

16. Soap production

Opponent:
Team Romania

Reporter:
Team Russia - Uranium 239

Task

Vegetable and **animal** oils and **fats** are historically used to make soap. Investigate how **physical** and **chemical properties** of such soap depend on **ingredients** and recipes, and **propose** an interesting problem concerning **soap-making** from **easily accessible** ingredients.

Proposed statement:

How to make antibacterial soap at home.

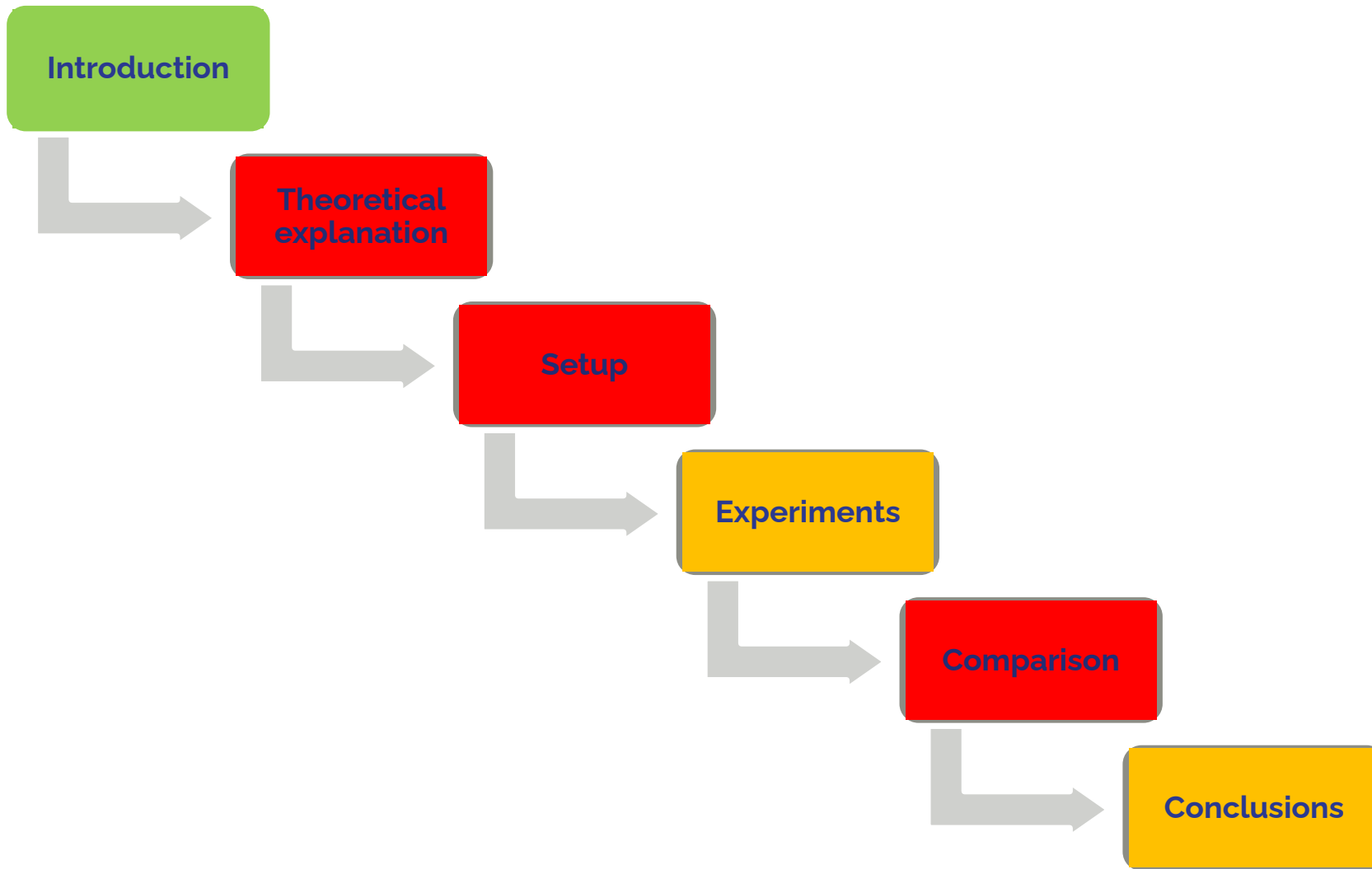
Chemical explanation of the soaps

- Theoretical information

Properties of soap

- Theoretical information

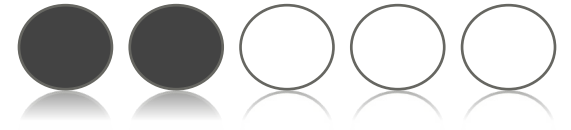
Outline



Legend for feedback colors:

- Well done (Green circle)
- Good (Yellow circle)
- Needs improvement (Red circle)

Theoretical part



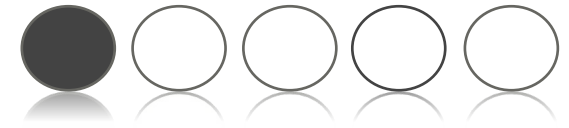
Strong points

- Chemical explanation of the phenomenon
- Good visualization of the reaction

Weak points

- Presentation not well structured (experiments, theory, experiments, theory, conclusions)
- Poor understanding of the theory
- Not fully explained the predictions of the hypotheses
- Variation of parameters
- Wrong measurements units in the parameters table (g/cm for density)

Experimental part



Strong points

- Good structure
- Clear visual aids
- Clear graphs

Weak points

- The setup wasn't presented
- No pictures of soaps made by them were presented
- The method of obtaining the data used in the table was not presented (force of deformation) - the response was wrong - the force cannot be measured with a ruler (in the table it was in Newtons)
- The volume of the soap was unknown
- Not presented what type of fat was used
- The method of measuring the foam quantity
- Not quantitative parameters

Discussion topics

- Antibacterial soap
- Deformation force
- Ph of water? Temperature of water? Pressure excited by the water? (slide 12)
- How could you measure the foam production?
- Type of oils
- What is dirt composed of?
- Explanation of the formula on slide 6