Spark

awesome

5 DIY Science Projects

To Do With Your Kids

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Do it Yourself!

ICE CREAM
IN 10 MINUTES

Have you ever made ice cream in just 10 minutes? It can be lots of fun, and you end up with a tasty frozen treat! Let's make your own ice cream in a bag while learning about chemistry!

You will need:


Milk


Ice


Salt


Spoon


Zip lock plastic bags (2 different sizes)

step 1

Pour milk into a small zip-lock plastic bag about ¼ depth. Seal tightly, allowing as little air to remain in the bag as possible.

step 2

Place this bag inside another same sized bag, again leaving as little air inside as possible and sealing well.

step 3

Put the ice into a bigger zip-lock bag.

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step 4

Then, put the milk inside it.

step 5

Sprinkle 3 spoons of salt on top of the ice. Seal the bag tightly.

step 6

Shake and massage the bag. Make sure the ice surrounds the milk.

step 7

After 5-8 minutes, your milk will freeze into ice cream!

How does it work?
The salt makes the ice colder and freezes the milk mixture. The squishing effect makes the mixture become creamy!

Do it Yourself!

ACID - ALKALI INDICATOR

Make your own red cabbage indicator that will test the acidity or alkalinity of certain liquids. Try this experiment at home and let your children learn about chemistry!

You will need:

Red Cabbage

Soap Dishwashing Liquid

Vinegar

Soda Bicarbonate

Lemon

Plastic Container

Kettle

Knife

1

Cut the red cabbage into small pieces and place them in a container

2

Pour hot water and left it for a few minutes.

3

The water turned a bright purplish colour. Use the spoon to strain out the cabbage pieces.

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Pour the cabbage juice into four small containers.

5

Now test the vinegar, soda bicarbonate, lemon juice and soap liquid with cabbage juice and then watch the colour changes.

6

The red cabbage juice turns red when it mixes with vinegar and lemon juice and turns bluish-green when it mixes with soda bicarbonate and soap liquid.

WHY?

Some substances are classified as either an acid or an alkali. Acid has a low pH (less than 7) and alkali has a high pH (more than 7). Scientists can tell if a substance is an acid or a base by means of an indicator.

Red cabbage contains a pigment called anthocyanin that changes colour when it mixes with an acid or an alkali. The purple cabbage juice turns red when it mixes with something acidic and turns bluish-green when it mixes with something alkali. Red cabbage juice is considered as an indicator because it shows us something about the chemical composition of other substances.

Note: You may try testing other substances such as milk, salt, laundry detergent, etc.

Homemade Butter

Out of butter?
Let us make some and surprise your mom. Are you ready?

You will need:

Heavy Cream

Jar

Tablespoon

1

Fill half of the jar with heavy cream.

2

Close the jar tightly.

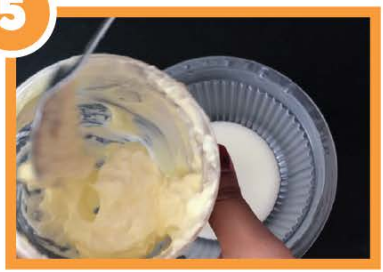
3

Shake the jar until you heard a splashy sound.

4

Make sure that the cream has broken down into buttermilk and butter.

5



Using the spoon, drain out the buttermilk.

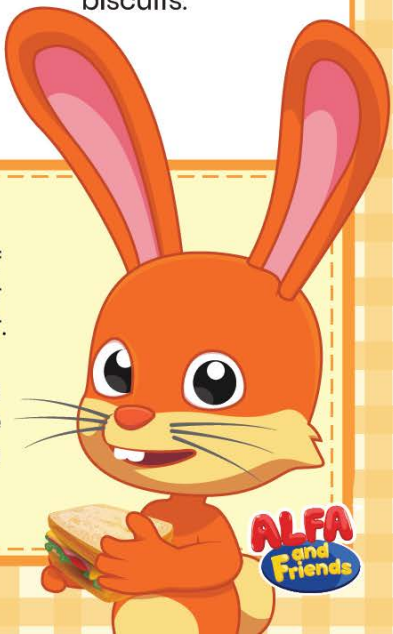
6

Enjoy your homemade butter with bread and biscuits.

Why?

Milk and cream are composed mainly of water and fat. When you shake the jar, the fat molecules hit against each other and spill out.

Milk fat structures join together to make a lump of fat which separates out from the water. The lump of fat is what we have known as butter.



Do it Yourself!

LAVA LAMP

Are you afraid of the dark? Brighten up your room with this cool lava lamp!

You will need:


Torch


Oil


Clear jar/ Container


Salt/Panadol Soluble


Food colouring


Water

1

Fill the container with 2/3 of oil.

2

Add 1/3 of water into the liquid.

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3

Put a few drops of food colouring into the liquid.

4

Drop one Panadol soluble into the liquid.

5

Watch how the lava erupts.

6

Place the torch behind the container for light effect in a dark room!

WHY?

Panadol soluble releases carbon dioxide gas when mixed with water thus forming the bubbles. When the bubbles reach the surface of the water, they pop thus releasing the carbon dioxide gas and creating the effect of lava.

The torch will act as the source of light to light up the lava lamp.

Homemade Popcorn

Kids mostly love homemade popcorn because it's fun to watch it pop, and it fills the entire house with the wonderful smell of freshly popped corn! It is so easy to make homemade popcorn that even your kids can do it!

You will need:


Corn kernel


Aluminium cup


Aluminium foil

Candle


Chopstick


Oil


Honey

1

Put about 1 tablespoon of cooking oil into an aluminium cup.

2

Add 1 tablespoon of corn kernels.

3

Make 4 holes around the cup. Penetrate the 2 holes using chopsticks so that you can hold the cup.

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4

Cover the opening of the cup with aluminium foil.

5

Light up the candles and start cooking the corn kernel.

6

The kernels are popping into popcorn!

7

Your popcorn is now ready to serve. Mix it with honey to get a yummy sweet taste.

Why ?

Each corn kernel contains a small drop of water stored inside a circle of soft starch. As the kernel heats up, the water becomes steam and expands, changing the starch inside each kernel.

The starch inside the kernel is inflated and spilled out, cooling immediately and forming into the odd shape we know and love!

Spark

To ensure the **best** for our children is to present them with the gift of **quality education**. In nurturing essential skills for a child's academic development and growth, it is important to allow the child to thrive in a learning environment that is equally supportive and child-centred.

Structured play or '**play-based learning**' offers an optimal learning experience for child-initiated exploration and discovery. Moreover, the integration of Science, Technology, Engineering, and Mathematics or **STEM** into play education enhances its design to equip its learners with valuable 21st century skills such as **problem solving** and **critical thinking** whilst still maintaining a flexible and **fun** learning environment.

Are you a parent to a child that,
- Loves to explore the surroundings?
- Shows great interest for science in practice, but not for science in theory?
- Glues him/herself to the screen?
- Lacks motor skills?
- Shies away from socializing?

If your child fits any of the descriptions above, then **Spark** is made for you. Consisting of **Spark the Moments, Spark the Interests and Spark the Talent**, Spark is curated by the **Alfa and Friends** team to help troubled parents such as you by...

1. Strengthening the parent-child bond and relationship.
2. Connecting children with their parents, as well as, educators through structured play-based learning.
3. Equipping children with crucial skills to embrace challenges of the 21st century.
4. Nurturing creativity and confidence in children.
5. Activating a child's both sides of the brain through robust learning.

What else does Spark offer?
1. Educational teaching and learning tools – Spark Book, STEM kits, and many more.
2. Spark Comic [First STEM comic in Malaysia] to cultivate a passion for reading at a young age.
3. An all-around educational experience that offers varied approaches to early childhood learning.

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Let's explore our STEM educational products!
STEM Comic Magazines and STEM Kits!

Spark your children's interest in learning with ALFA and Friends STEM Comic Magazines and STEM kits. An exciting experimental item perfect for Sunday afternoon! Be prepared to be amazed by the science facts and geared up to conduct experiments with your children to make the learning more fun, meaningful and unforgettable. Remember, your presence makes it extra special!

Colour Mixing Kit

Flubber Soap Kit

Growing Turnip Kit

Magic Corn Kit

Wheatgrass Kit

What's in the kit?

Each STEM Kit contains the equipment you need to conduct your experiment, complimented with ALFA and Friends Comic Magazine.

What's in the comic?

- ALFA and Friends science stories
- Fun facts
- Moral stories
- DIY experiments
- Alfa's lab
- Games and activities

and many more! Visit www.ALFAandFriends.com/shop now to purchase!