

The State Fair of
TEXAS
Curriculum

THE MIDWAY & GAMES

GRADE 5 STEM

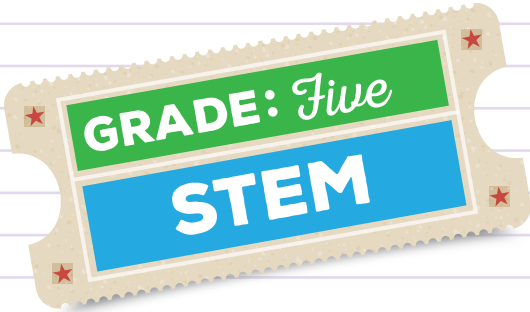
SPEEDING AROUND

DETERMINING THE SPEED & ENERGY OF THE DENTZEL CAROUSEL



STUDENT EDITION

The Midway & Games



Speeding Around Determining the Speed & Energy of The Dentzel Carousel



Recap

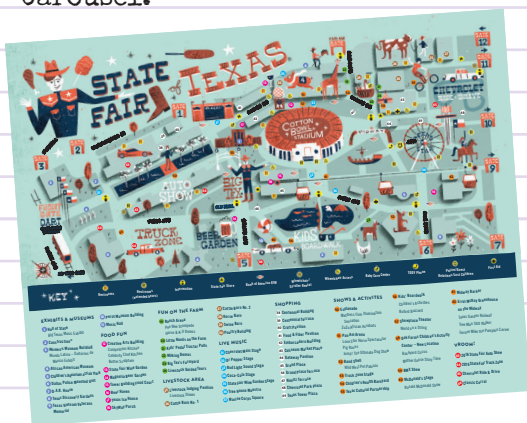
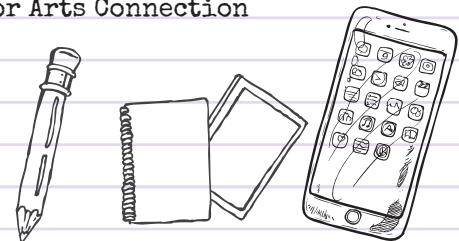
- ★ Review two videos about **sound** and **light**.
- ★ Recall the in-class discussion about reflection. Re-watch this **video** again about how light travels.
- ★ Recall the terms *speed*, *velocity*, and *revolution*:
- ★ Speed describes how fast something moves.
- ★ Velocity describes how fast something moves in a particular direction.
- ★ One time around a carousel is a full rotation or a revolution. Review the concept of rotations by visiting this **website**.

Plan Your Route.

- ★ Start at the Texas Star Ferris Wheel.
- ★ Walk down Martin Luther King Blvd. toward the Midway until you find the Dentzel Carousel.

Optional Materials to Bring

- ★ Smart Phone or Tablet
- ★ Pencil & Notepad
- ★ Sketchbook for Arts Connection



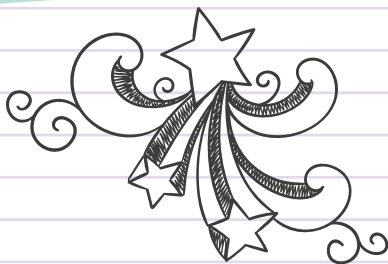
While You're There

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

1. Determine how many revolutions each ride would make in one hour.
2. Design your own carousel!

You will complete those goals back at school.

For now, the objective of your visit is to gather and record information to use in your projects later!



STUDENT EDITION

The Midway & Games

★ **GRADE: Five** ★
★ **STEM** ★

Speeding Around Determining the Speed & Energy of The Dentzel Carousel



A HIGH-ENERGY CAROUSEL

- Watch the carousel in motion.
- Make notes or take photos and videos of how the carousel uses mechanical, light, and sound energy to attract people.
- If you use a video recorder, narrate the types of energy you observe.

REFLECTING ON LIGHT ENERGY

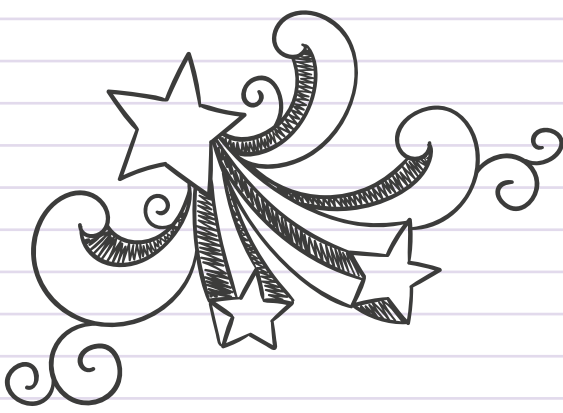
- Locate a reflective surface on the Carousel.
- Take pictures of the reflections you see.
- How is light reflected off the surface?

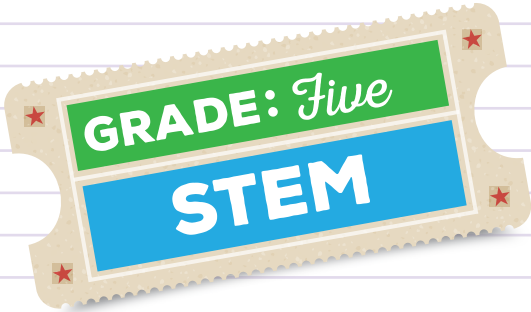
ROUND AND ROUND WE GO!

- Decide which horse or object on the Carousel you will use as your "starting point."
- Once the ride starts, start your stopwatch (or use that function on your phone)
- Determine how many revolutions (full rotations) the carousel is able to make in one minute.
- Write down your observations in your notepad as the number of revolutions in one minute.
- You may need to make an estimation for the total number of revolutions. The horse or object you use as a starting point may not end up at your starting point when one minute has passed.
- Be as accurate as possible!!
- And don't forget to get ON the ride and enjoy it, yourself!

Once you've written down the information for the carousel, try determining the speed of other rides, like the Gravitron or Texas Star, using the same method.

★ Would you be able to determine the number of revolutions on every ride at the State Fair? Why or why not?





Speeding Around Determining the Speed & Energy of The Dentzel Carousel



ARTS CONNECTION

- Observe the various horses that make up the carousel.
- What unique traits do you notice about each one?
- Which ones are you drawn to? Why?
- Do you notice that the fairgoers are drawn to specific horses? If so, why do you think that is?
- Pay attention to how the colors of the horses are dispersed throughout.
- Listen to the type of music that plays as the carousel is moving.
- Be sure to take note of these details so you can reference them later.

Back at School

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



Photo by Chris Benson, http://carousels.org/psp/DallasFairPark/fairpark_spirit.html

