

DREAM BIG

In the new film **Wonder Park**, coming to theatres on **March 15**, a magnificent amusement park springs to life from the imagination of a wildly creative girl named June. Here's your chance to dream big, just like June. Get together with a group of classmates and make your own Bendy Straw Slide!

PART 1

Your task is to *dream* (discuss with your group), *plan* (sketch out a design), and *build* a slide out of bendy straws, using the materials your teacher provides. Watch the video at <https://youtu.be/dkILS9BkwPk> for inspiration.

Things to think about:

- You may cut the straws.
- Your slide must change directions two times.
- Your ping pong ball and marble must not fall off the slide before they reach the bottom.
- Your slide must be secured to the cardboard, but it cannot be larger than the cardboard.

Step 1 Dream: Talk about your ideas for the slide's design with your group. What problems do you think you might encounter, and how will you solve them?

Step 2 Plan: On the back of this sheet, sketch out a plan for your design. See if you can find ways you might improve the design as you sketch.

Step 3 Build: Work as a team to build your design.

Step 4 Test: Send your ping pong ball, and then the marble, down your slide. Watch how they perform, and then improve your design. Send the ping pong ball and marble down the slide again. Time them to see which one reaches the end of the slide faster.

Ping pong ball: _____

Marble: _____

PART 2

Newton's Second Law of Motion states that the greater the mass of an object, the more force it will take to accelerate it. (This can be written as $F=ma$.) On your bendy straw slide, gravity is one force acting on the ping pong ball and the marble, speeding them toward the bottom. As they roll down the slide, friction acts as an opposing force, slowing them down. Use this information to answer the questions below:

1. Based on the performance of the ping pong ball and marble, which do you think has the greater mass?

2. Based on your results, what can you infer about the relationship between mass, friction, and speed when an object is rolling down a ramp?



SEE HOW JUNE'S IMAGINATION COMES ALIVE IN WONDER PARK AT A THEATRE NEAR YOU ON MARCH 15, 2019

Get a sneak peek at <https://youtu.be/VML6rQWssSk>