Balance This

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.

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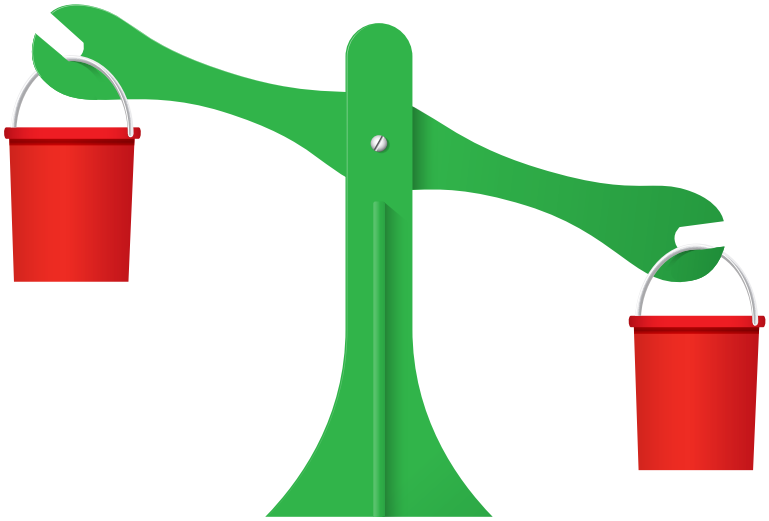
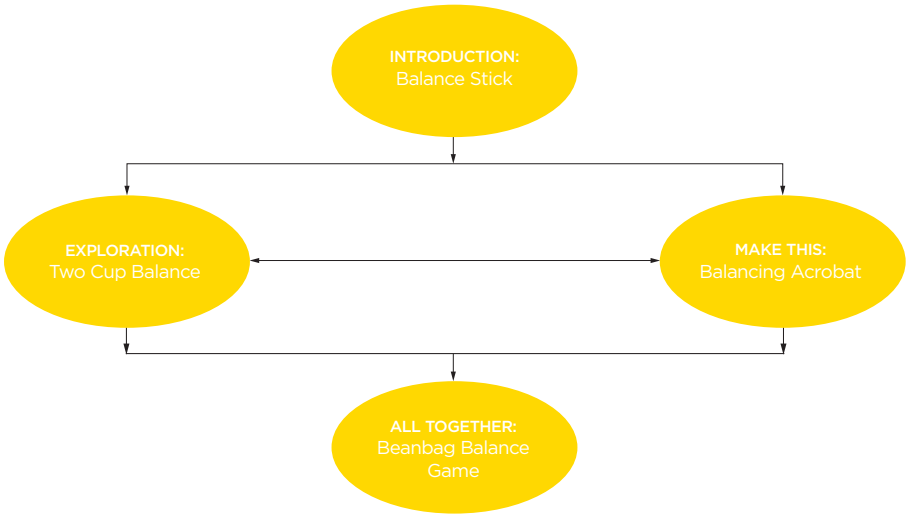


A path through Balance This

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 *Explorations* and *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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Balance This
Introduction

Balancing Stick

Balancing a dowel on your finger is a great way to learn tricks for balancing things.

What you need

- Various wooden dowels (different diameters, different lengths)
- Feathers

Hint: Craft stores sometimes sell peacock feathers, which work very well for this activity.

Hands on

1. Balance a feather on your finger. Observe what the feather does and what you do to keep it balanced.
2. Try to balance a dowel on your finger.
3. Repeat with different sized dowels.
4. Challenge yourself to balance the dowel on other parts of your body. Try your elbow, your knee or your nose!

Hint: The longer the dowel, the easier it is to balance. Watching the top of the dowel will give you the ability to keep it balanced because you can see which direction it is going to fall and correct it!

Where to next?

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Balance This
Introduction

Questions to ask

1. Is it easy to balance a feather? Why?
2. What do you do to keep the feather balanced? Do you look at it? Do you move your body? Do you move your finger?
3. Is balancing a dowel more difficult than a feather?
4. Which dowels were easiest to balance? Why?

What's next?

- Balance on your left and then right leg by lifting the opposite leg slightly. Is one leg easier to balance on than the other?
- While standing on one leg, try lifting your other leg as high as you can.
- While balancing, keep your arms by your side then raise them like a "T." Which position makes it easier to balance?

Community connections: Go to your local playground and try balancing on different play structures. Invite a yoga instructor to show your group some balancing poses.

Vocabulary: balance, long, short, thick, thin

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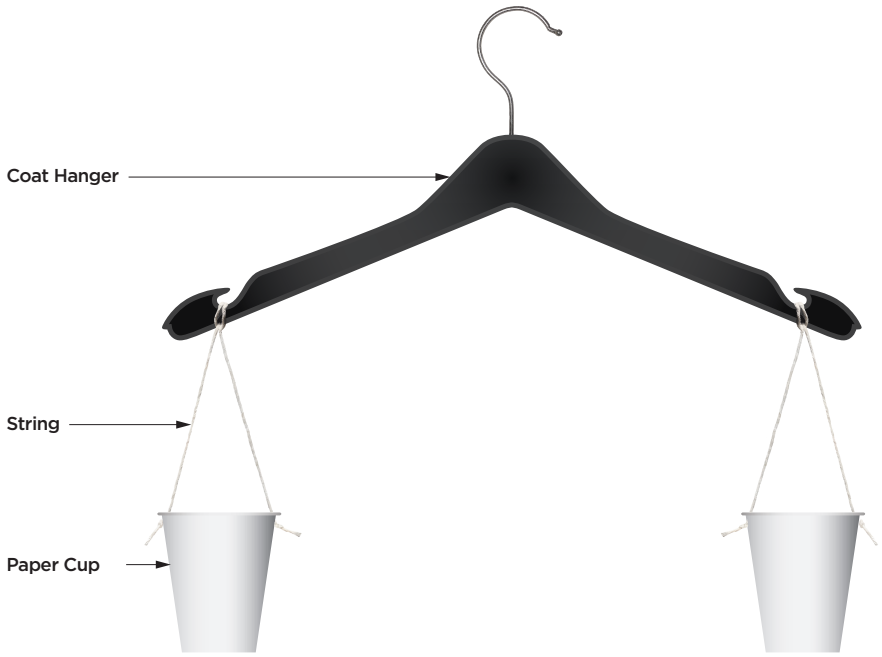
Balance This

Exploration



Two-Cup Balance

Balance scales are the perfect way to see how much things weigh. Experiment with different items to get a sense about balance and weight. Try to estimate if the items that are placed on the scales will balance.

What you need

- Plastic clothes hangers
- Paper or plastic cups (two per hanger)
- String
- Nail, scissors or hole punch
- Collection of items to be weighed—small and large, light and heavy (e.g. plastic animals, markers, crayons, large washers, erasers, wooden blocks). Be conscious of hazardous items (e.g. marbles).

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Balance This

Exploration

Preparation

To make the two-cup balance scale:

1. Punch holes on opposite sides of the cup rims (two holes per cup).
2. Cut two pieces of string, about 1m long.
3. Tie each end of one string securely to one cup. Repeat for the second cup.
4. Attach the centres of the strings to the hanger. The easiest way to do this is to use the hooks or dents on the "shoulders" of the hanger. If your hanger doesn't have these, you might need to use tape to keep the strings from slipping around.

Hands on

1. Before using scales, put an object in each hand and predict which one is heavier or lighter.
2. Hang the scale on a doorknob or on a rod.
3. Choose 2 objects and place one in each cup. Try again with new objects and experiment with more than one object in each cup.
4. Add objects to each cup, so that they are balanced.

Questions to ask

1. Which objects are heavier? Which are lighter? How can you tell?
2. How can you tell when the cups are balanced?

What's next?

- Choose a standard item: a small block, ball or plastic circular counters. How many blocks does it take to balance a toy car on the scale? A plastic dinosaur? Record your results.

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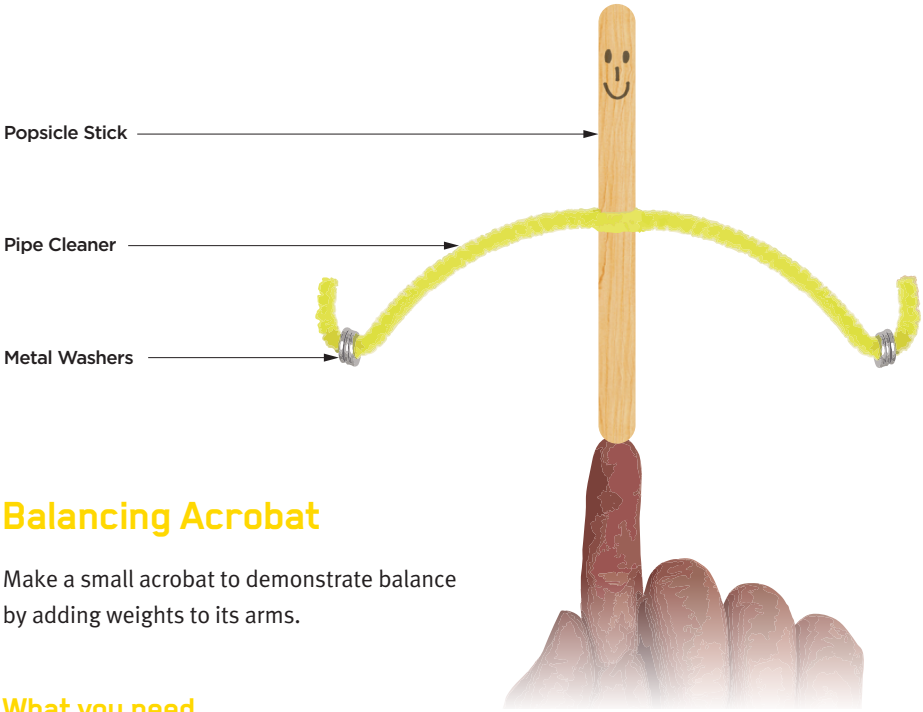

Balancing Acrobat

Make a small acrobat to demonstrate balance by adding weights to its arms.

What you need

- Popsicle stick
- Pipe cleaner
- Markers
- Washers (different sizes and weights)

Hands on

1. Wrap the middle of a pipe cleaner once around one end of the popsicle stick. Two "arms" of the pipe cleaner should be extending from the popsicle stick.
2. Give your acrobat a face.
3. Attach a washer of the same size to each arm.
4. Balance the acrobat on your finger.
5. Change the number or types of washers on your acrobat.
6. Predict and test whether the acrobat will balance.

Hint: Washers are easily swallowed. Supervise accordingly.

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Balance This

Make This

Questions to ask

1. Can you balance just the popsicle stick on your finger?
2. Is it easier to balance the popsicle stick with the washers? Why?

Hint: Experiment with different sizes and weights of washers.

What's next?

- Make variations of the acrobat, by putting the pipe cleaner in the middle of the popsicle stick by changing the length of its arms.
- Try Brilliant Balance from "Amazing Me" in the first edition of *Big Science for Little Hands* (scienceworld.ca/bslh).

Community connections: Think about the people in your community who need to balance while at work (e.g. dancers on stage, fishers on their boats and firefighters or carpenters on ladders). Make a list of these people and do some drawings of them balancing.

Vocabulary: balance, weight, even, washer

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Beanbag Balance Game

Use your body to explore movement and practice balance while playing a cooperative game.

What you need

- Beanbags
- Music with a variety of tempos
- Appropriate device to play music

Preparation

1. Set up an area where there is room for lots of movement. Gather enough beanbags so that each person has one.

Hands on

1. Put a beanbag on your head and try to keep it steady as you walk slowly around the area.
2. Then, try walking in a variety of ways—fast, slow, on tiptoe, with knees bent, backwards—while trying to keep the beanbag balanced.
3. Play Beanbag Freeze: use a bell to mark the start and end of the game. Place your beanbag on your head. Play some music and move to the beat. If your beanbag drops off your head, you have to freeze. When you see someone frozen, you need to tap that person on their shoulder to unfreeze them. Then the person can pick up their beanbag and put it back on their head.

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Hint: To make the game harder, make unfreezing more difficult. For example, you need to pick up the frozen person's beanbag and place it back on their head without having your own beanbag fall. If your beanbag falls while picking up someone else's, you have to freeze too.

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More Ideas

Teacher Resources

Check out these books for movement inspiration!

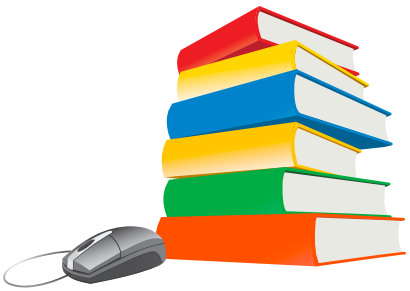
- *Jump* by Steve Lavis
- *Toddlerobics* by Zita Newcome

Literature for Children

- *Balancing Act* by Ellen Stoll Walsh

Online Resources

- Play a series of animated balance games from PBS Kids with *Sid the Science Kid*.
  - pbskids.org/sid/fablab_panbalance.html
  - pbskids.org/sid/balancingact.html
- Set up a balance activity with instructions and video of children explaining the activity from *Peep and the Big Wide World* (peepandthebigwideworld.com/en/parents/activities/3/balancing-on-a-seesaw/).



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Five Grey Elephants

Tune: *Hush Little Baby*

One grey elephant balancing.
Step by step on a piece of string.
He thought it was such a wonderful stunt.
That he called for another elephant.

Two grey elephants balancing.
Step by step on a piece of string.
They thought it was such a wonderful stunt.
That they called for another elephant.

Three grey elephants balancing.
Step by step on a piece of string.
They thought it was such a wonderful stunt.
That they called for another elephant.

Four grey elephants balancing.
Step by step on a piece of string.
They thought it was such a wonderful stunt.
That they called for another elephant.

Five grey elephants balancing.
Step by step on a piece of string.
All of a sudden the piece of string broke.
And down came all the "ele-folk."

Roly Poly (Rhyme)

Roly Poly Roly Poly up up up
Roly Poly Roly Poly down down down
Roly Poly Roly Poly ever so slowly
Roly poly Roly poly quick quick quick!

Hint: Accompany with actions on a yoga mat.

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Let's Reach (Rhyme)

I reach to the sky
I bend down to the Earth
I look up to the sky to watch the birds fly
I jump back and watch the ants walk by
Now I face the wind and feel the air
Then I sit on the ground.

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