Task

Student Text
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Suggested Timing
60–75 min

Tools
- grid paper
- computer
- *The Geometer's Sketchpad®*
- *Fathom™*
- graphing calculator (optional)

Related Resources
- G–1 Grid Paper
- T–2 *The Geometer's Sketchpad®* 4
- T–3 *Fathom™*
- BLM 1–21 Task: Create Your Own Water Park Rubric

Ongoing Assessment
- Use **BLM 1–21 Task: Create Your Own Water Park Rubric** to assess student achievement.

Create Your Own Water Park

Teaching Suggestions

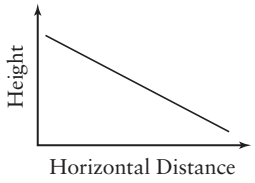
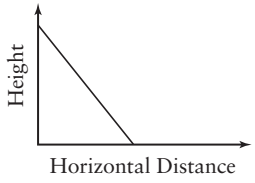
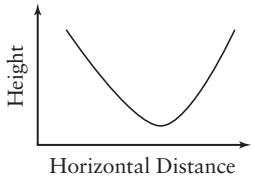
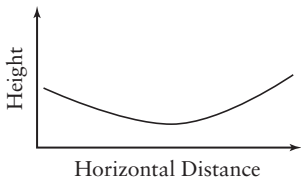
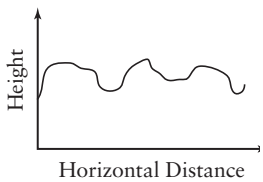
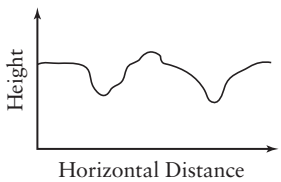
Start the class by asking for volunteers to describe water parks they have been to. Have students brainstorm the types of rides that are at these parks. Have students consider the equations of the graphs they know and how these may apply to the rides at the water parks.

Student responses are being assessed for the level of mathematical understanding they represent. As you assess each response, consider the following questions:

- Has the student used a labelled diagram to show the different rides of their theme park?
- Did the student comprehend the given information?
- Has the student provided different types of rides based on the information given in the age parameters?
- Has the student provided clearly communicated responses to parts a), b), c), and d)?

Level 3 Sample Response

a)

Age of Rider	Graph 1	Graph 2
Under 6 years of age Graph 1: "Ride the Line" Graph 2 "The See Saw"		
6 to 12 years of age Graph 1: "The Swing" Graph 2: "Swing Zone"		
Over 12 years of age Graph 1: "Move Over Grandma" Graph 2: "Move Over Grandpa"		

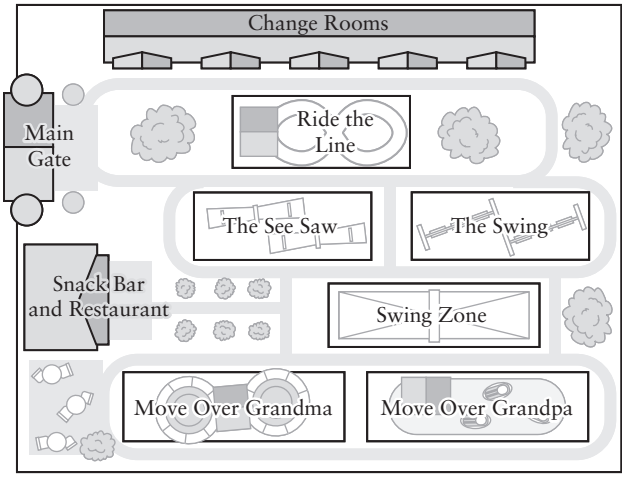
b)

Age of Rider	Description of Ride and Why It Is Appropriate Ride 1	Description of Ride and Why It Is Appropriate Ride 2
Under 6 years of age	This ride is smooth and steady, just like going down a slide.	This ride is smooth and steady, just like going down a slightly steeper slide.
6 to 12 years of age	"The Swing" is just like it says, the children go down the slide, then their momentum brings them back up the other side.	"Swing Zone" is a slightly less steep version of "The Swing"
Over 12 years of age	This ride is a waterslide of great fun for children. It provides both ups and downs many times during the ride.	This ride starts at a slightly different place, but provides the rider with much up and down motion that will cause thrill!

c)

Age of Rider	Polynomials Equation for the Ride and How It Represents the Ride Equation 1	Polynomials Equation for the Ride and How It Represents the Ride Equation 2
Under 6 years of age	$y = 2x - 1$ This ride starts on a platform 2 m above the ground and the child slides down the ride.	$y = 3x - 2$ is a slightly steeper ride, but one in which 6 year olds would enjoy, and those under 6 could ride with their parents.
6 to 12 years of age	$y = x^2$ This ride allows the students to go down one side of the slide and back up the other side.	$y = 0.5x^2$ This is a slightly less steep ride. It will allow the students to go more slowly down the ride and back up the other side.
Over 12 years of age	$y = \sin x$ This ride provides thrill for the rider with the ups and down hill movement.	$y = \cos x$ This ride provides thrill for the rider with the down and up hill movement.

d) The map of my park:



Note: The wee children rides are near the front gate so parents don't have to go too far. As well, if parents have older children, they can not leave the park without the parents seeing them.

e) I shared my model with some friends and they liked what I had created. They thought that perhaps I could have had a bit more challenging rides for the 6-12 year olds.