

The Air Up There



Big Science Little Hands II: Community Connections

Together, the Nanaimo Science and Sustainability Society (NS3) and Science World BC worked with Early Childhood Educators to complement the original *Big Science for Little Hands* activity book, with additional hands-on science resource materials. Our goal is to make science fun, hands-on, accessible to educators and to provide examples on how to link science concepts to the local community. We hope that these resource materials complement what you are already doing and offer additional ideas for making local connections.

The activities described in this book were designed with the help of nine Early Childhood Educators on Vancouver Island. Activities were tested at 54 pilot programs with 484 young children.

Support for program development was provided by the Vancouver Foundation, Woodgrove Chrysler, Nanaimo Insurance Brokers and VMAC.

Special thanks to Lorna McCrae, Barb Mjolsness, Jen Borzel, Sheila Grieve, Shawna Hassard, Odette Herr, Chris Peters, Melissa Burke, Corinne Dunn, Carly Foster, Becky Manson and the staff at Ladysmith Friends and Family, for allowing the NS3 to test 54 pilot programs at their early childhood education centres and gather student feedback! Their participation was invaluable!

For more ideas and activities check out scienceworld.ca/bslh

Introductions—Introduction activities are low-preparation, low-mess activities that can set the stage for the topic to be explored and work well for large groups.

Explorations—Explorations are an opportunity to discover, explore and get little hands dirty. Explorations involve open-ended activities that are appropriate for smaller groups and have questions associated with them for enhanced learning.

Make This—Children take their experiences home for further exploration, with this make-and-take activity.

Community Connections—Connect your explorations to the environment around you! Community Connections provide guides on how to connect these activities to the world around you.

All Together—This group activity makes a great wrap up to your topic of exploration.

Science World British Columbia

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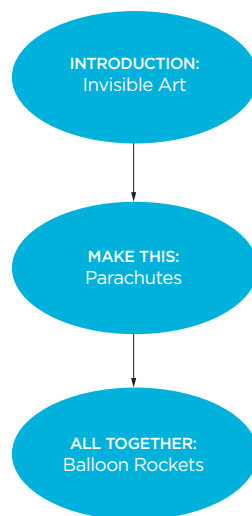
The Air Up There



A path through The Air Up There

Here's one possible way to put the activities in this resource together:

- Do an *Introduction* at circle time in a large group.
- Have the children try out the *Make This* in smaller groups at stations around the room.
- Try *All Together* just before the end of the school day, or at the end of a few days on the topic.



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Big Science for Little Hands supports the learning goals outlined in the British Columbia Early Learning Framework, particularly those in the area of Exploration and Creativity.

To promote exploration and creativity, adults provide an environment where young children can do the following:

- Explore the world using their bodies and all their senses
- Build, create and design using different materials and techniques
- Actively explore, think and reason
- Identify and try possible solutions to problems in meaningful contexts and situations
- Be creative and expressive in various ways
- Develop a sense of wonder for natural environments
- Express a zest for living and learning

(BC Early Learning Framework: bced.gov.bc.ca/early_learning/)

Share with us!

Help us to improve Big Science for Little Hands by submitting feedback:
scienceworld.ca/bslh/feedback

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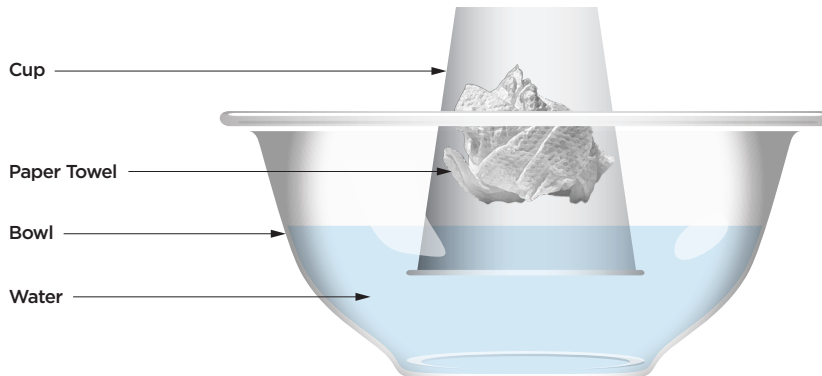
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The Air Up There

Introduction



Invisible Air!

Challenge your expectations with this activity. When a glass is placed upside down in a bowl of water, the air in the glass prevents water from entering the glass, thus keeping anything inside it dry.

What you need

- Large deep bowl
- Water
- Clear, tall drinking glass
- Food colouring (optional)
- Paper towel

Hands on

1. Fill the bowl with water and bright food colouring.
2. Push a piece of paper towel into the bottom of the glass.
3. Turn the glass upside down and put it in the water.
4. Remove the glass without tilting it.
5. Check to see if the paper towel is wet or dry.

Where to next?

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MAKE THIS

Parachutes

ALL TOGETHER

Balloon Rockets

MORE IDEAS

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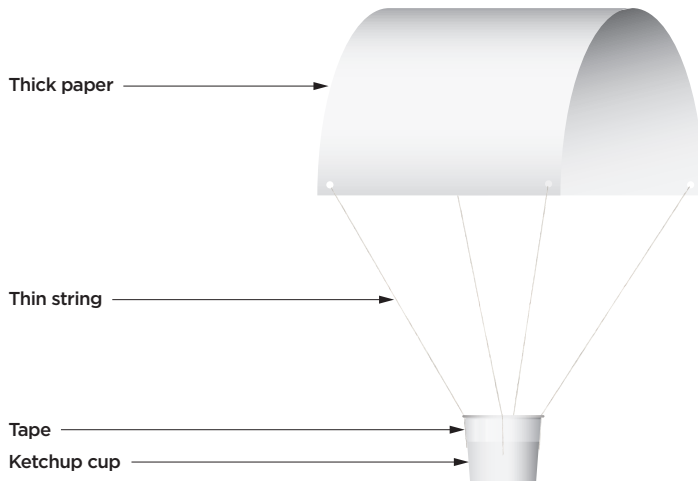
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Make This



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Parachutes

Create your own parachute, using simple household items.

What you need

- Thin string
- Hole punch
- Small paper cup (a ketchup cup works well)
- Paper bags — the thicker the better. Do not use paper towel
- Tape

HINT: Have younger children experiment with and modify pre-made parachutes.

Hands on

1. Cut a square piece of paper from a paper bag.
2. Punch holes in the corners of your paper square.
3. Attach string through each hole and then attach the string to the ketchup cup, with tape.
4. Float your parachute from different heights.

Questions to ask

1. How could we make the parachute stronger?
2. How could we make the parachute fall more slowly or more quickly?

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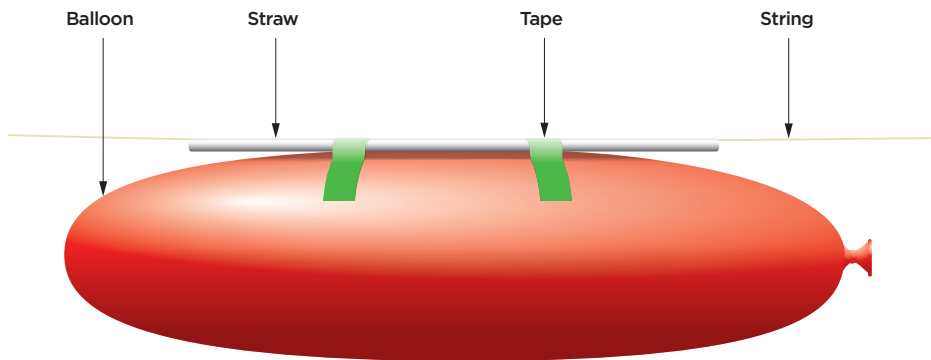
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The Air Up There

All Together



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Balloon Rockets

Use air to propel a rocket! As the air rushes out of the balloon, it pushes the balloon forward. This is the same principle that makes rockets and jet engines work.

What you need

- Balloons
- Straws (if using a straw that contains a bend, trim to remove)
- Nylon or other smooth string
- 2 chairs, or something to tie string between
- Cardstock (for extension)
- Tape

Preparation

1. Tie one end of the string to a chair, door knob or other support.
2. Put the other end of the string through the straw.
3. Pull the string tight and tie it to another support in the room.

Hands on

1. Blow up the balloon (but don't tie it).
2. Pinch the end of the balloon, to prevent air from escaping, and tape the balloon to the straw.
3. You're ready for launch. Let go of the balloon end and watch the rocket fly!

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More Ideas



Teacher Resources

- *Air* by Daniel Nunn
- *Air* by Alice Harman and Angela Royston
- *Air* by Vic Parker
- *Air: Outside, Inside, and All Around* by Darlene R. Stille
- *The Things in the Air* by Carmen Gil and Omar Alberto Turcios
- *Air is All Around You* by Franklyn Branley
- *How Do Hot Air Balloons Work?* by Buffy Silverman

Literature for Children

- *Paddington Takes to the Air* by Michael Bond
- *Everything Goes: What Flies in the Air?* by Brian Biggs
- *Curious George and the Hot Air Balloon* by H. A. Rey
- *Bear in the Air* by Susan Meyers and Amy Bates
- *Pierre in the Air!* by Andrea Beck
- *Violet the Pilot* by Steve Breen

Online Resources

- Weather-related, animated videos, featuring Peep and his friends.
 - Video about Chirp learning to fly during a windy day—“The Windy Day” (youtube.com/watch?v=zqm9BbhEXxg&list=PL8DB16Bo1C34AAFD0).
 - Video about Peep’s first encounter with an electrical storm—“Stormy Weather” (youtube.com/watch?v=7Li59FFilYQ&list=PL8DB16Bo1C34AAFD0).
- Three activities with instructions and videos of children explaining the activity at *Peep and the Big Wide World* (peepandthebigwideworld.com/en/parents/activities/search/)
 - Exploration of wind, bubbles and streamers. Find under “Blowing in the Wind”
 - Children explore different ways of flying. Find under “Flying Paper Airplanes”
 - Play with leaves on a windy day. Find under “Floating in the Wind”
- Animated game where children put together a plane then fly it by PBS and *Sid the Science Kid* (pbskids.org/sid/letsfly.html).
- An animated game where children earn and throw Frisbees for Martha in PBS Kids, *Martha Speaks* (pbskids.org/martha/games/catch/index.html).



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Songs & Rhymes



Windy

Tune: *Bingo*



There's a weather
That I like
And Windy
Is its name-o.
W-I-N-D-Y,
W-I-N-D-Y,
W-I-N-D-Y,
And Windy
Is its name-o!

Wind, Wind

Tune: *Row, Row, Row Your Boat*



Wind, wind, blow the clouds
Fast across the sky.
Blow the branches back and forth
In the trees so high.

Hats are Blowing

Tune: *Frere Jacques*



Hats are blowing,
Hats are blowing,
In the air,
Everywhere!
Every time the wind blows,
Someone's hat, away it goes.
Hold on tight
And you'll be all right!

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