

|              |  |  |  |  |  |
|--------------|--|--|--|--|--|
| OBSERVATIONS |  |  |  |  |  |
| ID           |  |  |  |  |  |

## DIY Handmade Soap

Soap is a cleansing agent made from the salts of vegetable or animal fats. Saponification is a process of making soap using a basic solution of lye (sodium hydroxide) along with different types of fat. Saponification not only involves science but is also a fun activity that lets you to make a soap with the properties of your choice.

### Stages of Soap Making

The soap that you use daily, goes through different stages during its making process. As you start making your soap, predict and observe what happens during each stage.

#### Making Lye Solution

Predict and observe the temperature changes as you make lye solution. Your options are **A** – Increase in Temperature / **C** – Decrease in Temperature / **E** – No Change

| #  | Step                                   | Prediction           | Observation          |
|----|----------------------------------------|----------------------|----------------------|
| 01 | After adding water to sodium hydroxide | <input type="text"/> | <input type="text"/> |

#### Adding Turmeric to Lye

Predict and observe the colour changes as you add turmeric to lye solution. Your options are **A** – Yellow / **C** – Light Orange / **E** – Reddish Orange

| #  | Step                                   | Prediction           | Observation          |
|----|----------------------------------------|----------------------|----------------------|
| 02 | Adding turmeric powder to lye solution | <input type="text"/> | <input type="text"/> |

#### Mixing Lye with a Mixture of Oils

Predict and observe the a) colour changes after mixing and stirring b) nature of the solution after mixing lye solution with oils and stirring for about 20 – 25 minutes. Your options for colour are **A** – Yellow / **C** – Light Orange / **E** – Reddish Orange  
Your options for nature of solution are **K** – Becomes Thicker / **L** – Becomes Thinner

| #  | What to observe?                        | Prediction           | Observation          |
|----|-----------------------------------------|----------------------|----------------------|
| 03 | Colour change after mixing and stirring | <input type="text"/> | <input type="text"/> |
| 04 | Nature of the solution                  | <input type="text"/> | <input type="text"/> |

## Trace Test

Predict and observe what happens when you perform trace test.  
Your options are **A** – A lump gets formed which will settle at the bottom of water  
**C** – A lump gets formed which will float on top of water

| #  | Step                  | Prediction               | Observation              |
|----|-----------------------|--------------------------|--------------------------|
| 05 | Performing trace test | <input type="checkbox"/> | <input type="checkbox"/> |

## Further Exploration

### Nature and Texture of the Soap

Predict and observe the nature and texture of the soap that gets formed. Your options are **A** – Hard and Rough when touched / **C** – Hard and Smooth when touched  
**E** – Soft and Rough when touched / **K** – Soft and Smooth when touched

| #  | Day | Prediction               | Observation              |
|----|-----|--------------------------|--------------------------|
| 06 | 1   | <input type="checkbox"/> | <input type="checkbox"/> |
| 07 | 3   | <input type="checkbox"/> | <input type="checkbox"/> |

### Amount of Lather

Once your soap is ready, use it to wash your hands. Predict and observe the lather formed, in comparison to the one commercially available at home. Your options are **A** – More / **C** – Less

| #  | What to observe? | Prediction               | Observation              |
|----|------------------|--------------------------|--------------------------|
| 08 | Lather formation | <input type="checkbox"/> | <input type="checkbox"/> |

### Life of Soap

Predict and observe the life of your soap (in days), in comparison to the one commercially available at home. Ensure to weigh your handmade soap and compare it with an equal weighted commercial soap. Your options are **A** – More / **C** – Less

| #  | Soap       | Prediction                                        | Observation                                       |
|----|------------|---------------------------------------------------|---------------------------------------------------|
| 09 | Handmade   | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| 10 | Commercial | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |