Making soap:
Teacher-led demonstration

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The scenario:

Now that you have secured yourself with all the bare necessities for life on Limpet Island, it's time to treat yourself to those extra little luxuries. Your teacher will now demonstrate to you how to make soap. There's just one little hitch, whoever picked the chemist as their desert island buddy gets to tell them how to do it!

You need to read and understand the method clearly and then transfer your knowledge to your teacher, who will carry out the practical. You will need to provide an equipment list and a verbal method.

Good luck! The cleanliness of your fellow castaways is dependent on this practical going well!

The equipment:

Note down what equipment your teacher will need from the diagram stages of the method section overleaf.

Think particularly carefully about equipment for measuring and the different laboratory techniques required at each stage.

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Sideline Science…

The history of soap

Records of soap making date back to Italy and Spain in the 8th century and was industrialised in the 13th century when it finally reached France.

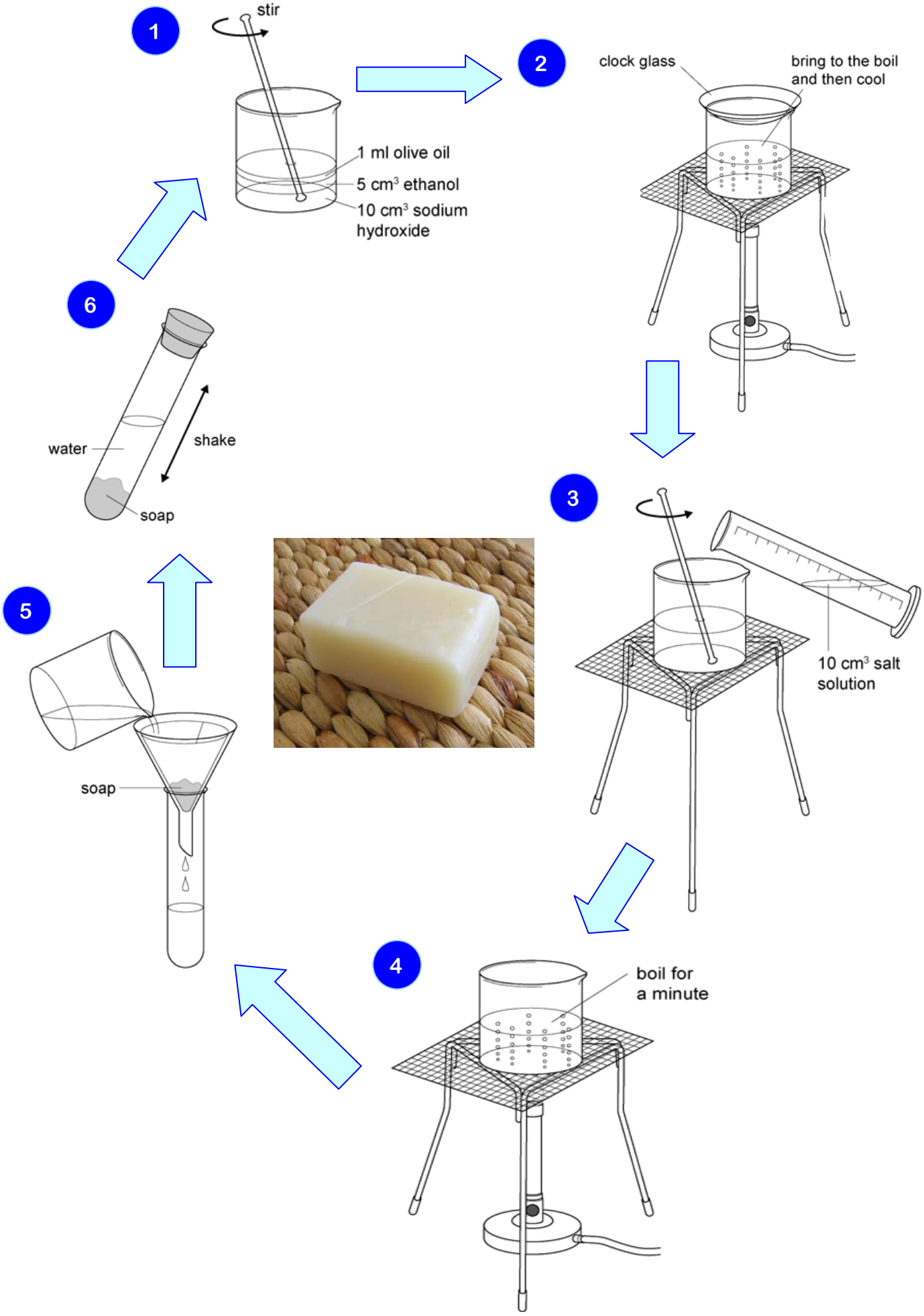
Soap goat!

Most soap was produced by mixing goat fat with an alkali, but the French devised a more appealing way of soap production by using olive oil! This is the same recipe you will follow with your teacher today.

Thinking point…

Exothermic vs. endothermic. Sodium hydroxide is added to distilled water to make soap. Sodium hydroxide dissolves because it is soluble in water. Sodium hydroxide changes from a solid state to a state in solution. Is the reaction likely to be **Exothermic** or **Endothermic**?

Method:


1
stir
1 ml olive oil
5 cm³ ethanol
10 cm³ sodium hydroxide
2
clock glass
bring to the boil and then cool
3
10 cm³ salt solution
4
boil for a minute
5
soap
6
water
shake
soap

The method:

You may want to jot down notes about the method at each stage so you know exactly what you are going to instruct your teacher to do. The following statements may help you, but are not in the right order!

Pour into filter paper in a funnel to collect soap. Wash through with cold water.
Boil the mixture for a minute and then cool
Heat the mixture until simmering
Shake a little of the soap with water and observe foam forming
Scrape the soap off the paper
Add salt solution to the cooled alkali solution
Mix vegetable oil with an alkali and add ethanol

1 –

2 –

3 –

4 –

5 –

6 –

Safety in the lab:

What kind of **safety equipment** is your teacher going to need?

Think about the chemicals involved. Is there a risk of chemicals entering the face or the eyes? Are any of the chemicals corrosive? Will they damage clothing? Are any of the chemicals flammable? You could look this up using the internet before the session begins.

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