

Amazing Me

Science for 3–5 year-olds



We gratefully acknowledge the financial support of the Province of British Columbia through the Ministry of Education.

CAREGIVERS, PARENTS AND PRESCHOOL EDUCATORS provide many creative opportunities for young children to explore their world. That's why we've created *Big Science for Little Hands*, an evolving suite of science resources for teachers and caregivers of 3- to 5-year-old children. Our aim is to develop activities that inspire further exploration and discovery. We hope that these resource materials complement what you are already doing and offer additional ideas to inspire further exploration.

The activities have been designed for experiential learning. The intent is for children to experience each concept, rather than simply talking about it. Each activity can serve as a starting point for further exploration.

The activities are divided into the following categories.

Introductions—These could be used to set the stage for the topic, or to find out how much the children already know. They're low-preparation, low-mess activities for a large group to do together.

Explorations—These require a bit more set-up and clean-up. They work best with small groups of children. They're intended to be open-ended, with a teacher or other adult available to pose questions and expand the activity as required.

Make This—These explorations result in a product that children can take home or display.

All Together—This big whole-group activity would make a great wrap-up to the topic.

Connections—Ideas for extending the topic in cross-curricular ways.

You know your group best! There is no perfect way to order or arrange these activities. They can be combined to spend an entire day on one theme, or used one at a time over several weeks. Please pick and choose, expand or contract as makes sense for your group of children.

Check for more resource packages coming soon:
scienceworld.ca/preschool

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Science World British Columbia
TELUS World of Science 1455 Quebec Street, Vancouver, BC Canada V6A 3Z7
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Topics Now Available:

Round the Circle

Activities to explore round things and things that roll.

Wet & Dry

Activities to explore being wet and dry.

Sticky Stuff

Activities to explore stuff that sticks.

Size Matters

Activities to explore things that get bigger and things that get smaller.

Mysterious Mixtures

Activities to explore dissolving, separating, mixing and combining.

Super Sleuths

Activities to practice science process skills such as observing, comparing and contrasting and using tools like magnifiers.

Reflections and Shadows

Activities to explore light, mirrors, reflection and shadows.

Amazing Me

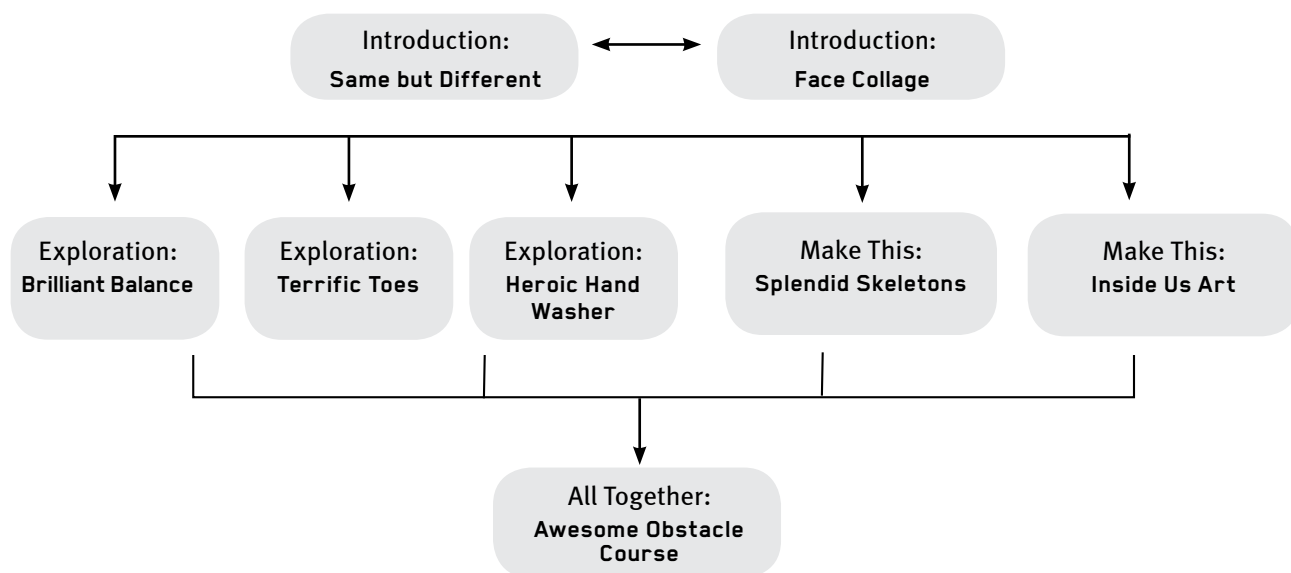
Discover the amazing things your body can do, both inside and out.

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A Path Through *Amazing Me*

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

- Do one or two *Introductions* at circle time in a large group.
- Have the children work on *Explorations* and *Make This* activities in smaller groups at stations around the room.
- Try *All Together* just before the end of the school day, or at the end of working on the topic.



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: bcded.gov.bc.ca/early_learning/)

Share with us!

Please send us your feedback, suggestions and ideas.

Email bslh@scienceworld.ca or visit scienceworld.ca/preschool and fill in an online survey.

Thank you to the children and families around British Columbia who assisted with the testing of the activities in this package. Thank you to The Canadian Children's Book Centre for recommending many wonderful children's stories.

Amazing Me: Introductions



Same but Different

Humans are essentially the same: we all have ears, hearts, lungs, toes, etc. However we all look a little bit different and have skills/abilities that make us stand out. Celebrate our similarities and our differences!

What you need

- Butcher, chart paper or other large format paper
- Crayons or markers
- Art supplies (coloured construction paper, yarn, buttons, etc.)

Hands-on

1. Trace the outline of each child on a sheet of large paper.
Optional: cut out the body shape.
2. Decorate each body shape with various materials to create features (yarn for hair, heart, lungs, etc.)

Questions to ask

How are we all the same? How are we different?
What kinds of things should we add to our bodies? How can you make it look like you?

What next?

Come back to the body outlines and add more features as you learn about new parts of the body.

Invite guests to try and guess which body shape belongs to each child.

Try lining up from shortest to tallest or ordering feet and hands from biggest to smallest.

Notes for next time

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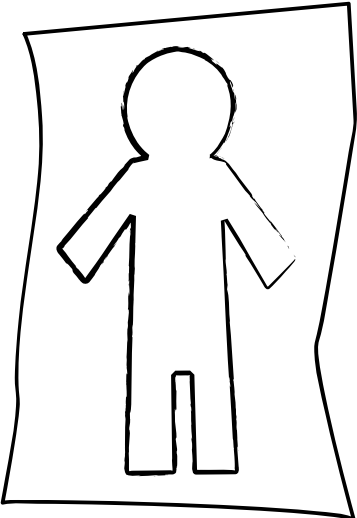
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Where to next?

- INTRODUCTIONS**
 - ▶ *Same but Different*
 - Face Collage
- EXPLORATIONS**
 - Brilliant Balance
 - Terrific Toes
 - Heroic Hand Washer
- MAKE THIS**
 - Splendid Skeletons
 - Inside Us Art
- ALL TOGETHER**
 - Awesome Obstacle Course
- CONNECTIONS**
 - More Ideas



Face Collage

We all have eyes, a nose and a mouth, but everyone has slightly different facial features that make them unique!

What you need

- Images of eyes, noses, mouths from magazines or photographs
- Paper
- Glue
- Mirror (optional)
- Crayons or felt markers
- Yarn (optional)

Hands-on

1. Have the children name the various parts of our faces (eyes, nose, mouth, etc.)
2. Observe friends around you to notice similarities and differences.
3. Choose someone to make a picture of (self, friend or family member)
4. Select eyes, nose and mouth and glue to paper to make the face of the person selected.
5. Draw on hair with a crayon or glue on hair made from yarn.

Questions to ask

- Can you tell me the names of some of the features we find on our face?
- What colour are my eyes? What colour are yours?
- What makes your face different from him/her? What things are the same about your faces?
- Who will you make a picture of? What colour eyes does he/she have?
- Can you find a nose that looks like theirs?
- Can you add on any other features that are missing with the crayons?

What next?

- Explore facial expressions. Can you tell what someone is feeling from the way they look? How can you tell?
- Make a pedigree (a special kind of family tree) that shows eye colour in your family. What colour are your mother's eyes, your father's eyes and your sibling's eyes?
- Make a chart showing who has blue, brown, green or hazel eyes in your group/class. Which colour is the most common?

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Brilliant Balance

Balancing involves many muscles, hand/foot coordination and the inner ear. The tightrope pole makes it easier to balance by lowering your centre of gravity.

What you need

- Plank of wood (2x4), or low balance beam
- Broom stick, long pole or dowel
- Bean bags or bags with handles

Hands-on

1. Set up a balance station in a open area of a room
2. Attach the bean bags or bags with sand to each end of the pole (like a tightrope walker's pole)
Hint: if a pole is too difficult, have the children hold bags with something heavy in their hands or tie strings to the beanbags.
3. Try walking along the balance beam, putting one foot in front of the other. Hold an adult's hand if needed.
4. Try again using the pole and beanbags.
5. Try walking perpendicular to the board.
6. On the floor, try to balance on one foot and then the other.

Questions to ask

- Can you walk along the balance beam?
- How can we make it easier or harder to balance on the beam?
- Is it easier with your shoes off or on?
- When you held on to the pole, was it easier or harder to balance on the beam?
- Can you balance for longer on your right foot or on your left foot?

What next?

- Modify the surface of the balance beam, or change the height and/or width of the beam.
- Try walking backwards on the balance beam.
- Practice walking on painted lines at the playground or seams in the sidewalk.
- Make a balancing toy (<http://www.scienceworld.ca/pdf/TTH/BalancingAct.pdf> or <http://www.scienceworld.ca/pdf/TTH/BalancingButterfly.pdf>)
- Practice hopping on one foot and then have a hopping contest to see who can hop the longest. With older children try hopping tag.

Hint

To make this activity easier, start with a double or triple line of tape on the floor as the "balance beam".

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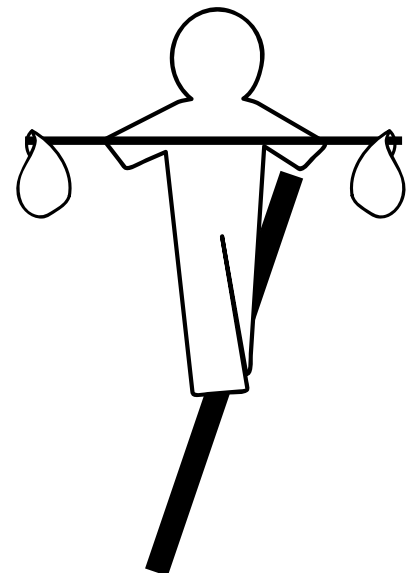
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CONNECTIONS

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Terrific Toes

Many animals use their toes and feet like fingers and hands. Test the ability of your “monkey toes”.

What you need

- A variety of small objects (e.g. fabric scraps, sponge, pencil, toys, large nuts/bolts, pompoms, sock, etc.)
- Stopwatch (optional)

Hands-on

1. Spread out the objects on the floor.
2. With bare feet, try to pick up as many of the objects as possible with your toes.

Questions to ask

- Which objects were easy to pick up? What was similar about them?
- Which objects were difficult to pick up? What was similar about them?
- What’s special about your hand that makes it good at picking things up?
- Did you have more success with your left foot or your right foot?
- What else can you do with your toes (e.g. paint, draw)?

What next?

- Try picking things up with your elbows.
- Time yourself using the stopwatch. How long does it take you to pick up all the objects?
- Pick up an item with your toes and see how far you can toss it.
- See how many items (e.g. beanbags) you can stack on top of each other (building a tower) before your tower topples.
- Talk about famous artist Christy Brown of My Left Foot fame who painted with his toes. Check out other foot painters at www.mfpaCanada.com, and then try creating art with your feet.
- Watch some video of gorillas or monkeys using their feet to eat, climb, etc. Some even make art.

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Heroic Hand Washer

Washing our hands is essential for good hygiene. By washing our hands we help our body stay healthy by reducing the number of germs that we put in our eyes and mouths. Challenge yourself to this test of hand washing ability.

What you need

- Washable paint
- Sink or bucket
- Soap
- Towel or paper towel

Hint: Glo Germ is a product used by hospitals and kitchens to test how well their employees wash their hands. It glows under black light. You can buy a Glo Germ kit from www.teachersource.com or www.boreal.com

Hands-on

1. Dip your hands in the paint and rub it all over.
2. Allow hands a few minutes to air dry. Sing a song to pass the time.
3. Wet your hands, put some soap on your hands then scrub well. Singing “happy birthday” through twice should be enough time to scrub your hands thoroughly. Rinse.
4. Dry your hands well with a paper towel.
5. Notice the areas where the paint was hard to get off-you need to make extra effort to get these spots clean every time you wash.

Questions to ask

- Why are we putting paint on our hands?
- Why do we wash our hands?
- Are you a good hand washer?
- Were you able to get all the paint off your hands?
- Where is there still paint? Which spots were harder to get the paint off of?

What next?

Make this activity more challenging by using a paint colour that is more difficult to notice (e.g. pink).

Try using Glo Germ (see **Hint**).

Have a hand washing race between two teachers, two children or a child and a teacher. Whoever gets their hands clean the quickest wins!

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CONNECTIONS

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Splendid Skeletons

Our skeleton is a rigid framework of bones that protects and supports our organs and provides attachment for muscles. Without it we wouldn't be able to stand or walk.

What you need

- Play dough, plasticine or clay
- Toothpicks or coffee stirrers
- X-rays of human bones

Hands on

1. Look at some x-rays of human bones.
2. Construct a clay figure with just clay alone.
3. Construct a figure with the toothpicks or the coffee stirrers as its skeleton.
4. Try to make both figures walk and move

Questions to ask

What can we see on these x-rays? What are we looking at?

What do bones/skeletons do? What is their job?

Can you feel your bones? Where do you not have bones?

What creatures don't have bones?

Do both your clay figures stand up straight? Are they strong? How are they the same? How are they different? Is the one with "bones" stronger? How come?

What next?

Compare mammal, bird, reptile and insect x-rays. You can find images online or purchase them from: www.wardsci.com or www.education.spectrum-nasco.ca

Talk about what happens when bones break. Make pretend casts for fingers from papier mache.

Get some real bones: compare chicken bones, fish bones and mammal bones (from a butcher shop). Borrow human bones from a doctor's office, museum or school.

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More Ideas



Amazing Me: Make This



Inside Us Art

Our body contains many different things under our skin: bones, muscles, blood, blood vessels, organs, etc. Each thing has a specific role and is important for a variety of reasons.

What you need

- Variety of art materials (yarn, pipe cleaners, fabric scraps, tissue paper, straws, popsicle sticks, cotton swaps, felt scraps, etc.)
- Books or websites with anatomy images, x-rays, etc.

Hands-on

1. Look at some anatomical drawings and images in books or online. Talk about what you see.
2. Create art using a variety of materials to represent what humans look like on the inside

Questions to ask

What kinds of things are inside our body? What do they do? What do they look like?
Do any of these art materials remind you of anything inside your body?
Can you tell me about your art? What have you made?
What is inside you that you can't see? Where are your thoughts and feelings?

What next?

Check out some 3-D models of the human body: a museum, high school, university or doctor's office/hospital should have some.
Invite a doctor, nurse or other health professional to visit.
Learn more together about any area of particular interest.
Project x-ray images on a wall or screen using an overhead projector.
Invite children to explore what they see.
Listen to your insides using a stethoscope and imagine what's in there.

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Awesome Obstacle Course

Moving in a variety of ways helps build strong bones and muscles and develops body and spatial awareness.

What you need

- Cushions
- Large cardboard box
- Hoop
- Pool noodles
- Carpet scraps/squares
- Bean bags or soft balls

Hands on

1. Set up the obstacle course in a large open space
2. Challenge the children to move through the course in a variety of ways (over, under, through, crawl, tiptoe, balance, toss, roll, backwards, etc.). Include lots of muscle and strength challenges to emphasize balance, flexibility and accuracy and focus on all the different amazing things the body can do.
3. Try out the course, modify as needed

Questions to ask

What are some different ways we can move our bodies?
How could we use this item (box, noodle, etc.) in our obstacle course?
How could we make our course more or less challenging?

What next?

Adapt the obstacle course to allow children to experience various abilities (e.g. blindfolded with a partner to experience being vision impaired).

Draw a map of the obstacle course.

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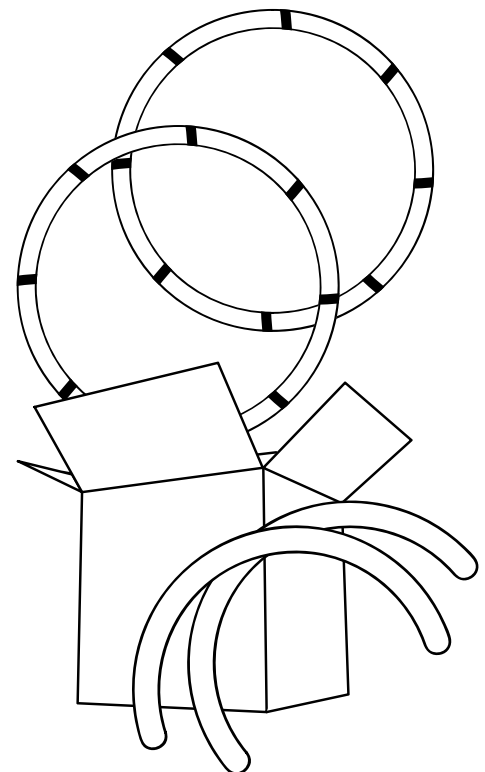
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ALL TOGETHER

- ▶ *Awesome Obstacle Course*

CONNECTIONS

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More Ideas

Songs, Rhymes and Circle Games about the Body

- *Hokey pokey*
- *Head and Shoulders*
- *Simon Says*
- *Dem Bones*
- *I'm Being Eaten by a Boa Constrictor*
- *Thumbkin*
- *Do Your Ears Hang Low?*

Body Snacks

- Witches fingers or thumbprint cookies
- Gingerbread men
- Blood Juice (hint: find the recipe here http://www.scienceworld.ca/pdf/FSN/PALS_CSC_FamilyScience-Body.pdf)
- Whole roast chicken or fish (to look at the bones)

Children's Books about the Body

- *Belly Button Book* by Sandra Boynton
- *From Head to Toe* by Eric Carle
- *Off We Go!* by Beverley Abramson 🍁
- *Penelope and the Humongous Burp* by Sheri Radford 🍁
- *The Best Figure Skater in the Whole Wide World* by Linda Bailey 🍁
- *Drumheller Dinosaur Dance* by Robert Heidbreder 🍁
- *I Am a Ballerina* by Valerie Coulman 🍁
- *Me and You* by Genevieve Cote 🍁
- *The Queen's Feet* by Sarah Ellis 🍁
- *Shoe Shakes* by Loris Lesynski 🍁
- *Wanda's Freckles* by Barbara Azore 🍁
- *Me and My Amazing Body* by Joan Sweeney
- *Outside In* by Clare Smallman
- *Ready, Steady, Grow!* by Sophie Piper
- *All About Faces* by Junko La Zoo
- *The Handiest Things in the World* by Andrew Clements

Resources for teachers

- *The Big Book of Bones: An Introduction to Skeletons* by Claire Llewellyn
- *Eyewitness Books: Skeleton, Visual Dictionary of Human Anatomy*
- *Hop, Skip and Jump* by Peter Walker
- *Healthy Opportunities for Preschoolers Early Learning Practitioners Resource. A Resource of Leap BC* (from 2010 Legacies Now)

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Where to next?

INTRODUCTIONS

- Paint Chip Eye Spy
- Find the Ticking Clock

EXPLORATIONS

- Photo Matching
(Exploring Magnification)
- Do You Know Your Rock?

MAKE THIS

- Fingerprints and Footprints
- Listening Tool

ALL TOGETHER

- Treasure Hunters
- The Goldilocks Mystery

CONNECTIONS

- *More Ideas*

