

# Ready, Set, Start Out Naturalist! Using Starting Out Wild/Family Nature Guides to get young children engaged in nature



# The Problem-- Nature Deficit Disorder



Children today are on screens and experiencing life virtually from the earliest months.

Yes, young children can enjoy nature!





Starting Out Wild was developed to extend Growing Up WILD to our youngest naturalists.

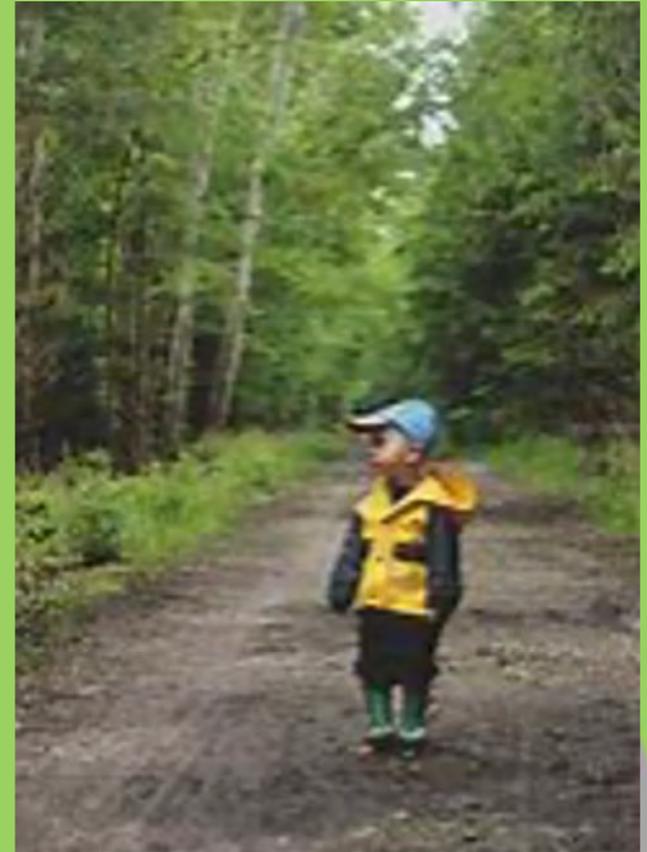
- Adapting G UW
- Trying it out with one team of teachers in one location
- Developing a **framework**
- Writing **original** materials
- **Multiple** teams teaching multiple populations
- Incorporating materials from **many** sources
- Multiple **revisions**
- A work in **progress**
- **Redacting** the original materials
- **Transition** to Family Nature Guides



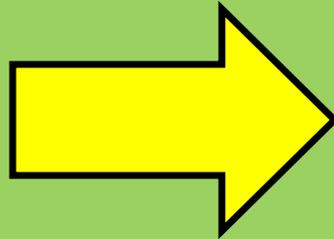
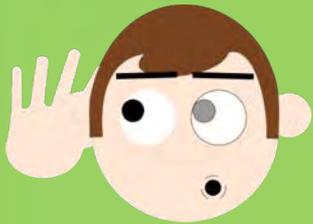
# Core values

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- The **love of nature** needs to accompany growing up from the beginning.
- Teaching must **engage both children and parents**.
- Learning will **spiral**, moving from tolerating and participating, to acquiring increasingly more complex concepts and vocabulary.
- We will learn with **play** and having **fun** using movement and all our senses.
- Familiar analogs** of unfamiliar concepts and vocabulary will be provided to make new concepts and vocabulary meaningful.
- All activities will be **process oriented** and developmentally appropriate.
- The sole focus is **nature learning**.
- Our lessons will be about things we can **see and feel** outdoors.
- We are about **real science**.



From tolerating and enjoying with our senses and **bodies**, to participating with concepts and vocabulary with our **minds** and **hearts**, we will **adventure** into nature and **invest** in nature.



# First things first--

how toddlers experience  
the world!



# How will we engage very young children in nature?

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Children are developing representation, memory, language, cognition, motor and social skills, so **we, ideally, want to engage parents as well as teaching children**— why? So that the parents invest in the enterprise of nature learning and will continue to facilitate their children's adventures in the natural world.

Our goal is that the children **will experience the natural world in the ways young children learn—through movement, touch and acting on, and in, nature** and that children will **enjoy, and therefore return to**, learning about nature

We do this, knowing that repeated experience will be required as children develop more representation, language and reasoning skills, to acquire the vocabulary and concepts we introduce.



# Understanding language and thinking

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Between the ages of 1 and 3 children change from babies, acting on the world with **simple physical schemas**, to preschoolers with **language, social, motor and cognitive skills**, so we are teaching to a range of abilities.

Language ranges from some simple receptive understanding, to having symbolic behavior (indexes and icons) to communicate, to combining words, to a variety of speech acts, and speech events. **In general, the youngest children will respond by choosing, participating in the activity physically, or imitating actions.**

Imitating language does not teach vocabulary; **rich experience paired with simple language makes words meaningful.** However, using scientific terms as a cheer works to engage children.

Cognitively, children are in the sensory motor to concrete operations, stages, that is, they learn by using their senses and acting on real things. **The youngest children need to be allowed to approach new experiences as they feel comfortable, generally through successive approximations or gradual phasing.**



# Moving

At one, children are just getting their ambulation skills. **They love to move, but tire easily on long walks**, so hikes need to be planned with these considerations in mind--young children also like to stop and examine what interests them. What they discover takes precedence over our agenda—go with the teachable moment.

What does this mean for our walk? Getting the children out into the environment is a core value, so we need to do this young-child-wise. It is important to **proceed leisurely so the children can discover their own interests**—we want them to develop curiosity about the natural world, and that value trumps imposing our agenda.

We also want to be **sensitive to the motoric attention span**. In general, around 15 minutes will be optimal for a walk, but leaders can adjust for the specific children and weather conditions of any given session. When possible, have a motoric transition that reinforces the learning, e.g., make an ant line to go back to class



# Manipulating

Motor skills will also vary in this age group. By one, children will probably have a pincer grasp and be able to remove and replace objects in containers. Between one and two they will be scribbling, in some cases using a palmer grasp. Nonetheless they enjoy scribbling as well as using clay-like materials, with adult supervision, since some will still be mouthing. Between two and three scribbling becomes more systematic with some delineation of form and line.

**In general, the youngest children enjoy media such as dot markers or stamps—banging motion, and ones using their fingers such as finger-painting or patting but are not ready for structured pasting.** So adhesive materials like stickers, two-sided tape or contact paper, work best.

In craft and snack projects **we balance 4 considerations:** ability for the child to be **independent** in the activity, **natural materials** if appropriate, reinforcement of the earlier **learning component**, and **safety**. Activities for the youngest children should have **one simple step** the child completes so the child experiences satisfaction in creation. Experiencing and exploring the material, is more important than product.



# One approach to a lesson

- First 15 minutes—**Gathering begins with the Focus**—Singing a Hello song to create a consistent clear start and a name song to engage children individually and jumping right into the songs and fingerplays to get engagement. You can have real and model specimens to explore (This allows for a better flow than trying to pass them in a circle), looking at books, reading\* a book, or having music with actions, in the learning place, to start collecting the children in one space. **Learning**—The teacher gives the content (concepts and vocabulary) with things the children can feel, manipulate, or act out. Transition with something active. Remember, young children learn concepts and language through **move-touch-do**—repeating just teaches echoing.
- Second 15 minutes—**We walk, to connect the content with nature in the outdoors**; and always have back-up activities for inclement weather.
- Third 15 minutes—We move next to the snack. **The snack\*\* reinforces the key features and has one simple step for success.**
- Fourth 15 minutes—And then, the craft, which, like the snack, reinforces the key ideas. So, the **make and take\*\***—craft projects or experiments highlight critical features—make sure they can do the action themselves. For the youngest have only a single step to complete and incorporate natural material when possible. For the **Closing there is a group project, such as adding insect stickers to a garden mural, and good-bye songs to provide a clear ending—you want the “brackets” of a beginning and ending to provide a “safe harbor” for such young children.**
- \*Reading hints for **youngest children—plunge right into the text with fast pace, drama=vary pace, loudness, frequency, emphasize rhythm and rhyme**—rather than having them find things in pictures, pair each set of pages with an action for them to do and in general “ham” it up!
- **\*\*Remember—keep things simple for the youngest—e.g., crafts and snacks with one step, everything pre-packed!**



It is important to have clear segments and clear transitions, so the group moves through the program together

# General Teaching Suggestions

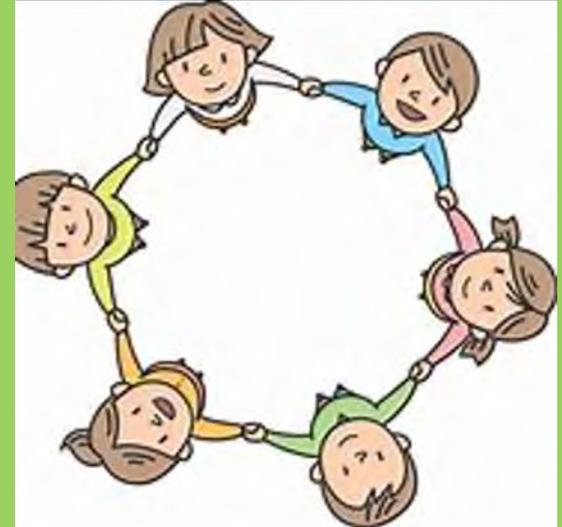
Pacing is key— **go active, dramatic and rapid.**

Don't feel that every child must do each part of the learning—so long as each child gets to do some parts, the children will remain engaged, and you will lose them if you try to let each child do every experience.

Have **real objects** to teach any concepts, e.g., to teach “gizzard” a box of stones and sand and a (taped up) food processor—you want to relate to things the children may see at home.

It's important to relate the session both forward to nature learning, and to familiar materials they will meet at library story hours and in school. Use classic children's books such as Brown Bear, Brown Bear and The Very Hungry Caterpillar, as well as nature science books, with props to make the books more concrete. Use fingerplays, songs, and movement games to teach and reinforce concepts. We want the children **to acquire rich relationships not only to the world of nature, but also to their future world of learning in school.**

And remember, we have **two audiences**—our young children and their parents—so have some materials for parents to reinforce their learning as well!



# Starting Out Wild and Family Nature Guides

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- The original format of Starting Out Wild was developed for programs in parks and preschools. Each lesson included: Gathering and Focus, Learning, Walk Outside, Learning Snack, Learning Craft and Closing. There were templates, objectives and outcomes, and 4 links to large files of stories, slideshows, and songs.
- Family Nature Guides were designed to take the best of Starting Out Wild and develop materials that could be used in a variety of settings with broader age ranges, and by families. Each lesson includes, learning materials appropriate from birth through elementary school, fingerplays, a simple story, suggestions for learning walks, snacks and crafts, and a mini-book.



# Examples of analogs



Hide and Seek—you don't need fancy materials.





We collect nature.

Seed collections

Materials don't need to be perfect!



Starting Out Wild Lessons with Materials/ Family Nature Guides

T E X A S

Master Naturalist 

Alamo Area Chapter

TEXAS A&M AGRILIFE EXTENSION 

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Covid-19 Updates

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- [A Bear's Lunch](#)
- [Arthropods](#)
- [Batty Bats](#)
- [Beat the Heat](#)
- [Bloomin' Blossoms](#)
- [Breakfast for Birds](#)
- [Brrrrr!-Surviving the cold!](#)
- [Busy as a Bee](#)
- [Clever Spiders](#)
- [Creepy Crawlies](#)
- [Decomposers](#)
- [Deer Oh Deer](#)
- [Earth Day](#)
- [Early Inhabitants](#)
- [Fish Full Ocean](#)
- [Fish Full Rivers and Lakes](#)
- [Froggies](#)
- [Flowery Verse](#)
- [Flutterfly Butterfly](#)
- [Gentle Encounters with Nature](#)
- [Green Grows the Grass](#)
- [Hide and Seek](#)
- [How's the Weather](#)
- [Light and Rainbows](#)
- [Little Ladies](#)
- [Leapin' Lizards](#)
- [Let's Go A'courting](#)
- [More and Less](#)
- [Mighty Ants](#)
- [Nature Literacy](#)
- [Nocturnal and Diurnal](#)
- [Partners](#)
- [Pokies and Pricklies](#)
- [Rockn' and Rollin'](#)
- [Seeds Sprouting](#)
- [Seeds We Need](#)
- [Slithering Snakes](#)
- [Spring Poetry](#)
- [Tangled Web](#)
- [Tree Houses](#)
- [Turkeys are Terrific](#)
- [Water Water Everywhere](#)
- [We Love Leaves](#)
- [We're Kin](#)
- [Where's the Energy](#)
- [Wild Things](#)
- [Who Eats Who?](#)
- [Who Lives in the Neighborhood?](#)
- [Worm Tracks](#)

Here are  
samples  
of some  
of the  
materials

Learning materials

Fingerplays

Simple stories

Learning walks

Learning snacks

Learning crafts

Mini-books



# Learning Materials

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Materials are provided both as background for parents and teachers, as well as materials for a range of ages.



# Water comes in 3 states.

Water is made of molecules-- think of them as little bits of water. When water molecules are in a rigid crystal, they form ice which is hard and cold.

You can sit very still like an ice cube.





Sometimes we call these the phases of water as they move from one to another.

When water molecules start sliding around the water is liquid.

You can make your arms wave and flow like liquid water.



# Water moves through the phases in the water cycle.

When water molecules are moving very fast the water becomes water vapor. Steam is hot water vapor and clouds are made from water vapor.

You can run around fast like water vapor molecules.



# We have feelings about different animals.

All animals need food, water, shelter and space. Wild animals must meet these needs themselves. They find their own place with space for moving around, shelter, food and water. Most wild animals live in the wild in forests, deserts, and grasslands.





Some wild animals live in zoos.  
The zoos provide food, water,  
shelter and some space.



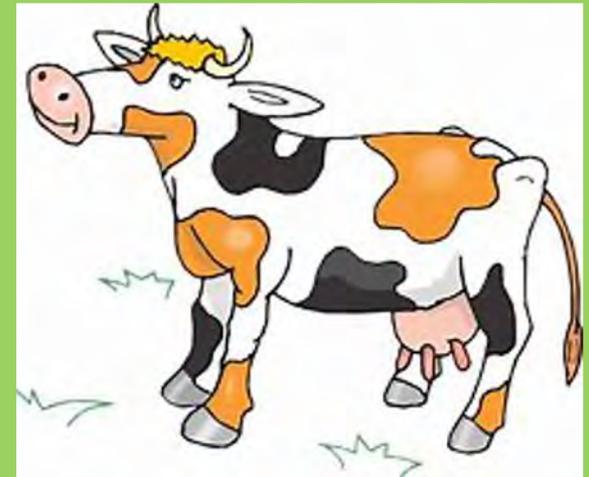


Tame animals have people who provide food, water, space, and shelter. Some tame animals are pets and live with people in their houses.





Some animals are domestic animals, like pigs or chickens on a farm. People provide them with food, water, space and shelter.





# Examples of supporting materials

Materials are included for parents, teachers and older children.



# Bird beaks, flight patterns and nests are adapted to specific needs and functions.



Birds are warm blooded animals that have wings, feathers, beaks and flight.

Feathers serve several purposes: flight, insulation, defense, display, camouflage, and waterproofing. Feathers are composed of several parts: quill (calamus hollow part that connects to the skin or bone), shaft (rachis or part that holds the vane), vane or plumed part composed of barbs which in turn are composed of barbules, and the downy afterfeather used for warmth. Each barb is like a tiny feather made up of barbules with a smooth side and a hooked—barbicels—side. The barbicels are tiny hooks that hook up with nearby barbules to create a smooth vane.

# Feather terms

The calamus is the quill, the hollow lower part of a feather, without barbs, that attaches to the skin or bone.

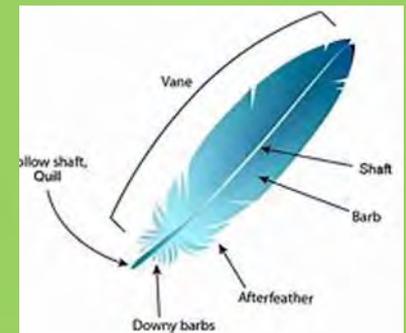
The rachis is the central part of the feather from which the barbs extend.

Barbs are parallel fibers coming off the rachis at a 45-degree angle. All them together form the vane of the feather. Barbs branch into barbules, which in turn branch into barbicels. These hook together to form the surface.

A plumulaceous microstructure has flexible barbs and relatively long barbules that trap air close to the bird's warm body.

Pennaceous feathers are stiff and flat, with microscopic hooks on the barbules interlocking to form a wind and waterproof barrier that allows birds to fly and stay dry.

Contour feathers on the wing, are called coverts. They shape it into an efficient airfoil by smoothing over the region where the flight feathers attach to the bone.



# Kinds of feathers:

Wing feathers, or remiges, are specialized for flight and are characterized by uniform windproof surfaces, or vanes, on either side of the central shaft that are created by an interlocking microstructure.

Tail feathers, or rectrices, feature an interlocking microstructure like wing feathers. These feathers support precision steering in flight.

Contour feathers are what you see covering the bird's body and streamlining its shape. They are ranged in an overlapping pattern like shingles with the waterproof tips exposed to the elements and the fluffy bases tucked close to the body. They may provide camouflage or display functions.

Semiplumes are hidden beneath other feathers on the body, with a developed central rachis, but no hooks on the barbules, creating a fluffy insulating structure.

Down feathers have an even looser branching structure with little or no central rachis; they are relatively short and positioned closest to the body where they trap body heat.

Filoplumes are short simple feathers with few barbs, and function like mammal whiskers to sense position.

Bristles are the simplest feathers, with a stiff rachis that usually lacks barb branches, commonly found on the head, protecting the bird's eyes and face.



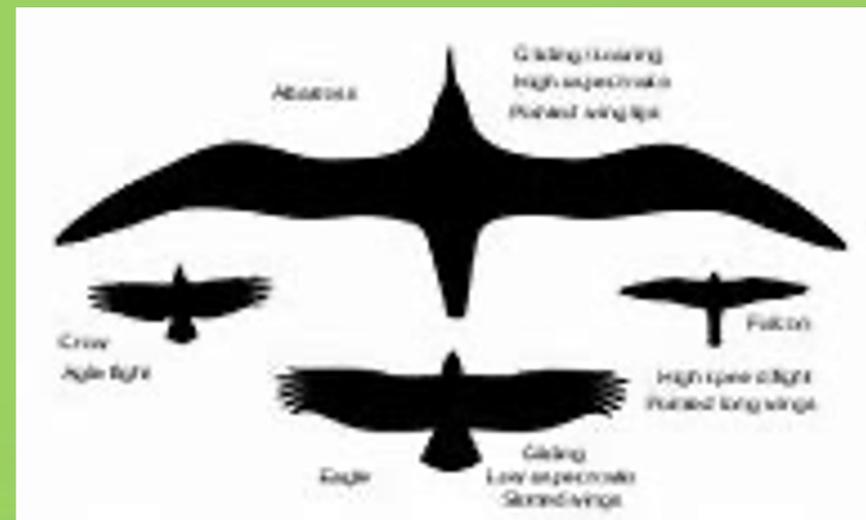
# Wing forms

Passive soaring wings have long spread-out primary feathers, creating areas that allow the bird to catch vertical columns of hot air—thermals--and rise higher in the air.

Long and narrow active soaring wings allow birds to soar, without flapping their wings, for a long time. These birds are more dependent on wind currents than passive soaring birds.

Long and thin high-speed wings are not as long as active soaring wings. Birds with this wing type are incredibly fast and can maintain their speed for a while.

Hovering wings are small and quick with nerves and muscles specially adapted for incredibly fast movement.



# Penguin—stand=arms straight at sides, swim=fly underwater, arms right angles

- Stand arms straight down at sides, swim arms at right angles and bend over to swim
- Eat fish



# Turkey vulture--tip in V, diurnal=day, eat carrion, rise on thermals

- V side to side
- Eat dead animals



Bald eagle-- side to side, fly 75-90mph, eat live prey, see a rabbit at 2 miles, dive 125-200 mph

- Wing to sides arms straight out to sides and look around
- Eat vertebrates



# Woodpecker-- flap hands up and down, eat bugs in tree bark, and rollercoaster to bark

- Roller coaster wavy S movements up and down
- Eat insects





Bird beaks are adapted for different foods and conditions: long and hollow for nectar, long and pointed to find food in mud, cone shaped to crack seeds and shells, pouch to scoop fish, strainer to filter tiny plants and animals, gaping to trap insects, sharp pointed to pick insects from bark, long thick to pick fruit, strong sharp and pointed to chisel bark, and long to hunt for fish in water.





Bird Beak Functions—bird beaks are adapted for gathering and eating different kinds of foods. What things can you find around the house that are like different kinds of beaks? Try out the things you find with beans, rice, seeds, pieces of cotton or paper and discover which “beak” works with which food,

- Long and hollow for nectar
- Long and pointed to find food in mud
- Cone shaped to crack seeds and shells
- Pouch to scoop fish
- Strainer to filter tiny plants and animals
- Gaping to trap insects
- Sharp pointed to pick insects from bark
- Long thick to pick fruit
- Strong sharp and pointed to chisel bark
- Long to hunt for fish in water



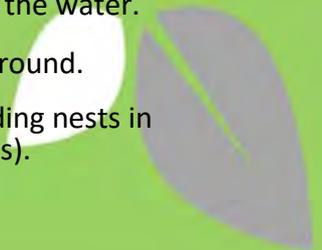
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## Bird Architects

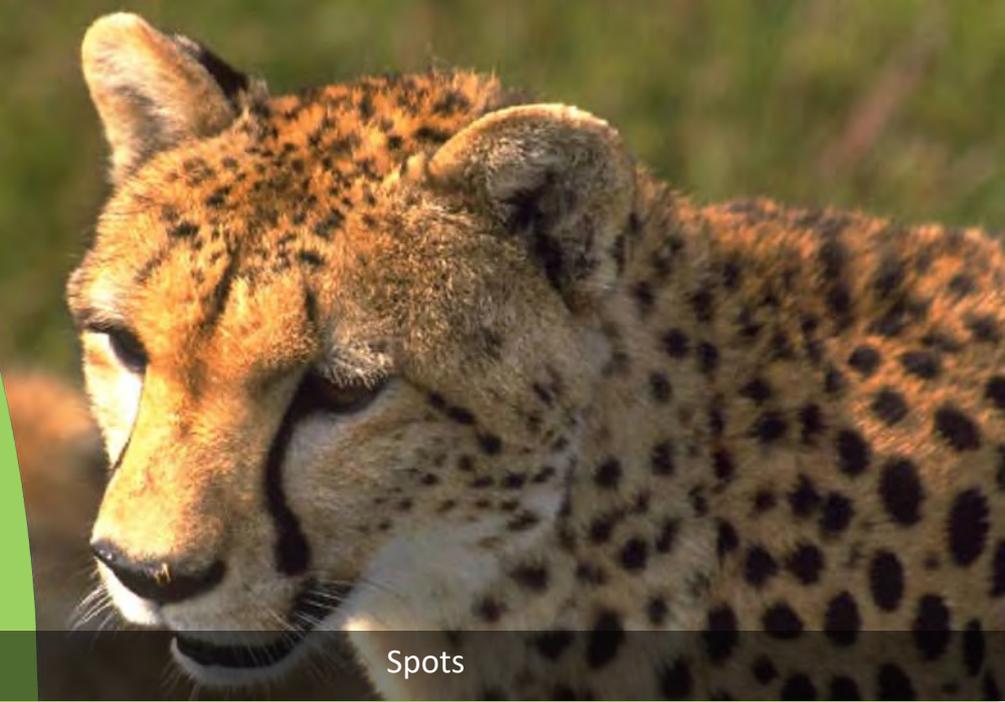
- Bald eagles make long lasting nests adding to them each year.
- Hummingbirds make small nests which stretch as the babies grow.
- Orioles make long elaborate nests dangling from trees.
- Birds that nest on beaches make a shallow depression to use as a nest.
- Birds that nest on rocky cliffside ledges on a coast lay pointy eggs that won't roll off the edge.
- Water birds like ducks build nests floating on the water, or in grassy areas in or near the water.
- Burrowing owls build nests underground.
- Other owls are cavity nesters building nests in holes in trees and snags (dead trees).



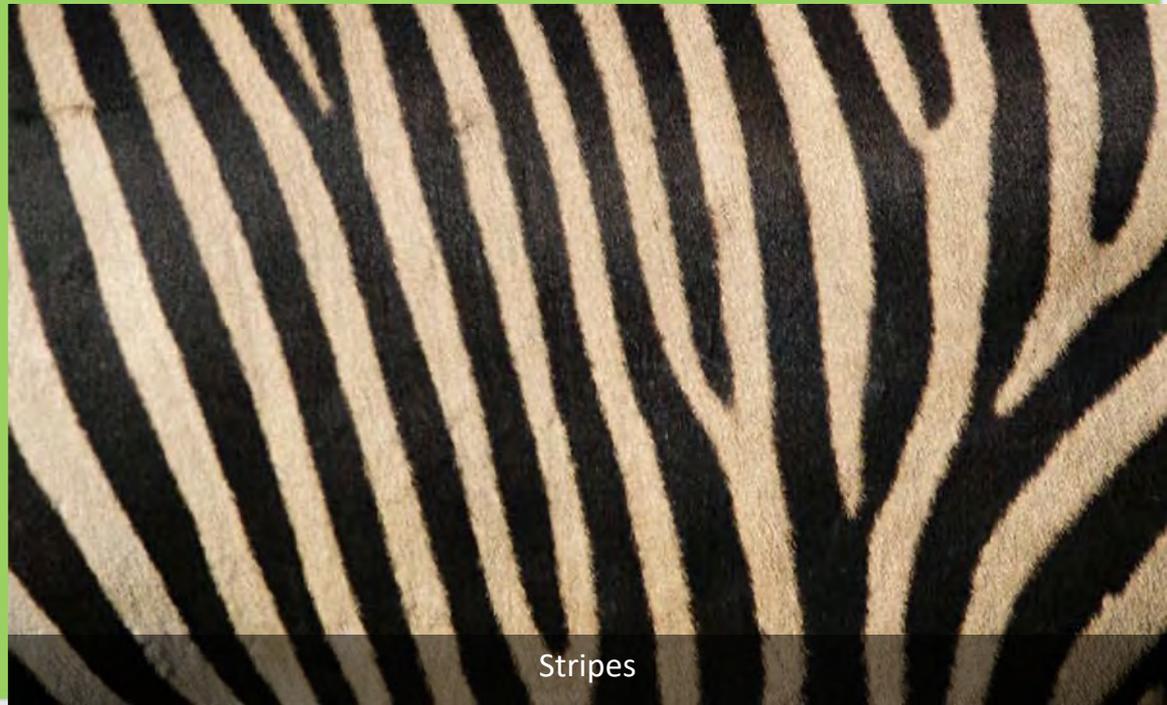


# Colors and shapes can help animals hide.

- You can read the story or watch it as a slideshow.
- *By Peggy Spring*



Spots



Stripes

Colors and shapes can help animals hide.



Stripes



Spots



Is this Blue Jay hiding or easy to see?



Is the giraffe hiding or easy to see?



Is the wolf hiding or easy to see?



Is the skunk hiding or easy to see?



Is the owl hiding or easy to see?



© Caters News Agency

Is the parrot hiding or easy to see?



Is the leopard hiding or easy to see?



Is the cardinal hiding or easy to see?



Is the fawn hiding or easy to see?



Is the tiger hiding or easy to see?





# Example of a movie--Sprouting



# Fingerplays

Very simple fingerplays  
reinforce key concepts.



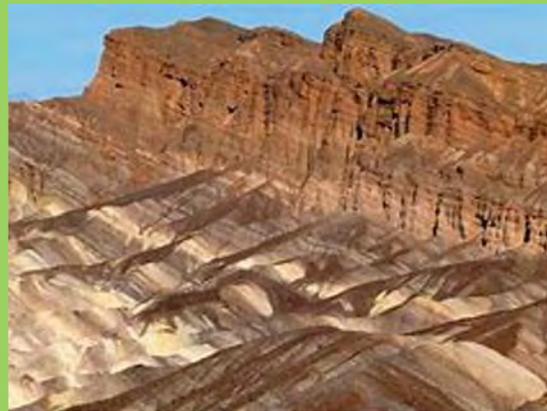
# More and Less

Use it again or make it something new (hands mixing)

That's what good recyclers do! (clapping)



# You can be finger rocks!



Some rocks come from seas (waving hands)

And some rocks come from heat (volcano up)

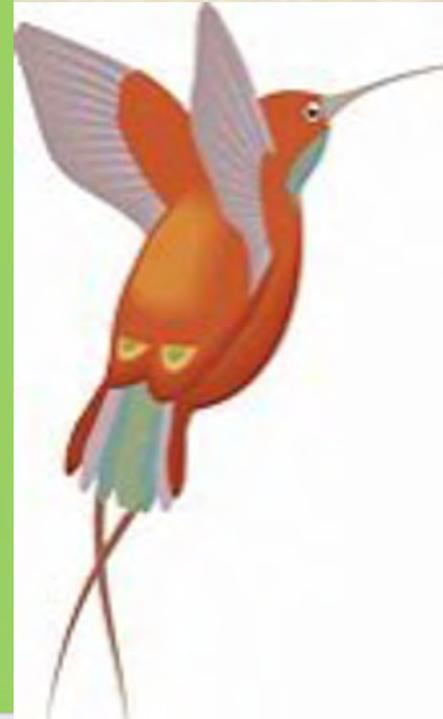
And some rocks become soil (tilling)

But every rock is neat! (clapping).



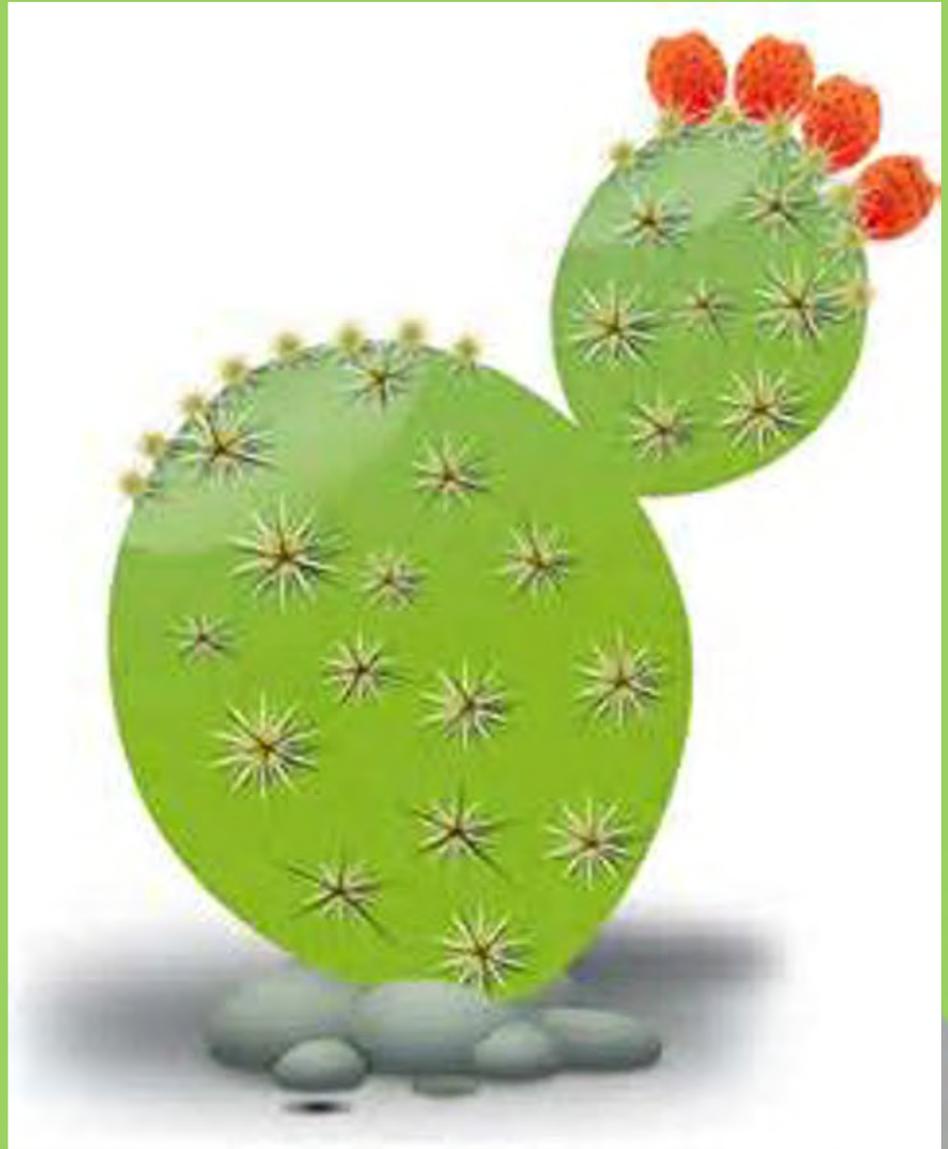
## You can be finger birds!

- **Some birds flap wings (flapping arms to sides)**
- **And some dive down-- (diving)**
  
- **Some back and forth, (moving back and forth)**
- **Some turn around! (turning around)**

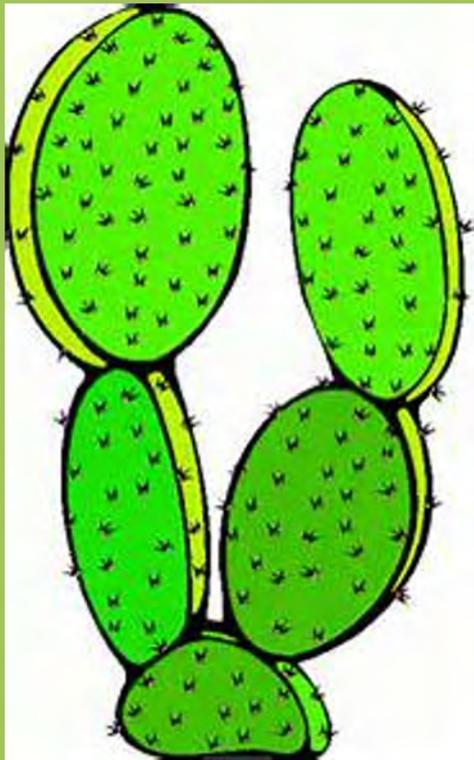


# Songs

Songs and movement are enjoyable ways of learning new things!



You can sing the song to  
*I'm a Little Teapot.*



I'm a little cactus—  
pads green and flat.  
(hands together  
horizontally)

My pads are my  
stems, just think of  
that! (hands together  
vertically)

My spines are my  
leaves, I think they're  
cute. (pointer fingers  
touching)

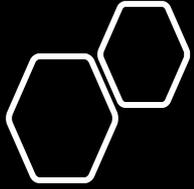
My flowers are  
yellow, and my tunas  
are the fruit! (hand  
rounded)



## To the tune of *Darling Clementine*

Deer need food (pointing to tummy)  
and deer need water, (pretending to drink)  
deer need shelter (making roof over head)  
and space too. (arms sweeping sides)  
They need all these things together (hands together)  
so they live like me and you! (pointing out and in)





# Stories

Very simple stories  
reinforce the key  
concepts and  
vocabulary.

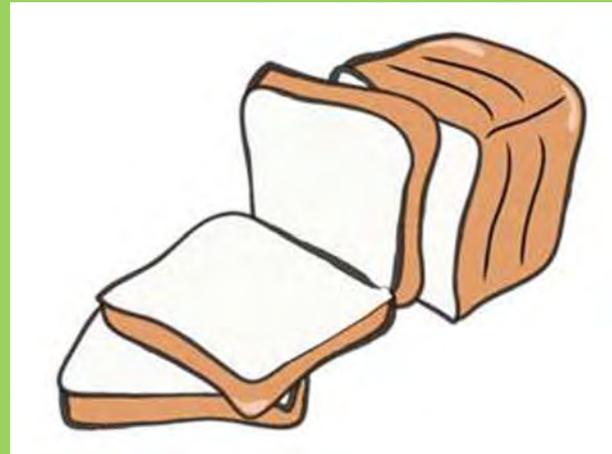


## The Story of Grass

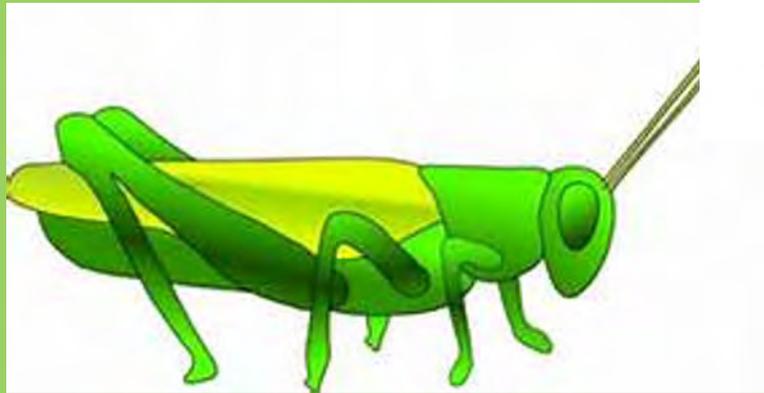
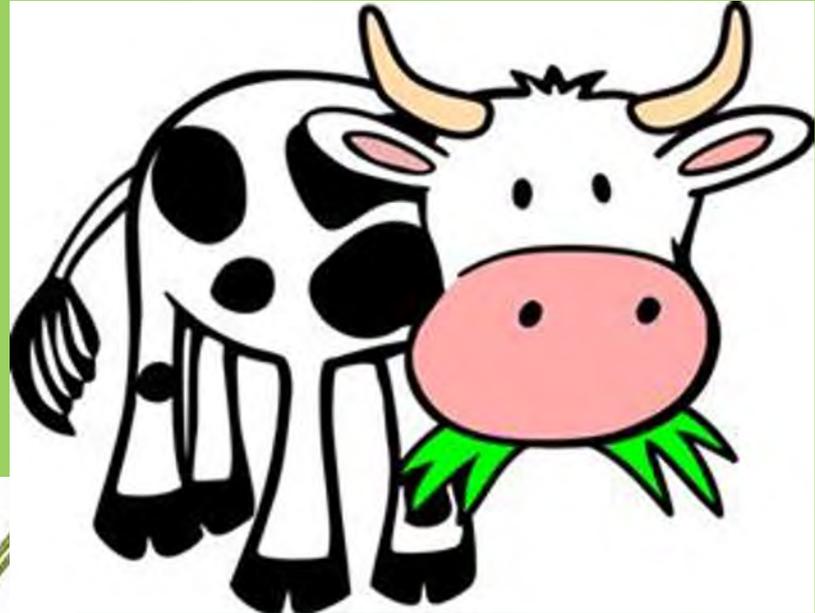
What are all the things the grass can do?



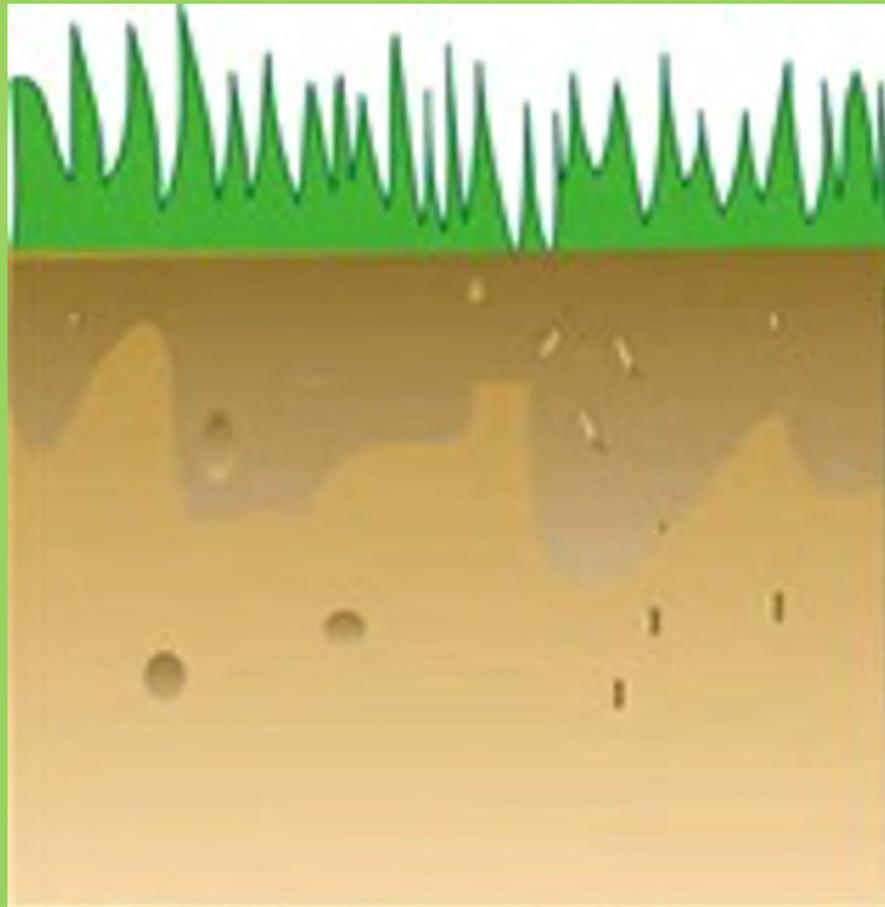
It makes food for me and you!



It gives animals shelter and things to eat.



It holds the soil and water—I think that's neat!





# Mighty Ants

*Ant Chant*



You can cut out an ant and act out the Ant Chant!



*Ant Chant* by Peggy Spring

# **Ant Chant**

**Ants have a great big head, I say,  
With two large eyes and two antennae.  
Their thorax is like what we call a chest--  
Six legs are there, that is best.  
They have an abdomen; you can call it a  
tummy.  
They like it best filled with something  
yummy.**



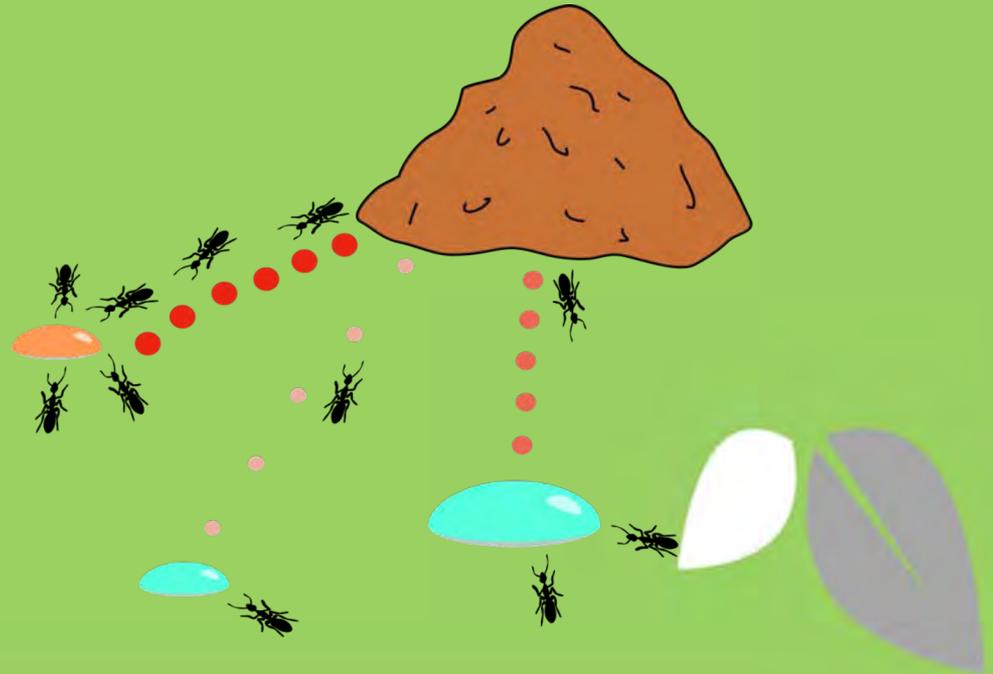
**Some ants live in a great big mound;  
Some ant hills are much smaller and  
round.**

**These ants are marching into the  
ground.**

**Let's look inside and see what's  
found.**



**Ants live together like a family;  
They all have a job in the colony.  
Some ants are workers; some ants  
guard  
And when they bite, they bite hard!**

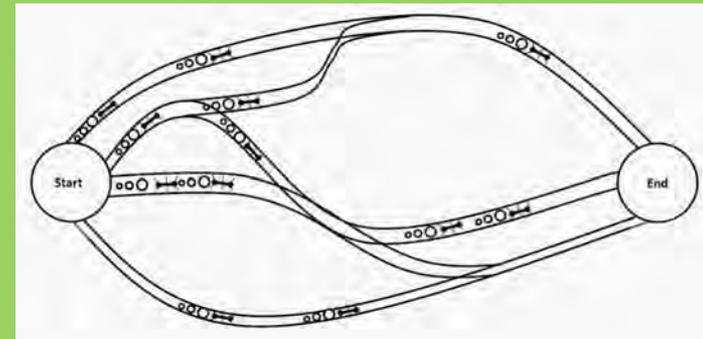


**We build a house with hammer and nails.**

**Ants build their nests by digging trails.**

**We rock babies to help them sleep;**

**Ants keep their babies in a great big heap.**

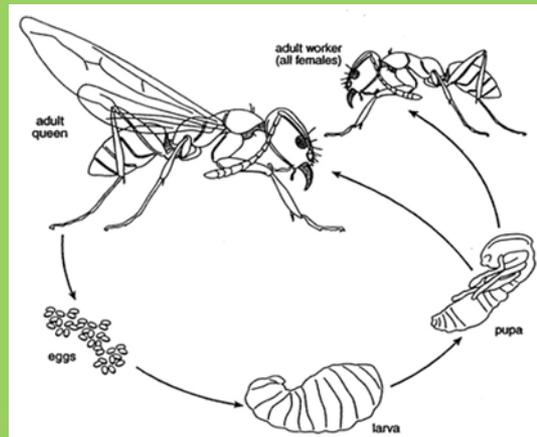


**Some of the workers must find some food.**

**There're so many mouths in the ant nest brood.**

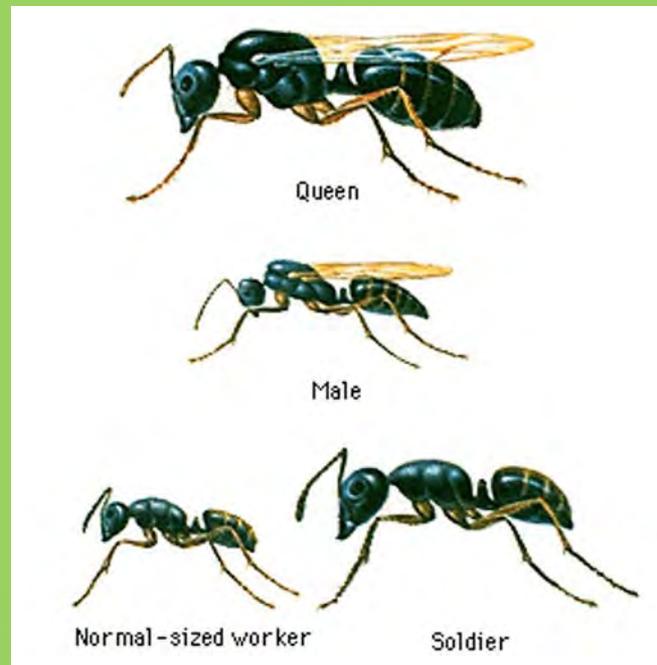
**You have a mommy; ants have a queen.**

**She lays more eggs than you've ever seen!**



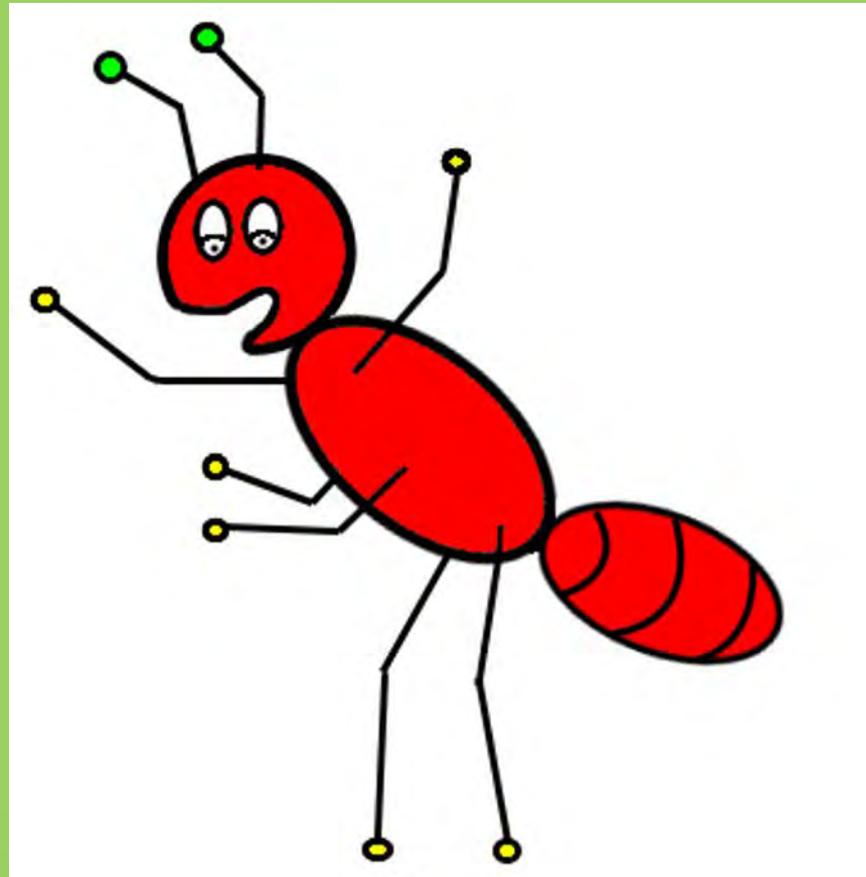
The daddy ants also have six legs;  
Their job is to help the queen make  
eggs.

Ant babies change as they grow.  
You have changed too, that is so.



**Now you know the story; let's  
give a chant!**

**Let's all say, "Hey, Little Ant!"**



# Learning Walks

Learning walks both  
apply the concepts and  
stretch the imagination.





Find the food, water,  
space and shelter  
where you live!

Now where can you find food, water,  
space and shelter for an animal around  
your home?





Do a tree walk around your house. We can use all our senses to experience the parts, similarities and differences in trees. Look for animals, birds and insects in trees, signs of life in trees, and things that could be homes or food. You can match color chips to bark and leaves.





# Hide and Go Seek!

Walk around your house to find good hiding places. Look down low and look up high. How about piles of leaves, or deep grasses, rocks and dirt and clusters of trees? Which animals could hide in each? Do you see signs an animal might have hidden there?





# Learning Snacks

Snacks are open ended and require problem solving.

# Be a nature chef!



Make a meal for a bird!  
What kind of bird are you?  
What kind of beak do you have? What foods do you have for your bird? What utensils will you use to eat those foods?





# You can eat like a bear!

What will you put in your lunch bag? Mini pretzel butterflies, goldfish or animal crackers, berries?





Can you find  
the jalapeno  
*lizard* in the  
broccoli *forest*  
or the  
butterscotch  
chip *bug* in the  
peanut butter  
*mud*?





# Learning Art

Learning art is free-form and open-ended.

# Grass imagination!

Grass art

You can design a grasshopper! Now find grass and leaves to hide your grasshopper!



Grass collage

# Grass hut for a gnome



You can  
imagine  
your own  
wild thing!



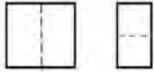


# Basic lesson plan templates

These provide a framework for creating a lesson



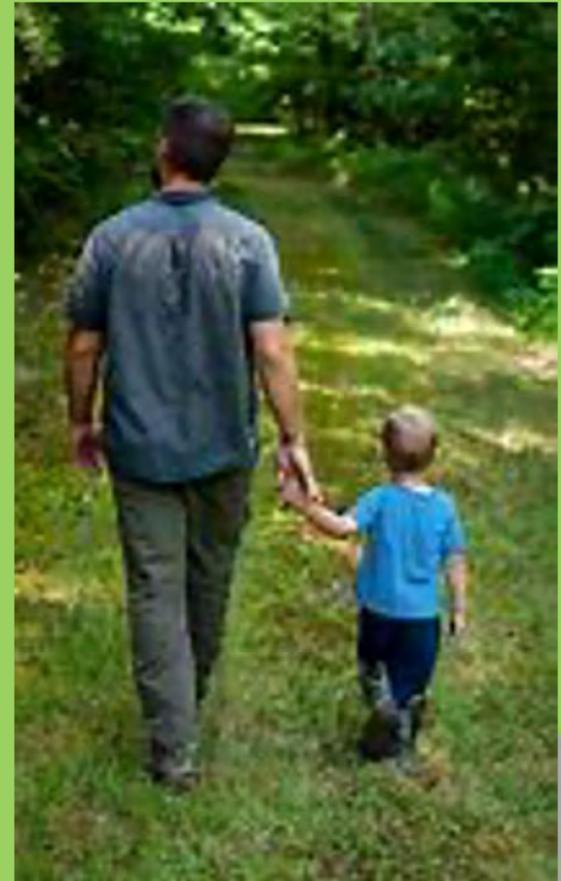
# Basic lesson plan template:

1 title	2 learning	3 fingerplay	4 songs	5 Story title
6 Story page1	7 Story p2	8 Story p3	9 Story p4	10 wall
11 craft	12 snack	13 You can make a mini-book! 1. Fold the paper in half 2. Then in half again. 	14 -----	

# We have outcomes in mind both for children and parents.

We want children to learn nature vocabulary and key concepts linked to familiar words and objects, to enact concepts and language with their bodies, to observe and explore the natural world, and engage relating familiar activities to nature learning.

We want parents to learn the young child terms and concepts paired with scientific language and explanation, to facilitate participation in observing, exploring and enacting nature learning, so that they will relate the learning to the home environment and continue to bring nature outdoors into their children's lives.



# Objectives for parents and children template:

Learning roles for parents	Fingerplays, songs and stories for parents	Walks, crafts, snacks for parents
Facilitate engagement	Facilitate participation	Adapt the materials for their particular resources and environment at home
Learning for children	Songs and fingerplays for children	Walks, crafts, snacks for children
Engage in the learning materials	Participate in songs and fingerplays	Participate in walks, crafts and snacks

# Objectives for parents and children template: Reptiles

Learning roles for parents	Fingerplays, songs and stories for parents	Walks, crafts, snacks for parents
Facilitate engagement	Facilitate participation	Adapt the materials for their specific resources and environment
Encourage the children to interact with any live reptiles, analogs such as velcro for gecko feet, or models.	Encourage the children to act out <i>Little Lizard in a Tree</i> , <i>All the Snakes are Wriggling</i> , <i>Some Turtles Swim</i> , <i>Did You Ever See a Lizard</i> , and the <u>Leapin' Lizard</u> story.	Encourage the children to look for reptiles on the walk, make a playdough snake, and push seeds onto a peanut butter snake.
Learning for children	Songs and fingerplays for children	Walks, crafts, snacks for children
Engage in the learning materials	Participate in songs and fingerplays	Participate in walks, crafts and snacks
Interact with the live and model reptiles and their analogs.	Attempt the actions and movements with the songs and fingerplays and attend to the story.	Look for reptiles, make something out of playdough and use the seeds and peanutbutter to make a snack

Thinking about outcomes:

**Outcomes**

Concepts:

**Extensions**

Concepts:

Vocabulary:

Skills:

Vocabulary:

Skills:



# Thinking about outcomes: Reptiles

## Outcomes

### Concepts:

reptiles have a backbone, dry scaly skin, 4 legs or are descended from creatures with 4 legs, and generally lay eggs.

Common reptiles in Texas include: lizards, snakes, turtles and alligators.

### Vocabulary:

vertebrates, lizard, snake, turtle, alligator

### Skills:

participating in the reptile songs and fingerplays, attending to *Leapin' Lizards*, using playdough and snack materials to create something

## Extensions

### Concepts:

differences between alligators and crocodiles, and turtles, tortoises and terrapins  
how turtles developed a shell  
how snakes lost their legs

### Vocabulary:

autotomy, setae, spatulae

### Skills:

creating a craft or snack model of a reptile



# The journey....

G UW to Starting Out Wild—  
starting early

To Family Nature Guides—  
learning in a variety of  
neighborhoods, and  
bringing nature to families  
who either can't travel to  
the park or work during the  
week



<https://www.fishwildlife.org/projectwild/growing-wild>

# STREAM



**+ ART=STEAM**



**+ READING=STREAM**



# What does STREAM look like for young children? Here are some ways of thinking about STREAM for young children.



Science is learning to observe nature, compare, contrast, and learning some of the related concepts and vocabulary.

Children can use simple technology such as magnifying glasses and rulers. Technology includes organizing, persistence and curiosity.

Reading connects what we learn about nature with classic children's literature.

Engineering lets children design their own creatures, plants or camouflage.

Art is one way children can express their ideas about what they observed in nature. We can incorporate lots of natural material into art projects.

Math is measuring and counting, arranging things in patterns

.



# What does STREAM look like for young children?



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What does STREAM look like for young children?



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# What does STREAM look like for young children?



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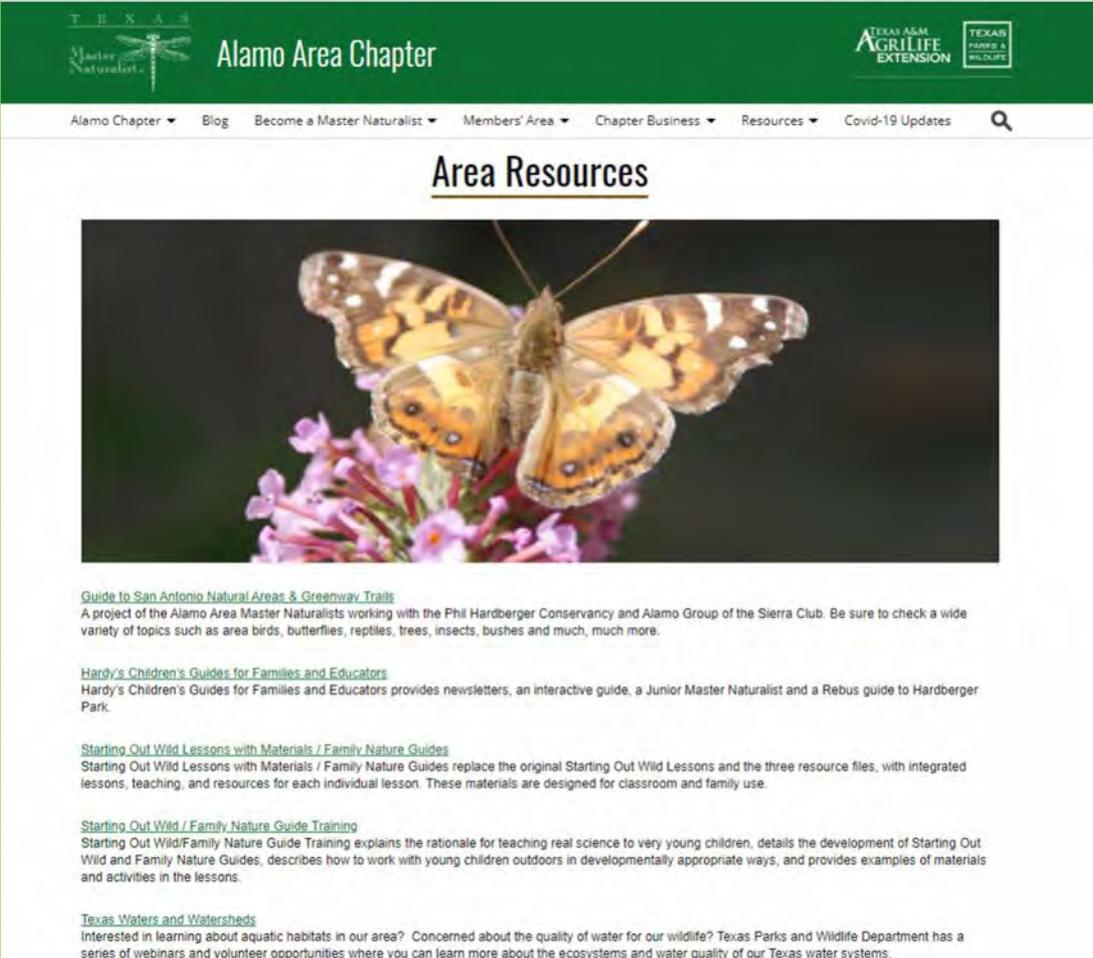


**Math** is measuring and counting, arranging things in patterns.

You can find the Family Nature Guides and Starting Out Wild Family Nature Guide Training at:

<https://txmn.org/alamo/area-resources/natural-areas-and-linear-creekways-guide/family-nature-guides/>

<https://txmn.org/alamo/area-resources/starting-out-wild/>



TEXAS  
Master Naturalist

Alamo Area Chapter

TEXAS A&M  
AGRI LIFE  
EXTENSION

TEXAS  
PARKS &  
WILDLIFE

Alamo Chapter ▾ Blog Become a Master Naturalist ▾ Members' Area ▾ Chapter Business ▾ Resources ▾ Covid-19 Updates 🔍

## Area Resources



[Guide to San Antonio Natural Areas & Greenway Trails](#)  
A project of the Alamo Area Master Naturalists working with the Phil Hardberger Conservancy and Alamo Group of the Sierra Club. Be sure to check a wide variety of topics such as area birds, butterflies, reptiles, trees, insects, bushes and much, much more.

[Hardy's Children's Guides for Families and Educators](#)  
Hardy's Children's Guides for Families and Educators provides newsletters, an interactive guide, a Junior Master Naturalist and a Rebus guide to Hardberger Park.

[Starting Out Wild Lessons with Materials / Family Nature Guides](#)  
Starting Out Wild Lessons with Materials / Family Nature Guides replace the original Starting Out Wild Lessons and the three resource files, with integrated lessons, teaching, and resources for each individual lesson. These materials are designed for classroom and family use.

[Starting Out Wild / Family Nature Guide Training](#)  
Starting Out Wild/Family Nature Guide Training explains the rationale for teaching real science to very young children, details the development of Starting Out Wild and Family Nature Guides, describes how to work with young children outdoors in developmentally appropriate ways, and provides examples of materials and activities in the lessons.

[Texas Waters and Watersheds](#)  
Interested in learning about aquatic habitats in our area? Concerned about the quality of water for our wildlife? Texas Parks and Wildlife Department has a series of webinars and volunteer opportunities where you can learn more about the ecosystems and water quality of our Texas water systems.

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# Learning about nature....

Thinking is more interesting than knowing, but not so interesting as **looking**.

*Johann Wolfgang Goethe*

The real voyage of discovery consists of not in seeking new landscapes, but in **having new eyes**.

*Marcel Proust*

It seems to me that **the pleasure is in the finding out**, not in being told the facts.

*Mary Newcomb*

A bird does not sing because it  
has an answer--

It sings because it has a song.

Chinese Proverb

