



The State Fair of
TEXAS
Curriculum

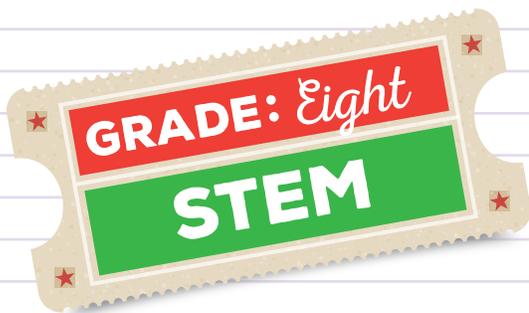
THE MIDWAY & GAMES
GRADE 8 STEM

A RIDE THROUGH NEWTON'S LAWS
ROLLER COASTER MOVEMENT ON THE MIDWAY



STUDENT EDITION

The Midway & Games



A Ride Through Newton's Laws Roller Coaster Movement on the Midway

Recap

- ★ Review the **video** you watched in class, covering speed, acceleration, force, inertia, velocity and motion.
- ★ Also review this **video** on action-reaction that you saw before.
- ★ Recall that Integers, such as negative numbers, can be used to describe a variety of situations.
 - * If an object is moving forward, the distance may be described with a positive integer, and when moving in the opposite direction, the distance may be described with a negative integer.
- ★ Note that you're going to observe the Windstorm Roller Coaster, among others.
- ★ Go over your notes from class, and remember to bring them with you on your trip!



Plan Your Route.

- ★ Start at the Texas Star, and walk toward the Windstorm Roller Coaster.

Drop: 30 feet	Height: 53 feet
Length: 1,430 feet	Trains: 2 - 12 passenger
Top Speed: 40 mph	Train Mfg: SDC

Optional Materials to Bring

- ★ Smart Phone or Tablet
- ★ Notes from Class (or photo of notes)
- ★ Pencil & Notepad or Sketchbook
- ★ Stopwatch (or you can use that function on your smartphone)

While You're There

You will use information you gather at the State Fair to help you with up to TWO project goals:

1. Create an imaginary ride that includes two of the laws of motion.
2. Analyze the speed, velocity, and other data from the rides you observe at the Fair.

You'll complete these projects back at school. For now, the objective of your visit is to find examples of speed, acceleration, force, velocity, and action-reaction at the Midway roller coasters. Watch or ride the roller coasters to discover how Newton's laws of motion are in action today!





A Ride Through Newton's Laws Roller Coaster Movement on the Midway



ARE YOU SPEEDING?!
After riding or observing a roller coaster, take notes to answer the following questions:

- What are two examples of acceleration you observed on the ride?
- What force acts on the coaster to change its inertia?
- Can you give an example of the velocity of the roller coaster?
- Can you find an example of action/reaction?

HEIGHT VS. TIME
Observe the movement of the Windstorm Roller Coaster or another roller coaster on the Midway.

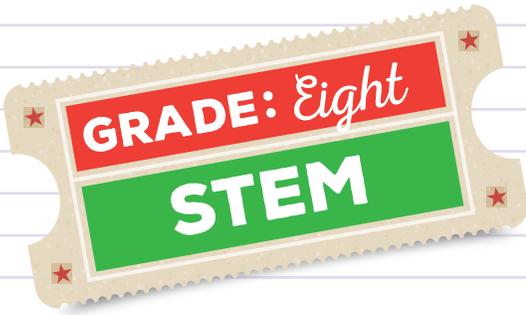
- Sketch a height vs. time graph in your notebook, or use the graph below.
- Use positive and negative integers to identify changes in direction.
- You might want to observe the roller coaster more than one time, or use your smartphone to make a video.

Back at School

When you return to class following your State Fair visit, you will work on your projects! See your teachers for more information.



STUDENT EDITION



A Ride Through Newton's Laws Roller Coaster Movement on the Midway



Name : _____

Date : _____

Name : _____

Date : _____

