

Thrill Seekers



An activity adapted from the book, Family Engineering: An Activity Event Planning Guide, by Mia Jackson, David Heil, Joan Chadde, and Neil Hutzler

The Power of **Afterschool** and the Future of **Learning**

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Planning and Implementing Family Science Events : Presented by
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THRILL SEEKERS

Engineering Fields

- *mechanical engineering*

Engineering Concepts & Skills

- *teamwork*
- *modeling*

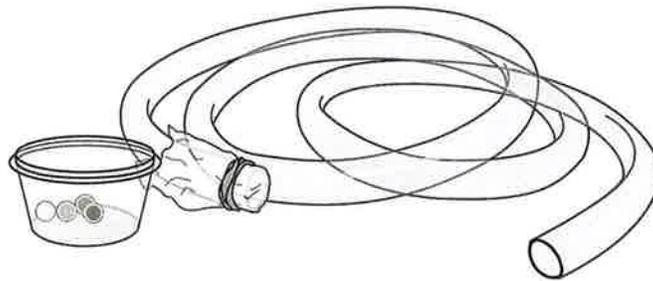
Supplies

- *8 foot length of flexible clear plastic tubing at least $\frac{3}{4}$ inch diameter, available at hardware stores; best to buy bulk from large spool—precut rolls tend to kink*
- *5 very small marbles (diameter must be less than $\frac{1}{2}$ inch to fit in tube)—called “mini-marbles” at educational supply stores*
- *plastic wrap*
- *rubber band*
- *small plastic cup or container to hold marbles*
- *Thrill Seekers activity sign (Appendix A)*

Can you engineer a good roller coaster design?

Advance Preparation

- Use a rubber band to secure a piece of plastic wrap over one end of the tubing. This will help to catch the marble.
- *Safety Note:* Small marbles may pose a choking hazard to children under age 3.



ENGINEERING CONNECTION

Mechanical engineers designing a roller coaster must balance the thrill of the ride with safety. They use the science of how things move to design hills, loops, twists, and turns that give riders a safe but thrilling ride!



THE ORIGINAL 'COASTER'

The idea of 'coasting' for fun comes from ice slides popular in Russia in the 17th century. Huge wooden structures with a thick sheet of ice allowed people to climb a stairway, get on a sled, and then careen down a steep ramp and up an opposite ramp, going back and forth before eventually stopping in the middle.



Activity Steps

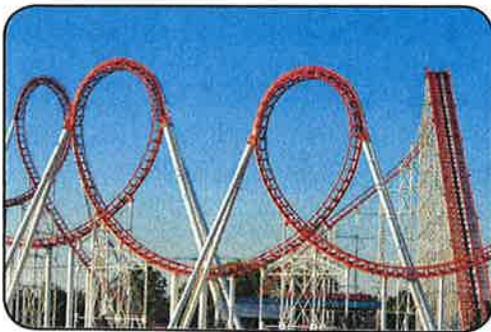
1. Work as a team to hold the tubing in a roller coaster shape.
2. Put a marble into the top of the tube and watch it ride. Did it make it to the end?
3. How many loops and turns can you add to make the most thrilling ride and still get the marble to the end?



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Want to know more? See back of sign.



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