



**A ROCHA**

Environmental Stewardship

## **Nature Explorations Resources**

**PROGRAM**

<b>Nature Explorations Program</b>	<b>3</b>
<b>Day 1 – Birds</b>	<b>34</b>
Birds & beaks matching pictures	35
Bird Fact Cards	37
Bird ID sheets	46
BIRD MIGRATION GAME	47
Birds and Beaks Information sheet	60
Birds Eating	64
Early bird bird pics	72
Early bird food info	74
Early bird food pics	75
Making bird feeders	77
Migration Bird Wingspan	79
Summit Pictures	81
<b>Day 2 – Trees and Plants</b>	<b>82</b>
ARC_native_tree_cards	83
Biodiversity Scramble and Crossword	89
Macro Micro Garden Pics	92
Plant Parts	94
Summit Forest Threats	95
<b>Day 3 – Bugs</b>	<b>96</b>
Bug Blast	97
Bug Life Cycle Relay	99
Bug life cycles poster	101
Bug life cycles relay adult pics	102
Garden_beneficials	106
Pests in the Garden	107
Rot Squad	111
Summit Bug Relay	112
<b>Day 4 – Mammals</b>	<b>120</b>
Bat Info Sheet	121
Bat Pictures	127
General Clue Hunt – Mammals and Birds	129
Locomotion Relay	133
Mammal Clue Hunt Intermediate Version	135
Mammal Clue Hunt Primary Version	137
Mammal Memory Cards	140
Mammal Survival Food Information Cards	143
Summit habitat destroyers.	146
<b>Day 5 – Water Creatures</b>	<b>150</b>
Amphibian poster pics	151
Aquatic Pollution Tolerance Sheet	154
Dragonfly pics	157
pH Chart	163
Pond ID cards	164
Summit Web of Life	168
Water Testing Sheet	172



Day	Theme	Stations	Faithbuilder	Resources to Gather
1	Birds	1. Painted birds 2. Beaks/tools, make an apple feeder 3. Bird migration game; Bird wing sizes 4. Bird-watching	Psalm 50:10-11 Genesis 1:20	bird shapes, paint, sticks, feathers. Beaks/Tools; tools Feeders: Spoons, bowls, fruit/seed mix, apples binoculars
2	Trees and Plants	1. Leaf rubbing nature cards; Papermaking 2. Hug-a-tree; Bark-casting 3. Tree Life; Tree Nutrition Relay; Tree Match 4. Garden Fun; Garden camera relay	Psalm 1:3 Psalm 104 Matthew 6:28	Card paper. Paper, blender, frames, screen Blindfolds, clay chalk, small cups, sugar, bottle/bowl of buttons, water cameras
3	Bugs	1. Bug diorama 2. Pooters; bug hunt 3. Bug life cycles relay; Life cycle growth; Life cycle tag 4. Compost check	Genesis 1:25 Proverbs 6:6	Recycled materials: boxes, Styrofoam  Magnifiers, compost
4	Mammals	1. Bat Art; Bat & Moth game  2. Mammal Clue Hunt 3. Teeth, Ears, Leaves game; Locomotion Relay 4. Quick Frozen Critters	Job 12:7, Isaiah 43:20,	Black construction paper, pastels, string, sticks, rocks Craft foam, wood blocks Hoops, plastic chips/buttons
5	Water Creatures	1. Dragonfly Creations  2. Amphibian Quest 3. Presentation Prep 4. Pond-dipping/creek catch	Genesis 1: 9-10; 1:20-21	Clothespins, tissue paper Googly eyes, glitter pH products paper, felts Pond-dipping nets, buckets

**Background:**

A Rocha is an international conservation organization working to show *God's* love for all creation.

We work out our commitment to environmental action through community-based conservation projects.

A Rocha has five distinct characteristics:

Christian	The name
Conservation	A Rocha is
Community	Portuguese and
Cross-Cultural	means 'the Rock'
Co-operation	

In simpler language, we care about *God's* creation. We hope that you will be excited and encouraged by learning about living things so that you will help be good stewards of *God's* earth too! We're offering this program free of charge for your use, but would appreciate an acknowledgement of its source, and an encouragement of our work by a donation. If you have questions about any activities, please contact us at:

A Rocha Canada  
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The theme of this week's day camp is Nature Explorations. Explore the world of insects, plants, birds, mammals and other natural wonders.



Gathering time: 9:00-9:10 (have some simple table activities for kids)

Music, Skit, Faith Builder: 9:10-9:40

Station Activities: (25 minutes per station + 5 mins transition) 9:45-10:10 +5; 10:15-10:40 +5

Snack 'n' Recreation Games\*\* or Journal time (see day 1): 10:45-11:25

\*\*Note: journal time will happen for 10+ minutes during this time. If doing this, there will probably not be time for the Summit activities or Recreation games.

Station Activities: 11:25-11:50 +5; 11:55-12:20 + 5 + wrap-up announcements and "what was the coolest thing today?"

[Summit activity: 12:15-12:30—only as time allows]

\*Debrief the day, and tie to Faith Builder. (music/ Read a story/Prayer to close)

**\*\*NOTE:** on the **FINAL DAY** parents will be invited for a visit at 12 noon, getting a glimpse into what the program has been about all week. Children will show parents what they've worked on, tours are available (kids participate with parents), coffee & goodies.

**STAFFING:** One leader per station. One leader moving with each group is ideal!

\*1 person needed to prepare snack, signal for station changes, and take photos (great to use for a PowerPoint presentation of the week's activities). It works well to have 1-2 leaders in charge of recreation time.

**REGISTRATION:**

\*Have nametags with children's names prepared each day. Divide children by age groupings ahead of time, with the symbol designating their group on the nametag.

The daily program contains skits, recreation games, 'Faith builders, 4 activity stations and a whole-group concluding activity. Resources include:

Day 1:

- Bird ID sheets
- Bird/beak matching pictures
- Birds and beaks information sheet
- Pictures of birds eating
- Making bird feeders
- Early Bird Gets the Worm-bird picture cards, bird food cards, bird food info cards
- Bird migration game cards
- Migration bird wingspan
- Bird Fact cards (including wingspan information and pictures)
- Summit pictures

Day 2:

- Biodiversity scramble & crossword
- Tree cards
- Garden Plant poster pictures (use from Macro/Micro matching sheets)
- Plant Part poster pictures
- Garden Macro/Micro Matching sheets
- Summit Forest threats pictures (alternate: garden pest pictures from Day 3)

Day 3:

- Bug poster board (station 1—use pictures from Summit Bug relay)
- Bug Who am I? (use cards from Summit bug relay)
- Bug Blast sheet (also use picture cards from Summit bug relay)
- Rot Squad compost pictures
- Pests & Beneficials cards
- Bug Life cycle Poster & Relay Cards (adult pictures in separate document)
- Summit Bug Relay Cards

Day 4:

- Bat Info Sheet
- Bat Poster Pictures
- Mammal Clue Hunt (Primary, Intermediate, General)
- Mammal Memory Cards (use also for Quick Frozen Critters and Teeth, Ears, Leaves)
- Locomotion Cards
- Mammal Survival Food Information Cards (to be put on back of Mammal Memory Cards)
- Carnivore and Herbivore Poster Pictures (use pictures from Mammal Memory)
- Summit Habitat destroyer pictures



Dragonfly pictures  
Amphibian Poster Pictures  
pH Chart  
Aquatic Pollution Tolerance Sheet  
Pond ID sheet  
Water testing sheets  
Summit Web of Life

**NOTE:** To create poster pictures, copy photos from pdf document into Word documents and then enlarge.

## DAY 1 INTRODUCTION

**As children arrive on the first day, let them make a Nature journal**

Materials: paper cut in  $\frac{1}{2}$  page size; staplers; foam for journal cover (folded or cut, and stapled), glitter glue, felt pens, scissors.

Children will choose a special spot on the first day, and go and spend 10 minutes there during each day with their journals - drawing and/or writing.

Introduction to Day Camp Leaders Skit (Line-up).

Have all the leaders stand in a line. The first person steps forward in the line, saying:

(example) I'm glad that I am \_\_\_\_\_ [name]

There's no one I'd rather be

But if I wasn't \_\_\_\_\_ [name]

A \_\_\_ [birdwatcher] \_\_\_\_\_ I would be.

[Show 3 different actions, ending with one complete word/action]

'Here's a bird (pointing)

There's a bird (pointing)

Here it comes again (moving finger)

Splat! (Slap hand on forehead)

The second person steps forward in the line saying their name/occupation.

They show 3 different actions, ending with one complete word/action.

They repeat those actions. When it is being repeated for the first time, the first person joins in again with their 3 actions. Both should end with their one complete word/action (i.e. 'splat').

The third person steps forward in the line saying their name/occupation.

They show 3 different actions, ending with one complete word/action.

They repeat those actions. When it is being repeated for the first time, the second person joins in again with their 3 actions. When it is being repeated for the second time, the first person joins in again with their 3 actions.

Continue until all the leaders have introduced themselves.



## Day 1: BIRDS

**Skit:** Mrs. Bush comes running, worried and upset. All the birds have disappeared from her garden and she doesn't know why. Sherlock Holmes appears and offers to help solve the mystery. Mrs. Bush suggests talking to the tree since that is where the birds live. She immediately thinks the stuff she's been spreading around the tree has been harming it. Sherlock is on the case. (exit)

Props: Mrs. Bush wig, apron, Sherlock Holmes hat, jacket, pipe?

### Faith Builder:

Props: poster board bird shapes on sticks, bird picture poster/display board (can use Early bird game pictures or Top 10 ARC birds), felt pens, 4 bird poster board shapes.

Look at this poster of different birds. Ask 'What's your favourite bird?' Then ask for 4 volunteers to come up to the front table. Tell them that they can each use the felt pens to create a beautiful bird. As they decorate, READ....

*Genesis 1:20*

And God said, "...let birds fly above the earth across the expanse of the sky. So God created...every winged bird according to its kind. And God saw that it was good..."

*Psalms 50:11*

I know every bird in the mountains,  
and the creatures of the field are mine

Ask children an open-ended question like: What does this passage tell you about the Creator? (God) Do you think God is a good creator? Does He have a good imagination?

When you make something that you think is good, how do you feel? 'How do you think God feels about the things that He's made?'

Ask the 4 volunteers to show their created birds. How would you treat something that you've made yourself?

### Day 1 Stations:

#### Day 1 Station 1: Painted Birds

**Faith Connection:** As the children are creating a bird, talk about what it means to be an artist. Emphasize that God is the Creator, and His Creation is good. What do you think of your artwork? How would you feel if someone wrecked your artwork? How do you think God feels when we damage His creation? What can we do?

**Materials:** Bird poster board shapes, luminescent/fluorescent poster paints, any kinds of collected feathers (crow—not special ones, as they will get wrecked), sticks, masking tape, bird pictures from Faith Builder poster, scissors.



**Activity:** Cut out bird shapes ahead of time (intermediates can draw and cut out their own), collect sticks or the children can collect their own sticks - while walking around look and listen for birds. Look at bird pictures—colours, shapes etc. Design your own bird! Paint bird shapes with bright colours and whatever imaginative designs you choose! Tape a stick onto the back so it can be held up.

*Alternate:* make a bird mobile with strings and sticks.

### Day 1 Station 2: Beaks & Tools and Bird Feeders

**Faith Connection:** God made each bird unique, just as we are also made unique. We each have different skills and abilities, and so do birds. *Read Matthew 6:26*- Look at the birds of the air; they do not sow or reap or store away in barns, and yet your heavenly Father feeds them.

\*if using drill, hammer, this activity needs 2 adults supervising

**Materials:** pictures of birds' beaks, buckets, tea leaves, water, strainer/sieve; 2 small bowls, beans & seeds, tweezers, chopsticks; various nuts, nutcracker(s), nut pickers; [OPTIONAL: several 2x4 boards, electric drill, hammer, nails]; 2 containers of water, straws, baster; paper, table knives; large bucket of water, plastic fish, bugs, dipnet; set of pictures to match bird beaks and tools together.

**Activity:** Look at bird pictures of different shaped beaks and food (use larger versions of birds and beaks pictures). Talk about different kinds of purposes for the beaks (what and how do different birds eat?). Relate how birds eat to how we eat. How do we eat milkshakes? Steaks? Sushi? So if birds don't have straws, knives, or chopsticks, what do birds use? Try matching cards with bird beak pictures and tool pictures.

Set up a table with 'food' items and corresponding tools. Use tools to get food the way a bird would:

- 1 bucket with tea leaves in water. Tools: strainer, sieves, extra bowl to deposit in.
  - 2 bowls with varied beans- tweezers, chopsticks are used to pick them up and transfer into a different bowl
  - bowl of nuts- pick & nutcracker to open them (\*Caution: be aware of nut allergies), container for shells
  - bucket of water- use baster to suck up water, squirt into another container.
  - boards & drill, hammer & nails: Children learn to drill a hole, hammer a nail into a board
- \*needs careful adult supervision (1 on 1)
- paper- Gently serrated table knife. Cut/tear the paper
  - large bucket of water with plastic objects floating- dipnet to scoop up objects, tray to put them on.



*Additional: Apple Bird Feeders*

**Materials:** Pictures of birds eating. 1 apple per child (pre-cored), several soup spoons, large mixing spoons, large bowl, bird seed, rehydrated dried fruit (raisins, currants, cranberries), bird seed, lard,  $\frac{1}{2}$  sheet of scrap paper, pencil for recording child's name.

**Activity:** Look at pictures of birds and food: talk about different things different birds eat. . Have children help mix bird seed, rehydrated dried fruit, lard. Stuff into apple centres, and talk about which birds would eat these kinds of things—what shape of beaks would they have? Where would be best to put the apple feeder (backyard, fence post, picnic table, deck)? Talk about whether those places would be safe for the birds coming to eat. What would be risks for the birds? (cats, people, bigger birds, dogs?)

*Additional-Primary:*

How do different birds act? Imitate them (as in Simon Says): Great Blue Heron stands on one leg, a duck dabbles its beak in the water, a hummingbird puts its long beak into a flower (other hand cupped).

*Alternate:* make a bird feeder out of a milk jug. Place some feeders in a nearby garden and watch for birds!

**Day 1 Station 3: Bird Migration Game**

**Faith Connection:** God provides food and shelter for birds. When we go on a trip, we have to plan where to stop and eat. God has already created that for birds, so that they can survive their long journeys. If people destroy habitat areas, then birds might not survive their migration trip! How can we help birds survive?

**Materials:** map of North America, chalk, scenario cards, migrating bird pictures, die.

[\*note: this map is available (for purchase) from the National Geographic at:

<http://www.ngmapcollection.com/Product.aspx?pid=15828> ]

**Activity:** Draw a chalk outline on the sidewalk of N & S America, post up the map. Spread out scenario cards along the outline. Talk about how birds migrate & look at migration map. Have students roll a dice to determine the card they start on. Follow directions on each card. When birds die/succeed, talk about the hazards and problems of migration. What is people's responsibility for any of these?

Look on the map at the kinds of birds that migrate. Are they all similar? (size, wing shape, etc)



*Additional: Bird wing sizes*

Materials: ropes with tags showing wing sizes (use Bird fact cards), measuring tapes, display of feathers

[\*note an interesting site for feather identification: <http://www.lab.fws.gov/featheratlas/> ]

Activity: Examine various feathers. Measure children's arm span with bird wingspans. Calculate migration distances for different birds on the migration map. How far do they fly? Who flies the farthest, and how big is its wingspan?

*Primary alternate: Bird's Life*

Materials: Floor mat with board game 'path' marked on it, beach ball with numbers & arrows designating move forwards (arrow pointing up) or backwards (arrow pointing down), bird picture cards (Migration Bird wing document). See below:



Activity: Throw the beach ball to children in turn. Wherever their right hand touches, that's how many spaces they go on the mat. The closest arrow tells the direction—forward or backwards. Who finishes their journey first? Sometimes God uses us as helpers. How can we take care of them? What are some things we do that harm them? (Examples: pollution and chemicals from cars and factories goes into water and can poison birds. There is danger from wires, boats/cars, other animals, hunting).

Nesting places are disappearing: wetlands are being drained, trees cut down, land being developed for buildings. Industry and development along the beaches and lakes is interfering with migration stops. How can we help? (leave wild spaces, provide bushes and trees in our yards, safe bird feeders)



#### Day 1 Station 4: Bird watch

**Faith Connection:** An important part of bird watching is listening! Birds know who their Creator is and how to praise God. We could learn something from the birds.

**Materials:** bird ID sheets, binoculars, a bird field guide

**Activity:** Show children how to use binoculars: which part to look through and focus with. Have them try focusing on a designated spot. Binocular etiquette (strap over head, always hold with one hand, no swinging or banging). Visit bird feeders, garden, forest/pond area and watch the activity. Or go quietly into a treed/shrub area, sit quietly and watch for birds. Or visit a good-sized pond and see who visits there.

*Indoor Alternate:* The Early Bird gets the worm! Game [large open area]

**Materials:** bird picture cards (picture and information about what it eats), sets of different bird food cards (seeds, fruit, worms, small mammals, fish, bugs & beetles, spiders)

**Activity:** Divide into 2-3 groups. Give each child a bird card so they know their identity. Scatter food cards around the area. Teams must try and collect the correct food cards for their team. (for primary ages, introduce vocabulary and use just pictures)

**Day 1 Summit:** Tip the Bird Nest (modification of 'Fruit Basket') \*if large number, divide into several smaller circles.

**Activity:** Give each child a bird name (one of four, i.e.: robin, owl, heron, chickadee—good to have poster pictures). Have the children sit in a semi-circle, with one child 'It' standing at the open side with leader. Call out one of the four birds. Each child who is that bird gets up and tries to move to another spot, while the child in the center also tries to find an empty seat. There should be one child left over, who then becomes 'It', calls out another bird, and so on. The child in the center can call out more than one bird at a time, OR "tip the bird nest," at which time, everyone gets up and finds a different seat.



## Day 2: TREES & PLANTS

In gathering time, have Biodiversity crossword & Biodiversity scramble sheets (Canadian Forestry Association, *Canada's Forests: All things big and small*, p. 11, 12) for intermediates to work on.

**Skit:** Sherlock interviews a Tree. Tree says it wasn't Mrs. Bush POISONING things- she was spreading compost around the garden! It looks and smells awful, but it's very good for the soil. All of us trees love good stuff in the soil—it helps us grow better and healthier. But Tree says, 'talk to the caterpillar. I've felt the caterpillars crawling all over my branches. Maybe the caterpillar ate all the leaves the birds use to build nests and shelter. Sherlock pulls his chin. OK, I'll check with the caterpillar.

Props: 2 branches, green fabric

### Faith Builder:

Draw large chalk tree on the floor. Ask for 2 volunteers to come and help measure the tree with a tape measure. Then ask if they know how a tree THAT big can get food. (from its roots). If the tree has to get water and nutrients from way down in the soil all the way up to its branches and leaves, how can it do that? Ask another leader to come up. Give them a LONG line of straws taped together. This is like one of the pipelines inside a tree. Place a cup of water along the tree, and have the leader stand on a small stepladder. The leader must then try and suck water up the LONG straw. Can (s)he do it? Have some encouragement chants.....So you can see how hard a tree has to work to get what it needs. God knows where the best places are for trees to grow! (they need to be where they're near enough to water to survive!)

Props: chalk, measuring tape, straws taped together, cup of water, stepladder

### Interesting tree facts:

The tallest tree in the world is 115.5 m, that's ~38 stories!

The widest tree in the world has a circumference of 48 m, or ~40 children holding hands.

The oldest tree in the world is a 4,600 year old Bristlecone (found in high elevation deserts in California).

The seeds of cottonwood trees can float for several days.

The birch tree produces 1 million seeds every year.

Tree roots can grow through concrete sidewalks.

Conifer trees in the north can survive negative 50 degree Celsius winters.

Baobab trees can survive drought with their own personal water tank in their trunk.

Mangrove trees can live permanently in salt water and never drown or turn salty.

Some trees can survive winds up to 200 km/hr.



*Read Psalm 1:3*

He is like a tree planted by streams of water, which yields its fruit in season and whose leaf does not wither.

This is how plants and trees grow!

*Psalm 104: Beside (the mountains) the birds of the heavens dwell;*

*They lift up their voices among the branches.*

*...The trees of the Lord drink their fill, the cedars of Lebanon which He planted, where the birds build their nests*

This is part of the reason why God made plants and trees: they are important for all sorts of other creatures, like birds, and us—to find shelter, safety and food.

How are trees and plants important for us? (wood for building with, fires for heat, fruit and leaves for eating, beauty products, medicine). How should we treat trees and plants then, if God cares for them? What happens when we are not careful of the trees or plants? (loss of habitat for animals, birds; erosion where trees are cut, loss of shade and protection. Trees clean the air, so if we cut too many, we are losing our air filters, sources of food, materials for building, heat source, medicines. This changes the environment so that other living creatures might not survive)

*\*Note:* we do NOT want to overstate this and make children fearful, although these are all true situations. Use discretion about how heavily to stress these points. These are *suggestions* of facts that could be pointed out.

**Day 2 Stations:**

Day 2 Station 1: A. Leaf rubbings, nature cards

**Faith Connection:** God made everything unique for a purpose. God made different plants and trees especially suited to grow where they are—some where it's hot and sunny, some where it's damp and cool. Each has different roots, different leaves, shapes and sizes.

**Materials:** cardstock, crayons, pencil crayons, plain paper, leaves, leaf samples, glue.

**Activity:** Different plants have different kinds of leaves for different purposes. Some leaves of plants in very dry places are specially made to collect moisture. In wetter places, they might hang down to shed water. Some are thick and waxy, some are hairy, some are thin and smooth. Collect and examine some interesting leaves, with different shapes and textures. Make rubbings on paper with crayons or pencil crayons. Cut out and glue onto card stock. Design and decorate.

*\*2 children can do their 'papermaking with frames' while others are making their cards.*



## B. Papermaking

**Materials:** scrap paper, plant/vegetable scraps, cornstarch, (10 wooden frames with screen stapled on for a group of 10 children), water, bowl, blender, large plastic basins, sponge, 2 clean dish towels, board to let papers dry on, ice cream bucket with water for cleanup, rag, fabric dye-optional.

**Activity:** Tear the paper into little pieces, and soak in a bowl of hot water for 30 minutes (\*or soak overnight).

Place a handful of wet scraps into a blender that is half-full of warm water. Blend at medium speed until the paper forms a mush. Collect and add some plant or vegetable scraps or add a few drops of non-toxic fabric dye for colour if desired, and blend again.

Pour the pulp into a large plastic basin, half full of warm water. Add a small amount of cornstarch to help hold the pulp together when on the screen.

Place the screen in the basin and move back and forth to collect the pulp. Once you have an even layer, lift it out and allow the water to drain [Note: thick layer of pulp = thick paper; thin layer of pulp = thin paper]. After the water has drained, carefully lay the mould upside down on a flat dish towel or absorbent cloth. Use a sponge to absorb the excess water through the screen. Let the paper sit for about an hour. Note: Because it's hard to re-use the frames immediately, you might need to have 20 frames. Gently remove the screen so just the paper is lying on the cloth. Let dry completely (overnight).

### *Alternate: Plant prints*

**Materials:** mallets or hammers, cotton or canvas squares, newspaper, gathered plant materials

**Activity:** Place plants in desired pattern on top of material. Place newspaper or sheets of scrap paper over top. Pound firmly with mallet/hammer or even wood blocks. When the plant matter has made a print, your creation is complete! This can be sealed with clear \*acrylic (buy in an art store). You have a piece of art or placemat!

## Day 2 Station 2: Hug-a-tree & Bark Casting

**Faith Connection:** God has made us to learn about the world with our 5 senses—hearing, seeing, feeling, smelling and tasting. It's good for us to use them all to experience things around us.

**Materials:** blindfolds

**Activity:** Divide into partners. 1 is blindfolded and spun around, led on a circuitous route to a chosen tree. Blindfolded one investigates the tree until satisfied they know it well. They are then led back to home base, unblindfolded, and must guess which tree they felt. Switch places.



*Additional: Bark casting*

Materials: magnifiers, self-drying clay, small pieces of scrap paper & felts to label clay.

Activity: Look at bark of different trees. Take a piece of clay and press it firmly onto the bark of a chosen tree. Then gently peel off, keeping the marks of the bark on the clay.

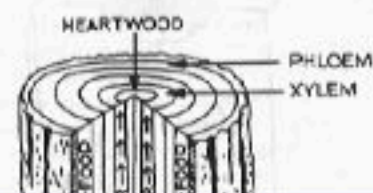
Day 2 Station 3: Tree Life

Faith Connection: *Matthew 6:28*-...see how the lilies of the field grow. They do not labor or spin. Yet I tell you that not even Solomon in all his splendor was dressed like one of these. If that is how God clothes the grass of the field .... Will he not much more clothe you?

What did you hear about plants or trees in these 3 verses? What do they tell you about how they look or grow or what they do? What is God's relationship to them? (need water, bear fruit for people/creatures to eat, are made by God, provide shelter for birds & others, God cares and provides for them).

Background: **Little Green Food Factories.** The food that trees need is made in the leaves. Each leaf contains millions of chlorophyll cells. Chlorophyll cells are green, which is why leaves are green in the spring and summer. These cells actually make food through a process called photosynthesis. Chlorophyll cells take in carbon dioxide (people and animals breathe out carbon dioxide). Chlorophyll cells combine this carbon dioxide with water sent up from the roots of the tree. In the chlorophyll cell, sunlight passes through this mixture and turns it into sugar and oxygen. The sugar is the food that trees need to grow.

Background: **Pipelines inside Pipelines.** Review the idea from the Faithbuilder that inside the trunk of the tree is a two-way pipeline. Just inside the bark there is a pipeline that the leaves use to send food down to the roots. This pipeline is called phloem (flo-em)—a way to remember this is that the food from the leaves goes down **LOW** (rhymes with phloem). Next to the phloem towards the middle of the tree is another pipeline - this one is called xylem (zi-lem) - that sends water up **HIGH** from the roots to the leaves. Between the phloem and the xylem there is an area of wood called the cambium. The phloem, cambium and xylem are the living portions of the trunk of a tree. Every year the tree trunk becomes wider as new layers of phloem and xylem grow from the sides of the cambium. When you look at a cut section of a log you can see the rings of new wood that are added each year the tree lives. In the center of the trunk of a tree is the heartwood. This portion of the tree is old phloem, cambium and xylem layers that are non living. The heartwood is very hard and gives a tree the strength to stand straight and tall.





Materials: magnifiers, optional: cut piece of tree trunk

Activity: search for a cut tree trunk. Can you count the rings? How old is the tree? Are all the rings the same? Why?/why not? (some years the tree doesn't get as much food and rain, so the rings are smaller)

*Additional: Tree Nutrition relay*

Materials: 3-4 small cups (could be Styrofoam egg carton cups), 3 empty small cups and 1 bottles of water, 'Nutrient' bottle, bowl of buttons, 1 bowl of sugar with a scoop

Activity: Use the chalk tree drawn for the Faithbuilder. Divide children into three teams: water, nutrients, and sugar. At the roots of the tree have 1 person from the water team with a full water bottle, 1 person from the nutrients team with a bottle labeled "Nutrients" (full of buttons) and a bowl full of buttons, and 1 person from the 'sugar' team holding an empty cup. At the top of the tree, 1 member from each of the water and nutrients teams will each be holding an empty cup. At the top of the tree, 1 member of the sugar team will be holding a container full of sugar with a scoop. The remaining team members are relay runners. They start at the source of their resource, for example, the full water bottle, and run a cupful at a time to their team's empty cup on the other end of the tree. The 'sugar' runner starts at the TOP, moving to the roots, as the phloem pipeline does. The relay preferably finishes when one of the resources runs out. It may also finish when one of the empty cups eventually fills up. What would happen if it was a very dry year? (the roots wouldn't get enough water to send up to the leaves. No leaves? Then the leaves wouldn't produce sugar for the tree to grow well that year)

*Additional: Tree Match*

Materials: tree cards

Activity: Divide group into pairs. Give children the tree cards and see how many they can find. If they cannot identify the tree, come back for 1 or 2 additional clues.

Day 2 Station 4: Garden Fun

Faith Connection: God provided food for the birds and all creatures. Today we will get to see the kinds of food that God has provided for US!

Materials: Garden plant poster, trowels, buckets

Activity: Identify what's growing in the garden. Is anything ready to eat? (harvest and eat) Do any plants have seeds? Do some weeding/planting in the garden. Talk about what uses plants have for living things (food, shelter/nesting)



*Additional: Garden Camera Relay*

**Materials:** digital cameras, Macro Match sheets & cards

**Activity:** Divide children into small groups of 3 or so. Leader gives a clue for what kind of plant to look for: i.e.-a plant with a flower, a plant with blue leaves, a plant with a bulb, a plant with a colourful stem, a plant with fruit, a plant with a strong smell, etc. First the child finds the given plant, takes a picture, brings it back and shows leader. Next person in the group goes. (relay style) Those who are waiting can work on matching up the cards and garden pictures on sheets.

*Alternate: Plant a seed to take home and grow:*

**Take-home Materials:** milk cartons or juice concentrate containers pre-labeled with tape (if sending home) spoons/trowels, seeds, water container, Sharpie for labeling, plant part poster [showing roots, stem, leaves, fruit, seeds]

**Activity:** Look at the parts of a plant. Look at the seed size and colour first. Can they guess what plant it will grow into? Fill the container about  $\frac{3}{4}$  full of soil. Poke a hole or 2 with a finger, then drop the seed(s) into the hole and gently cover. Water.

**Day 2 Summit: Forest Threat!** (if you're focusing on the garden, you could explore garden threats)

**Intro:** What are the things trees and plants need to survive? (water, shade, sunshine for photosynthesis, seed dispersal) What are the things that harm a forest? (Discuss natural disturbances: fire, wind, disease and pests, snow damage, leaf litter, mushrooms, soil compaction) We're going to play a game about forest disturbances.

**Materials:** life tokens (in 4 colours representing browsers [deer/moose/rabbits], wind, insects/disease or fire), armbands in 4 colours, poster board identifying the 4 colours, ice cream bucket, cones & ropes for boundaries, flip chart paper/clipboard and Sharpie.

**Activity:** Divide the group in  $\frac{1}{2}$ . 1 half will represent the forest community. Hand out 20 different coloured tokens to each. They will represent trees in the forest. They need to find a place to grow and be best protected (within a given area).

Then divide the rest into 4 groups. Each group will represent a different natural disturbance. They will create disturbances one category at a time. Their role will be to enter the forest and take a life token from as many trees as possible.



**Browsers:** Deer/moose/rabbit: walk into the forest, tag a tree and take a life token. Return to gathering area and put token into the bucket. Go back and repeat.

**Wind:** Walk into forest, tag a tree, take a token. Put in bucket. Repeat.

**Insect/disease:** Walk into the forest, tag a tree and take 2 tokens. Put in bucket. Repeat.

**Fire:** Walk into the forest, tag a tree, take the life token. Tag another tree, etc. *Fire does not have to return to the bucket each time.* Students need to collect a maximum of 10 tokens. Choose one volunteer to be the Chief Forester. This person must record the life tokens taken from the trees. To begin, send in the browsers. They have 2 minutes to collect. Stop! \*\*If any tree loses all its life tokens, it dies. That person just sits down.

After the browsers go, did any trees die? Forester records how many tokens each tree lost. Trees collect tokens back.

Next, wind will go in (teacher can quietly 'rig' the situation by removing all but one life token from 2 trees to. These represent weak or older trees which could be susceptible to wind damage. Have them stand on the edge of the boundary, where wind damage has more effect) Give wind 1 minute. Then stop. Forester records damage. Any difference between the 2 disturbances? Trees collect their tokens back.

Insects/disease have 2 minutes to collect life tokens 2 at a time. Forester takes the tally again. Trees collect their tokens.

Fire has 3 minutes to collect tokens. When each 'fire' has 10 tokens, they have to put them in the bucket, to represent the fire being out. As each tree dies, they are allowed to go and get 1 token to represent seedlings regenerating. Forester records the number of trees lost. Chief Forester now tallies totals. Which threat had the most effect on the forest?

Switch roles so trees get a more active part.

\*Garden threats: Identify some typical garden pests. Substitute those for the forest threats.



### Day 3: BUGS

**Skit:** Sherlock comes in dragging a caterpillar. Questions the 'suspect', asking if it knows anything about why the birds have all disappeared. Did the caterpillar destroy their habitat? Caterpillar denies any knowledge. Says we don't eat enough to destroy a whole tree! Says they eat plants too, not just trees, so there are lots of leaves around for everyone. But maybe it was the cat - the caterpillar has seen the neighbourhood cat running around the yard. The cat perhaps has eaten all the birds.  
Sherlock says he will follow up, but don't leave town!

Props: caterpillar-fabric 'body' and pipe cleaner antennae

### Faith Builder: Read *Genesis 1:25*

Props: poster of bugs (Optional - create your own!)

God made the wild animals according to their kinds, the livestock according to their kinds, and all the creatures that move along the ground according to their kinds. And God saw that it was good.

Enter: a person dressed up to look like they're camping. Sits on a chair, drinking coffee, talking about the beautiful sunset. Then slowly begin to occasionally slap a bug, then become more & more frenzied till they run offstage whacking and yelling.

'There are a lot of times when we look at things around us in the world and wonder why they're there—like mosquitoes! Sometimes we think a person we don't like shouldn't be around, just like those pesky mosquitoes that bite us—what good are they? But, as we learned about in the Creation Story, God looked at everything He made and said that 'it's good!' So we know that there's a reason for everything God made, and it's good. ....even if we don't understand why! It's amazing that scientists are still figuring out the incredible ways all sorts of things work in the world. They have discovered that one kind of beetle or bug actually keeps another kind or a plant from taking over too much. God made it so that there's a balance in nature. And sometimes people kill off one thing we don't like, only to find out that *that* creature was important for keeping certain other things in balance. (i.e.—Who knows what a mosquito is GOOD for? ....if there were no mosquitoes, then dragonflies, frogs, birds and other creatures wouldn't have the food they need!) Bugs are part of that balance!

*Proverbs 6:6* Go to the ant, you sluggard; consider its ways and be wise

God tells us that we can even learn things from bugs! (Proverbs) A sluggard is a lazy person, so God is telling the lazy person to watch how hard an ant works, and learn to be wise! So this teaches us that people should pay attention to the other living beings in God's creation, including bugs!



### Day 3 Stations:

#### Day 3 Station 1: Bug Diorama

**Faith Connection:** When God created, He designed the places for creatures to live and made it good. This gives you a chance to create a world for a bug. While you're doing this, you can think about how we can help create good spaces for bugs in our neighbourhoods and backyards!

**Materials:** Bug posterboard (print the pictures from the life cycle relay or others that you find from magazines or calendars), recycled materials of all kinds (Styrofoam, plastic containers, various lids, egg cartons, fabric, cardboard containers & boxes, etc), scissors, tape, glue

**Activity:** Choose a cardboard box, Styrofoam base or plastic base. On it, create a diorama with a whole bug world out of the materials provided.

#### *Alternate: Butterfly*

**Materials:** tissue paper, felt pens, tape, thin skewers

**Activity:** Draw a butterfly shape on tissue paper. Cut out (with extra margin around edges to tape skewers afterwards). Colour designs on the body and wings with felt pens. Tape skewers around edges and along main design lines (body & wings) for support.

**Optional:** suspend with fishing line. Can it fly?

#### Day 3 Station 2: Make a pooter, Bug hunt

**Faith Connection:** There are some very beautiful things in the world God created. This is your chance to not only notice the great big parts of creation, but also see the incredible and tiny things which are just as important!

**Materials:** Use 2 different sizes of straws (cut into finger-length sections), masking tape, small square of nylon stocking, collecting containers (clear plastic containers with lids/clear film containers), magnifiers

**Activity:** Put the 2 different-sized straws together with the nylon between. Secure with tape. You can now suck up bugs without them going into your mouth. Collect insects and gently blow them into containers. Observe with magnifiers.

#### *Indoor alternates: Bug Who am I?*

**Materials:** laminated bug cards (use summit relay cards), clothespins

**Activity:** Attach bug cards to children's backs with clothespins. They must ask questions of each other that can be answered yes/no, until they guess their identity correctly.



### Bug Blast!

**Materials:** chalk squares arranged in columns underneath the heading B-U-G. Make 4 rows down in each column, bug cards (use summit relay cards), ice cream bucket.

**Activity:** Have a bucket with the bug cards at a designated spot. Let everyone quickly choose a card. Leader will call out a category for each column: i.e.- under the B-flying bugs! Any child with that type of bug makes a run for a spot under that column. Anyone left out will have to wait for another chance. Keep the play moving quickly!

\*see Bug Blast sheet for ideas

### Day 3 Station 3: Bug Life Cycles Relay

**Faith Connection:** Every stage of life is important—that's why God made every creature to go through a particular life cycle. So even babies and kids are an important part of life!

**Materials:** Bug Life Cycle Poster, Bug Life Cycle Cards (use life cycle pictures and adult pictures), bucket

**Activity:** Put bug life cycle cards into a bucket. Divide the players into groups of 3 or 4. The first player from each group needs to run to the bucket and take one of the cards. The player brings it back to their team. The next player from each team goes and picks one card and brings it back. The team must decide if the card will help or not to complete the bug life cycle of the same bug. For example, if the first card chosen is a mayfly egg and the second card chosen is a dragonfly larva, then the team will need to choose which bug life cycle they want to create. Each player needs to get a card from the bucket in turn. Players will go more than once until all the cards are used up, and the team has formed one or more complete bug life cycles. Teams are able to trade with each other at the end after the bucket is empty. (i.e.. if team A has a honeybee egg card and team B needs that card, team B can give team A one of their cards and get the honeybee egg card from team A). The game ends when each team has created complete bug life cycles.

**Modifier for Primary** - Have the same number of bug cards as there are groups (i.e.. If there are 3 groups, have only 3 complete bug life cycles).

### *Additional: Life Cycle Growth*

**Materials:** CD player with music

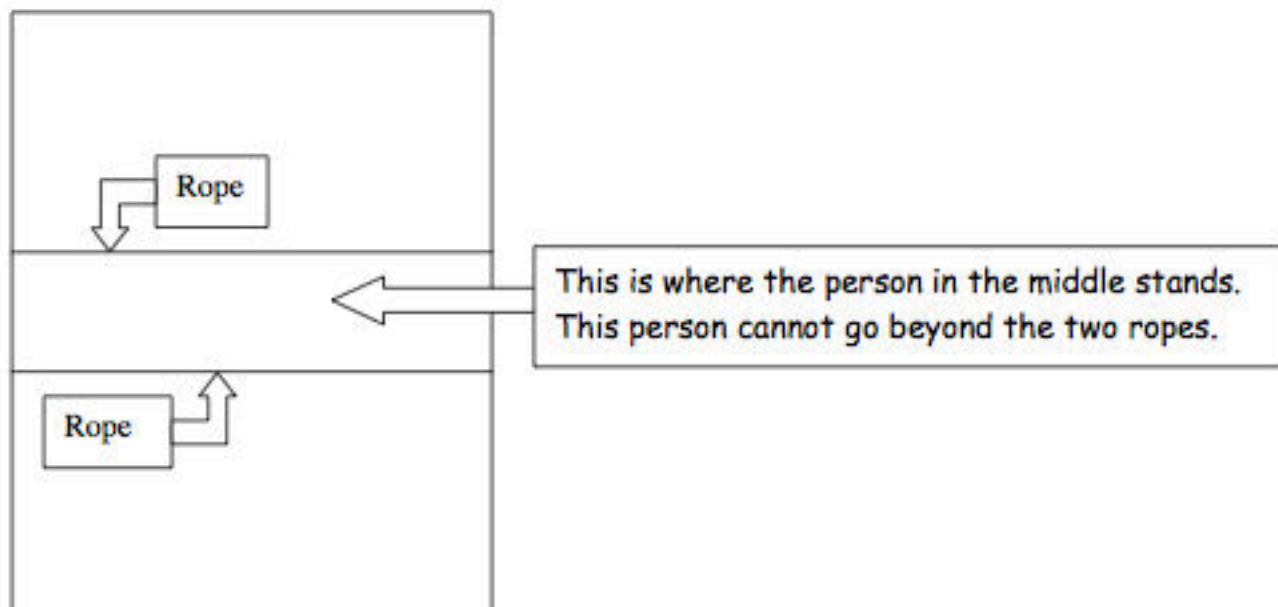
**Activity:** Explain the different life cycle stages (egg, larva, pupa, adult). Show the different actions that represent each life cycle stage. Make an 'O' to represent the egg. Put your arms at your side to represent larva. Spread your arms wider to represent pupa. Use your arms as wings to represent the adult. Each person begins as an egg. The goal of the game is to grow into an adult. When the music plays, the children move around (rolling as an egg, slowly for larva and pupa, flying for adult if they choose). When the music stops, the children must find another player of the same life stage (i.e.. Egg and egg, larva and larva). The players play rock,



paper, scissors. Note: you may need to teach the young children how to play rock, paper, scissors. Whoever wins rock, paper, scissors grows one stage (i.e. egg to larva, or larva to pupa, or pupa to adult, or adult remains an adult). Whoever loses decreases one stage (i.e. egg remains egg, larva to egg, pupa to larva, adult to pupa). Continue playing until all children have had sufficient opportunity to grow into an adult.

#### *Additional: Life Cycle Tag*

Materials: 2 ropes or cones. Set up the playing field as follows:



**Activity:** Set up a playing field wide and long enough for players to run. Choose one person to stand in the middle. That person is an egg. The other players stand on one side of the field. These players begin as larva. When the person in the middle says *GO*, the players need to run to the other side without getting touched. If the person in the middle catches one person, then they join hands. Now there is an egg and a larva in the middle. This time, the players at the end are pupa. The egg and larva (with hands joined) need to catch a pupa. The following time, all the players are adults. The egg, larva, and pupa (with hands still joined) need to catch an adult to create a complete bug life cycle.

#### **Day 3 Station 4: Compost Check**

**Faith Connection:** Plants get nutrients from soil, which is made from dead plants and animals. This reminds us of Jesus, who died to bring us new life with God. We will live again after our bodies die.



Materials: compost, Styrofoam trays or plastic lids, latex gloves if desired, scoop, trowel, chopsticks or spoons, magnifiers, 'Rot Squad' pictures, aquarium or large jar with layers (dirt on the bottom, leaves, fruit & vegetable scraps), examples of things that don't break down easily (plastic, Styrofoam, glass, metal). To find out more about compost, see city farmer website at <http://www.cityfarmer.org/>

Observe the compost aquarium. Look at the different layers. Talk about what goes into compost and why. (recycling, food scraps break down into great fertilizer for the garden. Kitchen scraps in the garbage go in the landfill, where they don't break down for a long time because they don't get oxygen. What *doesn't* break down into compost: show examples as above). Observe the Rot Squad pictures (on a poster or as sets of cards which can be passed around). Scoop compost onto a tray or plastic lid for each child. Observe the Rot Squad through magnifiers. (\*if someone has a Worm compost, you could observe worms from that) Talk about what they do. How many of the Rot Squad can the children find?

#### *Alternate—Pest Patrol*

Materials: magnifiers, small containers, trowels, garden bug poster {pests & 'beneficial' bug cards}

Activity: \* Hide different 'pest' and 'beneficials' (good bugs) bug pictures in the garden ahead of time. Talk about bugs you might find in the garden dirt. Can you tell if they're 'good' or 'bad'? Divide the group in half. Each group will then search for bug pictures. Who can find the most cards? [Could do while weeding with older kids]

#### *Intermediate: Plant Survival Circle Game (adapted from Cat & Mouse)*

Materials: cards of 'beneficials' for garden plants, armbands denoting plants (green), pests (red), beneficials (yellow)

Activity: Choose a child to be a *plant* and one to be a *pest*. The rest of the group are divided in pairs as 'plants' and 'beneficials' or 'plants' and 'pests' who link arms. At the leader's signal, the *pest* chases the *plant*. The *plant* can run inside or outside the circle to get away, but when it feels threatened, it must link arms with a 'beneficial' of one of the pairs in the circle. The plant from that pair must now start running to get away from the pest. After several rounds, change everyone's identities, so that everyone has a chance to be a plant.

#### Day 3 Summit: Bug Relay

Materials: 5 buckets with labels [compost, pond, forest, garden, meadow]; 2 large trays with bug pictures

Activity: Divide into station groups. In relay style, each person must run up to one large tray and choose a picture. Then they must decide which bucket it belongs in and put it in the correct bucket. Then return to their team. Teams sit down when cards are all sorted.



## Day 4: MAMMALS

**Skit:** Sherlock pulls cat in. Asks if he's been eating all the birds in Mrs. Bush's yard- or chasing them all away. Cat protests, saying he's not eaten or chased any birds- he's a vegetarian! No teeth, no claws! Says he's too busy sleeping in the sunshine. But he wonders if the birds at the nearby pond have disappeared too. Why don't you ask the frog from down there—she might know!

Sherlock goes off to speak to the frog.

Props: cat ears, gloves, black boots & clothes

**Faith Builder:** Read *Job 12:7-*

But ask the animals, and they will teach you, or the birds of the air, and they will tell you;

Or speak to the earth, and it will teach you,

Or let the fish of the sea inform you.

Which of these does not know that the hand of the Lord has done this?

In His hand is the life of every creature and the breath of all mankind.

*Isaiah 43:20-*

The wild animals honor me, the jackals and the owls,

Because I provide water in the desert and streams in the wasteland

Invite volunteers up to make different animal sounds. Do you know what they're saying? We don't understand them, but God does! What do these verses tell you about the relationship between the animals and God? (see Job--They know He is God. They honor and respect and understand God as the one who created them and provides what they need to live. He knows all the details.). If the animals know how great God is, I wonder why people don't always recognize that about God? God is our Creator too.

How can we learn about God from the other living things He created? Have you ever sat quietly and watched creatures from close up? Then you know how amazing the creatures God made are! I'm impressed when I see the beautiful feathers on a bird, or the amazing eyes of a dragonfly. So when I see God's work in creation, I am reminded of God's power and care. How can we honour God too?



## Day 4 Stations

### Station 1: Bat Art

**Faith Connection:** God created all sorts of creatures, but He didn't just make them and leave them to fend for themselves. He provides what they need. So some creatures, like mammals, God made to care for their young too. They protect them and feed them milk until they're old enough to survive on their own.

**Materials:** Bat poster pictures, black construction paper, pastels, fishing line, sticks. See <http://www.kidzone.ws/animals/bats/index.htm> for pictures and information.

**Intro:** Talk about what makes a mammal: warm-blooded creatures with spines, babies are born live, and fed milk by the mother. What kinds of mammals do you know? Which is the mammal—bat or moth? We're going to learn something about bats today.

**Activity:** Look at the poster and talk about the different kinds of bats, what they eat, where they live, etc. Go for a walk to collect sticks. Create your own bat (or other mammals) on black paper with pastels. Tie fishing line onto sticks and suspend your mammal. Talk about how bats find their prey, their roosting habits, diet, etc. Take a walk and look at the bat box on site. Do they see any activity? When would be a good time to try and see bats?

*Additional:* Bat & Moth game

**Materials:** 2 rocks or shells

**Activity:** Choose 2 children to be bat & moth. Form a circle with a 'bat' and moth inside. The bat is blindfolded, and the moth clicks 2 rocks together. The bat must try and catch the moth.

### Day 4 Station 2: Mammal clue hunt

**Faith Connection:** We can find animals by looking for the tracks they make. It takes great skill to be a good tracker, and to identify creatures this way. God knows each creature and each of us very well. He doesn't need to look for our footprints to know where we are—He already knows, and is with us all the time!

**Materials:** poster of local mammals (see Mammal memory cards), \*(optional) track cards (copy from clue hunt cards), \*track stamps(optional: make with craft foam glued onto wooden blocks), clue cards [6 different sets]. See attached suggested clues, though they will need to be modified according to your location.

**Activity:** Guess what kind of mammals might live around here. What might live by a river or pond? (beaver, muskrat). Where there's easy availability of different kinds of food? (raccoon) Divide into 3 groups. Give them the first clue, and then have them go and find the next clue. Can you observe any evidence (tracks) of any creatures? Clues will lead you to the creatures' identities.



*Indoor alternate: Memory game*

Materials: memory game cards (mammals)

Activity: Have cards spread out. Each child can turn over 2 cards. If they match, they get another turn. If not, let everyone see, and turn them over in place. Make note of where different cards are for future reference!

Day 4 Station 3: Teeth, Ears and Leaves game *\*modified from Wizards, Giants, Elves*

Faith Connection: Everything God made needs certain things to survive. We eat plants and meat to help us grow strong. Different animals eat different kinds of food too! God made everything we need.

Activity: Ask if the kids know what different mammals eat. (meat or plants) Explain the terms carnivore (meat-eater—signified by teeth), herbivore (plant-eater, signified by ears, put hands on head like ears) and plants (get nutrients from soil, which is decayed animal and plant material—signified by 'leaves' - hands swishing at your sides). Divide group into  $\frac{1}{2}$ . Explain that carnivores chase herbivores because carnivores eat herbivores, that herbivores chase plants because herbivores eat plants, and that plants chase carnivores because plants get nutrients from dead animals (detritus). Each team must choose one of the three options (teeth, ears or leaves). It is best if teams have a back-up in case the first doesn't work. Once both teams have chosen, they approach the middle of the field and turn their backs to each other. When the leader says "teeth, ears, leaves", the children turn around and show the symbol they chose. If one team is teeth and another leaves, then leaves chase teeth. If one team is ears and the other teeth, then teeth chase leaves. If one team is leaves and the other ears, then ears chase leaves. If both teams are the same action, then the teams will show their back-up (wait for leader's signal). Whoever is being chased and gets touched joins the other team. The game ends when there are no more people on one team.

*Additional: Locomotion relay*

Materials: bucket, picture cards

Activity: Put all locomotion cards into a bucket. Divide group into 2 teams. Each person must run up to the bucket, choose a card, and then 'move' back to their team using that mode of movement.

*Alternate: Mammal survival game*

Materials: picture cards of local mammals with survival info on the back &/OR poster showing carnivores & herbivores.

Intro: Review what a mammal is. Have kids suggest what kinds of mammals we might find around here. SOME of these are predators and some are prey. Can you tell me which kinds would be predators or carnivores? What would the other ones eat? Raccoons eat a larger



variety—they might eat other animals, or plants and garbage---they'd be called scavengers or omnivores—they eat everything! We're going to play a tag game that shows how a mammal has to try and survive in the wild!

**Activity:** You need at least 10 kids playing including a caller. All the players must first line up in front of the caller, and the caller whispers a mammal name (their identity for the game) to each player. Once everyone has an identity, the caller gives them ten seconds to run around.

Afterwards, the caller starts calling animals out. When the caller calls an animal, that person has to run from everyone, and all the other players have to tag that person to get him/ her out. But the caller doesn't have to wait until the person is out to call the next animal. The caller can call another animal before or after the person is tagged, it's up to the caller. This goes on until there are only two players left. Those players must stay within smaller designated boundaries and play till 'sudden death'. They do the same thing, but this time they are not allowed to step out of the boundaries. If they step out or are tagged, they are out and the last one standing is the winner. The winner will be the caller in the next game.

**Day 4 Station 4: Quick Frozen Critters (\* needs large open space) from *Project WILD* (sponsored by Canadian Wildlife Federation)**

**Faith Connection:** God gave us abilities for survival. He also made different creatures with different abilities for survival. Some run fast, some have good camouflage, and some are good hunters.

**Materials:** safety vests, food chips (buttons), hula hoops or large string loops, pictures of predators and prey (Mammal memory pictures).

**Activity:** Introduce the game by talking about what different mammals eat.

Identify different animals as predators or prey. Talk about how prey animals protect themselves (camouflage, freezing still). Predators will be given a vest to wear. (*designate 1 predator for every 4-6 prey*). Using a large space, identify 1 end of the field as the 'food' source, and the other end as the shelter. 4-5 hula hoops are placed in the open space between the 2 ends. These are shelter for the prey. Food chips are put on the ground in the food zone. Allow 3 food tokens for each prey animal. The object of the prey is to get from the shelter end to the food end and pick up 1 food token at a time. The predators are trying to catch them. Prey must obtain 3 food chips to survive. They can freeze if a predator is within 2 metres, or run to a 'shelter' hoop. Frozen prey may blink but otherwise remain still. Predators can only tag moving prey, not frozen, to catch them. Predators must catch 2 prey to survive (and take prey to the sidelines). Leader may designate certain prey as only collecting a certain kind (colour) of food, and blue buttons as water. This presents another level of challenge.



*Primary Alternate: Mammals in the Meadow (Fish In A Pond)*

Divide children into groups of two. Give each group a name of a mammal. Then have one member of each pair form a circle at one end of the playing area by holding hands, while the other partners do the same at the opposite end. Select one person to stand in the space between the circles. This person calls the name of the mammals and the two people who represent this mammal rush to their partner's circle to switch places. The person in the space attempts to catch one of the partners. If caught this mammal calls a different name and their position is taken by the person originally in that space. Positions are marked by gaps in holding hands.

*Day 4 Summit: Habitat Hop (modified from Musical chairs)*

*Materials: CD, music, material squares of different sizes and colours, poster with Habitat 'destroyer' pictures*

*Activity: Spread out different mats around the area. Review the idea of habitat [an environment providing the food and shelter required for an animal to make its home]. Ask kids to identify what different kinds of creatures might live in a forest/pond/meadow. Tell them that when the music plays, they can move around like animals would, looking for food, water, and finding shelter. Warn them that there might be a 'bulldozer' working, clearing land—destroying habitat for animals, or a polluter (taking away some of the mats). When the music stops, kids must find a habitat mat to be safe on (more than one child per mat, if there's space!) Any creature who can't find habitat space is 'out' of the game for the time being. At the end, when there are only a couple of survivors, talk about what happens when habitat is destroyed.*



## Day 5: WATER CREATURES

**Skit:** Sherlock interviews frog. Frog says s/he's noticed that the birds have been leaving the pond too. Mentions that maybe it's because it's getting colder now. Says that s/he's thinking about burying herself down in the mud at the bottom of the pond—winter's coming. "You can feel it in the air." Tree comes in and says he thinks that the birds have gone to warmer places, because the weather's been getting colder, and fall is approaching. The tree shows how its leaves are starting to turn brown and yellow. Some have fallen to the ground. Mrs. Bush enters. Sherlock Holmes presents her with the facts about the birds. She is relieved and glad to know the birds are ok. "So I'll see them again next spring??" Tree and frog and Sherlock nod in agreement. "Oh good!" All troop offstage.

Props: green 'frog' fabric, pom pom eyes

### Faithbuilder:

Materials: pictures of water creatures, chalk board, chalk. A good source of photos for local sea life is: <http://scuba.huskychemist.org/PacificNorthwestMarineLife/index.htm> .

*Read Genesis 1: 9-10; 1:20-21*

9 And God said, "Let the water under the sky be gathered to one place, and let dry ground appear." And it was so. 10 God called the dry ground "land," and the gathered waters he called "seas." And God saw that it was good.

20 And God said, "Let the water teem with living creatures... 21 So God created the great creatures of the sea and every living and moving thing with which the water teems, according to their kinds... And God saw that it was good.

God created a beautiful world, and lots of interesting things to learn about. The more you learn about them, the more you can appreciate God's creativity. God chose to create these living creatures, as well as human beings. It is no accident!

God also gave a job to people to take care of the world. It is our responsibility to care for the things God created.

\*\*\*draw a side view of beach and ocean, showing different zones from beach to low tide and into deep ocean.

Ask for a few volunteers to choose a favourite water picture and explain what they like about it. Make it into a prayer to God, thanking Him for what He's made.



## Day 5 Stations:

### Station 1: Dragonfly Creations

**Faith Connection:** God created the earth and separated it from the water. But God made everything dependant on water for life—plants and all living creatures. Dragonflies are part of life in water and air because they start their lives in the water. They only come out of the water to fly when they become adults. So they're very connected to water!

**Materials:** glue, craft clothespins, tissue paper, felts, paper, sparkles, googly eyes, dragonfly pictures

**Activity:** First look at some close-up pictures of different dragonflies. Observe their body parts and colours. Make a dragonfly: Bunch tissue paper for wings and insert into body of clothespin. Decorate clothespin with felts or whatever. Glue on eyes.

Take time to have a dragonfly hunt—how many can you see? What kinds/colours?

\*Does a dragonfly live in the water? (No—but in the first 2 stages of its life, it does!)

### Day 5 Station 2: Amphibian Quest (Q & A)

**Faith Connection:** God lives in the world but also outside of it! Amphibians are part of pond life, but also part of the world outside the pond! Often we can learn things about God from looking at how creation works.

**Materials:** small nets, jar, magnifiers, amphibian picture poster

**Activity:** Look at the poster picture of what kind of amphibians live here. Talk about where amphibians live, and what they need (cool, moist habitat near water, shelter under rocks, logs, bugs to eat). Give everyone a magnifier and decide together where to hunt for amphibians. Go on the amphibian quest!

### *Indoor Alternate: Pond Invasion*

**Activity:** Everyone gathers in the middle of the playing area. The leader sets the stage for the group going on a boat journey across the pond. On the way, you'll have some challenges and adventures. You're going to meet frogs, dragonflies, ducks and water boatmen.

In the story, when you meet frogs, you have to run to that (designate) corner and jump like frogs. When you meet dragonflies, you go to that (designate) corner and fan your wings like a dragonfly. If you meet a duck, you have to go to *that* corner and waddle like a duck. And for a water boatman, you row with your arms. Leader then starts telling the story. Children must listen for their cue to go to the proper corner and do the appropriate action.



*Alternate: Frog hop relay (primary)*

Activity: form two even teams.

The first players from each team get into frog position, squatting with their hands on the ground. While making frog sounds, they then have to "frog hop" to the end of the playing field and back. Then the next person on each team goes. The first team to finish wins.

*Intermediate Alternate: Water testing \*\*You could simplify this activity by just doing temperature and learning about pH with a water sample. The water testing sheets have some other observations you could do as well.*

Materials: thermometers, pH strips, pH acid/base(alkaline) chart & products (baking soda, pop, bleach, ammonia, lemon juice/orange juice), Water testing sheets, clipboards, pencils, table of low oxygen intolerant/tolerant invertebrates, thermometers.

Activity: Talk about conditions that affect water quality, and what that does to the creatures which live in it: ie-if there is too much organic matter in the water, it uses up too much oxygen. This means that some creatures are at risk. Define base and acid [A measure of the acidity or alkalinity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity. The pH scale commonly in use ranges from 0 to 14].

Show them the chart line for base/acids, and have them guess where the everyday substances (baking soda, juice, etc) might go on it. Show that both extremes can put water creatures at risk. **Test the pH of the water.**

Talk about what creatures need to live (air), and how pollution affects how much oxygen there is in the water. Some creatures can survive with less oxygen than others. Look at the table \*appendix. What kinds are there here?

**Take the temperature.** Explain that certain creatures will not survive well in warm water. Record on water-testing sheet.

Day 5 Station 3. Presentation Prep

Faith Connection: This is our time to share what we've learned this week. A way to honour God and care for creation is to share those things with other people!

Materials: props from skits, paper, crayons, tape, scissors, poster boards, other as needed, screen, projector, computer, extension cord

Activity: Prepare a skit, song, poem, poster etc for the parents' visit

\*\*Oldest intermediate group can do a PowerPoint presentation, so use the pictures taken during the week. The oldest group will prepare a narration to accompany the PowerPoint presentation.



Day 5 Station 4: Pond-dipping/creek catch \*\*this may need an extra leader

*Faith Connection:* God created everything in this pond, and cares for it all. God made us to be connected to that creation, and to each other. Part of our role is to understand God's creation and to help care for it—the plants, the bugs, the birds, the mammals and everything around us—in and out of the water!

*Materials:* small nets, wash basins, magnifiers, ID key

*Activity:* First spend a couple of minutes having children observe the area and what they can see of the habitat. Then demonstrate how to scoop the net in the water without getting mud from the bottom, and tap it carefully but firmly on the side of the basin. Make sure to do it well so that no tiny creatures are stuck in the net! Remind them that this is a neighbourhood for the living things here and that we need to be careful not to disturb their neighbourhood too much. Then allow them to dip nets and empty them into the bucket. See if they can identify what they find.

*Indoor Alternative:* If you do not have access to a pond, collect a few buckets/ containers/ aquariums full of water the day before or the morning of this day. Make sure there are some bugs in the water. The children can go dipping in this water for bugs.

Day 5 Summit: Web of Life \*optional if time available

*Materials:* 2-3 foot lengths of cord or heavy string (enough for 2 each) , Web of Life poster

*Activity:* Ask someone to name a creature they saw in the pond. Give them a string. Then ask questions which help make connections between all the living things in or around the pond (what eats who, as above). As the next person makes a suggestion, give them the other end of the first person's string, and also give them one of their own. As more connections are made, each one becomes attached with the end of 2 strings, one in each hand. When the whole group is attached together, you could introduce a scenario of something in the habitat changing (temperature going up, killing the first creature/people drain the pond or people introduce something into the pond which kills the original creature). When that creature 'dies', they sit down. Anyone else who feels their string pull must also sit down. Soon, everyone will be sitting, because everything is connected!! This reminds us that whatever we do in our habitat or in God's creation affects other living beings. How can we be more careful in how we live?

12 noon: Parent presentations

Coffee, tea, goodies, literature

Welcome & Introduction of staff, volunteers

Songs

Groups do their presentations

Farewell