

USING THE SCIENTIFIC METHOD

Scientific Method

Name _____

Smallpox

Smallpox is a **disease** that has been completely **eliminated** world wide. At one time it was one of the most **dreaded** diseases in the world. Two hundred years ago people had no idea what caused smallpox, how to **cure** it or how to **prevent** it.

A doctor noticed that girls who milked cows never got smallpox. Upon closer examination of this observation he realized that these girls got a similar disease from the cows, but it made them **immune** to smallpox.

He decided to do an experiment. He got some puss from a sore of a cow and **injected** it into a person. Then he waited until the person recovered from the mild "cow" form of the disease. He injected the same person later with puss from a sore of a person infected with smallpox. The test subject did not develop any **symptoms** of smallpox.

He decided from this experiment that he could prevent people from getting smallpox by first injecting them with the material from cows with cow pox.

This is an example of the scientific method at work.

Beside each of the following numbers write each step of the scientific method in order. Then on the line below write down the action of the doctor that fits each step of the scientific method.

1. _____

2. _____

3. _____

4. _____

5. _____

The steps I use are:

1. Clearly state the problem (or the question) How can smallpox be prevented?
2. Do preliminary research. (Could be reading books, magazines, journals correspondence etc. for 2 reasons, either find the answer or gain insight into how to solve the problem) In this case it was noticing that the milk maids had perfect complexions and never got smallpox.
3. Formulate a hypothesis. (Do you have them do a hypothesis in the If...then format? If I inoculate people with cowpox then they will not get smallpox.
4. Carry out an experiment
Follow the hypothesis...give some one cowpox followed by the attempt to give them smallpox.
5. State a conclusion...
 - A. the results of the experiment supported the hypothesis
 - B. The results of the experiment did not support the hypothesis
 - C. The results of the experiment did neither clearly...