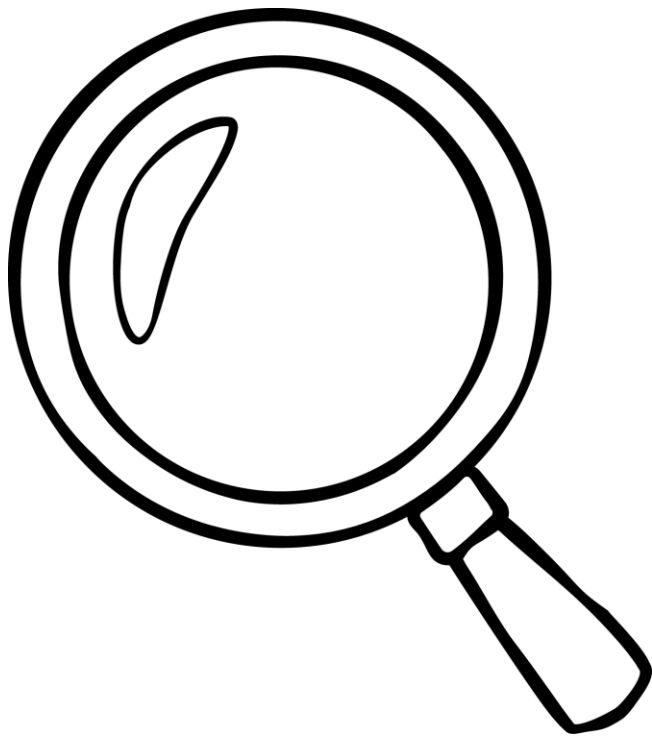


Using  
Curiosity Centres & Literacy Ideas  
to Develop the  
Curricular Competencies  
for Science  
(Grades 1-3)



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# BC Curriculum Cross Grade Big Ideas

Grade 1	Grade 2	Grade 3
<p><b>Living things</b> have features and behaviours that help them survive in their environment</p>	<p><b>Living things</b> have life cycles adapted to their environment</p>	<p><b>Living things</b> are diverse and can be grouped and interact in their ecosystems</p>
<p><b>Matter</b> is useful because of its properties</p>	<p><b>Materials</b> can be changed through physical and chemical processes.</p>	<p>All <b>Matter</b> is made up of particles.</p>
<p><b>Light</b> and <b>sound</b> can be produced and their properties can be changed.</p>	<p><b>Forces</b> influence the motion of an object.</p>	<p><b>Thermal energy</b> can be produced and transferred.</p>
<p>Observable <b>patterns</b> and cycles occur in the local <b>sky</b> and <b>landscape</b>.</p>	<p><b>Water</b> is essential to all living things and it cycles through the environment.</p>	<p><b>Wind, water</b> and <b>ice</b> change the shape of the land.</p>

# BC Curriculum Curricular Competencies

## Science Grade 1-2

### **Questioning and Predicting**

- ❖ Demonstrate curiosity and a sense of wonder about the world
- ❖ Observe objects and events in familiar contexts
- ❖ Ask questions about familiar objects and events
- ❖ Make simple predictions about familiar objects and events

### **Planning and Conducting**

- ❖ Make and record observations
- ❖ Safely manipulate materials to test ideas and predictions
- ❖ Make and record simple measurements using informal or non-standard methods

### **Processing and Analyzing Data and Information**

- ❖ Experience and interpret the local environment
- ❖ Recognize First Peoples stories (including oral and written narratives), songs and art, as ways to share knowledge
- ❖ Sort and classify data and information using drawings, pictographs and provided tables
- ❖ Compare observations with predictions through discussion
- ❖ Identify simple patterns and connections

### **Evaluating**

- ❖ Compare observations with those of others
- ❖ Consider some environmental consequences of their actions

### **Applying and Innovating**

- ❖ Take part in caring for self, family, classroom and school through personal approaches
- ❖ Transfer and apply learning to new situations
- ❖ Generate and introduce new or refine ideas when problem solving

### **Communicating**

- ❖ Communicate observations and ideas using oral or written language, drawing or role-play
- ❖ Express and reflect on personal experiences of place

# BC Curriculum Curricular Competencies

## Science Grade 3

### Questioning and Predicting

- ❖ Demonstrate curiosity *about the natural world*.
- ❖ Observe objects and events in familiar contexts
- ❖ **Identify** questions about familiar objects and events *that can be investigated scientifically*
- ❖ Make predictions *based on prior knowledge*

### Planning and Conducting

- ❖ *Suggest ways to plan and conduct an inquiry to find answers to their questions*
- ❖ *Consider ethical responsibilities when deciding how to conduct an experiment*
- ❖ Safely *use appropriate tools to make observations and measurements, using formal measurements and digital technology as appropriate*
- ❖ *Make observations about living and non-living things in the local environment*
- ❖ *Collect simple data*

### Processing and Analyzing Data and Information

- ❖ Experience and interpret the local environment
- ❖ **Identify** First Peoples *perspectives and knowledge as sources of information*
- ❖ Sort and classify data and information using drawings *or* provided tables
- ❖ Compare *results with predictions suggesting possible reasons for findings*

### Evaluating

- ❖ *Make simple inferences based on their results and prior knowledge*
- ❖ *Reflect on whether an investigation was a fair test*
- ❖ *Demonstrate an understanding and appreciation of evidence*
- ❖ **Identify** some environmental *implications* of their *and others'* actions

### Applying and Innovating

- ❖ **Contribute** *to care* for self, family, classroom and school through *collaborative* approaches
- ❖ Generate and introduce new or refine ideas when problem solving

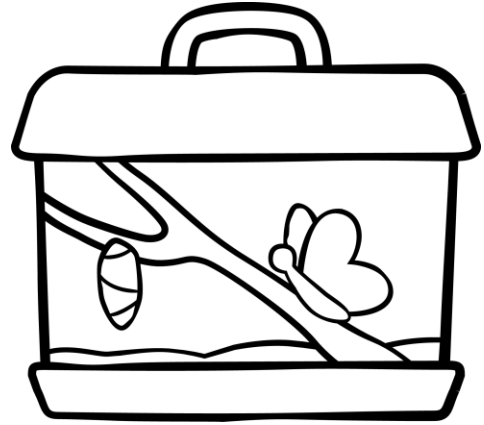
### Communicating

- ❖ **Represent and communicate** *ideas and findings in a variety of ways, such as diagrams and simple reports, using digital technologies as appropriate*
- ❖ Express and reflect on personal experiences of place

Standards in italics are what have changed from grade 1-2 to grade 3

# Science Curiosity Centre Ideas

## Grades 1-3



### **Living Things, Life Cycles and Ecosystems**

- plants, grass
- class pets like a gerbil
- things that are related to living things: fur, leather, wood, bone, bird's nest, wasp nest
- bug boxes, magnifying glasses, empty terrariums or aquariums
- samples of different stages of animal life cycles: egg shells from a bird egg, specimens of insects at different stages
- items relating to stages of a human: diapers, toys bottles, glasses, a cane
- seeds of various flowers and vegetables, bulbs, different kinds of dried leaves from local trees that have fallen, herbs like mint or basil. Make sure these items are in clear containers for safety and allergies.
- ipads to listen to animal sounds

### **Properties of Materials, Materials Change, Matter as Particles**

- a variety of objects (solids) that look and feel different but are all solids: such as blocks, toys, stuffed animals, beads, shells, modelling clay, books
- maker type items for construction like wood, craft sticks, thread, foam, plastic wrap, wire, clothes pins, ribbons, string, glue, tape pipe cleaners. Items from the recycling bin like paper rolls, plastic containers, lids, boxes.
- variety of liquids to test viscosity, containers with water to test buoyancy
- playdough

# Science Curiosity Centre Ideas Grades 1-2

## Light and Sound



- light bulbs
- plants and a light source to observe over time
- musical instruments or items to make them (ie. shoe box and elastic)
- ipads to listen to nature sounds such as crickets (natural)
- Flashlights and white poster boards to create shadows

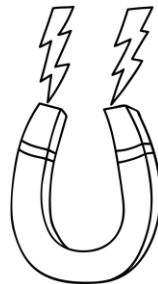
## Patterns in the Sky and Landscape

- items from each of the 4 seasons to sort
- ipads to see a night sky (night sky app)
- modelling clay to make planets, the sun etc.
- indigenous seasonal rounds: provide plastic figurines of salmon, deer, elk, caribou, bear, mountain goat, and beaver. Enlarge a seasonal round image featuring the 4 seasons and have students sort based on the season.



## Forces

- magnets
- balloons for static electricity
- items that can be dropped to look for air resistance (ie. feathers, a balloon, a ruler)
- items that you can push or pull: ie. springs, elastics



## Science Curiosity Centre Ideas Grades 2 -3

### **Essential Water and Water Ice and Wind Effects on the Land**

- mirrors to breathe on for condensation
- items that can be used to replicate the water cycle where students can design/create: ie. cotton ball clouds, mountain models with snow (made out of clay or plastic figurines)
- water tubs with containers and droppers
- rain cloud in a jar supplies: shaving cream, coloured water, eye droppers (see resource page)
- water cycle in a bag: baggies, clear plastic cup (see resource page)
- laminated images of rooms inside homes where students can circle where you might find water.

## Science Curiosity Centre Ideas Grades 3

### **Thermal Energy**

- ice cubes
- salt
- thermometers
- solar powered fans (Amazon has children's)
- dollar store solar powered dancing flowers etc.
- photos of things that expand and contract due to temperature (ie. sidewalks, railroad tracks that have expansion joints, jars that need hot water poured over to open the lid, canning fruit etc.)

# Integrating Literacy and Science

## Centre Materials and Literacy Lesson Ideas

- index cards
- stickie notes
- non-fiction books that match the concepts you are working on
- black line masters like Venn diagrams or T-charts
- selection of pencils/pens
- science journals
- white boards and expo markers

1. Research writing
2. Mini lesson: compare and contrast a fiction and non-fiction text on a topic. Have students decide what the author's purpose was in each book. (Persuade, Inform, Entertain).
3. Create lists: ie. things that push or pull (force)
4. Write or tell a story that has elements of the content being taught: ie. an animal story from birth to older or a story about electricity or space.
5. Read fiction non-fiction relating to the topic as a read aloud, shared reading experience or as part of a guided reading lesson
6. Go on a walk outside to observe things in nature and to develop students' sense of place. Have students:
  - Write/draw their observations on a 5 senses grid (Do not use the taste one.)
  - Write a story/sentence from the perspective of a leaf or other item
  - Draw all examples of water they see and write about why it might be essential
  - Create a story based on loose part items found outside. This story can be spoken, drawn, written or acted out.
  - Label parts of a plant or stages in a life cycle



# My 5 Senses Observations

See	Hear	Touch	Smell	Taste

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See	Hear	Touch	Smell	Taste

## Ideas for Using Ipad for Science and Literacy

Use the camera to take photos of a grade level topic:  
ie. a plant.

1. In photos, open a photo.
2. Click on the three dots ... on the upper right hand side and choose **mark up**.
3. Click on the + sign on the bottom right and choose **magnify**. Pick a part of the image that you want to zoom into for effect. (ie. a plant vein)
4. Click on the + sign again, choose text and label items in the picture. (ie. stem, leaf, roots)

Use the camera to take a **slo-mo** video of how oil and water interact.

Use the camera to do a **time lapse** video of how much water can be collected in a bucket when it rains.

Use the **notes** app to **record** some observations.

Use the **Voice Memo** app to record a reading of a non fiction book on a topic of study.

Possible Topics to Launch Learning and Integrate Curriculum

Grades 1-3

Salmon

Water

The Fraser River

The Pacific Ocean

Temperate Rain Forest

Animals of BC

Weather

Protecting our Earth

All Kinds of Communities

# Resources

## ***Fiction Books:***

Rosie Sprouts Time to Shine by Allison Wortche

Mad Scientist Academy: The Weather Disaster by Matthew McElligott

Cece Loves Science by Kimberly Derton and Shelli R. Johannes

The Water Walker by Joanne Robertson

Meet My Family: Animal Babies and their Families by Laura Purdie Salas

Pumpkin Jack by Will Hubbell

Before and After by Matthias Aregui and Anne-Margot Ramstein (wordless book – great for observation and discussion and as a writing launch)

Cloudy with a Chance of Meatballs by Judi Barrett

## ***Digital and websites:***

Apple.com resources for teachers:

**Everyone Can Create** (photography, drawing editions etc.)

**Night Sky app**

## **Animal sounds:**

<https://www.youtube.com/watch?v=Gg1Awlmc86M>

## **Water Cycle in a bag**

<https://www.1001gardens.org/diy-tutorial-fog-water-rain-create-your-own-water-cycle-in-a-plastic-bag/>

## **Rain Cloud in a Jar**

<https://funlearningforkids.com/rain-cloud-jar-science-experiment/>

**Seasonal Rounds:** [https://www.openschool.bc.ca/elementary/my\\_seasonal\\_round/units.html](https://www.openschool.bc.ca/elementary/my_seasonal_round/units.html)

## **Other Science and Literacy Resources:**

<https://www.steampoweredfamily.com/activities/heat-transfer-projects-for-kids-stem-activities/>

<https://kids.nationalgeographic.com/explore/science/science-lab/>

<https://www.stevespanglerscience.com/>

<https://education.scholastic.ca/productlist/BC-LETS-DO-SCIENCE>

<https://thewritestuffteaching.com/>