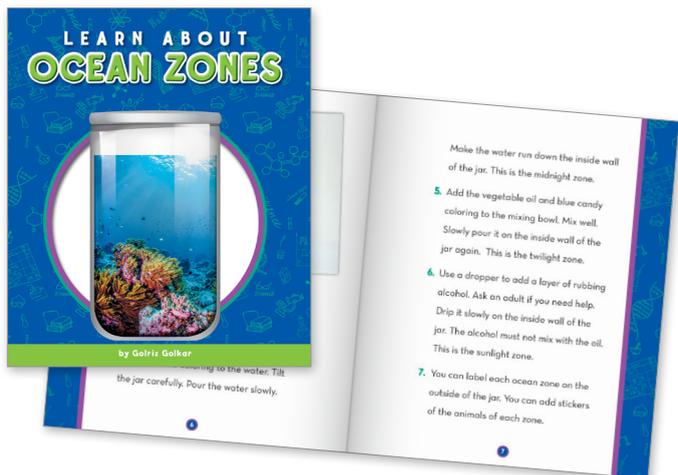




**LEARN-AT-HOME RESOURCES:  
7 STEM EXPERIMENTS FOR GRADES K-3**

# Experiments Featured in this Activity Packet!

## Let's Make the Ocean Zones!



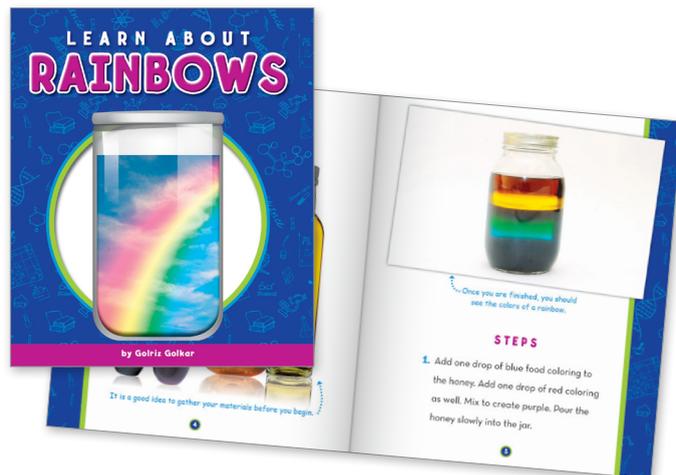
### Learn about Ocean Zones

Reading Level: Grade 2

Interest Level: Grades K-3

Scroll to Page 4 to start the activity!

## Let's Make a Rainbow!



### Learn about Rainbows

Reading Level: Grade 2

Interest Level: Grades K-3

Scroll to Page 8 to start the activity!

## Let's Grow Seeds!



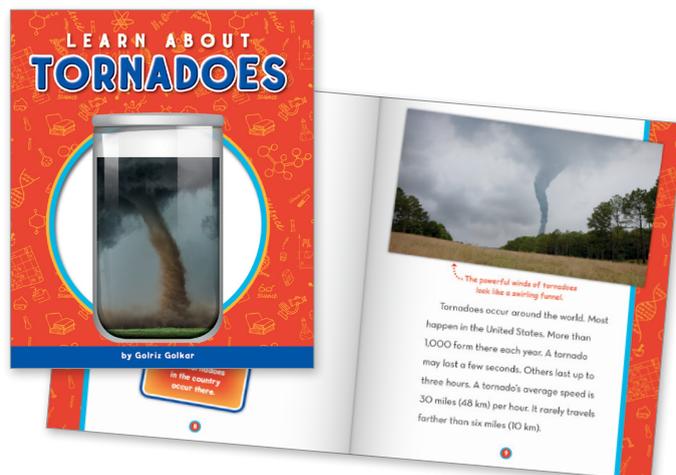
### Learn about Seeds

Reading Level: Grade 2

Interest Level: Grades K-3

Scroll to Page 12 to start the activity!

## Let's Make a Tornado!



### Learn about Tornadoes

Reading Level: Grade 2

Interest Level: Grades K-3

Scroll to Page 16 to start the activity!

# Experiments Featured in this Activity Packet!

## Let's Get Slimed!



### Slime Kitchen Experiment

Reading Level: Grade 1

Interest Level: Grades K-3

Scroll to Page 20 to start the activity!

## Let's Write a Message!



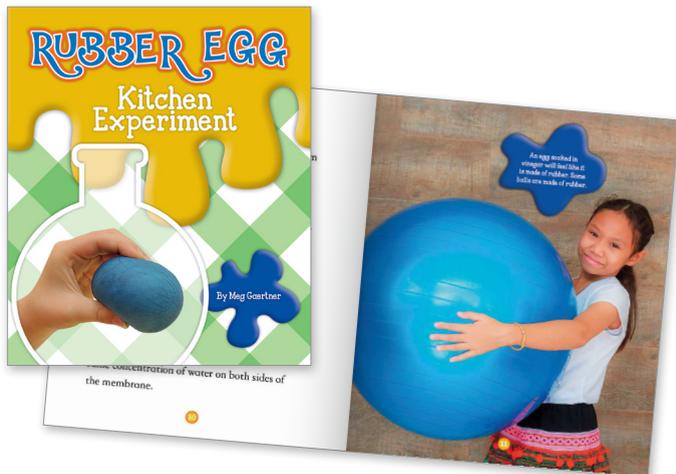
### Invisible Message Kitchen Experiment

Reading Level: Grade 1

Interest Level: Grades K-3

Scroll to Page 29 to start the activity!

## Let's Make a Rubber Egg!



### Rubber Egg Kitchen Experiment

Reading Level: Grade 1

Interest Level: Grades K-3

Scroll to Page 37 to start the activity!

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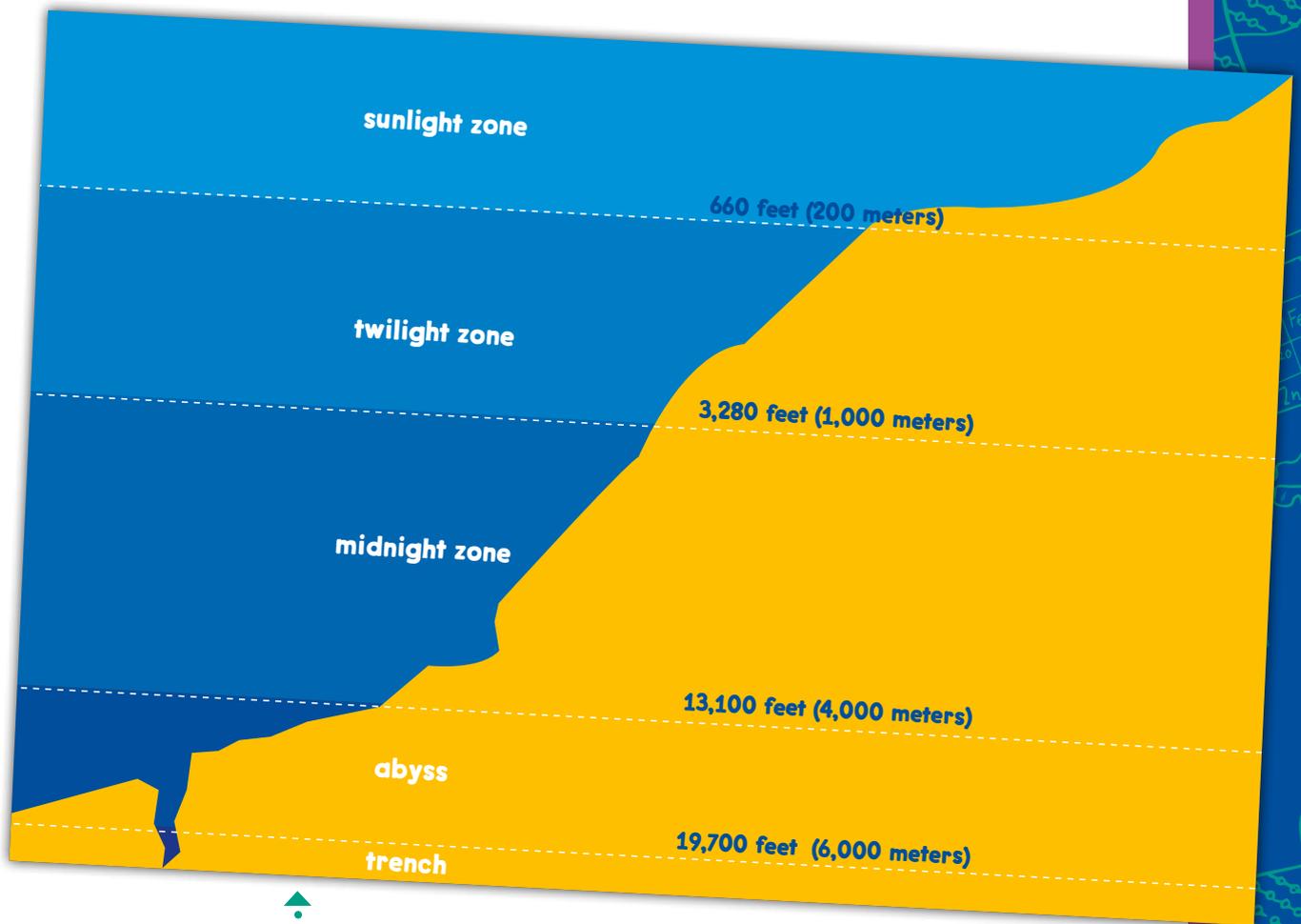
# Let's Make the Ocean Zones!

## MATERIALS

- Glass jar with lid
- Black food coloring
- $\frac{3}{4}$  cup corn syrup
- Funnel
- $\frac{3}{4}$  cup blue dish detergent
- Blue food coloring
- $\frac{3}{4}$  cup water
- Oil-based blue candy food coloring
- $\frac{3}{4}$  cup vegetable oil
- Rubbing alcohol
- Dropper
- Stickers of ocean animals (optional)



It is a good idea to gather your materials before you begin.



... Ocean zones are a way of measuring depth. Each zone is very different.

## STEPS

1. Put the corn syrup and black food coloring in a bowl. Mix together.
2. Pour the corn syrup into the jar. This is the trench zone of the ocean.



You will have five zones when you finish. 

- 3.** Pour the blue dish detergent over the corn syrup. Use a funnel. The layers should not mix. This is the abyss zone.
- 4.** Add blue food coloring to the water. Tilt the jar carefully. Pour the water slowly.

Make the water run down the inside wall of the jar. This is the midnight zone.

5. Add the vegetable oil and blue candy coloring to the mixing bowl. Mix well. Slowly pour it on the inside wall of the jar again. This is the twilight zone.
6. Use a dropper to add a layer of rubbing alcohol. Ask an adult if you need help. Drip it slowly on the inside wall of the jar. The alcohol must not mix with the oil. This is the sunlight zone.
7. You can label each ocean zone on the outside of the jar. You can add stickers of the animals of each zone.

# Let's Make a Rainbow!

## Materials

- Glass jar with lid
- 1/2 cup honey
- Red, blue, and green food coloring
- 1/2 cup blue dish detergent
- 1/2 cup water
- 1/2 cup olive oil
- 1/2 cup rubbing alcohol



It is a good idea to gather your materials before you begin. 



Once you are finished, you should see the colors of a rainbow.

## STEPS

1. Add one drop of blue food coloring to the honey. Add one drop of red coloring as well. Mix to create purple. Pour the honey slowly into the jar.

- 2.** Pour the detergent slowly into the jar.
- 3.** Add three drops of green food coloring to the cup of water. Tilt the jar carefully. Pour the water slowly, making it run down the inside wall of the jar. The colors should not mix.
- 4.** Slowly pour the olive oil on the inside wall of the jar again. This will make yellow.
- 5.** Add three drops of red food coloring to the rubbing alcohol. Mix well. Slowly pour it on the inside wall of the jar. Keep the jar tilted.



⋯ Be careful when using food coloring.  
It can stain your hands.

6. Place your jar near sunlight. You will see shades of orange and indigo. Then you will have seven colors. Your rainbow is complete!

# Let's Grow Seeds!

## MATERIALS

- Paper towels
- One glass jar
- 2-3 different seeds of your choice (for example, pea, kidney bean, daisy)



It is a good idea to gather your materials before you begin. . .



After about a week, your seed should sprout.

## STEPS

1. Wet several paper towels. Wring them out to remove any extra water.
2. Crumple the paper towels into balls. There should be enough to fill the jar.



3. Place one seed of each kind along the side of the jar.
4. Place the jar near a sunny window.
5. Watch the seeds grow. After one week, all the seeds should sprout. You can draw pictures of their growth every day. Measure each plant. Compare their heights. Which grew the fastest? Which was the tallest?

See how tall your plants grow. How are they the same? How are they different?

# Let's Make a Tornado!

## MATERIALS

- Glass jar with lid
- Water
- One teaspoon clear dish detergent
- Blue food coloring
- One teaspoon vinegar



It is a good idea to gather your materials before you begin. . .



... A tornado forms in the water  
when you swirl the jar!

## STEPS

1. Fill  $\frac{3}{4}$  of the jar with water.
2. Add the dish detergent. Add one drop of food coloring. Do not mix.



Tornadoes are known for their powerful winds. ...

3. Add the vinegar.
4. Close the jar lid tightly.
5. Hold the jar firmly by the lid. Rotate it quickly. Swirl the ingredients together. This forms a funnel shape. It looks like a tornado has formed!



# THE EXPERIMENT

## Let's Get Slimed!

### MATERIALS LIST

mixing bowl  
1 cup (237 mL) water  
food coloring  
1.5 cups (192 g) corn starch



### TIP

All of the supplies are safe. But it is not a good idea to eat this slime. It won't taste very good!

# STEPS



1. Pour the water into the mixing bowl.

- 
2. Add a few drops of food coloring to the water.  
Add more drops for more color.





## TIP

When the slime is smooth, the cornstarch has dissolved into the water.

3. Add the cornstarch to the mixing bowl. Use your hands to mix the solution. Keep mixing until it is smooth. The slime is smooth when it looks the same all over.

4. Try forming a ball of slime in your hands. If you can't, add a little more cornstarch. This makes the solution thicker. Mix it in until you can form a ball. The slime has become more like a solid.



5. Try holding the slime in your hands. It should drip like a liquid. If it does not, add a little more water. This makes the solution thinner.





6. When you are finished playing with the slime, you can keep it in a plastic zip bag. Add water the next time you want to play with it.

### TIP

Use warm water to clean the slime off your hands and clothes.



# THE EXPERIMENT

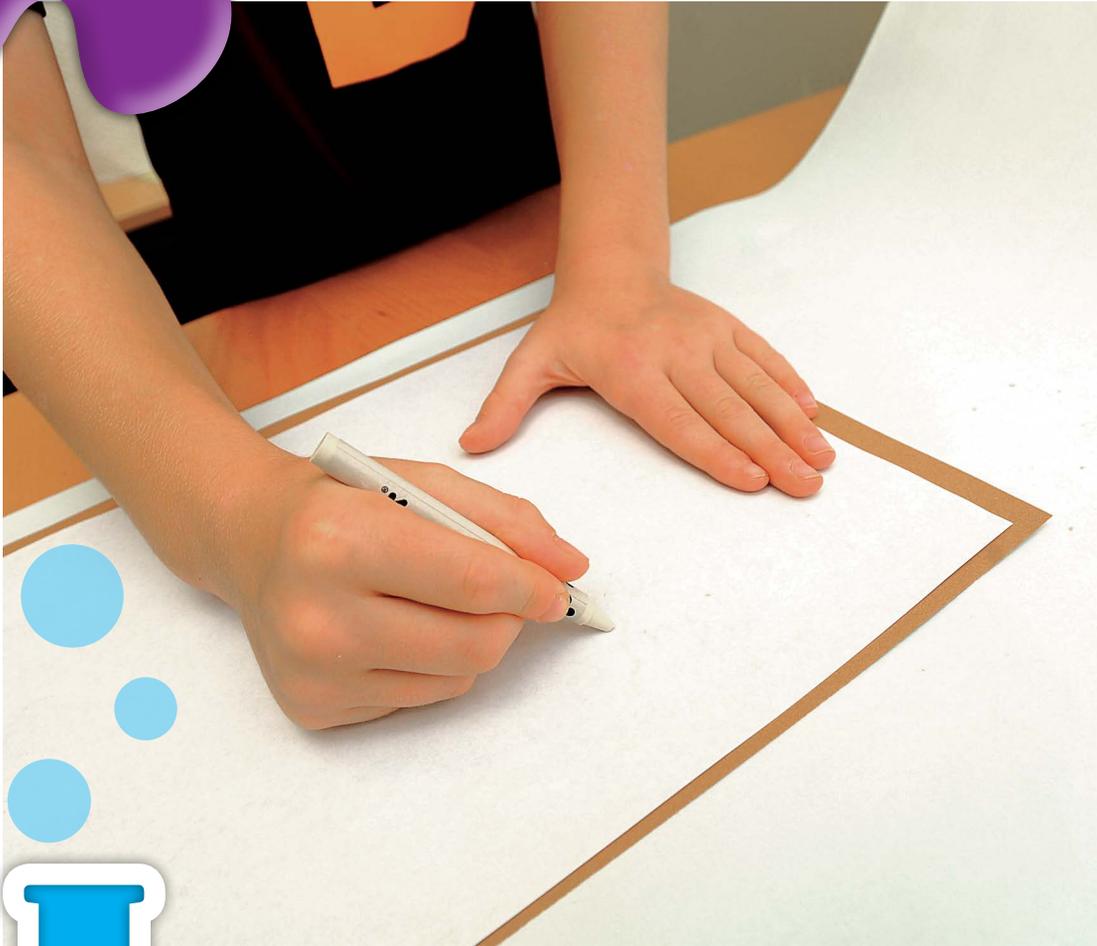
## Let's Write a Message!

### MATERIALS LIST

white crayon (not washable)  
white paper  
glass or cup  
water  
paintbrush  
watercolor paint



# STEPS

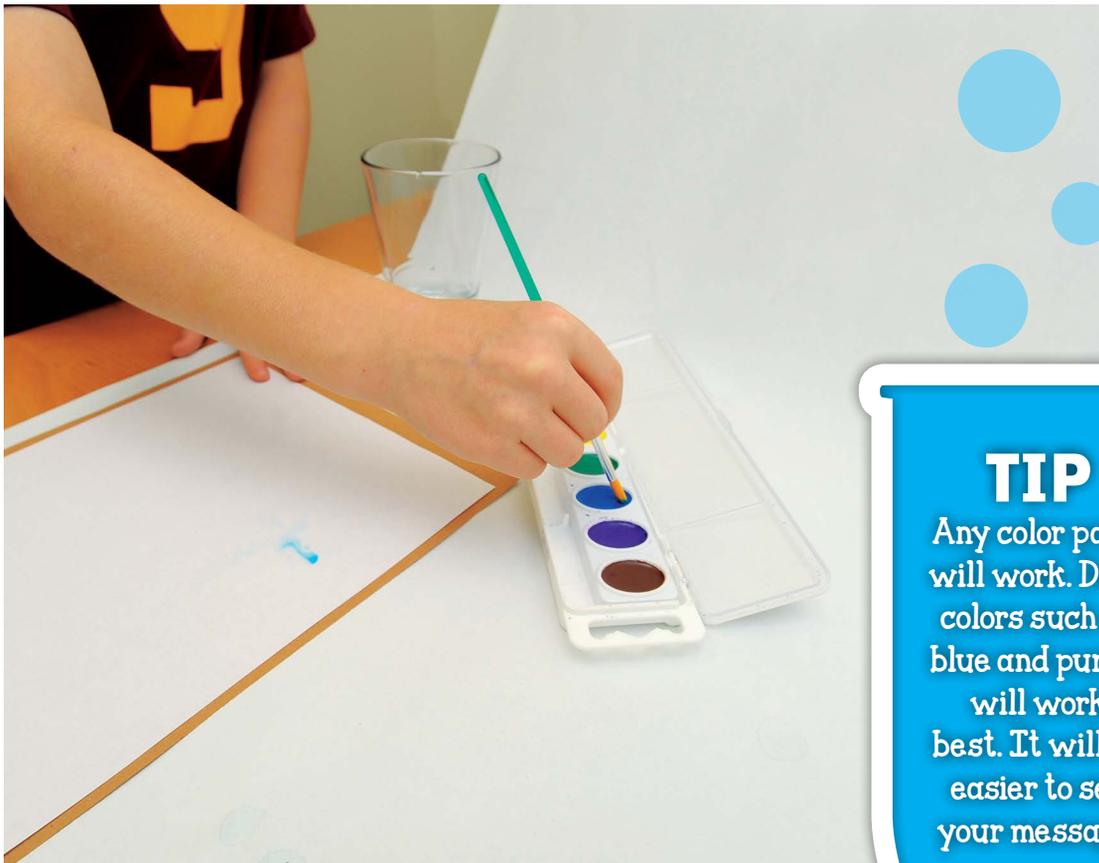


## TIP

Your message can also be a drawing.

1. Write your message on the paper with the white crayon. Press hard with the crayon. You want to leave lots of wax behind.

2. When you are ready to show your message, pour the water into the glass.
3. Dip the paintbrush in the glass of water.
4. Dip the paintbrush into one of the watercolor paints.



## TIP

Any color paint will work. Dark colors such as blue and purple will work best. It will be easier to see your message.

**5.** Brush your paintbrush over the paper.





6. If you need more paint, dip the paintbrush into the cup of water again before adding paint.

## TIP

You can use more than one color to show your invisible message! Make sure to rinse your paintbrush in the glass of water before switching to a new color.

7. Observe your hidden message. Can you see the whole message? How might you use invisible messages to talk to a friend?







# THE EXPERIMENT

## Let's Make a Rubber Egg!

### MATERIALS LIST

- 1 egg
- 1 glass or jar
- 1 cup (237 mL) vinegar
- a few drops of food coloring



**TIME TO COMPLETE:**  
5 days

# STEPS



1. Hold the egg in your hand. How does the egg feel? Is it hard or soft?
2. Gently put the egg in the glass.

3. Add the vinegar to the glass. Vinegar should cover the whole egg.
4. Add a few drops of food coloring to the glass.



## TIP

You can check on your egg while you wait. What do you see? Are there little bubbles around the egg? When the vinegar breaks down the eggshell, it makes a gas. The little bubbles that you see are a gas called carbon dioxide.



5. Put the egg in a safe space. Leave the egg in the glass for five days.

6. After five days, take the egg out of the vinegar. Be very gentle with the egg so it does not break. Carefully peel off any last pieces of the shell. Rinse off the egg with water.



7. Hold the egg a few inches above a table. Then let it go. Watch the egg bounce.



**TIP**

Be careful! The egg will still break if you bounce it too hard.



## TIP

Throw away the egg  
when you are done.  
It will start  
to smell bad!

8. Gently press on the sides of the egg.  
Does it feel different than it did when  
you began?
9. Wash your hands with soap and water after  
touching the egg or the vinegar. Raw eggs  
can make you sick. Vinegar will sting if you  
rub your eyes.

# We're here for you!

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