nickelodeon

USER MANUAL

SCIENTISTS / KIDS = FUN!

EXPERIMAKE

CREATED BY SCIENTISTS. FUN FOR KIDS!

WARNING

Not suitable for children under 8 years. For use under adult supervision. Contains some chemicals which present a hazard to health. Read the instructions before use, follow them and keep them for reference. Do not allow chemicals to come into contact with any part of the body, particularly the mouth and eyes. Keep small children and animals away from experiments. Keep the set out of reach of children under 8 years. **Warning**. Gloves are made of natural rubber latex.

FUN FACTS INSIDE

SUPERB SEA SHAPED SOAPS

Addo Play Ltd. Bucks, HP10 8EG, UK. Tel: +44 (0) 1494 917250

Addo

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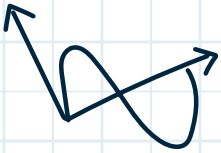
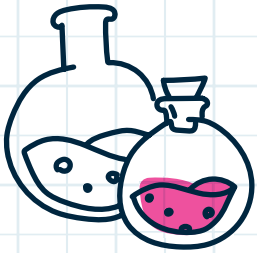


Advice for Supervising Adults



- Read and follow these instructions, the safety rules and the first aid information, and keep them for reference.
- The incorrect use of chemicals can cause injury and damage to health. Only carry out those experiments which are listed in the instructions.
- This experimental set is for use by children over 8 years.
- Because children's abilities vary so much, even within age groups, supervising adults should exercise discretion as to which experiments are suitable and safe for them. The instructions should enable supervisors to assess any experiment to establish its suitability for a particular child.
- The supervising adult should discuss the warnings and safety information with the child or children before commencing the experiments. Particular attention should be paid to the safe handling of acids, alkalis and flammable liquids.
- The area surrounding the experiment should be kept clear of any obstructions and away from the storage of food. It should be well lit and ventilated and close to a water supply. A solid table with a heat resistant top should be provided.
- Substances in non-reclosable packaging should be used up (completely) during the course of one experiment i.e. after opening the package.
- This set contains colourings which can stain. Keep away from objects and delicate fabrics.

Safety Rules

- Read these instructions before use, follow them and keep them for reference.
- Keep young children and animals away from the experimental area.
- Store this experimental set out of reach of children under 8 years.
- Clean all equipment and surfaces before and after use.
- Make sure that all containers are fully closed and properly stored after use.
- Ensure that all empty containers are disposed of properly.
- Wash hands before and after carrying out experiments.
- Do not use any equipment which has not been supplied with the set or recommended in the instructions for use.
- Do not eat or drink in the experimental area.
- Do not allow raw chemicals to come into contact with the eyes or mouth.
- Do not replace foodstuffs in original container. Dispose of immediately.
- The finished products should not be used if they change their appearance, colour or scent.
- Take care handling hot water and hot water solutions.
- Contains fragrances that may cause allergies.

Contents

Protective gloves
Soap base (150g)*
Vanilla fragrance (5ml)
Blue cosmetic colouring (5ml)
Red cosmetic colouring (5ml)
3 gift bags
3 pipettes
2 wooden spatulas
3 plastic moulds
3 labels

***Please note:** the soap base will need to be cut to size, either using a knife or grater.

Please ask an adult to help.

Chemicals Supplied and Warnings

The below warnings relate to the pure chemicals and not to the finished cosmetic product you will be creating. Keep all containers tightly closed. Store in a cool, dry place.

Substance/ID	Ingredients	Hazard and Precautionary Statements
Soap Base	Aqua, Glycerine, Sodium Stereate, Propylene Glycol, Sorbitol, Sodium Laurate Sulfate, Disodium Lauryl Sulfosuccinate, Sodium Chloride, Stearic Acid, Lauric Acid, Pentasodium Pentetate, Tetrasoidum Etidronate	Do not ingest. Avoid contact with eyes. Use only in accordance with instructions.
Vanilla Fragrance	Contains **3-(4-tert-Butylphenyl)-propanal.** May produce an allergic reaction	Harmful to aquatic life with long lasting effects. Avoid release to the environment.
Blue Colouring (CI 42090) CAS # 3844-45-9	N-Ethyl-N-[4-[[4-[Ethyl[(3-Sulfophenyl)Methyl]Amino] Phenyl](2-Sulfophenyl)Methylene]-2,5-Cyclohexadien-1-ylidene]-3-Sulfobenzenemethanaminium Hydroxide, Methylisothiazolinone, Methylchloroisothiazolinone, Dimethylol Urea, Dimethylol Glycol	Do not ingest. Avoid contact with eyes and mouth. Use only in accordance with instructions.
Red Colouring (CI 14720) CAS # 3567-69-9	Disodium 4-hydroxy-3-[(4-sulphonatonaphthyl)azo] naphthalenesulphonate, Methylisothiazolinone, Methylchloroisothiazolinone, Dimethylol Urea, Dimethylol Glycol	Do not ingest. Avoid contact with eyes. Use only in accordance with instructions.

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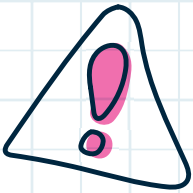
Disposal of Used Chemicals and Packaging

When you need to dispose of chemical substances, it is necessary to refer to the national and/or local regulations. Never throw chemicals into sewers and garbage. For more details please refer to a competent authority. For disposal of packaging make use of the specific collection points.
Please recycle all packaging where possible.



General First Aid Information

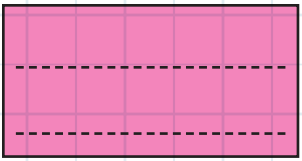
- **In case of eye contact:** Wash out eye with plenty of water, holding eye open if necessary. Seek immediate medical advice.
- **If swallowed:** Wash out mouth with water, drink some fresh water. Do not induce vomiting. Seek immediate medical advice.
- **In case of inhalation:** Remove person to fresh air.
- **In case of skin contact and burns:** Wash affected area with plenty of water for at least 10 minutes.
- In case of doubt, seek medical advice without delay. Take the chemical and its container with you.
- In case of injury always seek medical advice.

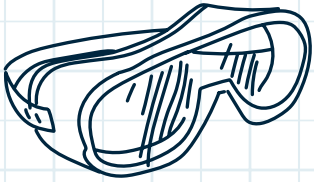
In case of emergency dial:

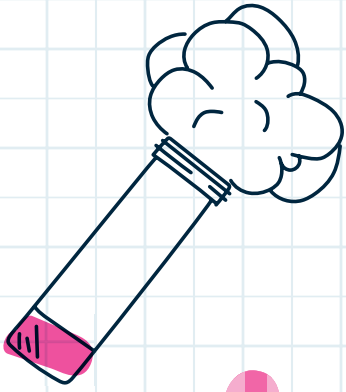
UK 999 • **Europe** 112
USA 911 • **Australia** 000

Write the telephone number of the national poison information centre or local hospital below.

They may provide you with information about measures to take in case of intoxication.







Welcome to the Wonderful World of Science!

EXPERIMAKE science sets have been designed by scientists to encourage **learning** through **play**.

Science, Technology, Engineering & Maths (STEM) education is important and each set will enable the development of at least two of these skills.

The **skills** and **knowledge** gained are essential for children's learning.

EXPERIMAKE sets not only support education but are fun and enjoyable for parents too.

When having fun, or making discoveries, a neurotransmitter called **dopamine** is released. Dopamine helps control the brain's **reward centre**.

When we have a positive experience and dopamine is released, we are more likely to remember it.

So, if learning is a positive experience it will stimulate the brain to help develop various skills.

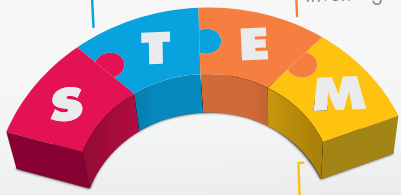
EXPERIMAKE sets are **educational toys** that combine **science** and **creativity** by fostering curiosity and experimentation.

We hope you enjoy exploring the wonderful world of science through our EXPERIMAKE range.

Inventive, creative and imaginative, STEM toys are educational, teaching new skills and knowledge and are (most importantly) lots of fun!

Technology
Encouraging problem solving and methodology skills.

Engineering
Encouraging design, building, and inventing skills.



Science
Encouraging a curiosity for the world around us.

Maths
Exploring different ways of getting children to think about numbers.

Why not share your results with us?

@AddoPlay AddoPlay hello@addoplay.com

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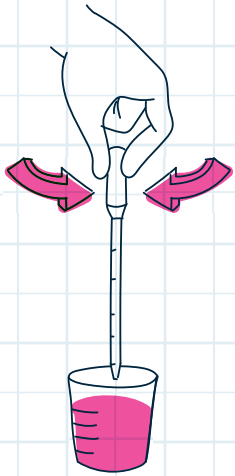
Before You Start...

How to Use Your Pipette

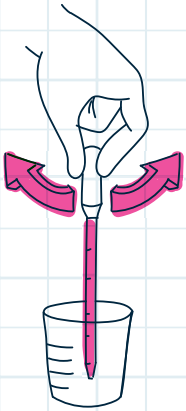
A pipette is used to collect liquid in small amounts and move from one container into another. It lets you control the amount of liquid you are adding by releasing a drop at a time. Before you begin with the experiments, you should practise using a pipette. The soft and squidgy end is called the **bulb** and the other end is called the **tip**.

1. Fill a small container with water, squeeze the bulb and place the tip into the water.
2. Slowly release the bulb until you see water filling up the tube.
3. Now that you have collected the liquid you can release it again in small drops. To do this, remove the pipette tip from the liquid and press the bulb lightly. You will see the drops come out one by one.

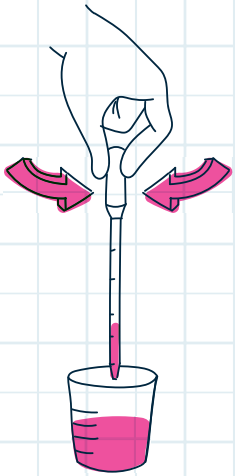
1.



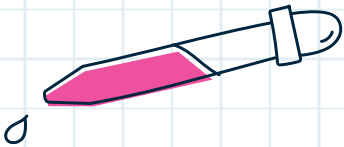
2.



3.



Tip: To avoid contamination, always use the same pipette for the same solution.



1. Make Your Own Soap

You will need

Soap base, wooden spatula, plastic mould, colouring, fragrance, gift bag, labels, heatproof cup (not included), oven glove (not included), microwave oven or boiling water (not included), weighing scales (not included).

Ingredients of finished product: Aqua, Glycerine, Sodium Stereate, Propylene Glycol, Sorbitol, Sodium Laureth Sulfate, Disodium Lauryl Sulfosuccinate, Sodium Chloride, Stearic Acid, Lauric Acid, Pentasodium Pentetate, Tetrasodium Etidronate, Butylphenyl, Methylpropional, Parfum. Food red 3, Food blue 2, Methylisothiazolinone, Methylchloroisothiazolinone, Dimethylol Urea, Dimethylol Glycol.

Steps

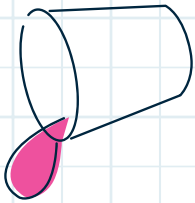
1. Place 30g of soap base into the heatproof cup.
2. Ask an adult to heat until it melts, passing from a solid to liquid state, as described below.

Either:

Microwave: heat the soap base in the cup for about 20 seconds. Remove the cup carefully using oven gloves and stir the soap base with the wooden spatula. If it is not fully melted, place the cup back in the microwave for another 10 seconds. Repeat this last step checking the consistency every 10 seconds.

Or:

Double-boil*: place a cup in a bowl of boiling water.
Keep stirring it with the wooden spatula until the soap base is completely melted.
*Double-boil is a scientific method of slowly and uniformly heating any liquid or solid substance. By placing a small container (with your chosen substance inside) into a larger container filled with boiling water, the substances are never heated to temperatures above 100°C (212°F) because the boiling point of water is 100°C (212°F).



3. Now that the soap base is in a liquid state, you can either pour it into a mould, or choose to add colour or fragrance or both. To add colour or fragrance, using the pipette add up to 4 drops of colour and/or 2 drops of fragrance into the liquid soap base. Stir the mixture well, using the wooden spatula.

⚠ Attention! be careful pouring into the mould as the soap is hot.

4. Carefully pour the soap base into your chosen mould and wait until it is completely solid (this could take up to 2 hours).
5. Carefully remove the soap from the mould. If you would like to store your soap or give it as a present, you can put it in a gift bag and decorate with a label.

Ideal Formulation

Scented Coloured Soaps (20.35g)

Soap base (20g), Fragrance (0.1g)

Cosmetic colouring (0.25g)

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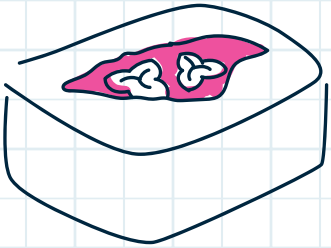
2. Make Your Own Dried Flower Soap

You will need

Soap base, wooden spatula, plastic mould, colouring, fragrance, flowers to dry (not included), newspaper sheets (not included), heavy book (not included), heatproof cup (not included), oven glove (not included), microwave oven or boiling water (not included), weighing scales (not included).



Steps

1. Choose flowers that you like (not included). We recommend rose petals or pansy petals. Place them in between 2 newspaper sheets. Put a heavy object on top of them, for example a big book. Leave to dry for 3 weeks.
2. When the flowers are dry, you can use them to make flower soap. At **step 4** from **experiment 1** carefully pour half the soap base into your chosen mould. Add your dried flowers using a wooden spatula, then pour the remaining soap base into the mould. Leave until completely solid.

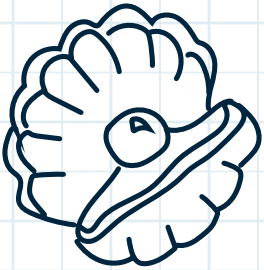
3. Make Your Own Aromatic Herb Soap

You will need

Soap base, wooden spatula, plastic mould, colouring, fragrance, dried herb (not included), heatproof cup (not included), oven glove (not included), microwave oven or boiling water (not included), weighing scales (not included)

Steps

1. To make aromatic herb soap, you can replace the dried flowers from **experiment 2** with aromatic herbs, such as rosemary or mint (not included).



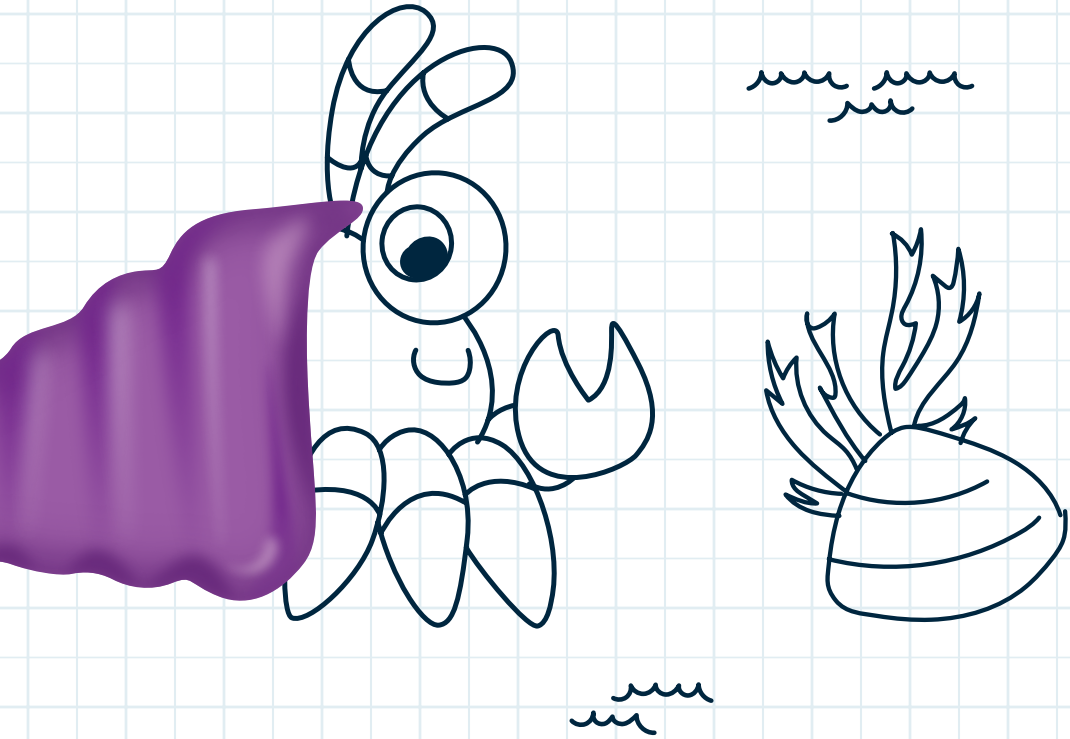
4. Make Your Own Oatmeal Soap

You will need

Soap base, wooden spatula, plastic mould, colouring, fragrance, handful of oats (not included), heatproof cup (not included), oven glove (not included), microwave oven or boiling water (not included), weighing scales (not included).

Steps

1. Repeat **steps 1 to 2** from **experiment 1**.
2. When your soap is liquid, add the oats until they are completely absorbed (not included). Stir with the wooden spatula.
3. Continue with **steps 3 to 5** from **experiment 1**.



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5. Make Your Own Exfoliating Soap

You will need

Soap base, wooden spatula, plastic mould, colouring, fragrance, sea salt (not included), heatproof cup (not included), oven glove (not included), microwave oven or boiling water (not included) weighing scales (not included).

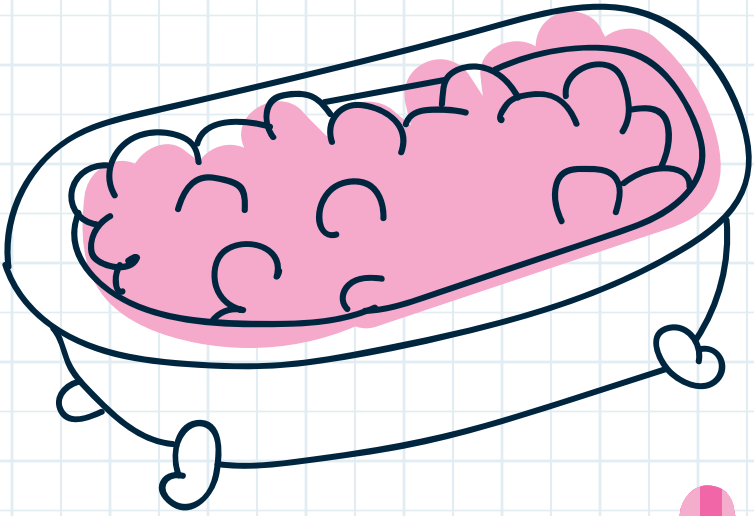
Steps

1. Repeats **steps 1 to 2** from **experiment 1**.
2. When your soap is liquid, add a tablespoon of sea salt (not included) and mix well with a wooden spatula.
3. Continue with **steps 3 to 5** from **experiment 1**.

Explanation

Salt has relaxing properties and helps with blood circulation and skin exfoliation.

Exfoliation is washing or scrubbing your body with a 'rough' substance to remove dead skin cells resulting in natural, smooth and soft skin.



my notes

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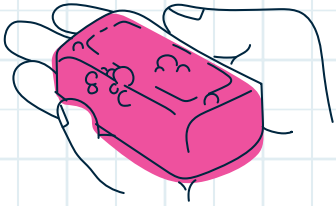
Periodic Table

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H Hydrogen 1.008																	2 He Helium 4.003
3 Li Lithium 6.941	4 Be Beryllium 9.012											5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.180
11 Na Sodium 22.990	12 Mg Magnesium 24.305											13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948
19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.956	22 Ti Titanium 47.867	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.845	27 Co Cobalt 58.933	28 Ni Nickel 58.693	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.723	32 Ge Germanium 72.631	33 As Arsenic 74.922	34 Se Selenium 78.971	35 Br Bromine 79.904	36 Kr Krypton 84.798
37 Rb Rubidium 84.468	38 Sr Strontium 87.62	39 Y Yttrium 88.906	40 Zr Zirconium 91.224	41 Nb Niobium 92.906	42 Mo Molybdenum 95.95	43 Tc Technetium 98.907	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.906	46 Pd Palladium 106.42	47 Ag Silver 107.868	48 Cd Cadmium 112.414	49 In Indium 114.818	50 Sn Tin 118.711	51 Sb Antimony 121.760	52 Te Tellurium 127.6	53 I Iodine 126.904	54 Xe Xenon 131.294
55 Cs Cesium 132.905	56 Ba Barium 137.328	57-71 Lanthanides	72 Hf Hafnium 178.49	73 Ta Tantalum 180.948	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.217	78 Pt Platinum 195.085	79 Au Gold 196.967	80 Hg Mercury 200.592	81 Tl Thallium 204.383	82 Pb Lead 207.2	83 Bi Bismuth 208.980	84 Po Polonium [208.982]	85 At Astatine 209.987	86 Rn Radon 222.018
87 Fr Francium 223.020	88 Ra Radium 226.025	89-103 Actinides	104 Rf Rutherfordium [261]	105 Db Dubnium [262]	106 Sg Seaborgium [266]	107 Bh Bohrium [264]	108 Hs Hassium [269]	109 Mt Meitnerium [268]	110 Ds Darmstadtium [269]	111 Rg Roentgenium [272]	112 Cn Copernicium [277]	113 Uut Ununtrium unknown	114 Fl Flerovium [289]	115 Uup Ununpentium unknown	116 Lv Livermorium [298]	117 Uus Ununseptium unknown	118 Uuo Ununoctium unknown

57 La Lanthanum 138.905	58 Ce Cerium 140.116	59 Pr Praseodymium 140.908	60 Nd Neodymium 144.243	61 Pm Promethium 144.913	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.500	67 Ho Holmium 164.930	68 Er Erbium 167.259	69 Tm Thulium 168.934	70 Yb Ytterbium 173.055	71 Lu Lutetium 174.967
89 Ac Actinium 227.028	90 Th Thorium 232.038	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium 237.048	94 Pu Plutonium 244.064	95 Am Americium 243.061	96 Cm Curium 247.070	97 Bk Berkelium 247.070	98 Cf Californium 251.080	99 Es Einsteinium [254]	100 Fm Fermium 257.095	101 Md Mendelevium 258.1	102 No Nobelium 259.101	103 Lr Lawrencium [262]

Alkali Metal | Alkaline Earth | Transition Metal | Basic Metal | Semimetal | Nonmetal | Halogen | Noble Gas | Lanthanide | Actinide



Skin hygiene and care is essential for removing microorganisms/germs that could cause infections in our skin and body. The skin is one of the most important organs of our body as it is a protective barrier against infections.

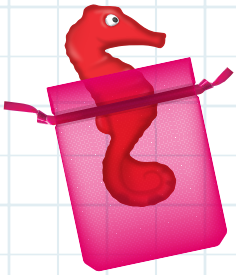
The origin of soaps:

It is believed that "soap" got its name in Ancient Rome. On Mount Sapo, animals were sacrificed and the fat of these animals, mixed with the ashes from wood fires, drained down the hills to the rivers, where women washed their clothes.

Women started to realise that it was easier to clean the clothes when these substances were present in the water. This lead to chemists producing soaps from chemical reactions between vegetables oils, mixed with scented oils, and salt (at the time potassium).

The Greek physician Galeno (AD 130-200) described the use of soap as a medicine for the removal of body dirt and dead skin. Since then, several scientists tried to use soap to heal many skin problems.

Soaps are made from fats, which can be of animal or vegetable origin. Fats are lipids which are biomolecules formed by fatty acids connected to an alcohol (glycerol), called triglycerides.



The essential characteristic of lipids is its insolubility in water, which means that it cannot be dissolved.

Glycerine is a product of soap making which is a solid at room temperature and passes into a liquid state when heated. When cooled, glycerol goes back to the solid state.

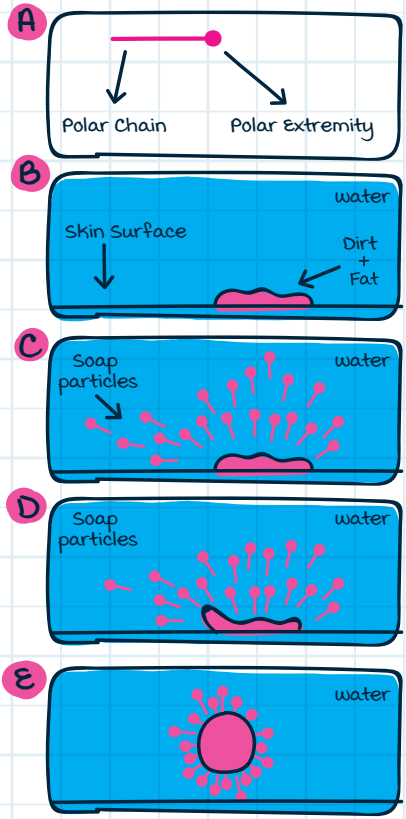
EXPERIMAKE TOKEN

Congratulations! You are on your way to achieving your experimake certificate.

To claim your certificate collect **3** of these tokens and send them to us.

The following images show the cleaning process when using soap

- **A** Soap molecule illustration.
- **B** Skin surface with dirt particles and fat which do not dissolve in water.
- **C** Soap particles added to water.
- **D** When the soap particles come close to dirt and fats, the non-polar chain interacts with these particles, and the polar extremity interacts with water.
- **E** A complex is formed which can easily be removed with water.



When soap is applied with water to a dirty surface it keeps the dirt particles in suspension so that these particles can be washed with clean water.

When soaps and detergents are used they drain into sewers and consequently end up in rivers. The movement of water causes a layer of foam at the surface, which blocks the entrance of oxygen in the water. Oxygen is essential for fish and other aquatic animals.

Luckily, soap waste eventually ends up being decomposed by the microorganism's action living in the aquatic environment. This process is known as biodegradation.

Soaps are made from substances existing in nature (oils and fats) and many microorganisms can degrade them. Every soap is biodegradable, unlike synthetic detergents which may or may not be biodegradable. This is why you should always use biodegradable glycerine soaps so we can help protect the environment!

FUN FACTS

Please ask your parent or guardian to complete:

Name _____ **Age** _____

Home Address _____

_____

Email Address _____

Please send 3 tokens to Addo to receive your experimake certificate

Send to: Addo Play Ltd. Bucks, HP10 8EG, UK

We confirm that information disclosed to Addo Play will be held in accordance with our privacy policy, a copy of which is available on our website www.addoplay.com

319-10107-N

Also Available...

*Subject to Availability

Why not share your results with us?

@AddoPlay AddoPlay hello@addoplay.com

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