





Photo credits

All photos are from Flickr Creative Commons unless otherwise noted.

Cover: HCTF Education

Explorer etiquette: HCTF Education Photo credits continued: Mitchell Joyce

(The following are clockwise from top left)

Fascinating Feathers: Marc Gordon, kathyrobinsonhays, december_snowdrift, john. Reverse, from top: letthere_belight, Andy Reago & Chrissy McClarren, Mark Robinson, Channel City Camera Club, Mother Natured

Wonderful Webs: bramblejungle (inset: Sean McCann x2), CountryMouse13 (inset: Sean McCann, Melissa McMasters), Kate (inset: Jean-Marc Linder, Zachary Llim), Jitze Couperus (inset: Màrtainn MacDhòmhnaill, Répertoire Des Insectes du Québec). Reverse: Sean McCann, Susanne Nilsson

Buzzing Bees & Beyond: Dirk Pons (inset: James Littlejohn), Benny Mazur (inset: Philip Cohen), Andrew Reding (inset: Sean McCann), Lisa King (inset: Johnida Dockens), Michael Klotz (inset: Orangeaurochs), frans (inset: Alabama Extension). Reverse: Patty O'Hearn Kickham

Lovely Lepidoptera: can5dos, Deb Watson, Heidi, smalljude, Washington DN, Mike Freedman, Haneesh KM, Jean and Fred Hort. Reverse: (clockwise from top left) J. Maughn, Jean-Marie Van der Maren, Seabrooke Leckie, Judy Gallagher, Donald Hobern, Melanie Tata, hedera.baltic, Andrew Reding

Amazing Ants: Rachael Bonoan, J. Maughn, Forest and Kim Starr, Ilona L, Cheryl Moorehead, Penelope Noel Gillette. Reverse: m/\RK aNDREWS

Great Gastropods: Henry Alva, J. Maughn, Ryan McMinds, nmahieu, Alex O'Neal, allysa hallett. Reverse: (clockwise from top left) Jan Hamrsky, Exmoor NP, Eva Funderburgh, Gertjan van Noord, Ron DeCloux

Brilliant Broad Leaves: Andrew Reding, Eli Sagor, Flora Orientalis Cascades, Andrew Reding, Lotus

Johnson, Luke McGuff. Reverse: (clockwise from top) J Brew, Becky McCray, Andre Zverev, David Seibold, northofsweden, Toni Vuohelainen

Cool Conifers: The Tree Library, Rick Dalrymple, Ross Bayton, J. Maughn, Thayne Tuason, Andrey Zharkikh. Reverse: (from top) Willamette Biology, Tab Tannery. HCTF Education

Powerful Pollinators: G. L. Dearman, TJ Gehling, wikipedia, Andrew Reding, Helen Haden, Ivan PS, Conall, nutmeg66. Reverse: lovecatz

Glorious grasses: J English, USFWS Mountain-Prairie, Matt Lavin x3. Reverse: maplegirlie

Super Seeds: M. E. Sanseverino, Andreas Rockstein, Matt Lavin, Joe Decruyenaere, Pewari, Lotus Johnson, Reverse: Kanu Hawaii

Wiggly Worms: Lloyd Davies, Richard May, Jennifer Aitkens, Lynette Elliot, Agroscope. Reverse: Kurayba

Incredible Insects: Andy Reago & Chrissy McClarren, Arthur T. LaBar, Don Burkett, Jerry Ting, Michael H. King, Kent McFarland, Thomas Shahan. Reverse: HCTF Education

Beautiful Beetles: Jordi Sz, Corey Raimond, Jean-Yves Rasplus, Judy Gallagher, Carla Kishinami, Aaron Carlson. Reverse: Jo Zimmy Photos

Fabulous Flies: Wayne S. Grazio, Brenda Dobbs, Ryszard, Didier, Gertjan van Noord, Frank Lawler. Reverse: Mosman Library

Big On Bugs: Reva G, Pierre Bornand, Andrew Reding, perspicacious photo, Simon Oliver, Christophe Quintin. Reverse: Mike Rastiello

Cricket Chorus: Judy Gallagher, JanetandPhil, Celeste Ramsay, Judy Gallagher, Mr. TinMD, Donald Hobern. Reverse: Daniel Paquet

Watchable Wildlife Signs: NC Wetlands, mia & steve mestdagh, Andrew, USFWS Midwest Region, Lorianne DiSabato. Reverse: Sarah Morris

Magical Mosses: Udo Schmidt, wikipedia, Paul Wilson, Nate Roe, Dick Haaksma, Amadej Trnkoczy. Reverse: BlueRidgeKitties, Kevan



Explorer Etiquette

When we think about nature, we may picture uninhabited wilderness – nature that is where people aren't. But the truth is that we are a part of the natural world and that nature surrounds us everywhere.

Use these cards in the schoolyard, at home, or in a local park. Give one to out to each person, or focus on one card to explore as a group! Revisit the same card in different seasons to see what new things can be found and what new patterns are revealed.

As we explore, we must show respect for the natural world and the living things we share it with. Natural spaces close to populated areas experience a lot of human impact because they're visited frequently by large numbers of people. Here are some ways we can lessen our impact, respect our wildlife neighbours, and enjoy nearby nature.

- Stay on the trail. Minimize your impact on soil and vegetation and help prevent the spread of invasive plants. Leave some areas just for wildlife.
- Take photos not specimens. Observe living organisms in their natural habitat. This allows them to continue to grow and remain part of the environment. Taking photos, making drawings, or writing notes are great ways to continue observations or make identifications later.
- Let wildlife be. When observing wildlife, do so quietly and keep your
 - distance. Using binoculars is a great way to see wildlife in detail from afar. Do not feed them food meant for people. Keep your dog on a leash. Chasing or otherwise disturbing wildlife can cause them stress and harm.
- Leave no trace. Return the area to the state in which you found it! Pack out your garbage and pick up after pets. Put rocks and logs back in their original positions after looking under them.





Photo credits continued

Fantastic Fungi: Sylvia Sassen, Bernard Spragg NZ, Lukas Large (inset: Tatiana Bulyonkova), Màrtainn MacDhòmhnaill, wikipedia. Reverse: J English x2

Likeable Lichen: Richard Droker x2, Bob Danley, J. Maughn, Richard Droker, Björn S. Reverse: (from top) Richard Droker, Joan Disley, Peter Stevens, siaron james

Neat Nests: Robert Pruner, Sault Naturalists, Bryant Olsen, Duncan M, Herman Beun, Peter Simpson. Reverse: U.S. Fish and Wildlife Service Southeast

Incredibly Invasive Plants: Andreas Rockstein, Henry Burrows, Philip Goddard, Nicholas Turland, James St. John, Александр Б, Jürgen Mangelsdorf, Andreas Rockstein. Reverse: Fellowship of the Rich

Flowery Fruits: (from top, I to r) pfly, pete veilleux, Lynette Elliot, Flora Orientalis Cascades, Rocky Mountain National Park, James Gaither, Laval Roy, Roy Dalrymple, Duane Roy. Reverse: Easy Kitchen, David Bennison

Awesome Amphibians: Andrew Reding, Charles (Chuck) Peterson, Cataloging Nature, John P Clare x3, Oregon State University, J. Maughn. Reverse: J English

Marvelous Macroinvertebrates: Katja Schulz, Dave Huth, Paul Claridge, Mark Robinson, Jacinta Iluch Valero, Charles Tilford. Reverse: (from top) John Hallmén, Chris Bradbury, Jan Hamrsky, Stephen Walker, HCTF Education

Splendid Squirrels: Tom Murray, David Seibold, Jimmy Smith, Nick Varvel, Jasper Nance, Darren Kirby, Naoki Takebayashi, Ben Bawden. Reverse: Province of British Columbia, Steve Baker

City Critters: Florida Fish and Wildlife, SoulRider.222, lesliezemenek, byron, Wheeler Cowperthwaite, woodleywonderworks.

Reverse: Andrew Reding, Tjflex2

Card list: northofsweden
Back cover: HCTF Education

Content and design: Juniper English

Editor: Stephanie Weinstein







Tail Feather



Contour Feather





Facinating Feathers

Nature notes:

- Feathers are made of a protein called keratin, which is the same material that makes up our fingernails and hair.
- Feathers grow from a bird's skin similar to the way hair grows from our head. When a feather becomes old or damaged, it is shed and replaced.
- Feathers allow most birds to fly. An owl's extra soft and fringe-edged feathers gives them the ability to fly silently.
- Feathers keep birds warm by trapping heat.
- Birds preen with oils from a gland near the tail keep their feathers dry while in the water.
- Feather colour can help to attract a mate or to camouflage for protection against predators.

Some types of feathers found on BC birds:

Wing feathers for flight have uniform, windproof surfaces. These feathers are long, strong, and asymmetric with a less flexible leading edge.

Tail feathers are often similar to wing feathers but more symmetrical. In some birds, tail feathers have evolved into showy ornaments to attract a mate and are not used in flight.

Contour feathers cover a bird's body like shingles, keeping it sleek and waterproof. They are found everywhere except the beak, legs, and feet.

Down feathers have a fluffy structure that traps body heat in pockets of air. It's also used by birds to line their nests.

Try This! Go on a feather hunt. Use magnifiers to look closely at their structures. How many different types of feathers can you find?













Orb Web

Top: Banded garden orbweaver (Argiope trifasciata) Bottom: Cross orbweaver (Araneus diadematus)



Sheet Web

Top: Sheetweb spider (Neriene digna) Bottom: Filmy dome spider (Neriene radiata)



Funnel Web

Top: Giant house spider (Eratigena atrica) Bottom: American grass spider (Agelenopsis utahana)



Irregular Web

Top: Cellar spider (Pholcus phalangioides) Bottom: Hacklemesh spider (Callobius spp.)



Wonderful Webs

Nature notes:

- Spiders make their webs from silk, a natural fibre made of protein. Spiders have silk-spinning organs called spinnerets on their abdomen.
- Spiders (Arachnids) aren't the only creatures that make silk. Many types of insects spin silk to make protective cases, such as aquatic caddisfly larvae tubes, butterfly chrysalises and moth cocoons.

Some types of spider webs found in BC:

Orb webs are wheel-shaped webs often found in open areas: between trees, tall grasses, or buildings. Orb spiders often wait for their prey in the center of the web.



Sheet webs are hammock-like and often found between plant branches. Above the web are horizontal threads. When a flying insect hits these threads, it falls onto the sheet section below and is captured by the spider.



Funnel webs may be found in short grasses, shrubs, wood piles, and around buildings. The spider waits for prey at the narrow end of the funnel. When an insect touches the web, the spider shakes the strands to trap it.



Irregular webs are a shapeless jumble of threads attached to a support. Many types of garden and house spiders make tangle webs, often in corner areas and small spaces.



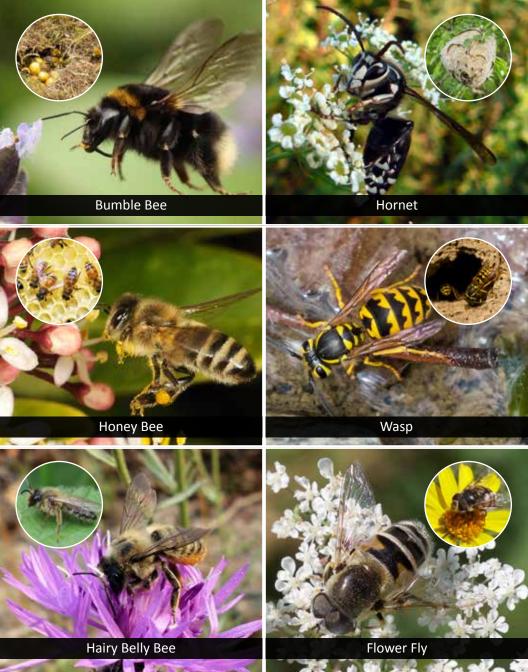
No webs! All spiders make silk but not all spiders make webs. Some species ambush or actively chase down their prey. These spiders use silk to line burrows, wrap egg cases, or tether themselves to a surface.



Red-backed jumping spider (*Phidippus johnsoni*)



Try This! Look for webs in the early morning when they glisten with dew. Can you find the spider who made the web?





Buzzing Bees & Beyond

Nature notes:

- Wild or native bees do not produce honey.
- Only domesticated honey bees and native bumblebees live in hives.
 All other native bees live alone and are solitary nesters.
- Solitary nesters roll pollen and nectar into a ball called a"bee loaf" and lay on egg on it. They lay their eggs in tunnels in the ground.
- Not all bees are striped black and yellow. Some are orange, brown, metallic green or blue.

Some types of bees and bee look-alikes in BC:

Bumble Bees are large and fuzzy. They build colonial nests in holes in the ground or clumps of grass. Unlikely to sting unless defending their nest.

Honey Bees are slightly fuzzy. They were brought from Europe to make honey and pollinate crops. They build hives in commercial boxes or tree hollows. They die after stinging and only sting if provoked or stepped on.

Hairy Belly Bees have hairy bellies! Numerous hairy belly bee species are native to BC including orchard bees, leaf-cutter bees and resin bees. All are solitary. Unlikely to sting unless provoked or stepped on.

Bald-faced Hornets are black and white with hairless bodies.

They build large paper nests, often in trees or under eaves. They will vigorously defend their nest, stinging repeatedly.

Western Yellowjacket Wasps are black and yellow with hairless bodies.

They live in the ground and in hollow logs and other structures.

They will sting repeatedly to defend their nest or if threatened.

Flower flies have eyes which join in the middle like ski goggles. They feed mainly on nectar and pollen from flowers. Their colouration is to scare off predators. They do not sting.

Try This! Find a patch of flowers and look for bee-like visitors. When foraging at flowers, bees and wasps aren't aggressive and are safe to watch. How many different types of visitors can you spot?





Lovely Lepidoptera

Nature notes:

- Butterflies and moths belong to a group of insects called *Lepidoptera*, meaning 'scaly-wings' in Latin. Butterflies make up only about 10% of the group, while moths make up the other 90%!
- A butterfly's antennae are club-shaped while a moth's antennae are feathery or saw-edged.
- Butterflies tend to fold their wings vertically up over their backs, although they will bask with their wings spread for short periods.
- Moths tend to hold their wings in a tent-like fashion or flat against the surface they are resting on.
- Butterflies are primarily active during the day, while most moths are more active at night or at dusk.
- While transforming into a winged adult during their pupal phase, moths are wrapped in a silk cocoon. Butterflies make a hard, smooth chrysalis.

Some types of butterflies and moths in BC:

Lorquin's Admiral (Limenitis lorquini)

Isabella Tiger Moth (Pyrrharctia isabella)



Western Tiger Swallowtail (Papilio rutulus)



Hemlock Looper Moth (Lambdina fiscellaria)



Cabbage White (Pieris rapae)
Introduced



Brown House Moth (Hofmannophila pseudospretella) *Introduced*



Try This! Be a Lepidoptera Tracker! Look for butterflies visiting flowers or mud during the day. Look for moths attracted to lights at night.







Amazing Ants

Nature notes:

- Ants are one of the most abundant creatures on the planet, with more than 12,000 described species!
- Ants are social insects and live in colonies. The colony is made up of
 one or more egg-laying queens and a large number of female worker
 ants who tend to her, build and maintain the nest, forage for food, care
 for the young, and defend the nest from intruders. Male ants, called
 drones, have wings and their only function is to mate with the queen.
- Ants are important! They disperse seeds, aerate soils, and are an important food for other animals, from beetles to birds and bears.

Some types of ants found in BC:

Western Thatching Ants: Black and red ants, found in southern BC. They build and live in large, thatched mounds of vegetation. These mounds insulate the colony against extreme hot and cold temperatures. Huge colonies can contain hundreds of thousands of workers.

Common Black Ants: Black, medium-sized ants, found throughout North America. They nest in soil, under stones, and in rotten wood.

Odorous House Ants: Small, black ants. Commonly found in homes. They are strongly attracted to sweet substances. When crushed, these ants have an unpleasant smell. Nest in soil, under stones and in dead wood.

Western Carpenter Ants: Large, black ants with dark red legs. They nest in dead wood, including wooden buildings. They dig tunnels in wood to create their nests, decomposing downed trees and recycling nutrients.

Pavement Ants: Small, dark brown ants introduced from Europe. They often make their nests under pavement. Colonies will frequently attack nearby enemy colonies resulting in large side-walk battles that may leave thousands of ants dead.

Try This! Make an ant picnic with small pieces of food. How long does it take for an ant to find it? For ten to arrive? What foods do they prefer?



Pacific Banana Slug (Ariolimax columbianus)



Robust Lancetooth Snail (Haplotrema vancouverense)



Leopard Slug (aka: Giant Gardenslug) Invasive (Limax maximus)



Pacific Sideband (Monadenia fidelis)



Black Slug Invasive (Arion ater)



(Cepaea nemoralis)



Great Gastropods

Nature notes:

- Slugs and snails belong to a group of invertebrate animals called gastropods. The word 'gastropod' comes from the Greek words gastros (stomach) and podos (foot). This name was given to the group because their stomach sits on top of a single, muscular "foot", which runs along their underside.
- A snail's shell is a protective place to retreat from dry conditions and predators. Without a shell, slugs can squeeze into narrow places where snails don't fit, such as under bark.
- Slugs and snails produce sticky mucus to help them glide over the ground, climb vertically, and even upside down! The mucus also protects them from predators and is used in communication.
- At the front of their bodies are four tentacles which are used to taste, touch, and smell. At the ends of the two longer tentacles are tiny eyes.
- There are at least 26 are invasive species of slugs and snails in BC.
 Most are assumed to have arrived on imported plant materials.

More types of gastropods found in BC:

Freshwater

Freshwater limpet and snail species live in lakes and ponds throughout BC.

Saltwater

Abalone, periwinkles, saltwater limpets, and whelks can be found on coastal shores.

Nudibranchs (sea slugs) come in many shapes and colours and can be seen in tide pools and on marine pilings.

Try This! Follow the trail and find the snail. This is how slugs and snails find one another. Can you track their silvery trail?













(Cornus nuttallii)

Red Alder



Garry Oak (Quercus garryana)



Brilliant Broad Leaves

Nature notes:

- Broad-leaf trees are a group of trees with wide, flat leaves. In temperate regions of the world, they are deciduous, meaning that their leaves drop in the autumn and regrow in the spring.
- The Arbutus (Arbutus menziesii), found on the southwest coast of BC, is Canada's only broad-leafed evergreen tree – and the exception to the rule.
- As autumn gets colder, the tree gets ready to drop its leaves. It stops making chlorophyll (a green chemical used in photosynthesis), which reveals reds and yellows in the leaves that were hidden beneath the green pigment.

As the tree goes dormant, its leaves dry up and fall off. It will remain bare until the rising temperatures and longer days of spring prompt new growth.

some trees drop their leaves?

Some types of broad-leaf trees found in BC:

Bigleaf Maple: Large leaves with five lobes. Found on the South Coast, often in moist soil.

Paper Birch: Leaves oval with pointed tips. Bark is white and papery. Prefers open areas.

Red Alder: Toothed, oval leaves. Inner bark is deep reddish-orange. Common along BC's coast.

Trembling Aspen: Found east of BC's Coast

mountains. Triangular or heart-shaped leaves. Intolerant of shade.

Pacific Dogwood: Found on the South Coast, often along shady streams.

Garry Oak: Found on Vancouver Island and the Gulf Islands. Leaves deeply lobed.

Try This! "Adopt" a broad-leaf tree and visit it regularly. How does it change throughout the seasons?









Why do

Arbutus

The broad surfaces of leaves lose moisture in the dry winter air and catch the wind and snow, which could damage the tree. In climates with freezing winters, broad-leaf trees lose their leaves to protect themselves.





Cool Conifers

Nature notes:

- All conifer trees native to BC have leaves that are needles or scales. Most are evergreens as they don't lose their leaves.
- Needles and scales have a thick, waxy coating that retains water and offers protection from frost and insects. Their sleek shape has lower wind resistance to reduce storm damage. Conifers that keep their leaves are able to capture sunlight and create food through photosynthesis all year-round.
- Unlike other conifers in BC that are evergreen, Larch trees shed their needles in the fall, which may help protect their branches from snapping from heavy snowfalls in winter.

 Male pollen cones produce pollen and tend to be smaller and less conspicuous than female cones..
 Female seed cones are fertilized by pollen and produce the seeds. Cone structure differs greatly between conifer families.



Scales

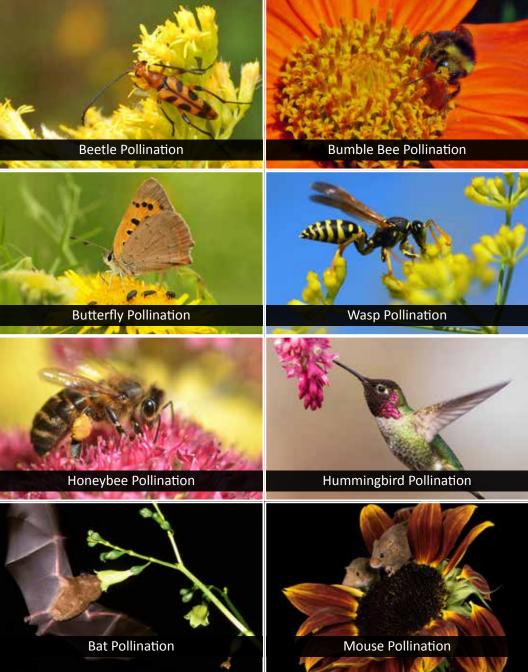
Some types of conifers found in BC:

Pine (pines, spruces, firs, larches) Woody cones with scales overlapping. Cones are pointed, cylindrical or egg-shaped.

Cypress (cypresses, cedars, junipers, redwoods) Woody cones with bract and seed scales fully fused. Cones are usually small and often spherical. In junipers, the cones are fleshy.

Yew (yews) A highly modified cone with only one scale; a soft, brightly coloured aril which partly covers a single seed. Yew seeds are highly poisonous.

Try This! Make a guide to the conifers in your area using photos or sketches. Include cones, leaf type, and the tree shape.



HCTF Education

Powerful Pollinators

Nature notes:

- Pollination is required for flowering plants to reproduce and make fruits and seeds.
- Pollination can't occur without pollinators. Pollinators are those
 who transfer pollen from the male part of a flower to the female
 part. Pollinators include insects, birds and small mammals.
 Pollination can also occur with the help of wind and water.
- Many flowering plants rely on active pollinators for reproduction.
 These pollinators are rewarded for their services with nutritious nectar and pollen.
- Some plants, including conifer trees and grasses, rely on the wind to blow their pollen from one area to another. Some aquatic plants use water to carry their pollen.

Some types of pollinators found in BC:

Insects: Honey bees may be the most well know pollinators, but other bees such as bumble bees and orchard bees carry pollen as well. Many other insects are pollinators as well including beetles, flies, wasps, midges, butterflies, and moths. Even mosquitoes act as pollinators.

Birds: Sugary flower nectar is an important fuel to power high-energy hummingbirds. Their long, thin tongues are able to access the sugary nectar deep within a flower.

Mammals: Mice and squirrels are also known to act as pollinators. Elsewhere in the world, some bats pollinate flowers that bloom at night.

Try This! "Bee" a pollinator helper! Create pollinator habitats plant native plants, add water elements, leave garden debris lying, and don't use pesticides in your garden or lawn.



HCTF Education

Glorious Grasses

Nature notes:

- Grasses are a family of flowering plants able to withstand a wide range of moisture levels and temperatures. They can be found in salt marshes, wetlands and grasslands, creating important habitat.
- Grass grows from the base near the root, rather than from the tip. This
 allows grass to grow back after it gets cropped by grazing, burning, or
 mowing. The fibrous network of grass roots hold soil
 and prevent erosion.
- Grasses are the world's single most important food source. People
 consume grasses such as oat, wheat, rye, corn, and rice in the form of
 flour, cereal, and beverages. Animals raised for meat and dairy also need
 grass for their feed.

Some types of grasses found in BC:

wildlife and livestock.

Bluejoint: Found in forests, alpine, marshes, meadows, and fields. Food for livestock and wild grazing animals. This tough grass provides soil stability in wet areas and is one of the first plants to reestablish disturbed sites. **Rough Fescue:** Common in prairies, montane, and subalpine grasslands. This grass is a staple food of many forging animals including mule deer, elk, and bighorn sheep.

Quackgrass: (Invasive) Found around human settlements in disturbed soils such as roadsides, gardens, and farm fields. Introduced from Eurasia, this invasive species crowds out native species and cultivated crops.

Cheatgrass: (Invasive) Crowds out native species in natural areas and contaminates agricultural fields. It produces a dense root mat in early spring, stealing water and soil resources from other plants. Its sharp seeds can injure the eyes and mouths of grazing

Try This! Go for a walk in a grassy field that hasn't been mowed. Wear socks or put some tape on your shoes and see if you've managed to collect any seeds! Try growing them in a pot at home.





Super Seeds

Nature notes:

- All flowering and cone-bearing plants produce seeds after pollination.
- Seeds have important functions for the plant. They enable the plant to disperse and grow in new locations and they can remain dormant until conditions are favourable for plant growth.

Some types of native plant seeds found in BC:

Achenes and Samaras: Achenes (ah-keens) are seed coverings with hairs, like those of Oceanspray and dandelions. Winged maple seed coverings are samaras or 'helicopters'.

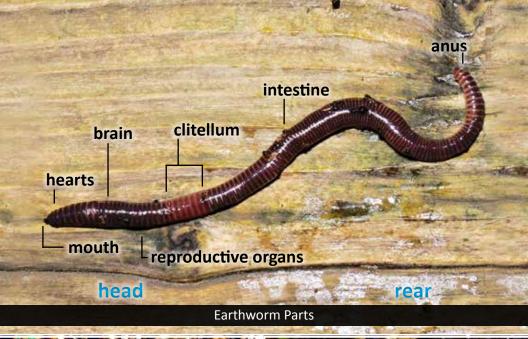
Nuts: Animals, such as squirrels and jays disperse acorns from Garry oaks and other nutritious nuts by hiding them for future food. As they won't return for every one, they are effectively planting the nuts in a variety of new locations where they can grow.

Cones: Conifer trees produce their seeds in cones. The protective cones of the Lodgepole pine only open after being exposed to the high heat of a wildfire. This gives the seeds a head-start to sprout and grow after a fire

Drupes: Also known as 'stone fruit', drupes enclose their seeds in tough pits, which allow them to pass unharmed through the digestive system of animals that eat them for their sweet flesh. (Example: choke cherries and other cherry species.)

Burrs: Fruits covered in hooked spines. In BC, burrs from plants such as silver burweed spread by catching on the fur of passing animals (or the socks of passing humans). The fastener, Velcro, was inspired by these structures.

Try This! What seeds are in your lunch or pantry? Save them and try germinating (sprouting) them in a moist paper towel in a ziplock bag.







Wiggly Worms

Nature notes:

- The thicker front end of an earthworm's body contains the mouth, hearts (they have 5 simple hearts!), brain, and other structures. They have no skeleton. They also have no eyes or lungs and instead sense light and breathe through their skin.
- Most earthworms we see in BC are species introduced from Europe.
 Until recently, it was thought that all of Canada's native earthworms had gone extinct during the last ice age. However, a few native species have now been discovered in previously unglaciated areas on Vancouver Island and Haida Gwaii. Researchers have termed these species 'ancient earthworms'. They can be found in rainforest soils and are seldom seen.

Some types of worms found in BC:

Common Earthworm: A large species, widely distributed around the world. It builds deep vertical burrows and surfaces to feed on dead leaves and other plant material.

Red Wiggler Earthworm: This worm thrives in rotting vegetation, compost, and manure. It is often added to compost to speed up the decay process. Rarely found in soil.

Marine Mussel Worm: Some types of worms live in salt water. This algae-eating worm is found in intertidal habitats along the coast, including mussel beds, sand, and gravel. It is a type of *Polychaete* worm, (meaning 'many bristles', for their bristly appendages).

Freshwater Ribbon Leech: Leeches are related to worms and share the grouping *Annelida*, known as "the segmented worms". This species lives in lakes and ponds. It is not a blood-sucker, instead eating small aquatic creatures.

Try This! After it rains, worms can be found above ground, escaping the water-logged soil. How many worms can you find on a rainy day? Look closely at the details of their anatomy.



Insect Parts





Bees, Wasps, Ants (Hymenoptera)



Flies, Midges, Mosquitoes (Diptera)



(Hemiptera)



Grasshoppers, Crickets, Katydids (Orthoptera)

HCTF Education

Incredible Insects

Nature notes:

- There are more known species of insects than any other organisms!
 Over one million species of insects have been described but it's estimated that there may be as many as 10 million species on Earth.
- Insects have three pairs of jointed legs and their bodies have three segments. They're covered by a hard shell called an exoskeleton.
 Insects have a pair of antennae, and usually two pairs of wings.

Based on their characteristics, insects can be grouped into scientific orders. These are the six largest orders:

Beetles (*Coleoptera*): Over 400,000 species. They have a pair of hardened wing covers that meet in a straight line down the back.

Butterflies & Moths (*Lepidoptera***):** Over 150,000 species. They have two pairs of large wings covered with small scales.

Bees, Wasps, Ants (*Hymenoptera***):** Over 130,000 species. Most have 2 pairs of clear wings and are often narrow-waisted. (Ants may have wings for part of their life cycle).

Flies, Midges, Mosquitoes (*Diptera*): Over 120,000 species. They have one pair of wings and a pair of club-shaped *halteres*, which are special organs that aid in balance during flight.

True Bugs, Cicadas, Aphids (Hemiptera): Over 82,000 species. They have a triangular shape on the top of their abdomen, behind the head, formed by the wings. They also have piercing/sucking mouthparts for sucking up plant juices.

Grasshoppers, Crickets, Katydids (*Orthoptera***):** Over 20,500 species. They have four wings, with the outer ones thickened. They also have strong hind legs for jumping.

Try This! Go on an insect safari. Look on flowers, leaves, in the soil, and under rocks or logs. Use containers and magnifiers to catch and observe what you find before releasing them.





Narrow-collared Snail-eating Beetle (Scaphinotus angusticollis)



White-spotted Sawyer Beetle (Monochamus scutellatus)



Mountain Pine Beetle (Dendroctonus ponderosae)



Ten-lined June Beetle (Polyphylla decemlineata)



Western Tiger Beetle (Cicindela oregona)

HCTF Education

Beautiful Beetles

Nature notes:

- Nearly 4,000 beetle species are recorded in BC that's a lot, but not surprising considering that beetles (Order *Coleoptera*) represent about 40% of all insects and 25% of all animals on earth!
- The outer pair of a beetle's wings are hardened into wing-cases, called *elytra*, distinguishing them from most other insects.
- Beetles live in most habitats and have diverse diets. They may be decomposers of organic debris, herbivores that feed on plants and fungi, or predators of other invertebrates.
- Some species are considered serious pests because they damage trees and food crops. Others are considered beneficial because they eat crop-damaging insects.

Some types of beetles found in BC:

Seven-spotted Lady Beetle: Introduced to North America from Europe and Asia for agricultural use. Found where there are aphids to eat.

Narrow-collared Snail-eating Beetle: Hides under forest litter and rotten logs. Eats slugs and snails.

White-spotted Sawyer Beetle: A wood-boring beetle with long antennae. Feeds on weak or dead pine and spruce trees throughout BC.

Mountain Pine Beetle: A wood-boring beetle that feeds on pine trees. Under certain environmental conditions, populations can grow until whole forest areas are destroyed.

Ten-lined June Beetle: A type of scarab beetle. When disturbed, they can make a hissing sound by forcing the air between their wings and back. Most often seen in summer.

Western Tiger Beetle: Found primarily in southern BC. Their colour can vary from brown, green, purple to black.

Try This! Beetles come in so many shapes, colours, and sizes. Show off their diversity by making a painted rock beetle menagerie for the garden.



(Musca domestica)



Western Black Horse Fly (Tabanus punctifer)



Fruit Fly (Drosophila melanogaster)



Common House Mosquito (Culex pipiens)



European Crane Fly (Tipula paludosa)



Greater Bee Fly (Bombylius major)



Fabulous Flies

Nature notes:

- Flies, midges, and mosquitoes all belong to an order of insects called Diptera, the 'true flies'. There are over 150,000 species of true flies worldwide.
- While many insects are called 'flies' (such as dragonflies and butterflies), true flies have only one pair of wings, rather than the usual two.
 True flies also have a pair of club-shaped halteres. These are special organs that aid in balance and allow flies to maneuver quickly in flight.
- Flies live as wingless, legless larvae before maturing into their adult winged form. Many are aquatic (like mosquito larva), while others, known as maggots, feed on carrion, vegetable matter, and fungi.

Some types of true flies found in BC:

House Fly: Found globally and is widespread in BC around human settlement. Feeds on organic matter such as food waste, carrion, and feces.

Western Black Horse Fly: Female horse flies need a blood meal for the development of their eggs. They will bite horses, livestock, and humans.

Fruit Fly: Originally from Africa but now found worldwide. Feeds on rotting fruit and vegetable matter. Important as a model organism in scientific laboratories to study diseases and genetics.

Common House Mosquito: Found across the Lower Mainland and Vancouver Island. Larvae develop in standing water, often in containers around urban and suburban homes. Adult females take blood from birds but may also feed on mammals. Males and females feed on plant juices and nectar.

European Crane Fly: Found in grasslands, particularly in southern BC. Larvae feed on the roots of grasses; adults don't feed.

Greater Bee Fly: Often found around summer flowers. Adults eat nectar; larvae feed on the young of solitary bees and wasps.

Try This! Make a flying insect! Many flying insects have four wings but true flies have only two. Build a fly using handprints, clothes peg or pipe cleaners, and some compound eyes.





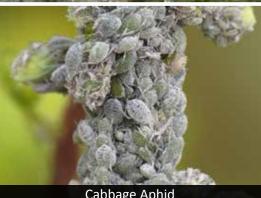
Brown Marmorated Stink Bug _{Invasive} (Halyomorpha halys)



Meadow Spittlebug (Philaenus spumarius)



Common Water Strider (Aquarius remigis)



Cabbage Aphid (Brevicoryne brassicae)



Rocky Mountain Cicada (Okanagana occidentalis)



Big On Bugs

Nature notes:

- **True bugs, cicadas, and aphids** all belong to an order of insects called *Hemiptera*, the 'true bugs'. There are over 82,000 species worldwide.
- While the term 'bug' may be used to refer to a variety of insects, only some are true bugs. True bugs have a triangular shape on their backs (abdomen), behind the head, formed where the wings meet in the middle. They also have piercing mouthparts used for sucking up plant juices.
- Young bugs are called nymphs, and are wingless but otherwise generally resemble their adult form.

Some types of true bugs found in BC:

Western Conifer Seed Bug: Frequently found on Douglas-fir trees; also on pines and spruce. Feeds on the sap of conifer cones.

Brown Marmorated Stink Bug: Introduced from Asia, and spreading in southern BC. An invasive agricultural pest that feeds on numerous fruits and vegetable crops. They produce a foul-smelling substance when disturbed.

Meadow Spittlebug: Often found in gardens, parks and meadows feeding on plant juices, they produce a frothy substance known as spittle to protect their larvae from predation and drying out.

Common Water Strider: Found on calm bodies of freshwater, they skate across the water's surface on specially adapted legs, using surface tension. Feeds on mosquito larvae and dead or drowning insects.

Cabbage Aphid: Found in southern BC. Feeds only on members of the Brassica family, which includes cabbage, broccoli, and cauliflower.

Rocky Mountain Cicada: Found in many parts of BC, particularly the Southern Interior. This cicada species emerges every summer. More often heard than seen, this species feeds on the juices of shrubs and trees.

Try This! Eat like a true bug! Using a short straw, try eating various foods — cucumber, jam, syrup, soup, banana, etc. See what you can suck up with your straw-mouth parts.



Migratory Grasshopper (Melanoplus sanguinipes)



(Dissosteira carolina)



Drumming Katydid Invasive (Meconema thalassinum)



Great Grig (Cyphoderris monstrosa)



Fall Field Cricket (Gryllus pennsylvanicus)



Fork-tailed Bush Katydid (Scudderia furcata)

HCTF Education

Cricket Chorus

Nature notes:

- **Crickets, grasshoppers, katydids** all belong to an order of insects called *Orthoptera*. There are over 20,500 species worldwide.
- These insects produce chirping sounds by rubbing their wings against each other (crickets and katydids) or against their legs (grasshoppers).
 These sounds are used to attract mates. At up to around 100 decibels, they can be as loud as a motorcycle.
- Over 80 species of grasshoppers are consumed by people worldwide, often roasted or ground into protein-rich flour.

Some types of crickets, grasshoppers, and katydids found in BC:

Migratory Grasshopper: Common throughout much of BC; found in a wide range of open sunny areas with plant cover. Feeds on leafy plants and can be a serious crop pest.

Carolina Grasshopper: Found in open, sunny habitat throughout southern BC. Feeds on grasses and other plants. Has large, black and cream wings.

Drumming Katydid: South Coast of BC and Vancouver Island. Found in the foliage of trees, particularly oaks. Native to Europe. It feeds on invertebrates such as caterpillars and beetle larvae.

Great Grig: This cricket lives in Southern Interior forests containing lodgepole pine and Engelmann spruce, feeding on the pollen of coniferous trees.

Fall Field Cricket: Most common on the South Coast and Vancouver Island in grassy, disturbed areas. Feeds on seeds and invertebrates.

Fork-tailed Bush Katydid: Scattered through the Southern Interior and Lower Mainland in weedy fields, thickets, and meadows. Eats the foliage of a variety of shrubs and other plants.

Try This! Tell the temperature by listening to crickets! Count the number of chirps in 25 seconds, divide this number by 3 and then add 4. According to the cricket, what is the temperature in degrees Celcius? Measure the temperature to check how accurate the crickets are.





Watchable Wildlife Signs

Nature notes:

- Some animals are only active at night. We may not see them, but they leave clues behind when they've been near.
- Watching for wildlife tracks and other signs is an exciting way to discover more about the wildlife that lives in your area and what they're up to.

Some types of wildlife signs found in BC:

Tracks: Look on soft ground like mud, sand, or snow for footprints. Notice the size and shape of the print. How many toes? A field guide can help you to identify who left them. If there is a trail of tracks, notice the gait. This is the pattern of the tracks and can show how the animal was moving. The gait changes between running, walking, hopping, and other movements.

Feeding signs: Keep an eye out for lunch leftovers. Squirrels, for example, create great piles of cone scales called *middens* while they extract the seeds. Nipped off vegetation, gnawed bark, animal carcasses, feathers, logs torn apart, rocks flipped over, and holes dug are all signs to look out for.

Scat: Scat is another name for animal poop. Animals leave behind distinctive droppings that can tell us who they are and what they've been eating.

Other signs: Some animals leave signs to claim territory, such as scent-marking or scratching the bark of trees. A tuft of fur may be caught on a twig. An area of crushed vegetation may show where an animal slept. A nest in a tree, a burrow in the ground – all are wildlife signs for you to find!

Try This! Look for animal clues and use your powers of deduction to tell the story of who's been where and what they were doing. Make a cast of an animal track by filling it with plaster of Paris and letting it harden.

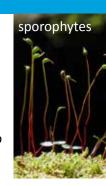




Magical Mosses

Nature notes:

- Mosses are simple land plants. Their leaves have a basic structure and are often only one cell layer thick.
- Mosses do not have flowers or seeds. Instead, they produce sporophytes. Sporophytes have a long stalk with a capsule at the top. The capsule opens to release reproductive cells called spores. These spores are carried by the wind and will grow into a new moss. Mosses do not have true roots. Instead they have hair-like structures called *rhizoids* that anchor the plant.



- They thrive in shady, moist environments. However, they can also survive in extreme conditions from hot, dry grasslands to cold, barren mountains, to cracks in urban pavement.
- Peat moss wetlands serve as important water purifiers and reservoirs, wildlife habitat, and flood prevention systems.

Some types of moss found in BC:

Bent-leaf Moss: Found across the province, most frequently in the lawns and grassy areas of cities and towns along the coast.

Shaggy Peat Moss: Low elevations to subalpine. In moist forest areas, swamps, and wetlands. Not found in bogs, unlike other Sphagnum species.

Step Moss: Common in lowland to middle elevation forests with humus-rich soil, forming the dominant ground cover. Also grows on rotten logs.

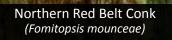
Crane's Bill Moss: Forms loose mats on moist, shaded soil. Especially on disturbed and exposed soil, like that caused by an uprooted tree.

Lawn Moss: A common moss of dry grasslands. Favours open, dry sites such as lawns, pastures, road edges, and trails.

Oregon Beaked Moss: Found in all vegetation types near the coast, but confined to humid forests in the Interior.

Try This! Gently feel moss. If it is dry, spray it with water and watch it spring back to life. How much water can the moss absorb?





Orange Peel Fungus (Aleuria aurantia)



Fantastic Fungi

Nature notes:

- Fungi share characteristics with both animals and plants but are neither.
 Like animals, they cannot make their own food (as plants do through photosynthesis) and must digest it from external sources. Like plants, fungi can grow in and on the soil and they reproduce by releasing seed-like spores.
- Fungi play vital roles in the environment. They enrich the soil, break down
 decaying matter, and form beneficial relationships with plant roots. They're
 also food to wildlife (and people!)
- Fungi come in a huge variety of shapes, sizes, colours, textures, and even smells! Get up close mushrooms can't do harm unless eaten.

Some types of fungi found in BC:

Fly Amanita: Found on the ground; most common around forest edges. Cap is red with white, cottony flecks. Stipe has a skirt-like ring. Poisonous.

King Bolete: Grows on soil in deciduous and coniferous forests. Thick, buff cap with a spongy underside rather than gills. Stipe is stout, enlarging downward.

Fairy Ring Mushroom: On lawns and other grassy areas, often in full or partial rings. Cap is light brown. Gills are widely spaced and uneven in

depth. Stipe is thin and straight.

Orange Peel Fungus: Found on the ground, especially in hard-packed roadsides, gravel paths, and trails. Bright orange and shaped like an irregular saucer. No gills or stipe.

Red Belted Conk: Found on the trunks of dead aspen and

coniferous trees. It is shelf-like, with distinct bands of brown and red. The surface is hard and the underside is white with small pores. No stipe.

Try This! Put a mushroom cap gill-side-down on paper. Cover with a bowl for 4-24 hrs, then check out the spore print pattern! You can use a mushroom from the grocery store as long as it isn't too old or dry.



Lungwort (Lobaria pulmonaria)



Common Witch's Hair (Alectoria sarmentosa)



Elegant Sunburst Lichen (Xanthoria elegans))



Ragbag Lichen (Platismatia glauca)



Trumpet Cup (Cladonia fimbriata)



Lipstick Powderhorn (Cladonia macilenta)



Likeable Lichen

Nature notes:

- Lichens are not plants or mosses. They're actually multiple organisms working together in a close relationship. One is a fungus, the second is an alga or a cyanobacterium (or both), the third is a yeast.
- Because they are able to create their own food, lichens can grow in a wide range of environments, including some of the harshest conditions. Some are able to live on solid rock.
- Lichens are an important winter food source for animals such as moose and caribou. Squirrels and hummingbirds use lichens in their nests.
- Lichens can also be very sensitive. Many are affected by environmental disturbances and their relative abundance or absence can be indicators of air pollution, ozone depletion, and metal contamination.

Some types of lichens found in BC:

Lungwort: Grows most commonly on trees, especially hardwoods. On the south coast of BC it favours bigleaf maple and Garry oaks.

Common Witch's Hair: Most common on conifers in temperate rainforest.

Found along the coast of BC as well as in Interior rainforests.

Elegant Sunburst Lichen: Found across BC and throughout much of the world on limestone-rich rock, bark, and occasionally on bone.

Ragbag Lichen: Common and occurring at all elevations.

On trees in open and shady forests. Found on every continent.

Trumpet Cup: Forming colonies at all elevations on mineral-rich soil, moss, and humus. Especially common in open sites.

Lipstick Powderhorn: Common, particularly in moist forests. Grows on bark and decaying wood close to ground level.

Try This! Zoom in on lichens and make a photo collage! Look for them on rocks, trees, and on the ground. Some are green and leafy, others form crusts like a layer of paint, or are bushy or beard-like, hanging from branches.



HCTFEducation

Neat Nests

Nature notes:

- Nests are used by birds as a place to incubate their eggs and protect their young. Some species build their nests from scratch, while other use cavities or burrows made by woodpeckers and other animals.
- When it comes to building, birds have very different ideas as to what
 makes the best nest! Nests come in a wide range of shapes and sizes,
 and range from simple to complex.
- The best seasons to find nests are spring and fall. In spring, bird activity
 may alert you to a nest's location. Remember not to disturb a nest that
 is in use as it will stress the protective parent birds. In fall, after the
 leaves drop, it can be easier to spot nests that were previously hidden.

Some types of bird nests found in BC:

Scrape: A shallow depression in soil or vegetation. Used by many ducks, most shorebirds, quail, and others.

Burrow: In or under the earth. Used by burrowing owls, most kingfishers, puffins, and others.

Cavity: A chamber, typically in living or dead wood. A birdhouse also provides a similar space. Used by woodpeckers, nuthatches, chickadees, wood ducks, owls and others.

Cup: A deep, rounded shape with a central depression. Made of twigs and other materials. Used by many species of songbirds, hummingbirds, and others.

Platform: Large and flat. Elevated in the case of raptors, such as ospreys. On water in the case of waterbirds, such as grebes.

Pendulous: An elongated, woven sac made of grasses and other fibres. Used by bushtits, orioles, and others.

Try This! Have a nest-building challenge. Build a bird nest using similar materials that they would use, like grasses, sticks, and mud.





Incredibly Invasive Plants

Nature notes:

- Invasive plants are species that have been introduced, either on purpose or by accident, into an area outside of their native range, and that cause environmental or economic harm.
- Without their natural predators to keep them in check, they can take over! Invasive plants compete with native plants for water, nutrients, and space. They displace native species and may alter entire ecosystems, threatening biodiversity.

Some types of invasive plants found in BC:

Himalayan Blackberry and Scotch Broom out-compete native species by forming dense, impenetrable stands where nothing else can grow. In addition, Scotch broom is flammable and can increase wildfire spread.

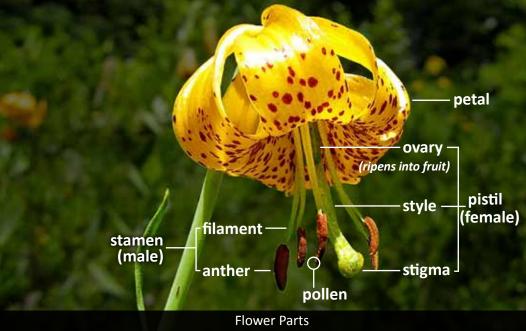
Oxeye Daisy and Spotted Knapweed invade grasslands and open areas, decreasing available forage for grazing wildlife because they are distasteful. Spotted knapweed can also cause skin irritation.

Yellow Flag Iris and Purple Loosestrife are aquatic plants that form dense stands that clog waterways and alter wetland environments.

English Ivy forms carpets that smother understory plants and also grows upwards, covering trees. Ivy-covered trees are vulnerable to blow-down because of the added weight and bulk.

English Holly spreads from gardens into natural areas by way of berry-eating birds who deposit the seeds. Holly thrives in a variety of conditions, hogging moisture and nutrients.

Try This! Practice **Play Clean Go** to help stop invasive species from hitching a ride. Remove mud, plant parts, and insects from your boots, clothing, pets, boats and gear before entering and leaving a natural area.







Flowery Fruits

Nature notes:

- Flowers and fruit are the way some plants reproduce. Pollen from one flower needs to get to another flower of the same species. The flower that receives the pollen ripens into a fruit with seeds. Those seeds will grow into new plants which are a mixture of both the parent plants.
- A fruit is the part of a plant that contains the seeds. Fruits develop from flowers that have been pollinated. The main purpose of fruit is to protect the seeds inside and to help them to spread. Plants use fruit to entice animals to eat their seeds and carry them in their guts to new areas before passing the seeds.
- In fleshy fruits, the area around the seeds is juicy and soft. Native Pacific
 crab apples, huckleberries, and Saskatoon berries contain many seeds.
 Some fleshy fruits, such as choke cherries, contain only one seed, or pit.
 These are called stone fruits.
- **Dry fruits** are typically not as juicy. Native dry fruits include beaked hazelnuts and Garry oak acorns. Wild strawberries are also a dry fruit because their seeds are outside of the fleshy part.

Some types of native edible fruits found BC:

Fleshy Fruits

Oregon grape berry
Pacific crab apple
Red huckleberry
Black huckleberry
Saskatoon berry
Trailing blackberry
Choke cherry (stone fruit)

Thimbleberry Nootka rosehip Salmonberry Salal berry

Dry Fruits

Beaked hazelnut Garry oak acorns Wild strawberry

Try This! Find out what fruits the Indigenous peoples in your region traditionally use. How do they preserve them? Try drying some fruits.









Awesome Amphibians

Nature notes:

- Amphibians can live on land and in water. The name amphibian comes from the Greek word, amphibios, meaning "both lives". This group includes frogs, toads, salamanders and newts.
- Amphibians are ectothermic (cold-blooded), meaning that their body temperature depends on their surroundings. Their skin is soft, scaleless, and generally moist. Most amphibians breathe partially through their skin, making them especially sensitive to polluted environments.
- Amphibians begin as soft eggs laid in water or a damp environment. Tadpoles hatch and breathe through gills, like fish. As they mature from tadpole to adult, frogs and toads lose their tails whereas salamanders keep them.

Some types of amphibians found in BC:

Pacific Chorus Frog: Found along the coast and the Southern to Central Interior. Habitat includes a wide variety of vegetation in natural to urban areas. Columbia Spotted Frog: Found throughout the Interior near permanent bodies of water with plenty of vegetation.

American Bullfrog: Large, invasive species from eastern North America. Found on the South Coast and Vancouver Island. Inhabits permanent water bodies.

Wood Frog: Found throughout the Central and Eastern Interior. Forest-dwellers who breed in temporary spring wetlands. Can survive freezing. Western Toad: Found throughout the province in moist forest and mountain meadows. Can tolerate drier habitat if there is fresh water nearby.

Rough-skinned Newt: Found along the Coast and on Vancouver Island. Habitat is grasslands and forests, often near wetlands. Skin can produce toxins.

Long-toed Salamander: Found throughout Southern and Central BC in forests, grasslands, and alpine meadows habitats.

Northwestern Salamander: Found along the Coast and Vancouver Island in damp meadows and forests, often underground.

Try This! Place old clay pots in your garden to provide cool, damp refuges for amphibians.





Marvelous Macroinvertebrates

Nature notes:

- Macroinvertebrates are animals without a backbone that you can see with your eyes, unaided by a microscope, such as insects, crustaceans, snails, clams, and worms.
- Many of the adult, flying insects that we see near freshwater (such as dragonflies, damselflies, and mosquitoes) begin their life cycle in freshwater.
- Many aquatic macroinvertebrates have special adaptations for life in the water. Here are some examples:
 - Mosquito larvae breathe air from the surface through a siphon tube at the rear end of their bodies.
 - Blackfly larvae have a net on their heads for collecting drifting food.
 - Stonefly nymphs have gills in their "armpits" for breathing dissolved oxygen underwater.
 - Whirligig beetles have paddle-like legs for swimming.
- Aquatic macroinvertebrates are of great ecological importance in the food chain (as meals for fish, amphibians, birds, and mammals) and as indicators of water quality.

Some types of aquatic macroinvertebrates found in BC:

Insect Larvae (horsefly, cranefly, midge, blackfly, caddisfly, mosquitoes, and more)

Insect Nymphs (damselfly, mayfly, stonefly, dragonfly,

and more)

Freshwater Molluscs (snails, limpits, mussels, and clams)

Crustaceans **Beetles Leeches and Worms**



Midge Larva



Damselfly Nymph



Freshwater Limpit



Giant Water Bug

Try This! Go for a pond dip to see what macroinvertebrates you can find. What do they look like under a magnifying glass?





(Tamiasciurus douglasii)



Eastern Grey Squirrel Invasive (Sciurus carolinensis)



Eastern Fox Squirrel Invasive (Sciurus niger)



Northern Flying Squirrel (Glaucomys sabrinus)



Yellow-Bellied Marmot (Marmota flaviventris)



Yellow-Pine Chipmunk (Neotamias amoenus)



Columbian Ground Squirrel (Urocitellus columbianus)



Splendid Squirrels

Nature notes:

- There are three primary types of squirrels: tree squirrels, ground squirrels (including chipmunks, prairie dogs, woodchucks, and marmots), and flying squirrels. All are rodents and members of the family Sciuridae.
- A tree squirrel's diet may include fruits, plants, sap, fungus, insects, and birds' eggs. Nuts and tree seeds are their main food sources. Squirrels bury them over a wide area to recover over the winter and often forget some, resulting in the distribution and planting of new trees.

Some types of squirrels found in BC:

Red Squirrel: Found throughout the province wherever conifers are common, except southwestern coastal areas. Douglas' Squirrel: Primarily found in southwestern coastal areas. Relies on old growth and mature conifer forest habitat. Eastern Grey Squirrel: Native to eastern N. America. Found in the Lower Mainland, Vancouver Island, and the Okanagan. Eastern Fox Squirrel: Native to eastern N. America. Found in the Okanagan in urban areas, orchards, and open forests. Northern Flying Squirrel: Found throughout the province in the trees of coniferous and mixed forests. Active at night. Yellow-Bellied Marmot: Found in the south-central part of the province. Lives in burrows in mountainous areas. Yellow-Pine Chipmunk: Found across central to southern BC (excluding Vancouver Island) in brushy, coniferous forests. **Columbian Ground Squirrel:** Found through south-eastern BC, burrows in mountainous terrain and high plains.

Try This! Observe squirrel behaviour to see where they bury their nuts and seeds. Map their treasures and check back in the spring to see if they've eaten them.



Did you know that squirrels and marmots are related?

The Vancouver Island marmot is found only on Vancouver Island. It's one of the world's most endangered mammals. But thanks to intensive recovery efforts, numbers have increased from a low in 2003 of less than 30 wild marmots to just over 250 marmots in 2021!





Black Bear (Ursus americanus)



Coyote (Canis latrans)



Columbia Black-tailed Deer (Odocoileus hemionus columbianus)



Raccoon (Procyon lotor)



Striped Skunk (Mephitis mephitis)



Invasive European Rabbit (Oryctolagus cuniculus)



City Critters

Nature notes:

Humans are not the only animals to live in urban areas. With numerous sources of food and shelter, some species have adapted to city life. Other species have had urban areas expand into their territories and are now dealing with new human neighbours. Here are some city critters you may meet and some tips for coexisting with them safely:

- Urban vegetable gardens seem like a buffet to deer. A goldfish pond is a tasty treat for raccoons, otters, and herons. Use appropriate fencing to keep some areas off-limits to wildlife.
- Secure your garbage, keep pet food indoors, clean up fallen fruit
 and spilled birdseed to prevent attracting wildlife such as raccoons,
 skunks, and bears. Bears are attracted to calorie-rich human food.
 Over time, fed bears lose their fear of humans which can lead to
 dangerous close-encounters.
- Keep squirrels and other rodents from nesting in your home by closing off entrance points to attics, under stairs, etc.
- Get along with wildlife by giving them their own space: add natural areas to yards and green spaces through Naturescaping. This type of landscaping uses native plants to provide attractive and resilient habitat that will coexist well with wildlife.

Some types of city critters found in BC:

Raccoons Skunks Mice and Rats Bears
Squirrels River Otters Marmots Foxes
Deer Coyotes Rabbits Bats

Try This! A 'Wildlife in My Neighbourhood' Journal. Make a list of mammals that live in your region. How many can you find? Look for their signs and tracks in your neighbourhood. If you see them, watch their behaviours from a safe distance.





Card list

- Cover / Photo credits
- Explorer Etiquette /
 Photo credits continued
- Fascinating Feathers
- Wonderful Webs
- Buzzing Bees & Beyond
- Lovely Lepidoptera
- Amazing Ants
- Great Gastropods
- Brilliant Broad Leaves
- Cool Conifers
- Powerful Pollinators
- Glorious Grasses
- Super Seeds
- Wiggly Worms
- Incredible Insects

- Beautiful Beetles
- Fabulous Flies
- Big On Bugs
- Cricket Chorus
- Watchable Wildlife Signs
- Magical Mosses
- Fantastic Fungi
- Likeable Lichen
- Neat Nests
- Incredibly Invasive Plants
- Flowery Fruits
- Awesome Amphibians
- Marvelous Macroinvertebrates
- Splendid Squirrels
- City Critters
- Card list / Back cover



15 — -14 —

2---

0— --

3—----

6----

4---

3—

1cm —







Recycle as paper

