asking several questions about a topic.
2. Eliminate questions that cannot be answered by direct observation or by gathering evidence.
3. Break broad questions into smaller questions that can be investigated one at a time.
4. Word questions in a way that allows them to be answered by an experiment.
Here are some good ways to begin scientific questions: “What is the relationship between . . . ?” “What factors cause . . . ?” “What is the effect of . . . ?”

Directions:

1. Read each statement 1 – 10 below and write yes if the topic can be investigated scientifically. Write no if it cannot be investigated scientifically.
2. Then, for each item to which you answered yes, rewrite the topic on lines below each in the form of a scientific question.
3. Also answer Question 11 on the back of this sheet.

Statements 1 – 10:

1. Some people work better in the morning, and other people work better in the afternoon.

2. Taking something that belongs to another person is wrong.

3. Snakes travel in pairs.

4. Animals behave in strange ways before an earthquake.

5. People shouldn't use things unless they can be recycled.

6. Basketball is a better sport than soccer.

7. You will remember best whatever you read just before you fall asleep.

8. Maria's bike is faster than Rob's bike.

9. Each year when the weather gets cold, birds fly to warmer regions.

10. Trucks use more gasoline than cars.

Think About It

11. Choose one of the scientific questions you developed in 1-10 above and tell what kind of evidence you would need to answer the question. How do you think a researcher could collect that evidence?
