Life in a Pond

A Tacoma Nature Center Field Investigation for Grades K-2
Aligned for Common Core for Grades K-1

The Tacoma Nature Center at Snake Lake
An Educational Facility of Metro Parks Tacoma
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Thank you for scheduling a guided “Life in a Pond” tour at the Tacoma Nature Center. Our 70-acre nature preserve and interpretive center provides an excellent study site right in the middle of Tacoma. Education staff and volunteers are eager to provide your students with a positive experience. Together we will learn about the animals that use wetland habitats. Children will explore how these animals survive by observing and describing the characteristics of these special animals.

The $6.00 per student fee includes 2 hours of activities led by staff and/or volunteers. Our tours will go rain or shine, so please advise your group to dress for the weather. In case of inclement weather, there is a designated area inside the building to eat lunch. Otherwise, there are many picnic tables to enjoy an outdoor lunch. Restroom facilities are available inside.

We accept checks, cash or credit cards as well as purchase orders. Please provide one payment for the entire group. We require payment at the time of the program. Groups that arrive more than twenty minutes late can not be guaranteed a program. If the program is cancelled due to tardiness, you may still be charged for your program.

We hope you enjoy your upcoming field trip to the Tacoma Nature Center. Please remember:
- Common Core aligned pre-visit vocabulary words and activities and post-visit activities are included in this packet in order to prepare your students for the field trip, and to continue the application of field trip discovery.
- Have at least one chaperone per every 7 students. Our field trips work best when chaperones are prepared to participate in activities and be in charge of necessary discipline.
- Be prepared to divide your class into small groups. Each small group of no more than 15 will be led by a staff and/or volunteer in order to provide the best experience for the students. **Check the confirmation form to see how many groups we will need to have you divide into.**
- Dress for the weather; we will go outside even if it rains. This includes appropriate footwear – no flip flops or sandals.
- Bring special medications/allergy treatments your students may need.

Your input is important. Please complete the enclosed evaluation after the field trip and help us improve.

If you have any questions, please feel free to call the Tacoma Nature Center at (253) 591-6439.
1919 South Tyler Street
Tacoma, WA 98405
(253) 591-6439
Hours: Mon-Sat 9-4; Closed Sundays

From Northbound or Southbound I-5, take the Gig Harbor/Bremerton exit – Highway 16 West

Exit Highway 16 West at 19th St. East, which is just past Cheney Stadium.

Go to the first light which is Tyler/Stevens Street.

Turn right onto Tyler Street.

The Nature Center driveway is immediately on the left-hand side.
The Tacoma Nature Center and preserve is a remnant of the habitats that once existed more abundantly in the Tacoma area. Within this 70 acre preserve is an emerging Douglas fir forest, which reflects historical influences by humans, logging and fire. The wetland is the dominant feature in the lower area of the park. Snake Lake, a long serpent-shaped body of water, is part of both a swamp and a marsh habitat.

Located geographically in the center of Tacoma, The Tacoma Nature Center preserve is a refuge for many species of wildlife. Although the wetland around Snake Lake is important for urban wildlife, it is the combination of several habitats and the edge areas between them, which is vital to their survival. For example, the red fox may find small mammals, amphibians, and other prey species in the wetlands but the terrain and plant cover in the forest habitat provide better shelter, protection from humans, and cooler temperatures during the summer months. Thus, the Tacoma Nature Center should be viewed as an ecosystem providing all the requirements to sustain life rather than 70 acres of different habitats.

Over 20 different species of mammals live within the boundaries of the preserve. Including both migrants and residents, over 100 species of birds have been identified here. In addition, several species of reptiles and amphibians live in the area. While most species are native, a number of exotics also inhabit the preserve.

The Tacoma Nature Center is open to the public year round. Pets, bicycles and motorized vehicles are not allowed in the park. The Visitor Center offers hands on displays and exhibits that focus on wetlands, watersheds and wildlife. The center is open 9am to 4pm Mondays through Saturdays. Membership opportunities are also available.
Plants and Animals Seen at Tacoma Nature Center

**Trees**
- Sitka Alder
- Oregon Ash
- Cascara Buckthorn
- Black Cottonwood
- Douglas Fir
- Pacific Madrone
- Scouler Willow
- Garry Oak

**Shrubs/Groundcovers**
- Red Elderberry
- Clustered Wildrose
- Indian Plum
- Oceanspray
- Tall Oregon Grape
- Douglas Spirea
- Black Twinberry
- Evergreen Huckleberry
- Orange Honeysuckle
- Baldhip Rose
- Beaked Hazelnut
- Common Snowberry
- Red Huckleberry
- False Lily-of-the-Valley
- Salal
- Trailing Blackberry
- Dwarf Oregon Grape
- Sword Fern
- Creeping Snowberry
- Bracken Fern

**Mammals**
- Red fox
- Coyote
- Raccoon
- Virginia Opossum
- Eastern Cottontail
- Douglas Squirrel
- Eastern Gray Squirrel
- Townsend's Chipmunk
- Norway Rat
- Deer Mouse
- Vagrant Shrew
- Townsend's Mole
- Black-tailed Deer

**Amphibians/Reptiles**
- Pacific Tree Frog (Chorus Frog)
- Bullfrog
- Long-toed Salamander
- Northwest Salamander
- Rough-skinned Newt
- Western Painted Turtle
- Common Garter Snake
- Northwester Garter Snake
- Northern Alligator Lizard

**Birds**
- Canada Goose
- Wood Duck
- Gadwall
- American Wigeon
- Mallard Northern Shoveler
- Bufflehead
- Common Goldeneye
- Hooded Merganser
- Pied-billed Grebe
- Great Blue Heron
- Osprey
- Bald Eagle
- Cooper's Hawk
- Sharp-shinned Hawk
- Red-tailed hawk
- Glaucous-winged Gull
- Rock Pigeon Barn Owl
- Barred Owl
- Anna's Hummingbird
- Belted Kingfisher
- Downy Woodpecker
- Northern Flicker
- Olive-sided Flycatcher
- Western Wood-Pewee
- Pacific-slope Flycatcher
- Warbling Vireo
- Cassin's Vireo
- Hutton's Vireo
- Steller's Jay
- American Crow
- Common Raven
- Violet-green Swallow
- Barn Swallow
- Cliff Swallow
- Black-capped Chickadee

- Chestnut-backed Chickadee
- Bushtit
- Red-breasted Nuthatch
- Brown Creeper
- Bewick's Wren
- Pacific Wren
- Golden-crowned Kinglet
- Ruby-crowned Kinglet
- Swainson's Thrush
- Hermit Thrush
- American Robin
- Varied Thrush
- European Starling
- Cedar Waxwing
- Yellow-rumped Warbler
- Black-throated Gray Warbler
- Wilson's Warbler
- Yellow Warbler
- Spotted Towhee
- Fox Sparrow
- Song Sparrow
- White-crowned Sparrow
- Golden-crowned Sparrow
- Dark-eyed Junco
- Western Tanager
- Black-headed Grosbeak
- Red-winged Blackbird
- Brown-headed Cowbird
- Purple Finch
- House Finch
- Pine Siskin
- American Goldfinch
- House Sparrow
**Vocabulary**

**Habitat** — home of an animal or plant, where it lives.

**Wetland** — land covered by water some or all of the time.
To be sure your students get the most out of their visit to the Tacoma Nature Center, we suggest you prepare them with the lessons below. Each is designed to complement K-1st grade Common Core Standards. 30-45 minutes (or more) each lesson.

**Science**

<table>
<thead>
<tr>
<th>Learning Target</th>
<th>I can explain how I use my senses to make observations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next Generation Science Standards</td>
<td>Science Models, Laws, Mechanisms, and Theories; Explain Natural Phenomena</td>
</tr>
<tr>
<td>Do Now/ Warm Up</td>
<td>Discuss what an observation is. Press students to think about how we can use our senses to learn more about the world around us. We call these observations, and scientists learn more about the world by observing it very closely. Brainstorm a list of ways that scientists may observe the world.</td>
</tr>
<tr>
<td>Tools</td>
<td>Handouts for each student Crayons, pencils Clipboard for each student (optional) Natural space to observe such as the playground, either by going outside or looking outside (if weather is poor)</td>
</tr>
<tr>
<td>Activities</td>
<td>Gather students and explain that they are going to practice their observations skills just like scientists. Distribute Outside Observations and a pencil (and optional clipboard) to each student to record their observations (Handout Page 2-Appendix A). Go over any rules or procedures you believe are necessary to keep students together while outside. Find a space outside for observing. Allow students to spread out a bit and instruct them to sit quietly for 5 minutes. Tell them that each minute you will challenge them to use one of their senses to make observations about the playground (or wherever you have taken them). They are to write words or pictures on their data sheet about what they observe next to each sense as you call them out. At the end of the observation period you may want to have students share some of their observations before returning inside.</td>
</tr>
</tbody>
</table>
**Activities**

Distribute My Five Senses for students to work on independently or with a partner (Handout Page 3-Appendix B). Early finishers may want to color the pictures. As students are working on their 5 senses handout, walk around and formatively assess for understanding. Collect and assess.

**Assessment**

Summative: completed assignment  
Formative: walk around observations

**Practice/ Homework**

On your way home from school, use as many of your senses as you can to make observations. When you get home, record what you observe on On My Way Home (Handout Page 4-Appendix C).

---

**Science/Language Arts**

<table>
<thead>
<tr>
<th>Learning Target</th>
<th>I can explain key details in a book.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Common Core Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.RL.1 With prompting and support, ask and answer questions about key details in a text.</td>
</tr>
<tr>
<td>1.RL.1 Ask and answer questions about key details in a text.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Do Now/ Warm Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show the cover of the book “In the Small, Small Pond” by Denise Fleming. Ask students to predict what the book will be about. Will it be a true to life story or a made up story? Will it be fact or fiction? How can you tell? What is the title? Who is the author? The illustrator?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy of “In the Small, Small Pond” by Denise Fleming (available on loan from Tacoma Nature Center)</td>
</tr>
<tr>
<td>Life in a Pond handout</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read aloud the book. Discuss key vocabulary as necessary. Relate to the upcoming field trip to the Tacoma Nature Center.</td>
</tr>
<tr>
<td>After reading the book, have students write and draw 3 things that live in or around the pond on the handout (Handout Page 5-Appendix D). Collect and assess.</td>
</tr>
<tr>
<td>Other great books about pond life:</td>
</tr>
<tr>
<td>Measuring at the Pond by Linda Bussell</td>
</tr>
<tr>
<td>Pond Circle by Betsy Franco</td>
</tr>
<tr>
<td>The Magic Goggles: Discovering the Secrets of the Lake by Lynn Markham</td>
</tr>
<tr>
<td>Song of the Water Boatman and other Pond Poems by Joyce Sidman</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summative: completed assignment</td>
</tr>
<tr>
<td>Formative: class discussion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Practice/ Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find a library book about ponds or a pond creature. Read to an adult at home or have an adult at home read it to you.</td>
</tr>
</tbody>
</table>
### Science/ Math

<table>
<thead>
<tr>
<th>Learning Target</th>
<th>I can explain how I find how many animals live in the pond.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Core Standards</td>
<td>K.CC.B.5 Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in scattered configuration.</td>
</tr>
<tr>
<td></td>
<td>1. OA.A.1 Represent and solve problems involving addition and subtraction.</td>
</tr>
<tr>
<td>Do Now/ Warm Up</td>
<td>How many boys are in our class? How many girls? Which is more? How do you know? Why do we need to know how many students are in our class?</td>
</tr>
<tr>
<td>Tools</td>
<td>Copies of the handout for each student</td>
</tr>
<tr>
<td>Activities</td>
<td>Just like we need to know how many students are in our class, scientists who study wildlife need to know how many animals are living in the wild. One way they find out is by counting them. Discuss whether or not someone could count every animal in or around a pond and how the total number could be determined. The goal is to think about this, not to necessarily unravel proportional reasoning!</td>
</tr>
<tr>
<td></td>
<td>Distribute the handout (Handout Page 6-Appendix E) . Have students work independently or in pairs to complete the handout. Have students share their thinking once everyone has had a chance to work the problems.</td>
</tr>
<tr>
<td></td>
<td>Challenge students to think about how they might use what they learn while on the field trip to the Tacoma Nature Center.</td>
</tr>
<tr>
<td>Assessment</td>
<td>Formative: class observation Summative: completed handout</td>
</tr>
<tr>
<td>Practice/ Homework</td>
<td>Write a math story problem that involves adding or subtracting animals. Be prepared to trade with a partner in class tomorrow and solve someone else’s problem.</td>
</tr>
</tbody>
</table>
Objectives

- To understand the kinds of animals found in a wetland habitat
- To encourage scientific exploration and discovery
- To provide first hand experience with native wetland animals

Schedule of Activities

1. Upon arrival, students gather on the wooden benches in the center of the building. Children are encouraged to find a seat quickly and quietly so that we can begin. A Naturalist will then spend a few minutes providing an orientation to the Tacoma Nature Center. Information will include:

   - An introduction to the staff and volunteers leading the field investigation
   - General outline of the day’s activities
   - An introduction to Snake Lake and the Nature Center

   We will spend approximately 10 minutes discussing the above. After this, we will split into groups for the rest of the tour. We ask teachers to assign the groups, as they are familiar with the number of kids per chaperone, students’ names and the like. Groups will contain approximately 12-15 students. Use the following as a guide to the number of groups you should assign prior to the trip:

   - If you make a reservation for 10-15 students, you will have 1 group.
   - If you make a reservation for 16-30 students, you will have 2 groups.

2. Once the students are divided into groups, each leader will rotate their groups through the various activities. Rules and appropriate behaviors will be outlined by the guide as needed at the beginning of each segment of the program.
On the walking tour, leaders will stop along the trail to look at the habitat and talk about the types of animals that live in a wetland habitat. Any animals spotted along the way will be pointed out. Students will be encouraged to observe the characteristics of these animals and the group will explore how their physical and behavioral adaptations help them survive. We will also explore how these animals fit into the wetland ecosystem.

While in the lab, students will learn about pond critters through a fun and interactive program. They will have the opportunity to look at and touch biofacts (animal skins, skulls, shells, etc.), ask questions and explore the lab for a few moments on their own after the program.

Also in the lab, or in the exhibit area, students will share a story about animals that live in a pond. Then they receive a visit from one of the Nature Center’s special animal residents. If time allows, this segment will end with the opportunity for students to explore the main exhibit area on their own. There are a wide variety of topics presented in the displays. This area might also be explored after the tour if the group has time.

The activities in this packet are designed to use in the classroom before or after your visit. The Tacoma Nature Center has videos, kits and materials available for loan. Call for more information.
To be sure your students get the most out of their visit to the Tacoma Nature Center, we suggest you follow up your field trip experience with the lessons below. Each is designed to complement K-1st grade Common Core Standards. 30-45 minutes (or more) each lesson.

**Science**

<table>
<thead>
<tr>
<th>Learning Target</th>
<th>I can explain living and non-living things in the pond.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next Generation Science Standards</td>
<td>Science Models, Laws, Mechanisms, and Theories; Explain Natural Phenomena</td>
</tr>
<tr>
<td>Do Now/ Warm Up</td>
<td>How do you know something is alive? How do you know something is not alive? Is a bird alive? A rock? A tree? Discuss. Come up with a class list of some ideas.</td>
</tr>
<tr>
<td>Tools</td>
<td>Completed field journals from the field trip. Paper Markers, crayons or colored pencils</td>
</tr>
<tr>
<td>Activities</td>
<td>On our field trip we learned about lots of things that live in a pond habitat. Those living things depend on having a healthy home to survive. Have students draw a healthy pond habitat. Be sure to have them include plants and trees, water and rocks, sun and weather as well as a variety of animals. Choose students to share their work with the class. Next challenge students to label which things are alive and which are not by writing “alive” and “not” next to each picture. Walk around and direct as necessary. Collect and assess.</td>
</tr>
<tr>
<td>Assessment</td>
<td>Summative: completed assignment Formative: walk around and evaluate drawings and labels for accuracy.</td>
</tr>
<tr>
<td>Practice/ Homework</td>
<td>Draw another habitat near you. It may be a school yard, park, your yard or a patch near your home. Identify what things are alive and which are not.</td>
</tr>
</tbody>
</table>
## Science/Language Arts

<table>
<thead>
<tr>
<th>Learning Target</th>
<th>I can write a story about a pond.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Core Standards</td>
<td>1.W.3 Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.</td>
</tr>
<tr>
<td>Do Now/ Warm Up</td>
<td>Discuss the field trip to the Tacoma Nature Center. What were our favorite things? What things are most memorable? What did we learn? Make a class list.</td>
</tr>
</tbody>
</table>
| Tools | Writing paper  
Optional illustrating supplies  
Copies of graphic organizer (optional) |
| Activities | Explain that we will be writing our own pond story. Provide an appropriate prompt to help students begin writing. Consider:  
On my way back from visiting the pond…  
While I was at the pond…  
I wish I was a __________(pond animal) because  
__________.  
Distribute the optional graphic organizer to get students thinking about their writing (Handout Page 7-Appendix F). Use the writing process to continue their writing over the next few days as needed. You may want to have students illustrate and publish their stories! |
| Assessment | Summative: completed story  
Formative: rough drafts |
| Practice/ Homework | Retell your story to someone at home. Explain the beginning, middle and ending of your story. |
Science/ Math

<table>
<thead>
<tr>
<th>Learning Target</th>
<th>I can explain how I make sense of my data.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Core Standards</td>
<td>1.MD.4 Organize, represent and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</td>
</tr>
<tr>
<td>Do Now/ Warm Up</td>
<td>Show the “pets” pictogram on the document camera (Handout Page 8-Appendix G) . Ask questions about what they see. For example, how many people have rabbits? How do you know? Do more people have cats or dogs? How do you know? Check for understanding.</td>
</tr>
<tr>
<td>Tools</td>
<td>Pets pictogram</td>
</tr>
<tr>
<td></td>
<td>Data handout</td>
</tr>
<tr>
<td>Activities</td>
<td>Tell students they will be making a pictogram from the information, or data, they collected on the field trip to the Tacoma Nature center. You can use actual data collected from the field trip, or use the numbers provided on the handout. Have students cut out the pictures of the animals and arrange them on the pictogram according to how many are required (Handout Pages 9-10-Appendix H). You may want students to color the pictures first. Once they are confident of their arrangement they can glue the pictures down. Collect and assess.</td>
</tr>
<tr>
<td>Assessment</td>
<td>Summative: completed handout</td>
</tr>
<tr>
<td></td>
<td>Formative: walk around and assess</td>
</tr>
<tr>
<td>Practice/ Homework</td>
<td>Draw a pictogram of the number of boys and girls living in your home. Be prepared to share your work with the class.</td>
</tr>
</tbody>
</table>
School___________________________________________________
Grade level_______________________________________________
Date of visit ______________________________________________
How did you hear about us? _________________________________

Please rate the following by circling the appropriate number from 1 (lowest) to 5 (highest).

The packet contains clear and useful information. 1 2 3 4 5
The field trip met my expectations. 1 2 3 4 5
The Pre-Visit Lessons helped prepare students for program concepts. 1 2 3 4 5
The Post-Visit Lessons helped reinforce concepts students learned. 1 2 3 4 5
The Common Core aligned material met my curriculum goals. 1 2 3 4 5
My students were able to relate to and understand the Common Core aligned material. 1 2 3 4 5
My students had a learning experience. 1 2 3 4 5
My students had fun. 1 2 3 4 5
I am likely to recommend this program. 1 2 3 4 5
The presenter was knowledgeable and fun. 1 2 3 4 5
Presenter name ________________________________
Comments:
Appendices
Appendix A

Outside Observations

Name: ______________________________________________

THINK! Why are we NOT using our sense of taste?

see

hear

smell

touch

The Tacoma Nature Center – Life in a Pond
My Five Senses

Draw a line connecting sense words and pictures of the part we use for each sense. In the box, draw something you would hear, see, touch, taste or smell in nature.

- smell
- see
- touch
- hear
- taste
Name: ______________________________________________

On My Way Home, What Did I...

see

hear

smell

touch

THINK! Why are we NOT using our sense of taste?
Name: __________________________________________________________

Life in a Pond

What lives in and around a pond? Draw a picture and write below.
Name: ______________________________________________

How Many Critters?

How many turtles are on the log? ___________________________

How many turtles will there be if 4 slip off the log into the pond?
____________________________________________________

How many turtles will there be if 6 climb out of the water and on to the log?
____________________________________________________

How many birds are in the tree?
_________________________________

How many birds will there be if 7 fly away?
_________________________________

Write the number sentence that shows this.
_________________________________
Appendix F

Pond Story

As the dragonfly flies around the pond, fill in the parts of your story.

How does my story begin?

What happens first?

What happens next?

What happens next, after that, second?

What happens next, after that, finally?

How does my story end?

Name: __________________________________________________________
<table>
<thead>
<tr>
<th>Pets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogs</td>
</tr>
<tr>
<td>Cats</td>
</tr>
<tr>
<td>Rabbits</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

From http://www.liv.ac.uk/~ccl/lskills/ WN/NumeracyDiagrms.html
Pond Pictogram

Juan and Denise went to the pond. They saw 7 turtles, 11 birds, and 3 frogs. Cut out the pictures on the next page to make a pictogram showing this data.