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# Race to Be First!



Your company is hoping that the machine you're designing will be the first of its kind. While surfing the Internet late one night, you come across a Web site for a competitor designing a similar product. Anticipating the near completion of its product, the company launched a marketing campaign to lure new customers. The Web site describes the machine and includes drawings. You realize there is enough information for you to finish your own version. If you're successful, you'll complete your machine first and corner the market!

### Materials for each team

- box of materials
- copy of **Welcome to the Spin Inc. Web Site!**

### Part I

**1** Review the information on the **Welcome to the Spin Inc. Web Site!** page. Use the chart to record how you think the materials are used in the machine and how the machine works.

**2** Now use what you know to build a working model of the machine.

### Questions

*Write your answers on a separate sheet of paper.*

- 1** What pieces of information were most helpful in building the machine? Which pieces of information were least helpful?
- 2** Compare your team's model with other models in the class. Note any places where your team interpreted information differently from other teams. Explain the differences in interpretations and how that may have affected your final design.

Material/Part	Where it is found in machine	What it does

Welcome to the Spin Inc. Web Site!



**Coming Soon—  
The Puff Machine!**

Imagine this: With just a puff of air you can lift things! Too good to be true? Not with the Puff Machine. Our exclusive design has been proven in laboratory tests across the nation. A puff of air turns a pinwheel, which raises and lowers a paper cup. The Puff Machine is fast and efficient, and because it runs on air—an unlimited natural resource—it's environmentally friendly, too!

Watch for the Puff Machine coming soon to a store near you. It'll take your breath away!

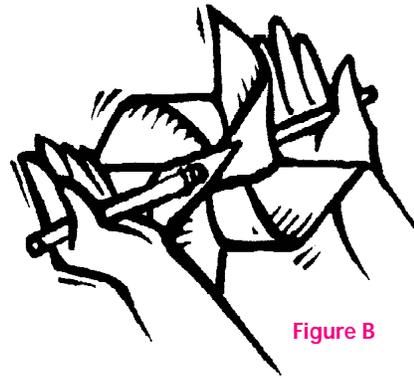


Figure B

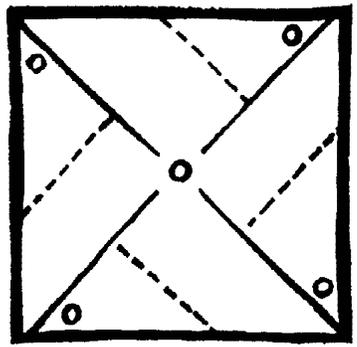


Figure A

scale: 0.5 cm = 1 cm

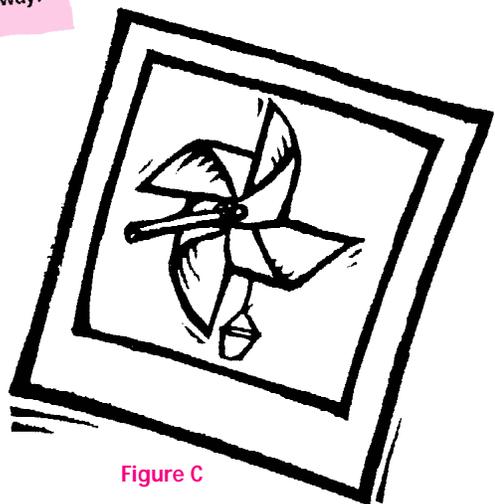


Figure C

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# Race to Be First!

## Part II

You did it! You completed your machine first and it's a #1 seller. But it's not over yet. To stay in front of your competitors, you need to improve the design. Think about what kinds of changes you might make. What if you changed the size of the machine or the diameter of the straw? How could you change the machine so that it lifts the paper cup faster or slower? How might you change the design to lift more weight?

**1** Sketch the parts you would change below and predict how your change would affect your machine. Then build and test your new model.



## Questions

*Write your answers on a separate sheet of paper.*

- 1** What did you change from your original model?
- 2** How did the change affect your new model?
- 3** What else would you change? Why?