# Hopping Into Spring Week

### Lesson Plan (K-1st)

**Monday (Reading/Math)**
- **Academic Time**: Draw an animal or celebrate the sounds you hear for each label. Template available in supplemental resources.
- **Creative Time**: Read How Dragonflies Grow and complete the Question Set. Use the Readworks packet in the supplemental resources.

**Tuesday (Social Studies)**
- **Academic Time**: How many spring outfits can be made with different shirts and pants. Template available in supplemental resources.
- **Creative Time**: Complete the Butterfly Flowers Math Activity. Also found in supplemental resources.

**Wednesday (Reading/Math)**
- **Academic Time**: Make Addition and Subtraction Clouds. Template available in supplemental resources.
- **Creative Time**: Practice Place Value with this video, then play Busy Bee Place Value. Also found in supplemental resources.

**Thursday (Science)**
- **Academic Time**: Write a sentence or draw a picture of something you can see, small things, and a flower during the spring. Template available in supplemental resources.

**Friday (Reading/Math)**
- **Academic Time**: Design Shape Flowers. Use the template in supplemental resources.
- **Creative Time**: Create a Spring themed Word Search. Use the template in supplemental resources.

**Electronic Time**
- Listen to the Very Impatient Caterpillar then write or draw a picture about what happened in the middle and end of the story. https://www.youtube.com/watch?v=Yo1YrZKk
Story Graphing

Use three stories that have recently been read in your classroom to explore graphing.

Procedure:
- After reading three stories in your classroom, have the students pick which book they liked best.
- Using the paper and crayons, the students can draw a picture about the story or by illustrating the cover of the story.
- Collect their votes and arrange the pictures in three rows. This is their simple graph.
- Talk about what the graph tells. Which story was liked the most? Why?
- Graph subsets: What scene is most often depicted from one book?
- You can try this activity with other things, favorite type of fruit, favorite color or favorite ice cream. Graph different topics several times during the year and compare the results at the end of the year. Do the results change over time? If so, why?

From a Circle to a Square to a Hexagon...

How many different shapes can you find in a circle of 12 dots?

Procedure:
- On a sheet of paper, draw 12 dots to form a circle.
- Connect some of the dots to see what shapes you can make.
- Can you connect the dots to make a square? (a hexagon has six sides; a pentagon has five sides).
- Use different colored pens or pencils to create each shape.

Pattern Hunt

A pattern is a design that repeats. Mathematicians look for patterns in objects to learn more about that object. There are many different types of patterns in nature. Take a look at a snail shell. Do you see a pattern? How about in a tree? Do you see a pattern there? See if you can find things in nature that have the patterns listed below. Go on a nature pattern hunt. Do any of the items you find have more than one pattern? Can you find any patterns besides those listed below? Can you find a pattern that is found in many different places in nature?

Clothing Combinations

Predict and determine how many different outfits can be formed with different colored pairs of pants and shirts. Figuring out all the combinations that are possible is part of probability.

Procedure:
- Explain that child was trying to figure out how many different outfits could be made up of two different colored pairs of pants and two different colored shirts. Each outfit should be made up of one pair of pants and one shirt and no two outfits should be the same. Guide students to predict or guess how many different outfits can be made.
- There are five different colors. Are there more than five different combinations?
- After predicting, give each student an outfit activity sheet similar to the illustration, two crayon colors for pants and three crayon colors for shirts. Allow students enough time to draw all of the different color combinations of outfits. You may want to have students cut out colored pants and shirts to try all the possible outfit combinations.
- How did students make sure they tried all possible combinations and that none were the same?

Extension:
- What if there were two colors of pants and four colors of shirts (add green, for example)? Try it with three colors of pants and four colors of shirts. Have students predict and draw the additional combinations.
- Discuss with students where else different combinations occur, such as pizza toppings or scoops of ice cream flavors.

Personal Measuring System

Throughout history objects have been measured in various ways. The earliest measuring devices were parts of the human body and this is a technique still used today. For instance, horses are measured in "hands." One hand equals four inches, or ten centimeters. Surveyors and farmers use strides (the distance in one step) to measure the ground. One stride is about a yard. Try this activity to measure things in your classroom or on your playground based on your own measuring unit.

Procedure:
- Choose a part of the body to measure things in your classroom. Some examples include: length of your foot, circumference of your head, length of your arm from shoulder to wrist, length of leg from knee to ankle, or any other section of the body you choose. Give your unit of measure a name.
- Cut a piece of string that is exactly the length of the body part you choose.
- Try measuring things around your classroom or playground using this unit.
- Compare your results with others in your class. Which unit tool more to measure an item? Were there any units that were larger than the item being measured?
- Have students divide their string into halves, fourths, eighths, and then mark the string with the marker. Measure the items and record as fractions of units, such as: "The desk is 4 1/2 wrists long."
Fruit Salad Symmetry

Although most fruits are not perfectly formed, they can still provide some extra practice locating lines and planes of symmetry, and recognizing the difference between two-dimensional and three-dimensional objects.

Procedure:
- After reviewing lines of symmetry with your students, let them practice what they know on the worksheet by drawing lines of symmetry on the fruit pictures. Demonstrate with the first fruit drawing, if necessary.
- Distribute the washed fruit and markers and ask them to draw the line(s) of symmetry on the real fruit. Share as a group where the students placed the line(s).
- Discuss, using the pictures and the fruit, the difference between two dimensional and three-dimensional objects. (Two-dimensional objects have only height and width, like the drawings, and three-dimensional objects have height, width and depth, like the fruit.)
- Two-dimensional and three-dimensional objects both have lines of symmetry, but only three-dimensional objects have planes of symmetry. Demonstrate this by cutting one of the fruits along its line of symmetry. When the fruit is cut along the line of symmetry, each half of the fruit looks like the other, more or less. Do the same with the rest of the fruit. When you are finished, cut up the fruit and enjoy a salad!

Materials (per student or team)
- piece of fruit (use a variety, like bananas, apples, oranges, star fruit, etc.)
- worksheet showing simple drawings of the fruit you will be using
- 1 non-toxic water color marker
- knife to be used by an adult
- cutting board
- large bowl
- serving size bowl

Resources
Exploratorium Magazine, Vol. 19, No. 3, Fall 1995
Exploratorium Science Snacks, www.exploratorium.org
Family Math Samplers, EUHALS Program, Lawrence Hall of Science
Family Math, by Joan Kerr Sennmark, Virginia Thompson and Ruth Cowey
Frasca, The Patterns of Chaos by John Briggs, 1992

Credits
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Dear Teacher,
Thank you for having the Mathfinder visit your school. We hope you enjoyed investigating mathematics with your students during the Science On Wheels experience. This flyer is intended to help continue the enthusiasm generated by our visit and extend your students' learning.

The following activities have been selected because they encourage problem solving skills, which are important components in math. Please feel free to adapt them to suit your needs. The insert's written for your students, with activities you may choose to do as a class or copy for home use.
Thank you for having the Mathfinder visit your classroom, and remember, have fun!

~Science On Wheels Teachers

Explore different types of graphs using a bag of candy and then extend the activity into other areas of math.

Procedure:
- Have students open their bag of candy and count the total number of candy pieces.
- Then, sort the candy into piles of different colors and count the number of pieces of each color. Record the number of pieces of each color on the scratch paper.
- On the graph paper, record the number of pieces of each color in different graph forms. Explore using line and bar graphs.
- Use colored pencils, pens or crayons to highlight the graphs.
- Compare all the graphs from your class and see how the numbers of pieces compare in the different bags. Did anyone have the same number of any of the colors in their bags?
- Enjoy the candy as a treat.

Extensions:
- With the same bag of candy introduce the concept of fractions. Figure out what fraction of the whole bag is each individual color.
- Use the bag of candy to talk about ratios.
- What is the ratio of each of the colors to the others or to the total amount?
- For older students, try graphing the number of candies as a pie chart.

Materials (per team)
- 1 bag of candy with different colored pieces
- scratch paper
- pencil
- graph paper for recording results
- colored pencils, pens or crayons

K-2 Flier DISCOVER PACIFIC SCIENCE CENTER
Label Me!

The CATERPILLAR!
Be sure to check out my entire butterfly unit!

Just give the image below a click:

Be sure to follow me on TPT so that you get updates for all my freebies!
How Dragonflies Grow
by ReadWorks

Dragonflies are flying insects. They go through three stages of life.

First, a female dragonfly lays lots of eggs. She lays the eggs on plants near or in the water. The eggs hatch. They are now baby dragonflies.

A baby dragonfly does not have wings. It lives in the water during the winter. In this stage, the baby dragonfly grows. It waits for warmer weather.

When it is warm, the dragonfly is ready to get its wings! The dragonfly climbs out of the water. It climbs onto a plant. The dragonfly sheds its last layer of skin. It can finally spread its wings. Now, it will fly away!

This is an adult dragonfly!

This is a photo of two baby dragonflies. They do not have wings yet.
MAKE YOUR OWN FLAG

There are many different flags that stand for many different things. Flags use symbols and colors that are an important part to a country, state, or family's culture. Flags honor events and people that shaped them.

Create your own flag.
Use symbols and colors that best represent you.

1. What symbols did you choose? Why?

2. Why did you choose those colors?

3. What does your flag represent?
Look at these butterflies and flowers. All of them have a number.

Can you find two butterflies to go on each flower so that the butterfly numbers add to the flower number?

Which pair of butterflies has no flower to go to? Why?

Which flower cannot have a pair of butterflies on it? Why?

Read about how three children started this task:

*Zac said:*  
I noticed there were eight butterflies which all had the number 10 on them, so I put one on each flower.

*Mona said:*  
I picked two butterflies and added their numbers together.

*Anita said:*  
I noticed that if I added two red butterflies together I didn't get a flower total.

*Did you start the problem in the same way as any of these children?*  
*What do you think about each method?*
Directions: Write addition or subtraction facts on each cloud. Draw raindrops to represent the sum or total of each fact.
Eggs for Springtime

Purpose:
This activity is an invitation to celebrate the beginning of Spring and to connect our community. The egg is used by many cultures and traditions as a symbol of renewal or the birth of an idea. It is associated with both Easter and Passover. It is also a non-sectarian symbol for the circle of life and renewal. This activity is familiar to many people and is appropriate for any age. We invite you to use the egg shape in any way that is meaningful. Have fun.

Materials needed:
- Use an egg template or make your own.
- Any type of drawing or painting medium.

Instructions:
- Find or create an egg outline that fills approximately 75% of your page.
- Fill the egg in any way that is fun and meaningful to you. This can be a decorative design, a spring scene, a dinosaur egg hatching or whatever you like.
- Optional: fill the space surrounding the egg by adding a background. This can create a setting for your egg such as an egg hatching on the beach or a pattern that complements, clashes or expands the egg design.
- Share your egg with others by hanging in a shared area or sharing virtually.

Reflection:
- What would you title your egg picture or what words come to mind when you look at it?
- What does the egg symbolize for you?
- Do you have any family traditions for holidays in the spring?
Busy Bee Place Value

Created by Sarah Moelling
thefabulousfirstgrade.com

Font credits: Kevin and Amanda Fonts
Clip Art Graphics from the Pond

Directions for teacher: Print cards on cardstock and laminate for strength. Directions for student: Match each place value card to its correct number.
4 tens 5 ones

45

forty-five
& tens & one

18

eighty one
b tens  
b ones

60

sixty

six
3 tens 7 ones
10 + 7 = 17

Tenth + Seven Ones = Seventeen
7 tens 3 ones

73

seventy three
5 tens 2 ones

52

fifty two
9 tens 6 ones

96

ninety six
<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
<th>Tens + Ones</th>
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<td>4</td>
<td>8</td>
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I see _______________________

I hear _______________________

I smell _______________________

I feel _______________________

I taste _______________________

Spring is here! I love it!
CURIOSITY AT HOME
MAKE YOUR OWN INSECT LIFE CYCLE

MATERIALS
- Life Cycle Cover Sheet
- Either a Butterfly, Ladybug, or Bee Life Cycle page
- Crayons or Markers
- Scissors
- Brad or paperclip

PROCEDURE
- Print out a cover sheet and one of the three (butterfly, ladybug, or bee) life cycle sheets.
- Color both of your sheets
- Cut along the solid line of the circle.
- With both circles facing up, place the cover circle on top of the insect life cycle circle.
- Use a brad or a paperclip to punch a hole through the center of the circles and to connect them.
- Move the cover sheet around to view the various stages of an insect's life cycle.

EXPLORE MORE
The Tropical Butterfly House at Pacific Science Center is home to a number of plant and butterfly species. While there are four stages to an insect's life cycle, you can only observe two of the four stage at PacSci. In our emerging window, you can view pupa. In this stage, caterpillars are transforming into butterflies. Once they emerge from the pupa, the butterflies are set free in the Tropical Butterfly House. As adults, butterflies usually lay eggs to begin the life cycle again.

Butterflies use their antennae to smell. Most butterfly species will only lay eggs on certain plants. The sense of smell is important to making sure the butterflies know where to lay their eggs. It helps them detect the presence of chemicals in plants that help them identify which plants to lay their eggs on.

Why would butterflies be picky about where they lay their eggs?
(No hint. Think about the butterfly life cycle stage that follows the egg.)

Since the butterflies in PacSci's Tropical Butterfly House are not native to Seattle, we do not raise butterflies. We work with butterfly farmers in Costa Rica, Ecuador, Malaysia, and other tropical regions to receive pupa.

How might PacSci ensure that our butterflies do not lay eggs in the Tropical Butterfly House?

Activity continued on next page...
CURIOSITY AT HOME
MAKE YOUR OWN INSECT LIFE CYCLE

BEE LIFE CYCLE

Activity continued on next page...

@pacsci
Show us how you’re being curious! Share your results with us.
LADYBUG LIFE CYCLE

Activity continued on next page...

Show us how you're being curious! Share your results with us.
BUTTERFLY LIFE CYCLE
Directions: Identify and cut out the following shapes and create flower designs with the different shapes. How many flower designs can you come up with?