

SCIENCE ACTIVITIES You Can Do at Home

The Centre for Family Literacy also offers the following programs:

For Parents and their Infants and Toddlers

- Books for Babies
- Rhymes that Bind and Multicultural Rhymes that Bind

For Parents and their Preschool Children

- Learn Together - Grow Together
- 3-2-1 FUN
- Alberta Prairie C.O.W. (Classroom on Wheels) Bus

For Adults

- Literacy Links
- Adult Tutor Program
- Adult Courses

For more information, please contact
Centre for Family Literacy



Literacy Links Workshop



Experimenting and Exploring

Children are always asking questions about everything! They see the world around them as a place of wonder but they also want to understand the why of things. Whether it is wanting to know where snow comes from, what happens if you mix green with yellow, or where frogs sleep at night, they want to understand the world around them. They learn about their world through experimenting and exploring through play.



What skills are they developing?

- Critical thinking – what happens and why
- Observing
- Predicting
- Collecting and organizing information
- Communicating
- Recording and sharing

How to support their learning:

- Provide a variety of safe and stimulating opportunities for your child to experiment and explore
- Be excited about discovering along with them, modeling the importance of exploring the world around them
- Allow your child to explore freely, making their own decisions and moving at their own pace, to discover their areas of interest and to ultimately pursue their passions

When Will the Flower Grow?

Predicting and observing are skills which help children learn about the world around them. The excitement builds as your child waits to watch the flower unfold!

You Need:

- Construction Paper
- Pen
- Scissors
- Bowl
- Water



What To Do:

1. Draw a flower shape and petals on the construction paper
2. Cut out the flower and cut flaps for the petals
3. Fold the flaps toward the center of the flower
4. Put water in the bowl
5. Place the flower in the water, flaps up, and watch the flower grow



What is Happening?

The construction paper has many holes in it. When it goes in the water all the holes fill. If there is a fold, the water pushes until it gets into those holes, causing the paper to unfold. The holes are like cells in a wilting plant that stands straighter when it is watered.

Exploding Volcanoes

Learning Through Play!

Fizzy volcanoes are a perfect way to introduce new words while having fun. You can even race to see whose volcano erupts first!

You Need:

- Baking soda
- Vinegar
- Food Colouring
- Clay (to shape around your container – if wanted)
- Dish Soap
- Container
- Spoon



What To Do:

1. Put baking soda in the container
2. Add one or two drops of soap
3. Pour Vinegar and watch it go!
4. Try different ways to add things together

What is Happening?

Mixing vinegar and baking soda makes a chemical reaction. The acetic acid in the vinegar reacts with the sodium bicarbonate of the baking soda, which makes carbon dioxide gas and water (which starts the bubbles). Adding dish soap makes the bubbles last longer.

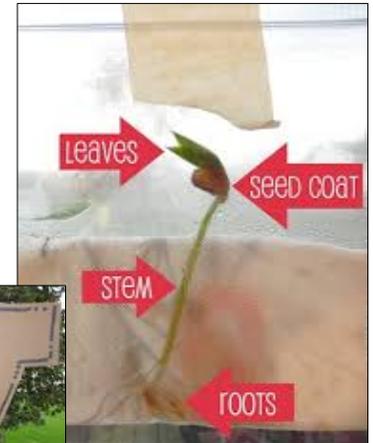
Bean in a Bag

Learning Through Nature

Nature is our greatest teacher. Children learn much about themselves and how they grow – and how to take care of the world around them – when they observe the living world.

You Need:

- Ziploc sandwich bag
- Bean Seed
- Paper Towel
- Construction paper and scissors (if wanted)
- Marker
- Tape



What To Do:

1. Fold the paper towel and get it wet (not dripping)
2. Put the paper towel and the bean seed into the sandwich bag
3. Get the air out of the bag and close it
4. Tape the bag to a sunny window
5. You can cut out a planter shape to tape around your plant or label the parts of the plant as it grows if you want
6. Wet the paper towel as needed and watch and talk about how the seed grows. Open the bag a bit as it gets taller
7. After a couple of weeks plant them in soil (outside if possible) and continue to watch it grow

What is Happening?

The paper towel gives the bean seed enough water to sprout (germinate) without soil. You can watch the seedling come out of its coat and see the roots and leaves grow.

Goop

Exploring Through the Senses

Children discover their world through touching, smelling, tasting, listening, and observing. Goop is a great way to let them experience a play material that is both a solid and a liquid at the same time. They can even help make it!

You Need:

- Corn Starch
- Water
- Bowl
- Spoon
- Food Colouring (if wanted)
- Small toys to hide in the goop to be found (if wanted)



What To Do:

1. Put the Cornstarch in a bowl
2. Add water until it is wet and moves easily when you move your fingers or a spoon slowly through it
3. Hide small toys in the goop to be found (if wanted)



Do **NOT** pour down sink drain because it may harden and plug the drain up.

Please let it air dry or pour in plastic bag, then put in garbage

Butterflies

The Wonders of Colour

Colour isn't always what it seems, and for children it can be quite magical as they learn about how it works.

You Need:

- Coffee Filter (folded kind)
- Straw
- Scissors
- Markers (washable)
- Pipe cleaner (if wanted)
- Water



What To Do:

1. Cut two small lines along the folded edge of the filter
2. Lay filter flat and use markers to colour the front and back
3. Put drops of water on the filter and watch the colours separate and change
4. Wet the outside edge of the filter completely and pull sides apart
5. Feed the straw through the cuts and shape the pipe cleaner in to the top of the straw for the butterfly antennae

What is Happening?

The marker colours are made up of different colours and each colour separates and moves with water at different rates. It is called chromatography when the colours separate.

Gak

Exploring Texture

Watching materials change as they are stirred is like observing magic. It stimulates many questions about how things are made. Feeling the cool slippery texture of gak as it changes shape is a great way to search for new vocabulary.

You Need:

- Baking Soda
- Elmer's, LePage or White School glue – **not** all purpose glue
- Water
- Bowl
- Food colouring (if wanted)
- Measuring spoons and cup



What To Do:

1. Mix $\frac{1}{2}$ teaspoon of baking soda into 1 cup of warm water, stir and then let it cool
2. Put 1 Tablespoon of glue and 2 to 3 drops of food colouring in a bowl, stir until mixed
3. Add 1 Tablespoon of baking soda water and stir
4. Keep stirring until it becomes a sticky ball
5. Pour onto a hard surface and roll and play with hands until it becomes less sticky
6. Shape and play



*it will be good to play with for a few hours, but does not store well.

What is Happening?

Glue has long chains of molecules that create the stickiness. The baking soda acts like a catalyst (starts a reaction) and links simple molecules into complex molecules which have different properties like the non sticky Gak.

Play Dough

Developing Body Awareness

Rolling, shaping, squeezing and building with play dough develops hand eye coordination and fine motor skills that help us hold pencils and write. It also provides hours of imaginative play and creativity for the whole family.

You Need:

- A bowl and large spoon
- 1 cup flour
- $\frac{1}{2}$ cup salt
- 1 Tablespoon Cream of Tartar (found in baking section) *Makes dough last longer, but you don't have to use it
- drops of food colouring
- 1 Tablespoon of oil
- 1 cup boiling water
- sealed bag or container to store dough in



What To Do:

1. Mix flour, salt, and cream of tartar in a bowl
2. Make a hole in the center and add oil and food colouring
3. Have an adult pour in the boiling water and mix
4. It will seem goeey, but let it cool a few minutes and it will start to get firm
5. Take the dough out of the bowl, knead it to make the colour even, and then play!

What is Happening?

Making play dough teaches children that parts of different ingredients can be mixed together to make a whole, which is quite different from the parts it is made up of.

Diving Spaghetti

Observing and Asking Questions

Children learn by watching the world around them and asking the question all parents know well, WHY? A fascinating activity like diving spaghetti allows your child to come up with their own explanation of how the spaghetti moves.

You Need:

- Uncooked spaghetti, rice or raisins
- 1 cup water
- 2 teaspoons of baking soda
- 5 teaspoons of vinegar
- Tall clear glass



What To Do:

1. Put baking soda in glass and stir until you can't see it
2. Break spaghetti into small pieces, and put 6 in the glass
3. Add vinegar 1 spoonful at a time. Watch what happens and add more vinegar if the spaghetti stops moving to the top of the glass
4. Do not stir!



What is Happening?

When baking soda and vinegar are mixed, a chemical reaction occurs which makes carbon dioxide gas. This gas forms many little bubbles which cling to the spaghetti and bottom of the glass. The bubbles make the spaghetti float to the top. When the spaghetti reaches the top, the bubbles burst and the spaghetti sinks to the bottom.

Walking Water

Worth the Wait!

The excitement of setting up an experiment and then having to wait for the results is a good way to explore patience. Children can explore their emotions as they watch water walk and unfold beautiful colours.

You Need:

- 3 same sized clear cups
- water
- food colouring
- paper towels

What To Do:

1. Fold a paper towel in half and in half again to make a strip. Make 2
2. Put the cups in a row. Fill the 2 on the ends with water half way. Then add blue colouring to one cup and yellow to the other. Stir. The cup in the middle stays empty
3. Take the strips of paper towel and put one end in the coloured water, and the other end in the middle cup
4. Keep checking what happens over the next couple of hours
5. Try the experiment again with red and blue or yellow and orange



What is Happening?

Capillary action makes the water move along the paper towel because the adhesive forces between the paper towel and the water are stronger than the adhesive forces inside the water. The colour travels with the water and when the primary colours (red, yellow and blue) mix, they form secondary colours (green, orange and purple).