

PAREF – SOUTHRIDGE SCHOOL
Grade School Department
Science 5
Scientific Method

Name: _____ **Date:** _____
Section: _____

Directions:

I. Read the story on how penicillin was discovered.

In 1928, Sir Alexander Fleming was studying Staphylococcus bacteria growing in culture dishes. After returning from a long holiday, Fleming noticed that many of his culture dishes were contaminated with mold called penicillium. A clear area existed around the mold. The bacteria that had grown around it had died. In the culture dishes without the mold, no clear areas were present. Fleming hypothesized that the mold must be producing a chemical that killed the bacteria. He decided to isolate this substance and test it to see if it would kill bacteria. He made a set up that would help mold to grow. After the mold grew, he placed it to a culture of bacteria. He observed that the bacteria died. Fleming published his discovery in 1929 in the British Journal of Experimental Pathology, but little attention was given to his article. Fleming continued his investigations, but found that cultivating penicillium was quite difficult, and that after having grown the mold, it was even more difficult to isolate the antibiotic agent. Fleming's impression was that because of the problem of producing it in quantity, and because its action appeared to be rather slow, penicillin would not be important in treating infection. Fleming also became convinced that penicillin would not last long enough in the human body to kill bacteria effectively. Many clinical tests were inconclusive, probably because it had been used as a surface antiseptic. In the 1930s, Fleming's trials occasionally showed more promise, and he continued, until 1940, to try and interest a chemist skilled enough to further refine usable penicillin.

II. Identify the steps of Scientific Method by answering the questions that follow.

1. What question best states the problem that Fleming figured out?

2. What did Fleming observe about the cultured dishes of bacteria?

3. What was Fleming's hypothesis?

4. How did Fleming test his hypothesis?

5. Did the result of the experiment reject or support his hypothesis? State the conclusion.

III. Construct a concept map to show the steps of the scientific method.

IV. Evaluation: Use numbers 1 to 5 to put the steps in proper order.

- _____ Make the conclusion .
- _____ Test the hypothesis.
- _____ Know what the problem is.
- _____ Make a hypothesis.
- _____ Gather information.

PAREF – SOUTHRIDGE SCHOOL
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Science 5
Laboratory Rules

Name: _____ **Date:** _____

Section: _____

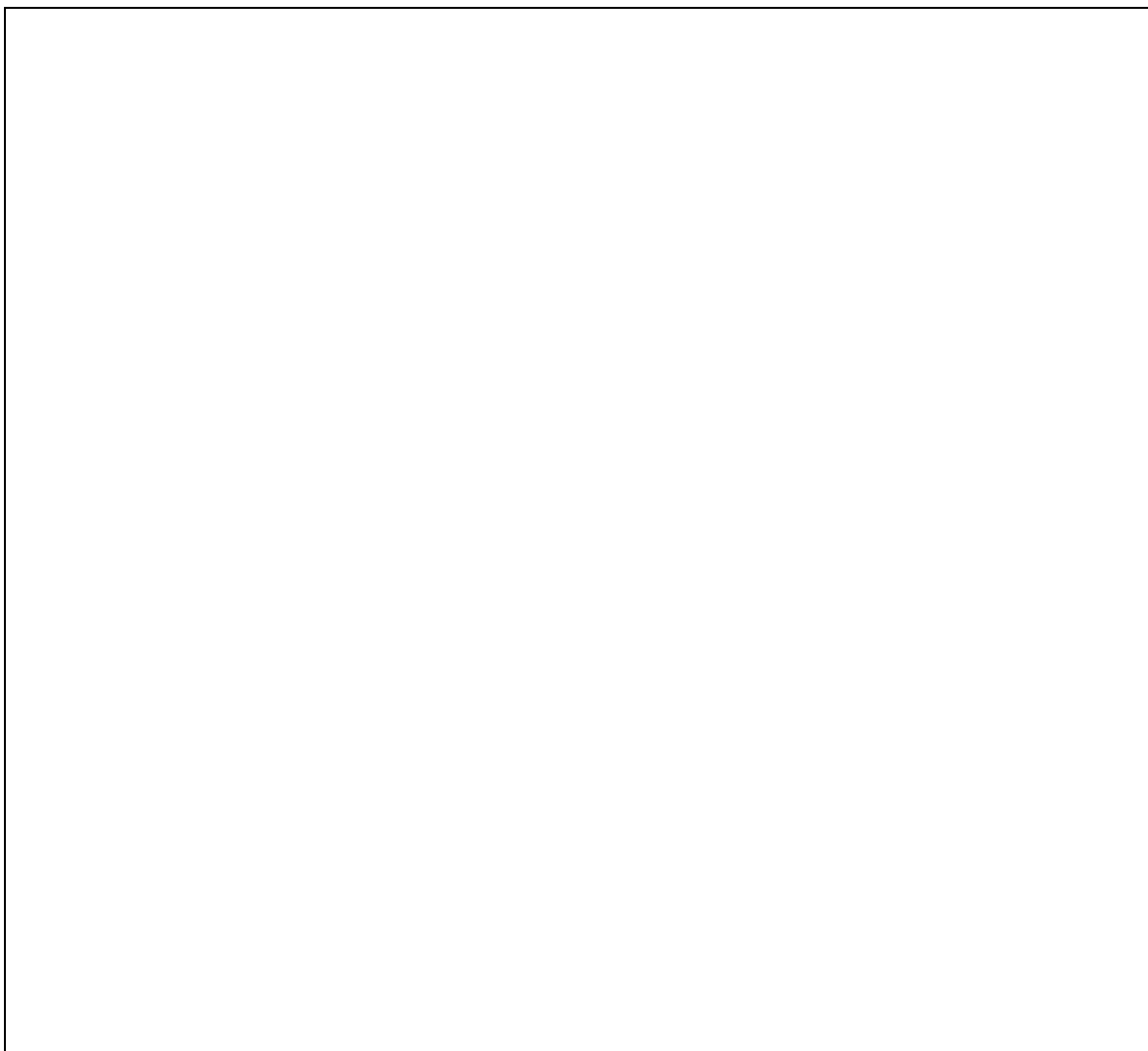
Directions:

1. Create a rap about laboratory rules (minimum of 30 seconds duration).
2. Draw at least 5 safety symbols that you can post in the laboratory. Draw each on a bond paper. Color each.
3. Make a simple poster that promotes safety in the laboratory. Use $\frac{1}{4}$ cartolina and other art materials you have available at home.

Rap Title: _____

Composer: _____

Duration: _____



Safety Symbols	Meaning

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