Learning Target:

SC.10.11.10.01  Designs a scientific investigation to answer an original question
✓ Identify examples of scientific investigations
✓ Identify each step of the scientific method

Mini-lesson One

Semmelweis and Childbed Fever: The Scientific Method at Work
The Question

It is the year 1847. A Hungarian physician working in Vienna, Ignaz Semmelweis, makes an interesting observation. Rich Viennese women who give birth in his hospital and receive the finest care from highly trained physicians are dying from childbed fever in far greater numbers than poor women who give birth in a nearby birthing center run by midwives. **Why is the death rate four times as high in the hospital compared to the birthing center?**
The Hypothesis

Semmelweis notices that the hospital physicians travel from patient to patient without changing their smocks or washing up. The blood on their clothes and body signifies that their services are in high demand. Neither he nor his fellow doctors know at the time that disease is spread by microscopic pathogens. But Semmelweis begins to suspect that bloody clothes and hands may in some way be responsible for the childbed fever deaths. He decides to change his behavior. We can state his hypothesis as follows: **If I clean up before delivering a child, then the mother will be less likely to fall ill and die.**
The Experiment

Semmelweis begins to wash his hands in chlorine solution between patients and prior to delivering babies. The results are dramatic: deaths from childbed fever among his patients falls from thirteen percent to two percent.

Semmelweis eventually returns to Hungary and replicates his experiment in another hospital. The results are the same. He sets up controlled studies of the effects of hand and instrument washing on patient survival and publishes his findings, which, unfortunately, were not accepted by many of his fellow doctors.
Tasks

Create a **Circle Map** which describes the scientific method.

Create a **Flow Map** which shows the process Semmelweis used to lower the death rate from childbed fever among his patients.