

Mobile Dairy Classroom

The Scientific Method in Action

The Scientific Method

Question → Hypothesis → Investigation → Analysis → Conclusion → Communication

Question - What do you want to learn?

Prompt students to ask questions that they think will be answered at the assembly or through in-class research. For younger students, choose one group question. Older students can come up with individual questions.

Examples:

- What will the cow look like?
- How much milk does the cow make each day?
- How many dairies are there in California?
- What is the most popular dairy breed in California?

Hypothesis - Try to predict the answer to your question.

Prompt students to come up with “educated guesses” to answer their questions.

Examples:

- All cows are black and white.
- Brown cows make chocolate milk.
- A dairy cow makes one gallon of milk each day.
- Students in my class prefer fat-free milk.

Investigation -

Students use this step to gather information, or data, related to their hypotheses.

If students made hypotheses before the assembly, use the assembly to gather observational data and facts from the instructor.

Example:

At the Mobile Dairy Classroom assembly, I saw _____ OR I learned _____.

If students made hypotheses after the assembly, allow in-class time to research their questions.

Example:

On _____ website, I learned that _____.

Analysis -

Sometimes further analysis is needed from the investigation. If students are recording observational data from the assembly then they will not need to do further analyses. If students are doing a more in-depth experiment then they will need to do further analyses of their data to reach their conclusions. This could involve compiling raw data into graphs or comparing data sets.

Example:

If students did a poll to determine whether their classmates prefer chocolate or plain milk with lunch then they would need to analyze the poll data to determine which one is the preferred choice.

Conclusion -

Students use this step to compare their data to their hypotheses. Have students review the data to determine if their hypotheses are correct.

Remind students that it is OK for their hypotheses to be incorrect.

Communication -

Have students report back about their conclusions.

Examples:

- Ask for short, in-class presentations.
- Pair share.
- Give a writing assignment.
- If using one class question, lead a class discussion.