

Joanna Thompson

4th grade best lesson

BALLOON RACING

Georgia Performance Standard:

S4P3—Students will demonstrate the relationship between the application of a force and the resulting change in position and motion on an object.

Target Grade Level:

Fourth, when they're learning about force, motion, gravity, friction, and simple tools.

Materials:

- One balloon per student (may want to purchase more though because some may rip or pop in the process)
- Two kinds of string—one thin and one thicker (yarn works well for the thicker one) you will need about five feet of each
- One straw cut in half per student
- Tape
- each student should have paper and a pencil

Directions:

1. First, have each student choose and blow up a balloon, make sure they don't get too carried away with blowing up the balloon because it could pop in their face
2. Next, have each student draw a picture of their balloon and ask them to draw arrows to represent the direction that air would move out of the balloon if they were to suddenly release the balloon.
3. Next, have the students test their predictions by counting to three and allowing them to let go of their balloons to see where they go/how the

- air moves out of them. Then have them draw on their paper what actually happened when they released the balloon.
4. Then, have each student blow up their balloons again but **do not tie the balloon closed**. Have the students each tape their balloon to the straw cut in half with the opening of the balloon facing them (they made need help doing this in order to prevent them from letting go of the balloon too soon). Have two students do this at a time because they will be the ones “racing” each other.
 5. Next, take both kinds of string and slide one string into each of the two straws with the balloons taped to them, all while making sure the students are still holding their balloons closed. Then, have two other students volunteer to hold the other end of each string very tightly at the other end
 6. Then, count to three and have the students release their balloons at the same time. Have the students observe the balloons as they “race” down the string. The one on the thinner string should be faster and go farther because there is less friction on that string, while the one on the yarn will be a bit slower and may not make it to the end because there is more friction. Have the students observe these things and tell you why one was faster than the other. Also keep in mind that your results could be skewed because of balloon size.
 7. Repeat the races until all students have gone, and have them record their results.

Safety Concerns:

Whenever working with children and balloons it is important to watch and make sure no balloons are swallowed. Also it is important that you watch how big the students are blowing up their balloons in order to keep them from popping in the students’ face. Another concern is watching how the kids are interacting with each other and the balloons, because they are rubber and can constrict breathing easily.

What I would do differently:

If I could do this lesson again, there are a few things that I would change it order to make it go more smoothly:

1. Try to control the excitement of the students that comes with getting to play with balloons; they very easily get out of hand and it is hard to bring them back to focus on the lesson
2. Do not let the students choose their own type of string that they want their balloon to race with; they begin catching on very quickly to the fact that the thinner string makes the balloon go faster, and naturally they want to win, so distribute the string yourself.
3. They will want to keep their materials to take home and show their friends/siblings/parents, so make sure that you buy enough supplies for them to be able to do this.