

# STEAM STORY TIME AT HOME: BALLOONS!

## Activity 1: Design a balloon

### Supplies:

- Balloon
- Glue dots
- Construction paper
- Paper, scissors, pencil, coloring materials

### Prompt:

You've probably seen them before: colorful creatures floating in the sky and fun characters floating down the streets. People love making creative hot air balloons to float over the horizon and balloons for parades (Macy's Thanksgiving Parade is just around the corner!). Now it's your turn to design a beautiful balloon!

### Directions:

1. First, plan your design. Draw your balloon and the decorations you want to put on it.
2. When you are happy with you plan, it's time to execute it.
3. Collect your supplies and make what you need.
4. Blow up your balloon.
5. Assemble your design.

### A note about glue dots:

The glue dots are a useful adhesive because you do not need to wait for the glue to dry for it to work. If you have not used glue dots before, there is a trick to using them. They are easier to use if you do not immediately take it off the wrapper (so that you would be holding it in your hand. Doing that causes it to get stuck to your finger). Instead, cut one dot off to separate from the rest. While the dot is still on the wrapper, press it onto the item to attach. Rub the back of the wrapper, then remove the wrapper. The dot should be transferred to the item. Then stick the item onto the balloon.

### Suggested Reading

- *Balloons Over Broadway* by Melissa Sweet
- *How Do Hot Air Balloons Work?* by Buffy Silverman
- *Neck & Neck* by Elise Parsley
- *Can One Balloon Make an Elephant Fly?* by Dan Richards
- *Hot Air: The (Mostly) True Story of the First Hot-Air Balloon Ride* by Marjorie Priceman

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### Activity 2: Balloon rockets

#### Supplies:

- Yarn/string
- Drinking straw
- Tape
- Balloon

#### Prompt:

Balloons are made of a flexible material (rubber or latex) that can stretch to accommodate more gas inside it. But that material always wants to shrink back to its regular, non-stretched state, and it will do it as quickly as it can when given the chance. Harness that force of expelling gas to make a rocket fly!

#### Directions:

1. Thread the straw onto the yarn.
2. Stretch the yarn from one side of the room, to the other (attaching to the backs of chairs might work, for example).
3. Fill your balloon with air (gas) but do not knot it closed.
4. With the balloon pinched closed, have another person tape the top of the balloon to the straw.
5. Let go of the balloon. What happens? Draw or write down your results!

#### Extended Activity:

Experiment with how much you fill the balloon. How far does it go when it is completely full? How far does it go if it is barely full? How full does it need to be to reach the other side? What can you do to alter the shape of the balloon to make it go faster or slower?

### Activity 3: Blow up a balloon

#### Supplies:

- 1 Bottle (around 16 oz)
- 1.5 tsp Baking soda
- 10 Tbs Vinegar
- Balloon

#### Prompt:

Usually we fill up balloons with air we breathe into it or with an air pump. Today let's try something different: a chemical reaction! A chemical reaction happens when two substances combine to change into a different substance. For this activity, we will combine baking soda and vinegar to create carbon dioxide (a gas), water (liquid), and sodium acetate (a salty liquid).

#### Directions:

1. Use a funnel to fill the balloon with 1.5 tsp of baking soda.
2. Pour 10 tablespoons of vinegar into the bottle.
3. Attach the balloon to the mouth of the bottle and seal it shut (pinch around the rim or use tape).
4. Empty the baking soda inside the balloon into the bottle with the vinegar.
5. Observe what happens.
6. Draw (or write) what happened!

#### Extended Activity:

Experiment with different amounts of baking soda and vinegar. Write down or draw the different reactions you observe.

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