ASKING SCIENCE 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.

GOOD SCIENCE QUESTIONS SHOULD BE DEFINED, MEASUREABLE, AND TESTABLE.

Scientists may start with a broad question such as “What makes a seed grow?” Next, they break the question down into smaller questions: What are the essential factors necessary for seed germination? What factors are necessary for radish seed germination? They state the final question in a way that can be answered by investigation or experiment. A good example of a scientific question may be: “What effect does the pH of water have on radish seed germination?”

Tips on Asking 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 through testing.

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 question 1 – 6 and CIRCLE YES if the question is an effective scientific question. CIRCLE NO if it is a poorly worded question.

2. Then, for each item to which you answered no, rewrite the question in the form of a valid scientific question. **Avoid binary (yes/no) questions**.

NAME/PERIOD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How does the percentage of plastic on the school campus change before and after lunch period?

Valid science question: YES or NO

If no, rewrite the question:

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2. What is unleaded gasoline?

Valid science question: YES or NO

If no, rewrite the question:

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3. Does salt water negatively affect the rate of radish seed germination?

Valid science question: YES or NO

If no, rewrite the question:

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4. Which is better, apple juice or orange juice?

Valid science question: YES or NO

If no, rewrite the question:

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5. What is the relationship between smoking and lung cancer?

Valid science question: YES or NO

If no, rewrite the question:

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6. Why do people not like genetically modified foods?

Valid science question: YES or NO

If no, rewrite the question:

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