



The InvestiGator Club™ Prekindergarten Learning System

Investigations

PARENT'S
EDITION

Integrated Activities for Exploring, Experimenting,
and Making Discoveries

Wet and Wonderful Water

The title "Wet and Wonderful Water" is written in a large, bold, black font with a white outline. The word "Water" is the largest and is positioned at the bottom. A magnifying glass with a black handle is positioned over the word "Water", with the lens focusing on the letters. The lens contains a small amount of water. Several water droplets and bubbles of various sizes are scattered around the text, giving a sense of movement and discovery.

Part 4

How Does Water Change?

Water is amazing. It can be a solid or a liquid. Water can disappear altogether as a gas. Your child will be amazed to see these changes take place. Melting ice is the most familiar experience your child probably has had with changing the state of a substance. Tell your child: *During this Investigation we'll mix a whole lot of science with some math, art, music, movement, language, motor skills, and dramatic play to learn more about the ever-changing nature of water. So let's start investigating!*

Science/Math/Language

Is it water or is it ice? Your child will discover the ever-changing nature of water.

Materials

- water
- Ziploc® plastic bags
- paper toweling or newspaper

Presto Change-O

Have your child put water in two Ziploc® bags and seal. Place one bag of water in a freezer. Leave the second bag at room temperature. Ask: *Will the water in both bags stay the same or will the water in one bag change?*

- Once frozen, remove the bags from the freezer. In case of spills, have your child place both bags on paper toweling or newspaper to examine. Talk about how the liquid water moves in the bag, whereas the solid water does not move. Ask: *How are the bags the same? How are they different?*
- As time passes tell your child to watch the bag of ice and describe how it continues to change. Ask: *What happened to the solid ice once it melted?* (It changed into a liquid—water.) Talk about how the water changed from a liquid to a solid and back to a liquid again.



Movement/Music/Math

Get your child moving like icicles, snowflakes, and raindrops to demonstrate different forms of wet weather.

Materials

- musical recording
- tape or CD player

Freeze Like an Icicle

Talk about the different forms of water in the weather: ice, snow, rain. *What happens when snow falls and piles up? What happens when snow or ice melts? What makes icicles or snowflakes change shapes? What forms when a lot of rain falls?* Join your child in creative movement:

- Twirl around like snowflakes as you play music. Count from 1 to 10 together, then stop the music and freeze in place like an icicle.
- Start the music again and have your icicles start to melt into a puddle while you count down together from 10 to 1.
- Play different music and dance like raindrops.
- Play again and skate on ice.
- Ask which kind of wet weather your child liked being the best.

Health/Science

What happens when you mix a little science with a healthful food? Your family has a tasty treat to enjoy!

Materials

- fruit juice
- paper cups
- craft sticks

Fruity Ice Pops

Explain to your child that favorite fruit drinks are part water. Ask: *What do you think will happen if we put fruit juice in a freezer?* Follow these steps to make ice pops:

Make Ice Pops

Count out enough paper cups for each family member.

Fill cups with a favorite fruit juice.

Place the cups in a freezer.

When partially frozen, place a craft stick in each pop.

Once the juice is totally frozen, peel away the paper cups.

Enjoy the icy pops!

Get your child involved in estimating how long it will take for an ice cube to melt in a variety of locations.

Materials

- self-stick color-coded dots
- ice cubes
- paper
- marker

Disappearing Cubes

This is a great experiment for a warm day. Number self-stick dots and have your child place one on each ice cube. Take the cubes outdoors and let the investigating begin!

- Tell your child to place the ice cubes on different surfaces such as the grass, a wooden surface, a brick or concrete surface, a rock, dirt, or sand. Place some in the sunlight and others on the same surfaces but in a shadier area.
- Have your child estimate how long it will take for each ice cube to melt. Record on paper the number of the cube, where the cube was placed, and the estimated time.
- Have your child watch closely to look for signs of melting. As the cubes melt, the self-stick dots can be placed on the chart with the exact time for melting.
- Ask many questions: *Which cubes melted the fastest? Which took the longest to melt? Why do you think some melted faster than others? Did the cube take more time or less time than your guess? Did the cubes melt in different ways?*



Indoor Option:

If you prefer doing the experiment indoors, place the cubes in cups and place them in various places throughout the room—near a window; near a heat source; away from a light or heat source; in the refrigerator; in cold, warm, or hot water.

Art /Science/Fine Motor Skills

Your child can observe how salt melts ice and create colorful designs using blocks of ice.

Materials

- water
- clean half-gallon paper milk carton
- powdered tempera paint or food coloring
- paper cups or plastic containers
- coarse salt in a shaker
- eyedropper
- magnifying glass
- tray layered with newspaper

Ice Block Designs

Beforehand, freeze water in a half-gallon paper milk container and make colored water using powdered tempera paint or food coloring and place in paper cups or plastic containers. When the water has frozen, tear off the cardboard and place the block of ice on a tray layered with newspaper.

Invite your child to spend a little time examining the block of ice with a magnifying glass and reporting what is seen. Continue with the following experiments:



- Have your child sprinkle coarse salt on the block. Ask: *What happens to the ice?*
- Have your child use an eyedropper to drip various colors of water on the ice. Ask what is seen. Examine closely using magnifying glasses. (Tunnels of color are created as the salt melts through the ice.)
- If the weather is agreeable, place the block outdoors and observe and describe what happens over time.

Literacy/Language/Science

Generate rhyming words with your child while learning about seasonal weather.

Materials

- [Rhyming Pictures Activity Sheet](#)

Ice Is Nice

Teach your child the following rhyme about the seasons:

Wintertime is very nice

I go skating on the ice.

In wintertime I like to go

And build a snowman in the snow.

In spring dark clouds come floating by

Then rain drip-drops down from the sky.

Summertime means lots of fun.

Swimming and playing out in the sun.

- Repeat the rhyme, telling your child to listen for rhyming words. Then ask: *Do the words nice and ice rhyme?* Repeat with these word pairs: *go, snow; by, sky;* and *fun, sun.* Ask your child to repeat the rhyming words after you.
- Recite the rhyme again, pausing before the words *ice, snow, sky,* and *sun* for your child to say the missing rhyming word.
- Print out the [Rhyming Pictures Activity Sheet](#). Help your child say and match the pictures whose names rhyme.

Fine Motor Skills/Art/Science

Your little artist creates works of art using frozen colored water as a medium.

Materials

- water
- ice-cube trays
- powdered tempera paints or food coloring
- craft sticks
- finger-paint paper
- plastic gloves (an option you may want to use if food coloring has been used to color the water)

Ice Artists

Mix red, yellow, and blue powdered tempera with water and pour the colored water into ice-cube trays to freeze. Another option is to use 8 to 10 drops of food coloring in the water. (See note in Materials list.) Once the cubes are partially frozen, place a craft stick in each one to use as a handle.

- Tell your child to hold the colored ice cubes by the "handle" to color on paper. Ask: *What happens when you mix more than one color? What new colors did you make?* As another option, place some of the colored cubes into glasses of water. Have your child observe and describe what happens.

What Happened

The water melted on the paper.

The ice cube made pretty colors.

I mixed red and yellow and made orange.

I put a blue ice cube in the water and the water turned blue.

All About Mixing

Investigate mixing solids and liquids and discover what will dissolve in water and what will not.

Materials

- clear plastic cups
- plastic spoons
- water
- sugar
- salt
- sand
- cereal
- rice
- Kool-Aid®
- Jell-O®
- paper
- marker

Display all the solids you want to mix with water. Remind your child that a solid has a definite shape. Examples to use are sugar, salt, sand, cereal, rice, and Kool-Aid®. Ask: *What do you think will happen when we mix each of these things with water? Will the water change? Will the solid change?*

Have your child investigate different mixtures. Provide a plastic spoon and clear plastic cups to investigate. Begin by having your child put water in the glass and add a teaspoon of sugar. Have it sit for a moment to see what happens. Then stir the sugar while you sing the following song to the tune of "Frere Jacques."

Stirring, stirring, stirring, stirring.

Water and (sugar), water and (sugar).

What happens to the water?

What happens to the (sugar)?

Will it change? Will it change?

- Ask your child to respond to the question in the song. (The sugar dissolves, or changes into a liquid. The sugar is still there, though, because the water tastes sweet.) Explain that when a solid, such as the sugar, turns into a liquid, it dissolves.
- Repeat the process using different mixtures. Insert the name of what is being mixed with the water as you repeat the song. Find out what dissolves and what doesn't. Make a list.
- As a finale, have your child mix Jell-O® with water and chill. Discuss what changes take place here—solid + liquid = solid. Then enjoy!



Dramatic Play/Science/Fine and Gross Motor Skills

Your little painter can discover how heat causes water to evaporate while engaging in a dramatic play experience.

Materials

- painter's cap
- water
- bucket
- paint tray
- paint brush
- paint roller

Science/Math/Language

Make a mixture called goop and discover that sometimes it's hard to tell if something is a liquid or a solid.

Materials

- water
- cornstarch
- one-cup measuring cups
- bowl
- spoon
- Liquid or Solid?
Activity Sheet

Calling All Painters!

Invite your child to pretend to be a painter and help fill a bucket or a paint tray with water. This will be the "paint."

Tell your child to put on a cap and grab a brush or paint roller and head outdoors. "Paint" the sidewalk, the steps, the house, the playground equipment, and so on.

Have your child observe and discover what happens when the sun shines on the water after a while. Ask: *What do you think will happen as the sun shines on the water? Where does the water go?* Help your child understand how the warmth from the sun heats the water and changes it from being a liquid to being a gas and disappearing in the air. Make a connection the next time you have a pot of boiling water or a tea kettle on the stove with all the steam rising as the water heats up.

The Magic of Goop

Use the following recipe to make a batch of goop:

Goop

- 2 cups of cornstarch
- 1 cup of water

1. Measure the cornstarch and place in a bowl.
2. Measure the water. Slowly add the water while stirring.
3. Continue stirring until the mixture thickens.

- Invite your child to put two hands in the goop and try to pick up and roll it between the hands to make a ball. Then stop rolling and let the goop ooze away. Use spoons to tap on the goop or stir it around.
- Allow your child to continue playing to make new discoveries. Ask questions such as: *How does the goop feel in your hands? What happens when you pick it up and squeeze it? When does the goop act like a liquid? When does it act like a solid?*
- Have your child try changing the goop by adding more cornstarch or more water. *What happens now?*
- To explore the ever-changing nature of water, distribute copies of the Liquid or Solid? Activity Sheet. Have your child circle L for the pictures that show water as a liquid, and S for the pictures that show water as a solid.

You can think about how the heat from the sun evaporates water while singing a familiar song using puppets.

Materials

- [Itsy Bitsy Spider Activity Sheet](#)
- scissors
- drinking straws
- tape
- large paper cup

Itsy Bitsy Spider

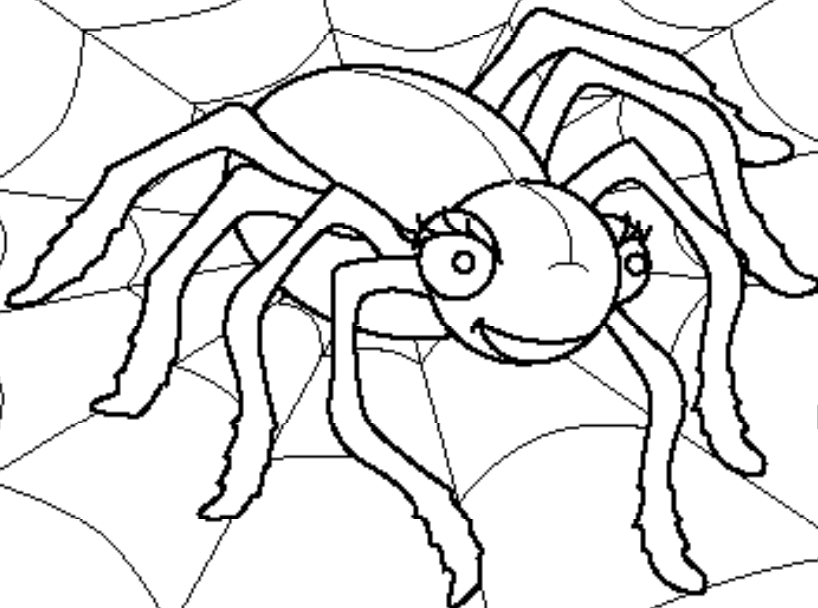
Sing or recite together the traditional rhyme about the Itsy Bitsy Spider:

*The itsy bitsy spider went up the water spout.
Down came the rain and washed the spider out.
Out comes the sun and dries up all the rain.
So the itsy bitsy spider went up the spout again.*

Repeat the song and include hand motions. Then ask: *When the spider crawled up the water spout was the spout dry or wet? What happened when the rain fell? Why was the spider able to walk up the water spout again?*

Remind your child that Great Auntie Lu loves to tell stories. Your child can tell the story of the itsy bitsy spider while singing the song using puppets!

- Print out the Itsy Bitsy Spider Activity Sheet. Help your child cut out the patterns to make puppets in a cup. Color each picture and tape it to a drinking straw.
- Make three small holes in the bottom of a drinking cup. Have your child push each stick puppet through a hole and pull the puppet down into the cup.
- Sing "The Itsy Bitsy Spider" again. As you sing, your child can move the puppets up and down in the cup to match the words in the song.



Science/Math/Language

What can a child learn from a puddle? Some science mixed in with a little math!

Materials

- chalk

Puddle Watchers

What child can resist a puddle? Go outside after a rain shower to find some puddles. No rain? Make your own puddles. Talk about why water settles in certain places to form puddles.

Ask: What do you think will happen when the sun comes out? Then to keep an eye on the puddles, use chalk to have your child draw a circle around each puddle to show the shape and size. Use size words to describe each puddle. This puddle is big. This one is little. This puddle is the largest. This puddle is the longest.

Visit the puddles later to see how they have changed. Use size words again to describe. Did all the puddles become smaller? Did any grow larger? Have your child mark the new size by drawing another circle. Continue a few times more until the puddles disappear.

Gross and Fine Motor Skills/Cooperation

You will need family members or some friends to do this relay race!

Materials

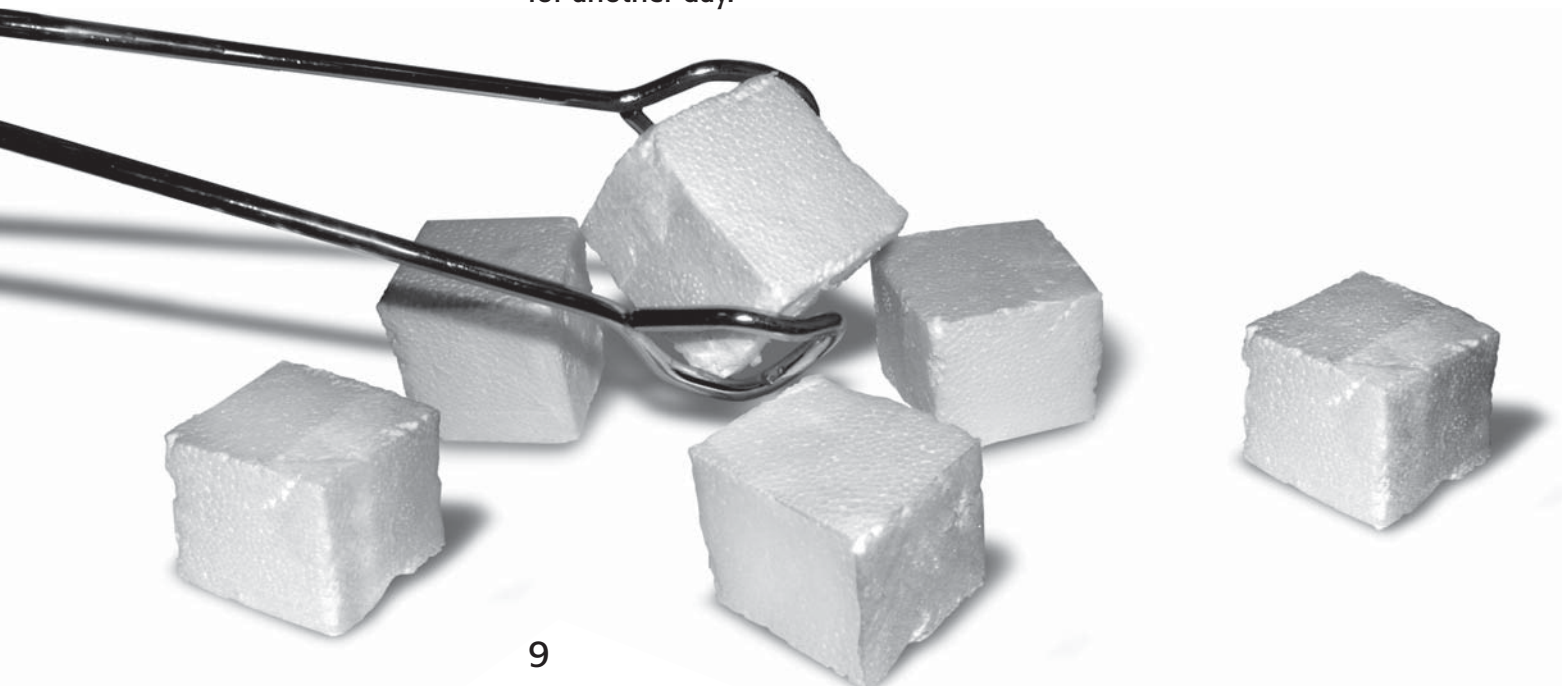
- plastic foam blocks
- tongs
- containers such as buckets

Ice-Cube Relay

Gather a group of family members or friends and involve your child in a fun relay race. First, form teams. Next, mark off the race track. Place a container of "ice cubes" (plastic foam blocks) at the starting line of each team's track. Place an empty container at the finish line.

Demonstrate how team members will take turns using tongs to remove one "ice cube" (plastic foam block) from the container, race down and drop it into the second container, and race back to give the tongs to the next team member.

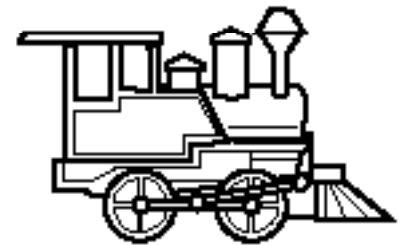
Sound the signal and let the race begin. As each team finishes, have the team members sit down until the others finish. Everyone is a winner because they finish the task. Change group members and play again or save for another day.



Name _____

Rhyming Pictures

Draw a line to match pictures whose names rhyme.



Investigation: Wet and Wonderful Water/Part 4

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Name _____

Liquid or Solid?

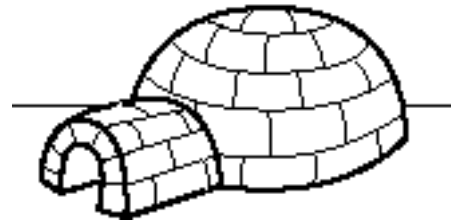
Water can be a liquid or a solid. Circle **L** for **liquid**. Circle **S** for **solid**.



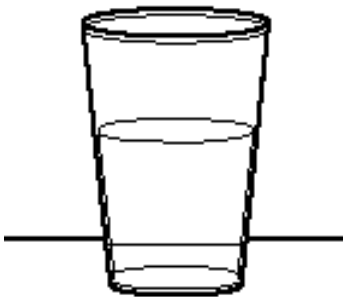
L **S**



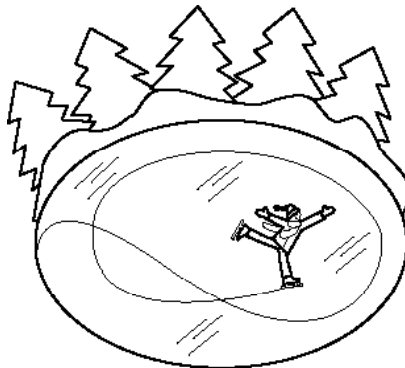
L **S**



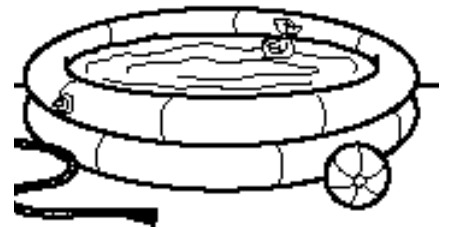
L **S**



L **S**



L **S**



L **S**

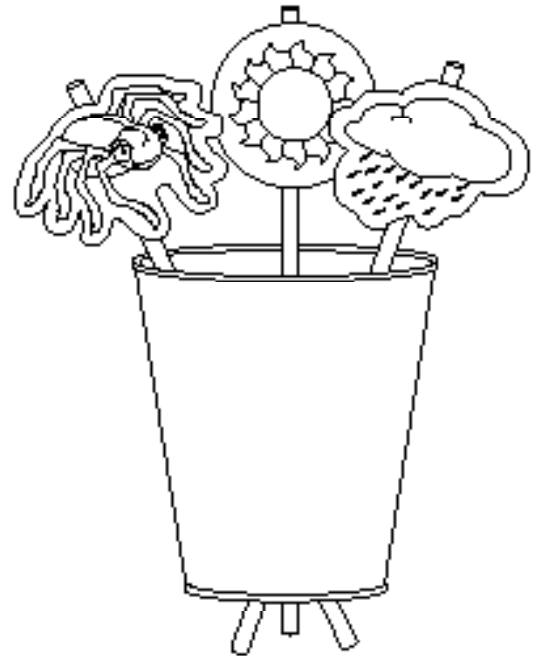
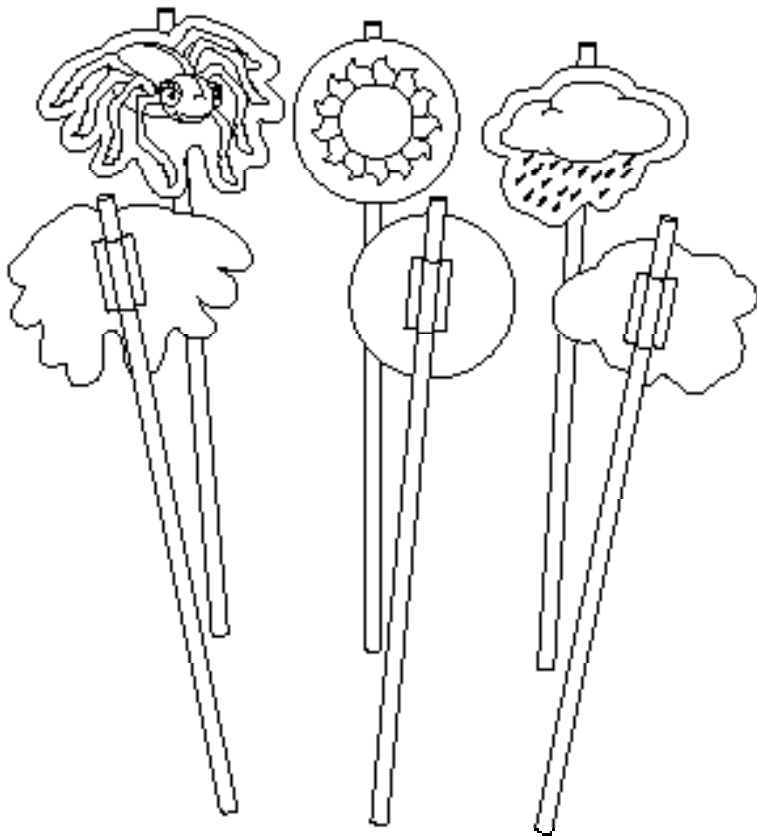
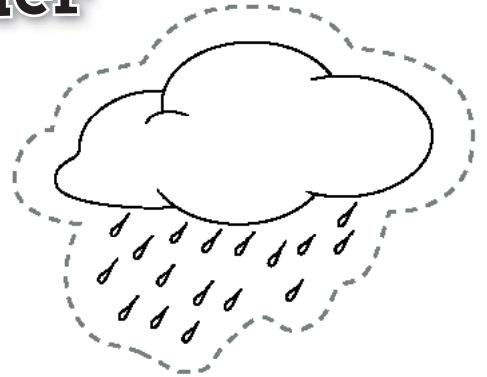
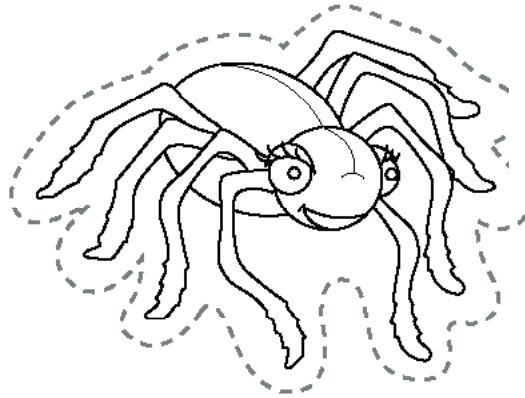
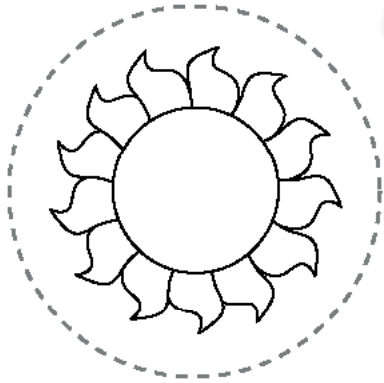
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Name _____

Itsy Bitsy Spider



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