SciGirls Activity 1
Wild Water!

Icebreaker:
Build the tallest structure you can...using water!

SciGirls Skill: Observing

You'll need:

- a large mixing bowl
- a kitchen mixer, hand or electric
- a tablespoon of dishwashing liquid
- a cup of water
- a plate

Guide your girls as they:

1) Pour about a cup of water into the bowl. Add the tablespoon of dish soap.
2) Use the mixer to whip up some suds. Take your time... you might want to mix for as long as ten minutes.
3) When the suds seem good and stiff, start piling them up onto a plate. You can scoop them with a large spoon, or just with your hands.
4) Keep piling up the foam, until you make the tallest pile you can.
5) Vary the amount of soap, water, or time of mixing to increase the tower's height.

SciGirls Suggestion: This activity works best if three or fewer girls work on one bowl. So for larger groups, grab a few extra bowls and mix up some science!

Find out more about this foamy fun at: pbskids.org/dragonflytv/superdoit/foam_tower.html

PBS KIDS GO! tpt TWIN CITIES PUBLIC TELEVISION NSF

Investigation:

Science at the Waterpark!

Your girls can even find science among the slippery slides at your local waterpark.

We're Valerie and Margie, and we love the splashy, slippery rush of waterslides! To learn more about these soggy thrill rides, we visited our favorite waterparks to investigate this SciGirls question: **What makes a great waterslide?**

For each group of three girls, you'll need:

- 3 plastic page protectors, 8 x 11 size
- 1 wax pencil or waterproof marker that writes on the plastic page protector
- 1 acrylic clipboard
- 3 heavy cardstock papers with a large spiral, to make a "maze-ometer"
- clear packing tape
- 1 stopwatch
- a water slide!

Find out more about this wacky water investigation at pbskids.dragonflytv/show/waterslides.html. Then surf to pbskids.org/dragonflytv/contact/index.html to tell us what you learned!

Check out this investigation on Tape 1, Segment 1.

SciGirls Want to Know:

What makes a waterslide so cool? Is it the speed, or the number of twists and turns?

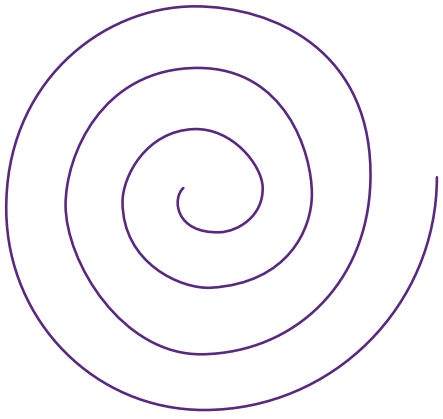
Guide your girls as they:

1) Pick two slides they want to compare. (DFTV went to The Wave Waterpark in San Diego, using the Salsa Twist and Flash Flood. Search the Web for waterparks in your community. Before heading out to the waterpark, it's a good idea to call the park manager to confirm whether or not you'll be allowed to carry out this experiment.)
2) Ask the park manager to measure the length of each slide.
3) Use the stopwatch to time the duration of each ride three times.
4) Put a clean maze-ometer page inside a page protector. Seal the edges with tape. Have a wax pencil or waterproof marker ready. Put the maze-ometer onto a clipboard, or hold it as firmly as possible.
5) Ride each waterslide, holding the maze-ometer. Try to trace the spiral using a wax pencil or waterproof marker, writing on the clear page protector. Use a fresh page protector for each trial.

SciGirls Secret:

Research shows that girls love science when it's applied to real-life situations, just like a visit to the waterpark. Challenge your girls to brainstorm other locations in their community that offer the thrill of "H 2 Oh!" How about your local lake, river, or swamp? What's living in the playground puddles? Make a splash!

Maze-ometer



SciGirls Synthesize:
Data and Analysis

1) Figure out the average time duration for each ride. Divide the ride's length by this average time, and you'll get the average speed of the ride.

2) Examine the maze-ometer traces, counting the number of times the traced line crosses the reference spiral. A neat maze-ometer trace only crosses the reference line a few times, indicating a gentle ride. A messy maze-ometer trace crosses the reference line many times, indicating a wild ride.

Here's Valerie and Margie's data:

Waterslide Comparison Data

	Ride length, m	Ride duration, sec.	Speed, m/s	Maze-ometer
Flash Flood	86	19	4.5	neat
Salsa Twist	80	20	4.0	messy

See Appendix A for a graphing example.

How does your data compare?

Keep Exploring!

1) Think of other places to bring the maze-ometer. Use it to compare roller coaster rides, or to find the bumpiest seat on the school bus. Collect data on a maze-ometer, just like Margie and Valerie did on the waterslides.

2) Margie and Valerie considered the Salsa Twist more fun to ride; that was their opinion. Ask a big group of girls at the water-park what kinds of waterslides they like best, and why. Do they love the twists, the speed, the splash factor? Do their opinions match the DFTV girls'? Do they match yours?