

AB FOUR ELEMENTS CHALLENGE



Girl Guides of Canada
Alberta Council

Introduction The purpose of this challenge is to learn more about the elements that surround us every day.

Challenge Requirements

Sparks and Brownies: Do one challenge from each section

Guides, Pathfinders and Rangers: Do 2 challenges from each section

Section 1 – Air

1. Create your own windmill or pinwheel (see supplement for some ideas on how to make these)
2. Learn about windmills, how they work and how they generate power. Learn about the original uses for windmills. You can visit a wind farm.
3. Make your own hot air balloon (see supplement for ideas).
4. Make a kite and fly this. Learn how to make this go up or down.



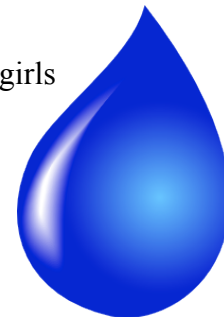
Section 2 – Earth

1. Create an art project using sand (see supplement for some ideas on this).
2. Learn about the different types of rocks
3. Create a rock garden individually or as a group
4. Learn about earthquakes and how these are created. You can work on raising funds for CWWF that helps to support countries devastated by earthquakes.



Section 3 – Water

1. Learn about the water cycle (see supplement). You can have the girls draw this out or use pictures from magazines to create this.
2. Make your own terrarium. Using a recycled 2 litre plastic bottle, put dirt in the bottom, plant small plants (such as beans), add some water and close the cap. Watch as the plants are able to use the water cycle to grow!
3. Create an art project using bubble painting (see supplement).
4. Find a local water environment near you. Work together to keep this area clean and find out about the different species of plant and animal that reside there.



Section 4 – Fire

1. Create an edible fire. You can use all different types of edible materials, such as pretzel sticks, jujubes, icing, graham wafers.
2. Learn how to set different types of camp fires.
3. Make your own fire starter.
4. Learn how to cook something over a fire. This can be as simple as roasting marshmallows or as complex as a complete meal.



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Program Tie-Ins

Sparks: *Going Outside keeper* (additional activities), *In My Community Keeper* (water, additional activities)

Brownies: *Key to the Living World* (plant life, water all around), *Water, Water Everywhere* interest badge, *Special Interest badge*

Guides: *Beyond You* – Explore the Outdoors and Nature (#2, #6), *Ecology interest badge*, *Naturalist interest badge*, *Outdoor Cooking interest badge*, *Water interest badge*

Pathfinders: *Camping Here We Go*, *Up Close and Personal with Nature*

Rangers: *Energy Check*, *Our Local Environment*, *Water, Water Everywhere*, *Mmmm Dinner*, *Your Interests*



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The Four Elements Challenge: Supplement

How to make a hot air balloon:

What you'll need:

- A plastic grocery bag
- Several plastic straws
- Glue
- Thread
- A hair dryer
- Modeling clay

Make sure that the plastic bag has no holes in it other than the handles. Use glue and about three or four plastic straws to make a ring about five inches in diameter. You may need to snip a slot at the tip of each straw to make it easier to insert another straw inside. Once the ring is sturdy, slip the bag through it and glue the bag to it just below the handles.

Tie a long piece of thread to each handle and use globs of modeling clay at the bottom to keep the ends firmly attached to the table or other surface.

With the help of a responsible adult, use the hair dryer on low to slowly heat up the air inside the bag. While it's tempting to use the higher setting, doing so could cause the bag to melt. If you smell burning plastic, turn off the hair dryer.

From: http://www.hotairballoons.com/how_to_make_a_hot_air_balloon.asp

How to Make a Hot Air Balloon:

Supplies
Balloons
Helium
Paper Cup
Ribbon
Glue
Scissors

Instructions

For each balloon, take two 2 1/2 inch lengths of ribbon, and tie them together with a knot in the center. Take a small, disposable paper cup, and poke a hole in the front, back and each side. Thread the ends of the ribbons through the holes, and secure with a knot. Inflate a balloon, decorate as desired and place it inside the ribbons. Use tape or a little glue to keep the ribbons in place. This also makes a fun decoration! (Float time: 4 1/2 hours)

From: http://www.freekidscrafts.com/hot_air_balloon-e36.html



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How to make an origami windmill:

Origami Windmill

You can attach your windmill to a paper cup, pencil or gift tag with a pushpin or brass tack and it will really spin!

If you have trouble with the instructions, try reading through the [basic origami instructions section](#).

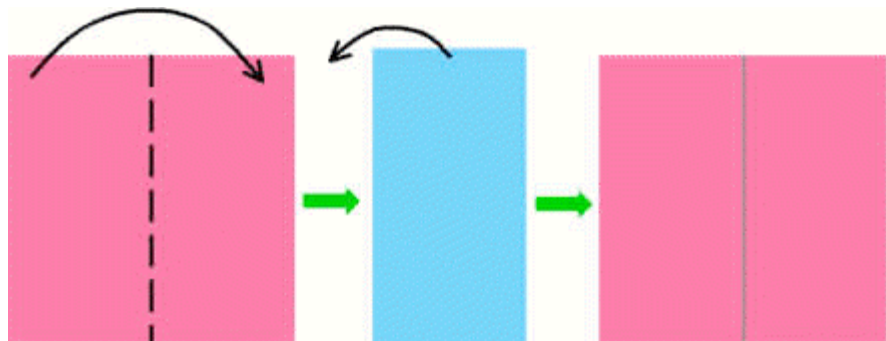
Materials:

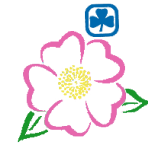
- square of paper - [click here for instructions](#) to make a rectangle of paper (typical 8.5x11 sheet) into a square



Instructions:

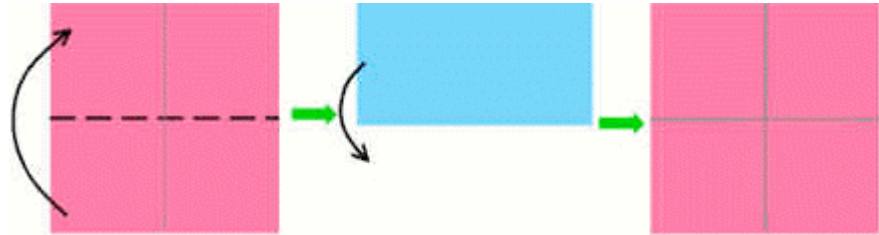
- Valley fold the paper from the left edge to the right edge, crease well and then unfold.



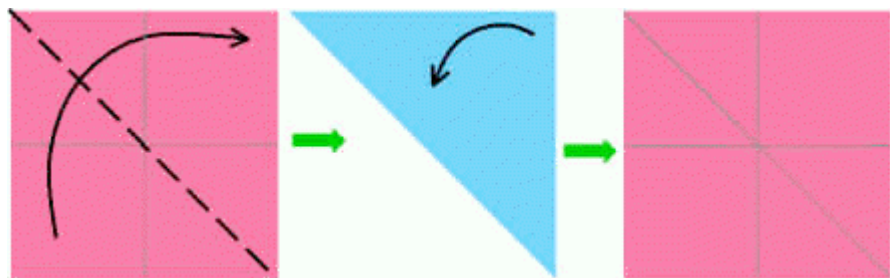


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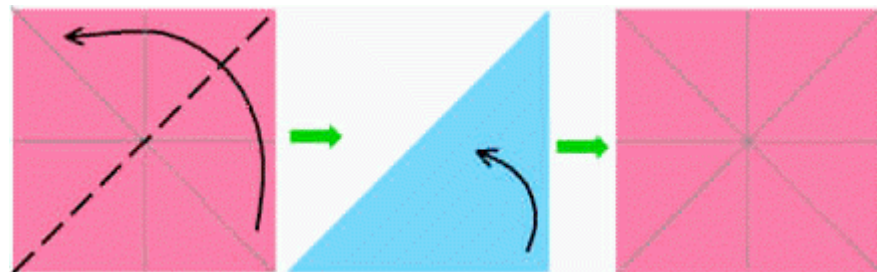
- Valley fold the paper from the bottom edge to the top edge, crease well and then unfold.



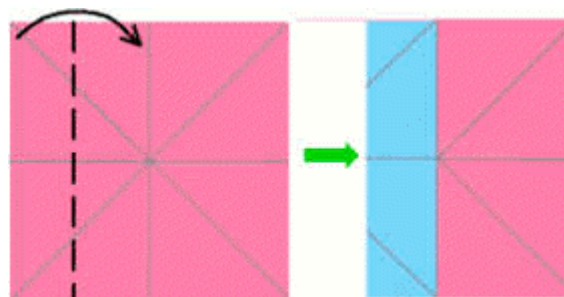
- Valley fold the paper from the bottom left corner to the top right corner, crease well and then unfold.



- Valley fold the paper from the bottom right corner to the top left corner, crease well and then unfold.



- Valley fold the left edge over to meet the center line. Crease well.

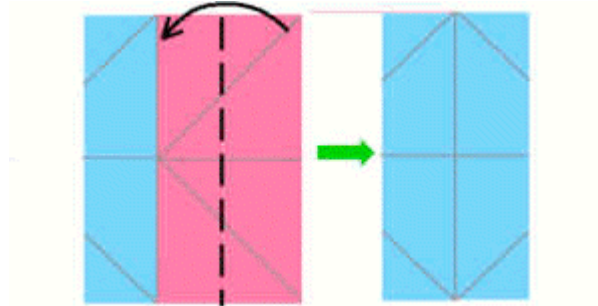




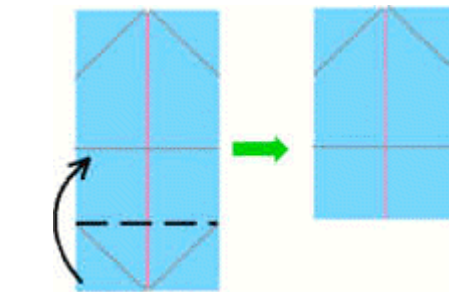
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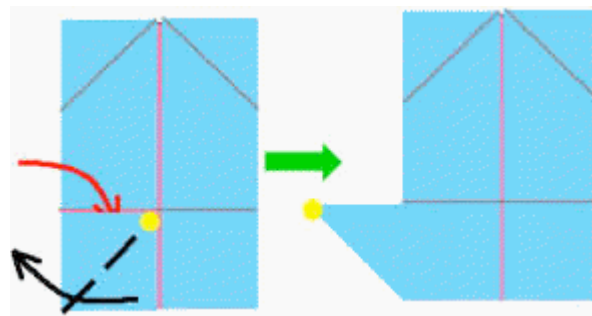
- Valley fold the right edge over to meet the center line. Crease well.



- Valley fold the bottom edge up to meet the center line. Crease well.

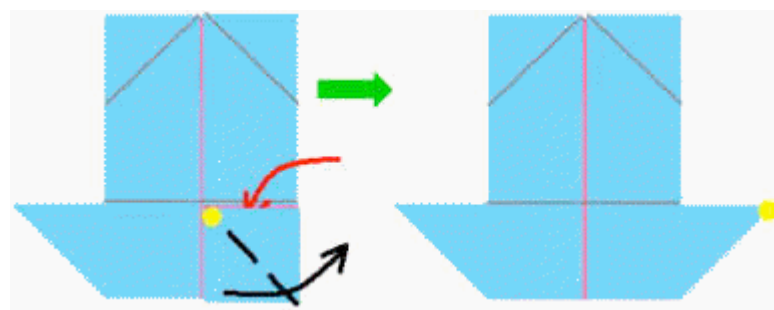


- Reach under the top layer of paper of the part you just folded. Do the left side first. Use the prefolds as a guide and pull the paper outwards to make a triangle. Crease well.



follow the yellow dot if you aren't sure how to do this step

- Repeat with the right side. You will now have a canoe shape.

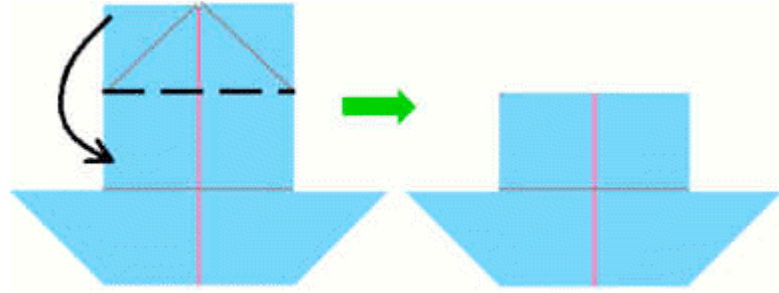




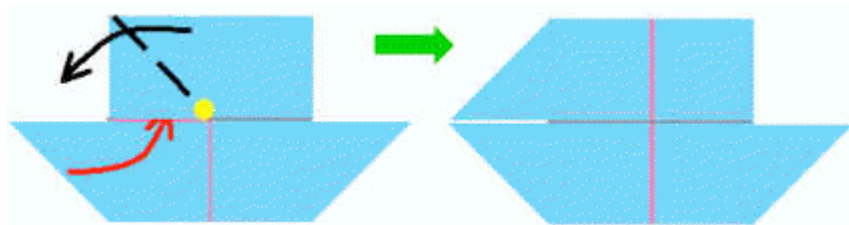
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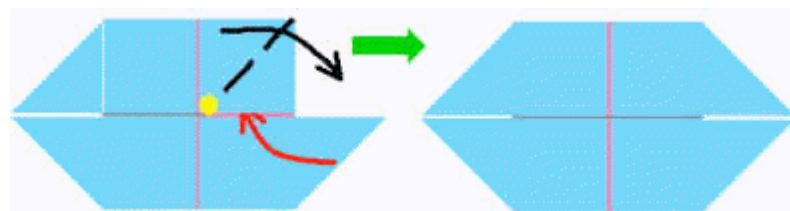
- Valley fold the top edge to the center. Crease well.



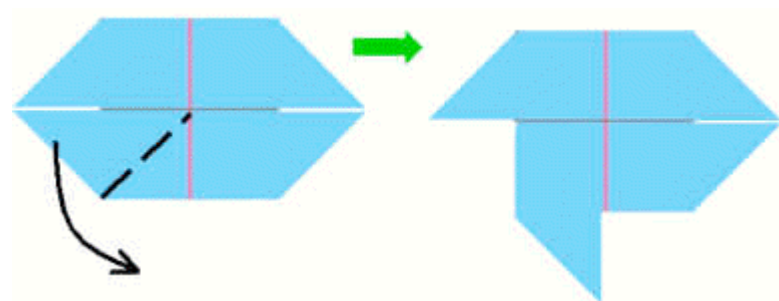
- Reach under the top layer of paper of the part you just folded. Do the left side first. Use the prefolds as a guide and pull the paper outwards to make a triangle. Crease well.



- Repeat with the right side. You will now have a canoe shape on the top too.



- Valley fold the bottom left corner down.

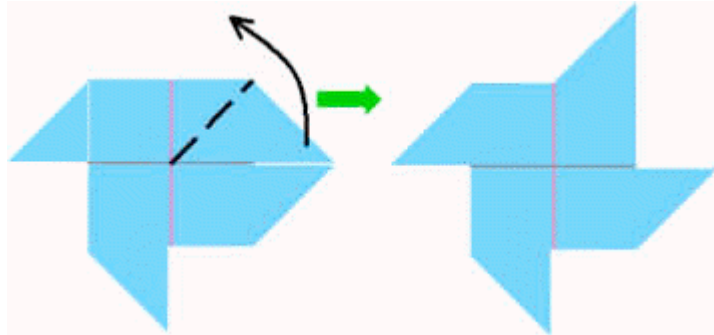


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- Valley fold the top right corner up.



- Attach to a paper cup or similar to make a windmill or to a pencil to make a pinwheel you can play with



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From: <http://www.dltk-kids.com/world/japan/morigami-windmill.htm>

How to make a sand jar candle holder:

Materials needed:

- Jars
- Sand
- Food Colouring
- Ribbon
- Glue

Instructions:

Place the sand in a glass or metal bowl and use the food colouring to tint it to the desired colour. Place the sand in the jar in any pattern you like. Glue and/or tie the ribbon around the end of the jar. Push a candle into the middle of the jar, pushing it into the sand.

From: <http://familycrafts.about.com/cs/candleholders/a/blsandcand.htm>

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How to do bubble painting art:

Supplies:

Small Cup

Straw

Bubbles

Paint

Finger Paint Paper

Instructions:

Fill the small cup about $\frac{1}{4}$ of the way with bubbles. Add a couple drops of paint. Mix this with the straw. Place the cup of bubble paint on top of the finger paint paper and blow through the straw. This will make bubbles and they will overflow on top of your paper making a wonderful painting.

From: <http://www.showmomthemoney.com/water-preschool-theme-crafts-and-art/>