

# SCHOOL AGE

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Week

16

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Smart Activities



SMART CHOICE. SMARTER CHILD.®



## Dancing Corn Kernels

**Materials:** baking soda (2 tbsp), corn kernels (1/8-1/4 cup), food coloring, jar (tall), measuring cup and spoon, plate, white vinegar (1 cup), water (2 cups)

**Instructions:**

Before you start your project, answer some questions:

- What happens when you mix vinegar and baking soda?
- Why do vinegar and baking soda react the way they do?
- What types of substances are baking soda and vinegar?
- What made the kernels dance?

Here's the science:

Baking soda and vinegar react chemically because one is a **base** (*baking soda*) and the other is an **acid** (*vinegar*).

The baking soda and vinegar reaction is actually two separate reactions. The first reaction is the acid-base reaction.

When vinegar and baking soda are first mixed, the hydrogen ions (*atoms that carry a positive or negative electrical charge*) in the vinegar react with the sodium and bicarbonate ions in the baking soda. The ion charges in both the sodium and the vinegar react to each other. The result of this initial reaction is two new chemicals: carbonic acid and sodium acetate.

The second reaction is a decomposition (*breakdown or separation*) reaction. The carbonic acid formed because of the first reaction immediately begins to decompose into water and carbon dioxide gas.

Now you're ready:

1. Gather all your materials.
2. Place jar on plate.
3. Fill your jar with water and add a couple drops of food coloring if desired.
4. Add your baking soda and stir well until it is well dissolved.
5. Add corn kernels.
6. Add the vinegar and watch the corn start to dance as the carbon dioxide bubbles are released!





## Fizzing Sidewalk Artist

**Did you know:** When you mix baking soda (which is the base) and vinegar (which is the acid), you create a gas called carbon dioxide. With this experiment, you will be able to see, hear, and even feel the chemical reaction happening. Become an artistic scientist using this activity.

**Materials:** 2 cups baking soda,  $\frac{2}{3}$  cups cornstarch, 1 cup warm water, water-soluble food coloring, vinegar, in a spray bottle, large bowl, plastic clear cups, spoons, paint brushes, sponges

**Instructions:**

1. In a large bowl, mix together the baking soda and cornstarch. Stir in the water and mix until completely blended.
2. Divide the mixture into separate containers and add a few drops of food coloring to each one. Stir well. (**Warning: this mixture could stain your sidewalk but usually fades in the sunshine - also paint mixture will settle quickly and be thick on the bottom- just stir it up again.**)
3. Begin to paint your masterpiece on your unlimited canvas (sidewalk).
4. Once you are finished painting, spray your masterpiece with vinegar and watch the cool fizzing effect. Did you see, hear, and feel the chemical reaction?



## French Toast Roll-Up Bake

**\*Always wash hands for 20 seconds before and after cooking**

**Materials:** 8-inch round cake pan, measuring cups/spoons, mixing bowl, spoon, knife or pizza cutter, parchment paper

**Ingredients:** 8-oz cream cheese, 3 tablespoons sugar +  $\frac{1}{4}$  cup,  $\frac{1}{4}$  teaspoon maple extract, 2 cans refrigerated crescent dinner rolls, 1 teaspoon cinnamon, 2 tablespoons butter, maple syrup

**Preparation:** An adult will help with this activity.

### Instructions:

1. Heat oven to 350 degrees, grease 8-inch pan, line bottom with parchment paper.
2. In small bowl, mix cream cheese, 3 tablespoons sugar, and maple extract until blended.
3. Unroll 1 can of dough onto lightly floured surface. Press into about a 12x8-inch rectangle, pressing perforations to seal.
4. Use math skills to figure out how many rows are needed to cut the rectangle into 12 squares. Cut into even squares. Repeat with other can of dough.
5. Spread a spoonful of filling in center of each square. Roll each rectangle into a cylinder.
6. In another small bowl, mix  $\frac{1}{4}$  cup of sugar and cinnamon. Coat each roll-up in the sugar mixture.
7. Cut each roll-up in half and place in pan with cut side up starting with the outside edge.
8. Bake 38 to 40 minutes. Run knife around edge of pan to loosen edges. Let cool. Remove to plate and serve with maple syrup.

## Team Tossed Salad Game

**Materials:** beach towel and soft toy per team

**Preparation:** Clear a large playing space. At least four players are needed.

### Instructions:

Each team will have at least two players and a towel. Each team will work together as one team to toss the object back and forth using only the towel. The two teams will stand several feet apart, and one group will have the soft object. On the start signal, the group that has the object first will toss it through the air to the other group, who must catch it on their towel. If a catch is made, the team gets one point. Switch turns with the other group. Once a team earns 5 points, one team moves away 2 giant steps. Continue play with this pattern as far as possible. Try different objects to toss that fly through the air differently.



## Glaciers

**Materials:** balloon, digging tools (craft sticks, forks, spoons), flashlight, hand towel, recyclables (optional), small objects (beads, mini figures), safety glasses, salt, tray, water

**Preparation:** Gather materials, prepare an ice ball ahead of time by filling a balloon partway with water, inserting small objects, and then freezing it. Keep the ice ball size manageable by not completely filling the balloon. It should be able to fit into an 8-ounce cup prior to freezing.

**Instructions:**

1. Once the ice in the balloon is frozen, take it out of the freezer and remove the balloon covering to reveal your ice ball. Set the ice ball on a tray. (Make sure to have your dry towel nearby to dry and warm your hands.)
2. Turn on the flashlight and examine the ice. Look for the embedded objects. What do you notice about where they are located or how the ice looks?
3. Put on safety glasses to protect your eyes. (Sunglasses will work.)
4. Grab your digging tool or get creative and invent your own glacier digger using items like craft sticks, forks, spoons, and recyclables.
5. To extract the objects, you must dig into the ice. You are a scientist who is using precision to extract information from a glacier formation.
6. To speed up the process, add a spoonful of salt on top of the ice. What do you think is happening here? (Salt has a chemical reaction with the ice and causes it to melt at a lower temperature.)



## Superheroes to the Rescue Comic Book

**Did you know...** Superheroes didn't debut in movies. They actually got their **start** in the pages of the earliest **comic** books. Scholars believe the oldest **comic** book in the world is *The Adventures of Obadiah Oldbuck*, which was published in Europe in 1837 by Rodolphe Topffer. Comic books appeared in the United States during the 1930s and Marvel's *Captain America* and DC's *Wonder Woman* were two of the first published along with *Superman*. Comic book sales have been on the rise due to the *Marvel* movies. You could have your own superhero character in the movies one day! Let's get started!

**Materials:** copy paper, hole punch, magazines or decorative paper, glue stick, markers, pencil, ribbon, string or twine or yarn, ruler, scissors, 2 pieces of cardstock or thin cardboard

**Preparation:** Gather materials. Think about what your superhero will look like and represent: cape or no cape, special powers, person or animal?

### Instructions:

1. Design your own superhero storyline comic book... what makes your character a super hero?
2. Stack several sheets of copy paper together. Use a ruler and pencil to make boxes for your sketches. Write your story using both sides of the paper. Make sure your story has interesting characters, a conflict to be resolved, exciting action, and a beginning/middle/end to the plot.
3. When you have completed your story, use a piece of cardstock to make a cover. Design it to go along with your superhero.
4. With a pencil, place at least four dots evenly spaced alongside the left edge (binding) of both pieces of cardstock to be the front and back cover. The dots should be about a quarter inch from the edge.
5. Place comic papers between the covers, punch the holes, and stitch the pages together with string, twine, or yarn.
6. Be sure to add your name, the year, and of course a copyright mark. A copyright will give you legal ownership and protection of what you have created, so no one else can take your work and use it as their own before sharing your original work.



## Engineering: Build a Parachute

**Materials:** cloth, paper, string, one small object like an animal figurine, scissors, low-temp glue gun or very strong glue

**Preparation:** An adult will help with this project.

**Instructions:**

A parachute is a device used to slow the motion of a falling object by creating drag. Parachutes are typically made from light, strong fabric. Originally silk, now most parachutes are made from a fabric called nylon. They are typically dome-shaped but vary with rectangles, inverted domes, and other shapes. Many different things can be attached to parachutes which includes people, food, equipment. Get ready to make and test a parachute:

1. Cut four pieces of string 18 inches long.
2. With the help of an adult, use the hot glue gun to attach an end of each string to a corner of the cloth.
3. Tie the other end of each string together around your small object.
4. Toss the parachute to see how it works.

Observe the following:

- Does the object drift gently down or sink like a rock?
- What variables will make a parachute better or worse?
- Time your parachute and see how long it takes to fall.
- Can you make any adjustments to your parachute to make it even better?



## Art: Romero Britto Technique

**Materials:** paper, pencil, bright colored markers

**Preparation:**

<https://www.youtube.com/watch?v=jKekztPa6mI>

**Instructions:**

Romero Britto is a Brazilian artist who is known for the neo-pop art style. His work combines elements of cubism, pop art and graffiti painting with vibrant colors and bold patterns. It is a visual expression of hope, dreams, and happiness.

Watch the video linked above. Observe the techniques being used to create the artwork. The video states that Romero Britto uses simple shapes and lines to create his artwork. What other information do you learn about Romero Britto's work?

As you watch how to create a work of art like Romero Britto, follow along and recreate the drawing on paper, using designs and colors of your choice! Use your creativity!



## Cooking: Cucumber Mini Sandwiches

**\*CAUTION:** Wash hands for 20 seconds before and after this activity.

**Materials:** 1 cucumber, pepperoni or other deli meat available, cream cheese or other cheese available, mustard, toothpicks, butter knife.

**Preparation:** Gather all materials and place on counter or table.

**Instructions:**

1. Wash and slice the cucumber into 1-inch thick slices.
2. Spread a thin a layer of cream cheese on one side.
3. Add a layer of meat, like a small piece of turkey and two slices of pepperoni. Try different combinations if you want!
4. Top it off with a drizzle of mustard and one more slice of cucumber.
5. Stick a toothpick in it to hold it together.

Share these yummy mini sandwiches with family! Talk about which combo was your favorite!

