Nature WiLD

For Kids
Who Love Nature
· Summer 2019 ·

NATURE KIDS BC
WWW.NATUREKIDSBC.CA

How do Bats use sound waves?

Which is bigger, bus or whale?

Global Wind Day
June 18

INSIDE...

Please welcome **Sarah Lockman,** our new Executive Director. Sarah has a passion for nature and loves to be outdoors exploring, learning and experiencing new activities. She is really looking forward to going on Explorer Days with as many clubs as she can get to, meeting NatureKids and Club Leaders. She wants to find out about all the stewardship projects that clubs are involved with.

In her spare time, Sarah enjoys nature walks with her dog, Maya, and fun activities in all types of water – rivers, streams, lakes, and oceans.

Leslie Bol

President, NatureKidsBC

@NATUREKIDSBC /NATUREKIDSBC @NATUREKIDSBC

NatureKIDS BC is **THE** club for children and families who love to be outdoors. Members discover nature on Explorer Days organized by volunteer leaders and guided by experts, participate in stewardship projects, earn Action Awards and receive NATUREWILD magazine 4 times a year.

Come join us! Family membership: **$35** per year. Individual adult membership: $25 per year. Or subscribe to NATUREWILD magazine: $20 for 4 issues per year. For more information and to sign up online go to: naturekidsbc.ca

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QUESTIONS? COMMENTS?

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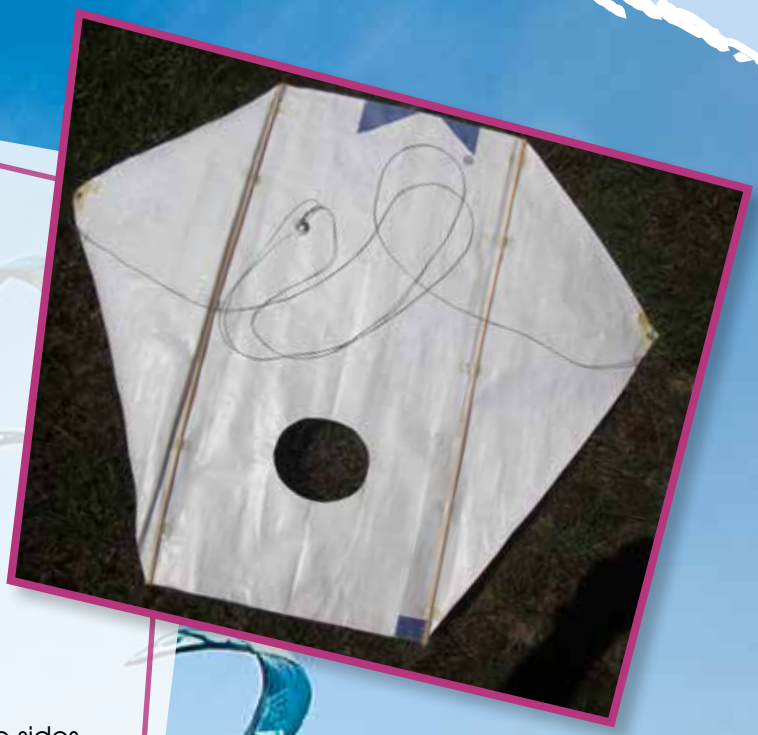
Cover photos: Bat: JasonOndreicka, istock • Whale: Homunkulus28, istock • Bus: alazur, istock • wind: jattumongkhon, istock

A Family Project

Dr. Doowitt says: **"Celebrate Global Wind Day on June 18 and make a Sled Kite!"**



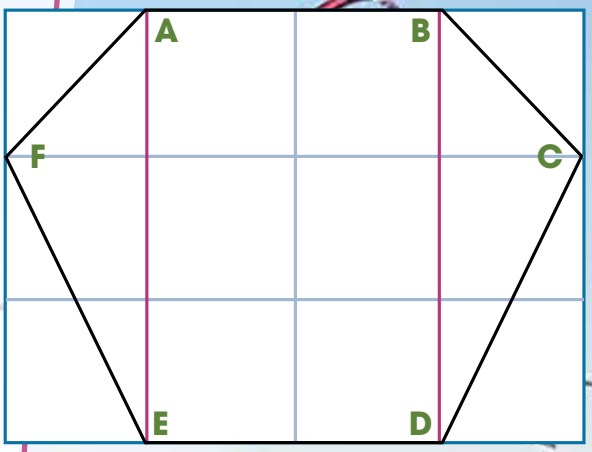
Materials:

1. Sharpie pen
2. Piece of Tyvek scrounged from a construction site (approximately 60 cm x 45 cm)

   (if no Tyvek, try strong brown paper)
3. 1 metre length of 1cm diameter dowel, cut in half – these are the spars. (Shown in red in the diagram.)
4. Fibreglass-reinforced tape
5. Strong but light twine for the bridle that is three times the distance from F to C.
6. One 5cm diameter metal washer
7. 50 metres of kite string on a simple winder

To Make:

1. Use the sharpie to draw out your plan on the Tyvek. The sides of the squares should be 1/3 the spar length (33 cm). Decorate.
2. Strengthen the areas at points F and C with the tape and poke a small hole through, at least 1 cm in from the edge.
3. Slide the washer onto the piece of twine – this is your bridle string.
4. Tie the washer so it is in the middle of the bridle.
5. Tie the bridle string onto the points F and C
6. Make a circular hole to act as the 'tail' of the kite.
7. Use 4 or 5 tape strips on each side to tack the spars onto the kite.A > E and B > D. See photo of kite,
8. Make a loop on the kite string and attach to the bridle washer.
9. Now, have someone move about 5 metres downwind of you, holding the bottom of each spar as high as possible and let 'er (or 'im) go!



(Get help from: https://sites.google.com/site/kites4all/home/sled-kite-plan)

Photo credits: Kite: Brian Herrin, B.C. • background: Szymon Barylski, istock

Bats of B.C.


① Juvenile bat wing

They hang upside down to rest, they're awake when we're asleep in bed, they see with sound that we can't hear, and they fly with silky skin between their fingers. Bats really are the most incredible animals and British Columbia is lucky enough to have at least fifteen species.

Bats are the only true flying mammals. Scientists classify bats in the order *Chiroptera*, meaning 'hand-wing". Bats are found around the world, in every habitat type (including cities) except the Arctic and Antarctic.

Ace fliers

Quick and agile, bats are all-round better fliers than birds. Their bodies are small, but their wings are large and very mobile. The wing is made of soft, thin skin which starts at the bat's neck, links the tips of all the fingers (except the thumb), then goes down to the bat's ankle, on to the tip of its tail then up the other side.

We don't have fruit bats in B.C., but they do exist in Australia, Africa and Asia where they pollinate flowers and help spread plant seeds.


② Bats flying at night

The importance of bats

B.C. bats are the most important predators of night-flying insects in the province. They eat about half their weight in insects every night! Just one ***Little Brown Myotis*** can catch and eat 600 insects in an hour! Most B.C. bats especially like the insects of marshes and lakes, such as mayflies, midges, caddisflies and mosquitoes. The ***Pallid Bat*** is adapted to desert living and eats crickets and scorpions off the ground.

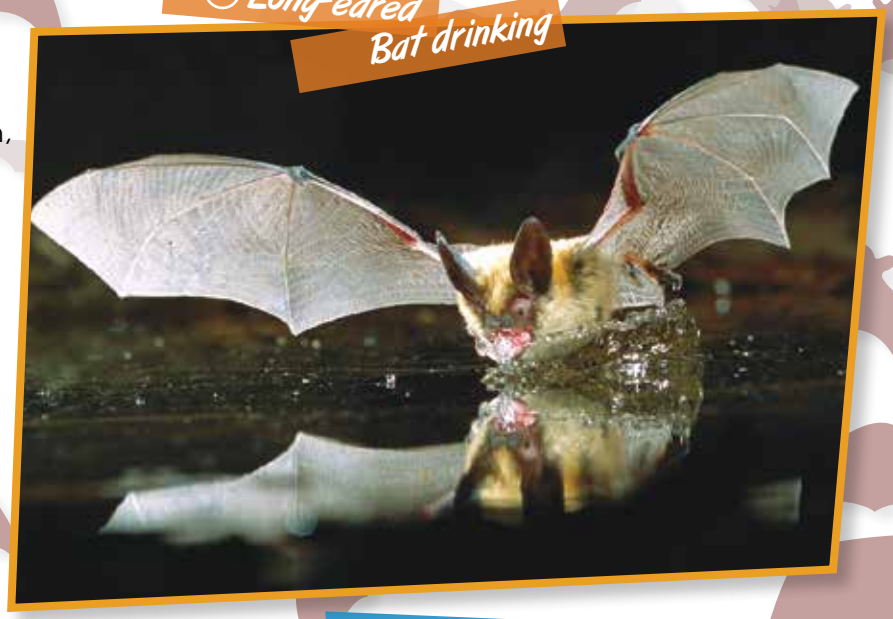

③ Spotted bat


④ Pallid bat

Background: tatianazaets: istock

Spring

As breeding female bats come out of hibernation, they gather together in nursery colonies to have their babies. They choose sun-warmed cracks in rocks, dead trees or - attics! Most bats have only one pup a year. Pups are nursed until they can fly. Meantime, they stay at the roost while their mothers hunt for food at night. If the mother flies to another roost she'll take the pup with her, clinging to her chest.



⑤ Long-eared Bat drinking

⑥ YumaMyotis pup

Summer – and the livin' is easy

During the summer, most bat species spend daylight hours hanging upside down in tree cavities, buildings, rock cracks, under the leaves at the tops of trees or inside peeling tree bark. At night, of course, they are out catching insects.

⑦ Female with pup

⑧ Townsend's Big-eared Bat

⑨ Roosting bat

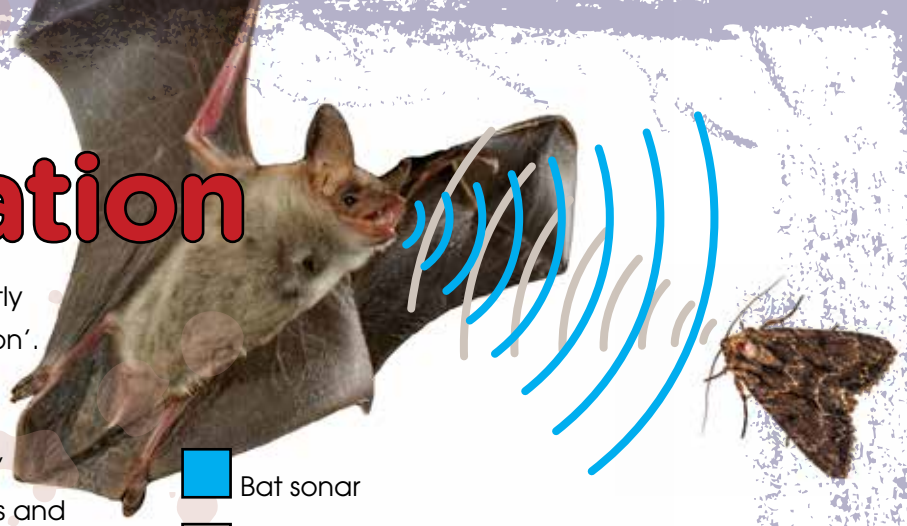
Winter: one long sleep

In B.C., two species of bats migrate south, but the other 13 species hibernate throughout the cold season. Damp caves and rock crevices make the best places to hibernate. The bats go into a torpor (like a coma) and their heart rate drops to 5 beats per minute. Bats do not store food for the winter, so they must fatten up during the summer to avoid starving through their long winter sleep.

Sources:
Bird Life, RSPB Wildlife Explorers
Bats in British Columbia, B.C. Ministry of the Environment
BC Nature magazine
B.C. Community Bat Program

Photo credits: 1, 8 & 9: Todd Carnahan, B.C. • 2: (9413217529) • 3: Margi Chantler • 4: mypubliclands, CC • 5: mypubliclands, CC • 6: Christian Gronau • 7: B.C. Community Bat Program

Echolocation



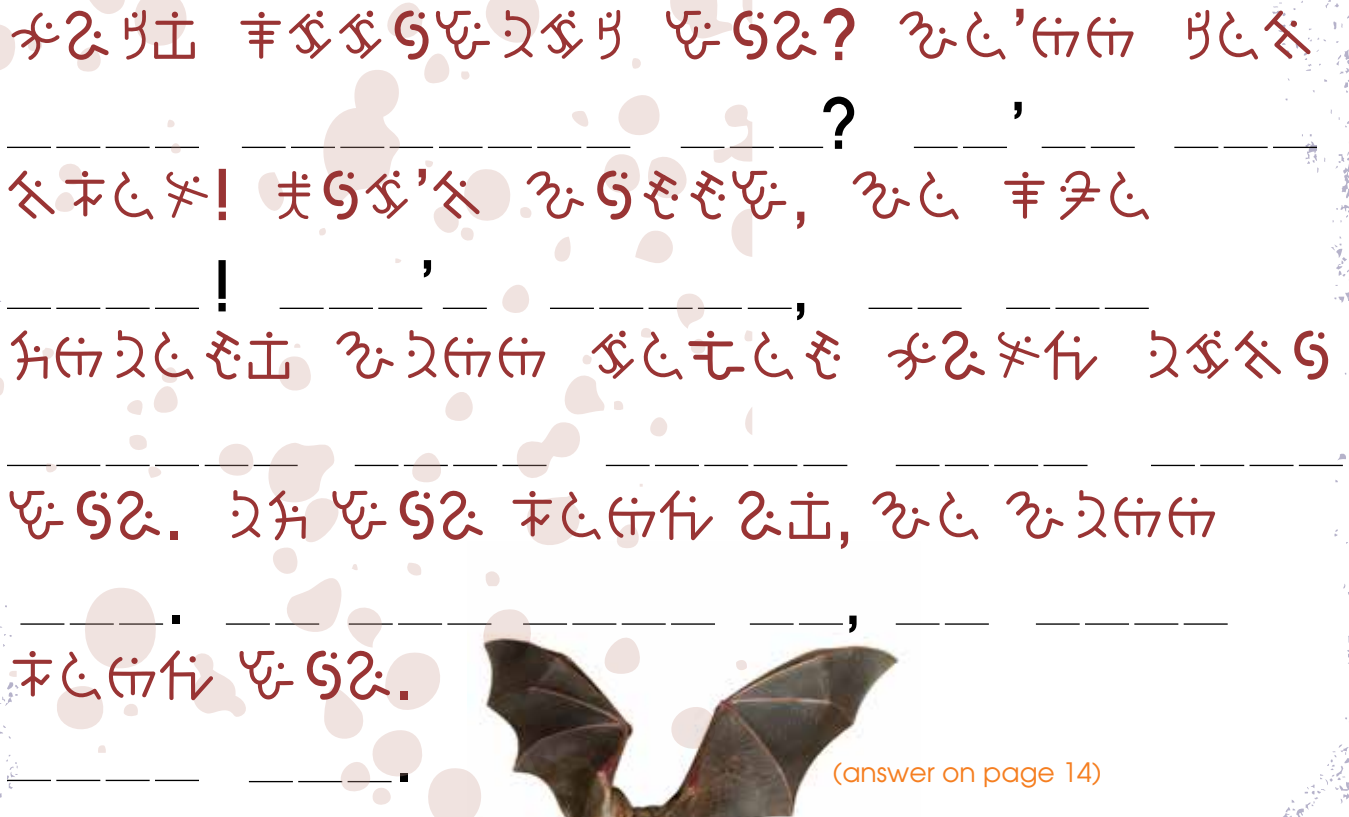
Bats have excellent eyesight, but mostly find their way around by 'echo-location'. They send out ultrasonic sound waves which bounce off objects in their path and come back as echoes to the bats' ears, telling them how big the object is and how far away. The faster the echo comes back, the closer the object is.

Bat sonar

Returning sound waves

Bats also have social calls to 'talk' to each other. Adult humans cannot hear these calls as they are too high-pitched, but children can. Anytime you think there might be bats flying around use your superhuman hearing to listen for their squeaks.

This is what the bats might be saying to you! Use the secret code below to read the message.



(answer on page 14)

Secret Message Code

a	b	c	d	e	f	g	h	i	j	k	l	m
n	o	p	q	r	s	t	u	v	w	x	y	z

Photo credits: Bat: JAH, istock • Moth: vovashevchuk, istock

The Incredible Plants of the Coastal Temperate Rainforest

By Ziya Chong, Jessica MacLean-Ashmore, Joshua MacLean-Ashmore, Fraser Wagner, and Kaia Wagner, students at Fresh Air Learning, who took notes then wrote up their findings. Thanks to Cease Wyss of the Squamish Nation for talking with us.

Before there were doctors in white coats and medicine in bottles, there were wise women and men who were healers. For hundreds and hundreds of years, healers have found ways to make people better when they get ill or hurt. One way is to use plants, and in British Columbia the plants of the coastal temperate rainforests are amazing! These are some of the rainforest plants used by Coastal First Peoples.

Salal *Gaultheria shallon*

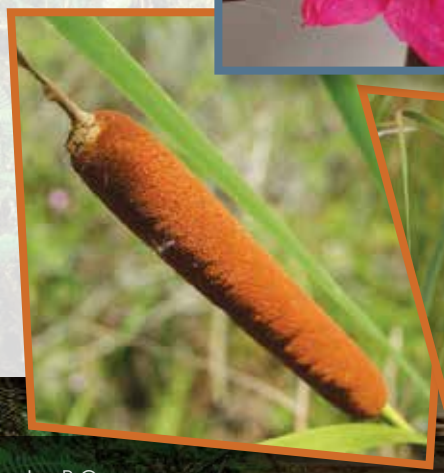
Evergreen shrub that grows in lush thickets. It was used as a medicine for stomach upsets and coughs, also for food (berries, dried or cooked), and dyes (purple from fruits, yellow from leaf infusion).

Oregon Grape *Mahonia nervosa*

Evergreen shrub with shiny prickly leaves like holly, clusters of yellow flowers and blue fruit. The bark and berries were used as medicine for liver, gall bladder and eye problems. Eating lots of berries was the only cure for shellfish poisoning.

Salmonberry *Rubus spectabilis*

Prickly plant with berries that look like raspberries. This is because both are edible berries in the rose family. Salmonberry bark and leaves were used for skin troubles and were also made into teas to treat diarrhea and dysentery.



Cattail *Typha latifolia*

Found in marshes, ponds and slow-flowing water. The fruit looks like a brown weiner on a stick and the fluff from it can be used as stuffing for pillows and mattresses. The leaves can be woven together and used for clothing, bedding or mats.

Photo credits:
Forest: jenifoto, istock • Salal flowers: Rob Alexander, B.C.
• Salal berries: Todd Carnahan, B.C. • Mahonia flowers: Rosemary Taylor, B.C.
• Mahonia berries: Rosemary Taylor, B.C. • Salmonberry: Rob Alexander, B.C. • Salmonberry red fruit: AL Grass, B.C.
• Cattail: boettcherguilherme, CC • Cattail Seeds: dmoon10751, CC • Cattail mat kneeler: Jullia Wagner

Humpback Whales

by Joan Lopez


Humpback blow

Imagine you are on a hill in British Columbia, gazing over the ocean. To your surprise, you see a big puff of steam, and then a long dark object. The puff comes again, several times, then one more puff and a hump appears, like a rock rising out of the water, followed by a huge tail fluke lifting skyward. The fluke comes down and disappears, leaving a circle of smooth water, and all is quiet again. You have just seen a **humpback whale!**

The humpback is one of the largest whales that visit B.C.'s coastal areas. A humpback may grow to 16 or 17 metres, with females usually slightly longer than males, and weighing up to 40 tonnes. That is about the same length and weight as a fully-loaded city bus!

of th
so e

Now imagine that whale leaping out of the water (breaching) and landing with an enormous SPLASH - an explosion of water!


Breaching humpback

Humpbacks (*Megaptera novaeangliea* meaning 'big-winged New Englander') have very long pectoral flippers, about one-third the length of their body (much like our arms) with bones that resemble our hand and arm bones.

Humpbacks might use their pectoral flippers to steer, to slap the water, or to wave in ballet-like motions, but it is the up-down movement of their mighty tail fluke that propels them through the water.

We know 'our' humpbacks migrate to Hawaii or Mexico for the winter, where you might hear the males singing, and where females give birth to a calf four metres long and weighing 700 kg. The humpbacks then return northward in May for summer feeding.

Despite their large size, humpbacks feed on small schooling fish like herring, sardines, anchovy and sand lance, or on swarms of krill, a shrimplike invertebrate.

To feed on such small prey requires some special equipment. Humpbacks are known as ***rorqual baleen*** whales. ***Rorqual*** refers to the expandable pleats in their throat, and ***baleen*** replaces teeth. Baleen looks like rows of overlapping hairy curtains hanging from the upper jaw. It is made of keratin (like our hair and fingernails).


Humpback whale baleen

When the humpback approaches food, its huge jaws open wide, then close around the food, plus a lot of water. The throat pleats open up and then squeeze together, pushing the water out through the baleen and trapping the food, much like draining macaroni through a sieve.


bubble net feeding


Humpback whales

The underside pattern e fluke is unique to that animal, ach individual humpback can be identified and studied by scientists.

One of many methods humpbacks use for feeding is known as ***bubble netting***, a cooperative behaviour that happens when they find a very large school of fish. One or two humpbacks descend below the fish and make loud trumpeting sounds, scaring the fish into a tight group. Next, the whales slowly breathe out bubbles while circling the fish. The bubbles act like a net the fish will not swim through. Other humpbacks swim upward through the school of fish, with mouths open to catch them. The whales take turns blowing bubbles and feeding.

The humpback population in the North-eastern Pacific has grown steadily since 1967 when commercial whaling officially ended. Now humpbacks may be seen anywhere in B.C.'s coastal areas. Some are even staying year-round!

So - if you are in a boat and you see a 'blow', GO SLOW. Your reward will be meeting one of the world's most magnificent animals.

Joan Lopez became interested in marine biology after going snorkeling, then learning to dive. Her interest in whales evolved over time and for many years she has been a wildlife guide with a Vancouver area whale watch company.

Conservation note: Threats to this growing population include not enough food, entanglement in ropes and fishing nets, and ship strikes.

Photo credits: all Joan Lopez, B.C. except: Whale baleen, wikipedia • whale bubble net feeding: Christin Khan • whale bubble net feeding: wikipedia • **Illustrations:** whale: Homunkulus28, istock • Bus: alazur, istock

Darners! Dashing Blue-eyed Guardians of the Ponds

By Brian Herrin

1) Blue-eyed

This summer, why don't you take some time to get to know the dapper Blue-eyed Darners? Easy to observe, they truly are amazing flyers - flying forwards, sideways, backwards as well as up and down. They also live in two distinct habitats - in water ***and*** on land.

2) Blue-eyed Darner wing up

These husky blue dragonflies dart back and forth along the banks of freshwater lakes and ponds. If you row along a waterway, one may land on your sweater or oar handle as they are fearless and will investigate any movement. No need to be afraid of coming 'eyes to eyes' with a Darner Dragonfly. They're stingless and don't bite humans, so you may get a chance to meet a magnificent insect up close!

Darners are B.C.'s biggest dragonflies. Their large eyes, with up to 30 000 lenses, are designed to spot other smaller flying insects. They are hungry predators and may even eat smaller dragonflies, catching them on the wing! Each male darner 'owns' a certain patch of the shoreline and tirelessly patrols it from dawn until dusk, chasing away other males. When two males clash, not much happens except a noisy clatter as their wings collide. (Of course, the males treat the females in a more friendly way!)

A large darner can fly at 60 km per hour and can do that for the whole day! No wonder they are always hungry and hunting! Their large powerful jaws make short work of flies and other insects; if they land close to you, you can hear them crunching up their prey!

3) Blue-eyed Darner hovering

4) Darner

Darner in flight

5) Blue-eyed Darners mating

To mate, the male darner grasps the visiting female just behind her head. Once connected she bends her abdomen forward to connect with the male's second abdominal segment and the sperm is transferred to her from the male.

The female then detaches and finds a good spot near water where she makes small slits in a stem or mushy stick to lay her eggs in. She often hides to avoid other males, so you must listen for wings rustling as she flies among the reeds.

6) Nymph

Darner eggs hatch into fierce underwater predators called nymphs. The nymph stalks its prey and grabs it with a huge hinged lower jaw that has pincers at the end. And surprise! a nymph can shoot water out of its anus, jet-propelling it forward either to escape something larger or to catch something smaller! As it grows it will moult 10 - 14 times, which may take a year or two, depending upon how warm the water is. (The warmer the water, the quicker the nymph grows.)

When it is ready, the nymph crawls out of the water to a plant stem or rock, and during the night will emerge as an adult darner.

The nymph needs about a day to dry out and harden and is easily damaged by rough movement or wind. Picking one up may harm it, but as the new soft darner is not going anywhere right away, you can easily watch it without touching it at all.

For about two weeks the new darner hunts and grows stronger without getting larger or needing to be near water. Then it is ready to head back to the water to compete for a territory, find some mates and start the cycle over again.

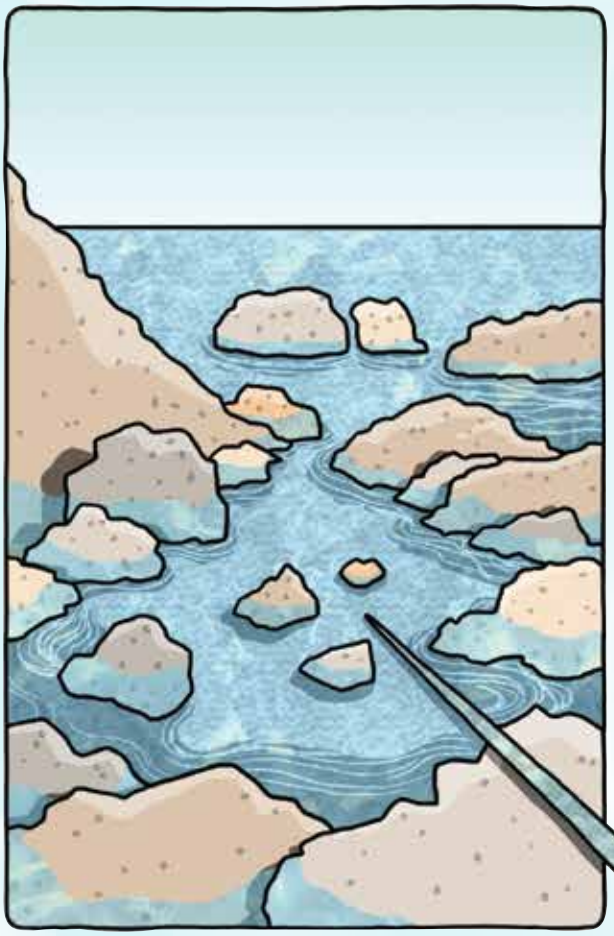
7) Blue-eyed Darner resting on grass

Photo credits: background Medow: jackekasak, istock • 1 - 3 & 7: Rob Alexander, B.C. • 4: David Shackleton, B.C. • 5: JG Polman • 6: Vitalii Hulai, istock

A Read Aloud Story

Rock 'N' Pool

Illustrated by
Sara Theuerkauf



"**The tide went out and I got stuck here,**" said Gobie.

"**You won't like it here,**" said Barnacle. "**It's very quiet.**"

"**Why don't you try the rock pool next door, dear?**" said Anemone.

"**What a bunch of stick-on-the-rocks!**" thought Gobie.

"**As soon as the tide comes in, I'll be off. But until then, I'm stuck,**" he said. "**So - what do you do for fun?**"

"**Keep very still,**" said Mussel. "**And quiet,**" said Limpet.

"**That's easy for you,**" said Gobie. "**You're shellfish. That's what you do.**"

The tide rolled in and the tide rolled out. It left behind rock pools like little underwater gardens.

The creatures that lived in the rock pools liked it there.

"**Aaaaah, nice,**" said Anemone with a sigh.

"**Hold on tight!**" said Barnacle, closing his shell.

Limpet made himself comfy nearby. Mussel had clamped her lips. Tubeworm shrank into his cosy tube for a nap.

"**Is it always this quiet here?**" said a voice.

"**Who said that?**" asked Limpet.

"**I did,**" said a small fish, swimming out of the seaweed. "**My name is Gobie.**"

"**What are you doing in our rock pool?**" asked Tubeworm.

"If Gull spots you, he'll gobble you up!" said Anemone.

"Don't worry," said Gobie. **"Look!"** And he hid himself in some seaweed at the bottom of the rock pool. He sat very still and quiet. The shellfish couldn't tell what was seaweed and what was Gobie. He was completely hidden.

"Oooh!" said Anemone

"Good, isn't it?" said Gobie.

"So you can stay still!" said Barnacle.

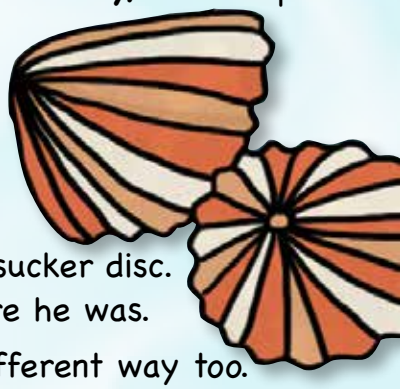
"And quiet!" said Tube worm.

"I like you better already," said Limpet.

"You know," said Gobie, **"I like you too."**

"Oh," said Mussel. **"What's the matter?"** asked Gobie.

"When the tide comes in, you'll be washed away! We'll never see you again!" wailed Mussel.



"Don't worry about that," said Gobie. And he showed them his special sucker disc. When the tide came in he stuck fast to the rock and stayed right where he was.

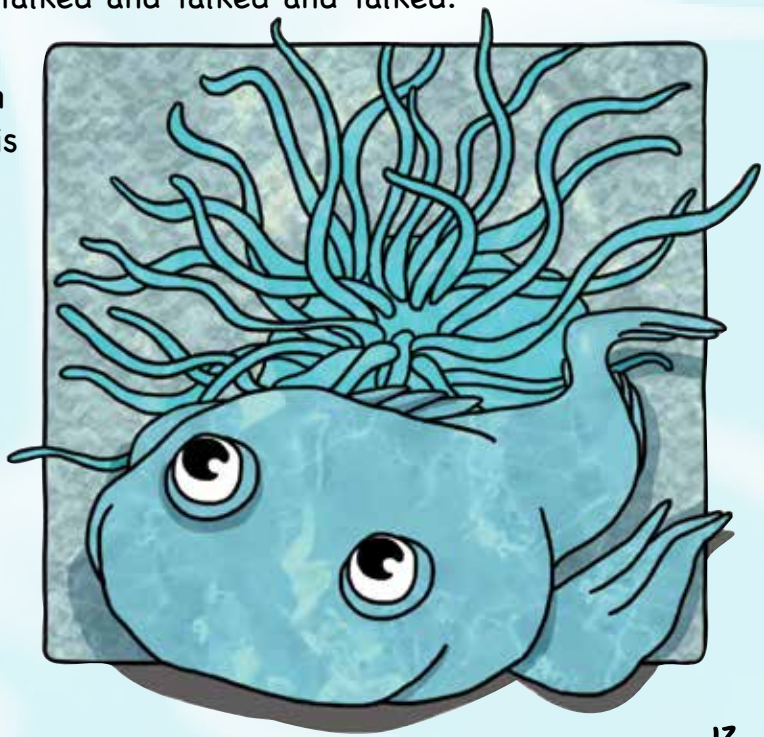
When the sea had covered the rocks, Gobie saw his new friends in a different way too.

Anemone shook out her tentacles. Limpet crawled about, licking algae off rocks with his rough tongue, and Mussel opened her shells and talked and talked and talked.

Barnacle really came out of his shell. Feathery legs exploded out of his top and swayed about in the sea. Even Tubeworm poked his head out of his tube and waved his tentacles about.

"Well," said Gobie, **"it seems I'm not the only one full of surprises. This is a real party rock pool after all!"**

"So," said Anemone, swaying her tentacles, **"Will you stay, then?" "You know, I think I will,"** said Gobie, swimming around her. **"It's only rock and pool but I like it!"**



Note to parents: Gobie is the Northern Clingfish (*Gobiesox maeandricus*), native to the Pacific coast of North America. Gobies live in the intertidal zone (between the low and high tides) in tide pools or on rocky shores where they hide within seaweed or under rocks.

From WILD TIMES, a publication of the Royal Society for the Protection of Birds, adapted with permission.

Have a Nature Question?

ASK AL

Al Grass has worked as a career park naturalist and ranger throughout B.C. Now he is a well-known nature tour leader and photographer. Al especially likes birds, insects and spiders. Photo Credit: Robert Alexander, B.C.

Photo credits: sgrace, CC

Q: I saw a Sea Lion floating in the ocean holding one flipper up in the air. Why was it doing that?

A: The flippers of Sea Lions are not very well insulated and can be used to help the Sea Lion maintain body temperature (*thermoregulate*). By holding their flippers in the sunshine, they take advantage of the heat of the sun to warm the blood in their flippers which then moves through their bodies and warms the Sea Lion.

A generous NatureKID, Morgan Heslup, from the North Vancouver Club

For her 8th birthday party Morgan had a 'toonie' party. She asked her friends to bring toonies instead of gifts. Then she donated the toonies to NatureKIDS because she wants to invite a child to join who doesn't have enough money.

Morgan says "*I decided to make a donation with my birthday money because I already have so many things and I like helping people. I chose NatureKIDS because I like going to Explorer Days and I wanted to give another child the same opportunity.*"

"*My friends were not very surprised when I asked for donations to NatureKIDS instead of gifts. Every year I choose a different organization to support for my birthday. I am glad I chose NatureKIDS this year!*"

As well as Explorer Days Morgan likes to read NatureWILD. She says "*I really like stories about water life, like otters, seals and seal lions. I also like to read about ways to help our environment, and about weather. It would be neat to read about different Nature Clubs and what activities they do.*"

THANK YOU. MORGAN, for your kind gift. We will look out for a child who would like to join NatureKIDS but would find it hard to pay for the membership.

Answer to bat puzzle: "Bugs annoying you? We'll get them! Don't worry, we ace fliers will never bump into you. If you help us, we will help you."

Nature WILD NEWS

Passports to Nature

Micah (Nicomekl) and Rayne and Sage (Merritt) completed their 2nd Passports to earn their coveted **NatureKIDS caps!** Ken (North Vancouver) and Grace (Delta Home Learners) earned rewards for their 3rd Passports! Kaylee and Emma (Kelowna) and Troy (Nanaimo) celebrated completing their 4th Passports. Janel (Nanaimo) is an amazing NatureKID - she just completed her 8th Passport!

Congratulations all!

Keep mailing/e-mailing us your completed passports so we can acknowledge and reward your time spent in nature.

Comox Valley NatureKIDS had a great outing to Melda's Marsh in Seal Bay Park, seeking out signs of spring and discussing projects to reduce their impact on the environment. CVRD's Early Earth Day celebration was on at the park and everyone had fun participating in the games and activities, and winning prizes! Comox Valley Earth Day, credit: H. Datoo

Nanaimo NatureKIDS had a great animal tracking experience on their February Explorer Day! After playing some games, they gathered together for a gratitude circle with their animal tracking mentor, Doug Janz. With snow still on the ground, there were many tracks to discover. Thanks to Doug for a great learning experience! Nanaimo, Animal Tracking, credit: L. Brooymans

Merritt NatureKIDS explored Monck Park with mentor Liis Jeffries who taught them about the birds and plants they found there. Merritt, Monck Park Adventure, credit: R. Wallace

Prince George NatureKIDS joined leader Vanessa Elton to open their hearts and minds to the new spring growth in Lheidli T'enneh Memorial Park. Congratulations to Dawn Bast and Vanessa for bringing NatureKids back to Prince George! Prince George, Lheidli T'enneh Memorial Park, credit: Natasha Ewing.

Many things these days are labeled Biodegradable, which means "able to decay naturally and in a way that is not harmful".

Dr. Doowitt wanted to know just how 'biodegradable' some of those 'things' might turn out to be. He buried six objects that were labeled biodegradable in his garden last summer. This summer he dug them up and this is what he found:

(from worst - #1 to best - #6):

So it seems that paper products do degrade (decay) although they take more than a year to decay completely. Some of the mixed materials such as the tin-foil/cardboard soup box and the coated butcher wrap decayed more quickly than the rest, but all may disappear with more time.

Conclusion from experiment:

1. 'Biodegradable' labels should say how long the material takes to degrade.
2. We should shop more carefully and refuse wrappings, containers, etc., that do not biodegrade quickly.

Test for yourself! Fill a 15cm wide plant pot with rich soil. Bury toonie-sized pieces of box cardboard, paper and card containers, bits of plastic cutlery, stirrers, pieces of biodegradable plastic bags and newspaper, short straws, anything else you want to test, plus some worms. Keep soil moist at all times and add a plant that will flower over the summer. **Photo credit:** Brian Herrin, B.C.

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