

Brandon Valley School District  
District Learning Plans  
May 18-22, 2020

Last Week of School!

Grade 5

Monday

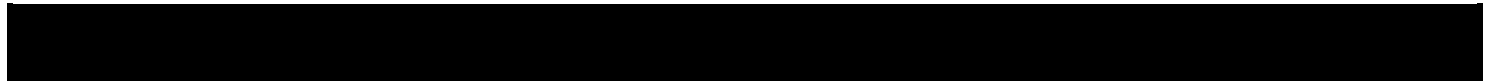


# Brandon Valley School District Distance Learning Plan

STEM DAY


GRADE: 5

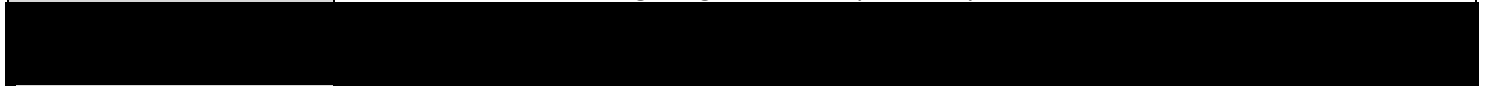
DATE: Monday, May 18, 2020



<p>What do students need to do?</p> <p><a href="#"><u>Link to BV STEM DAY instructional video for week of May 18-22, 2020</u></a></p>	<p><b>Last week we designed and created an amusement park. Today we will be focusing on roller coasters! Here are the three activities you will complete:</b></p> <ol style="list-style-type: none"><li>1. Students will be reading about famous roller coasters. You will read the handout “All About Roller Coasters.” There are optional questions attached.</li><li>2. Students will learn about how potential and kinetic energy help roller coasters to work. Study the “Kinetic and Potential Energy-Roller Coaster” handout and learn about kinetic and potential energy. Students will then design a new roller coaster and label where the kinetic and potential energy is on a roller coaster.</li><li>3. Finally, students will complete the Roller Coaster STEM Activity. Students can choose to build a roller coaster with household supplies, or they can complete an online roller coaster simulation activity.<ul style="list-style-type: none"><li>● <b>STEM Roller Coasters:</b> students will build a roller coaster with household supplies such as TP rolls, paper, paper plates, tape, and a marble. (They can use ANY supplies they have around the house)</li><li>● <b>Online Roller Coaster Creator:</b> students will go to the following website: <a href="https://assets.jason.org/resource_assets/4851/8673/coaster.html">https://assets.jason.org/resource_assets/4851/8673/coaster.html</a> They will use the online roller coaster simulation to create a successful roller coaster!</li></ul></li></ol>
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<p>What do students need to bring back to school?</p>	<ul style="list-style-type: none"><li>● Students are not required to submit evidence of completion; however, they may submit participation photos or short videos to their teachers.</li><li>● Please feel free to share a picture or video of your roller coaster. Describe your roller coaster and share how it works. Click on the link below or scan the QR code to share your roller coaster! <a href="https://flipgrid.com/de5a27f2">https://flipgrid.com/de5a27f2</a></li></ul>  <ul style="list-style-type: none"><li>● Students should submit (to their respective teacher) any required 4th quarter distance learning assignments not previously turned in.</li></ul>
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<p>What standards do the lessons cover?</p>	<p>3-5-ETS1-1: Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.</p>
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<p>What materials do students need? What extra resources can students use?</p>	<ul style="list-style-type: none"> <li>● Students will need the “All About Roller Coasters” handout, “Kinetic and Potential Energy-Roller Coaster” handout, and the “Roller Coaster STEM” handout.</li> <li>● They will also need either a computer for the online roller coaster simulation or household supplies to build a STEM roller coaster. <ul style="list-style-type: none"> <li>~Example of household materials: Toilet paper rolls, paper, tape/masking tape, paper plates, etc.</li> <li>~They will also need one of the following: marble, ping pong ball, or bouncy ball.</li> </ul> </li> </ul>
<p>What can students do if they finish early?</p>	<p><b>If you finish early check out these SWEET online roller coaster simulations!</b></p> <p><a href="http://kidsgameshq.com/rollercoaster-creator">http://kidsgameshq.com/rollercoaster-creator</a></p> <p><a href="https://rollercoastergames.net/build-your-own-coaster/">https://rollercoastergames.net/build-your-own-coaster/</a></p> <p><b>Roller Coaster Virtual Field Trips:</b>  Top 10 Tallest Roller Coasters: <a href="https://www.youtube.com/watch?v=iT1w1fQFmvk">https://www.youtube.com/watch?v=iT1w1fQFmvk</a>  Disney Roller Coasters: <a href="https://www.elitedaily.com/p/12-virtual-disney-world-rides-for-your-very-own-disney-day-at-home-22636008">https://www.elitedaily.com/p/12-virtual-disney-world-rides-for-your-very-own-disney-day-at-home-22636008</a></p>
<p>Who can we contact if we have questions?</p>	<p><b>Brandon Valley Intermediate School</b></p> <p><b>Principal-</b> Mr. Skibsted- <a href="mailto:Nick.Skibsted@k12.sd.us">Nick.Skibsted@k12.sd.us</a></p> <p><b>Assistant Principal-</b> Mr. Pearson- <a href="mailto:Rick.Pearson@k12.sd.us">Rick.Pearson@k12.sd.us</a></p> <p><b>Science Teachers:</b>  Mrs. Sershen- <a href="mailto:gina.sershen@k12.sd.us">gina.sershen@k12.sd.us</a> (red team)  Mr. Stroh- <a href="mailto:nick.stroh@k12.sd.us">nick.stroh@k12.sd.us</a> (white team)  Mr. Metzger- <a href="mailto:tyson.metzger@k12.sd.us">tyson.metzger@k12.sd.us</a> (blue team)  Mr. Wiese- <a href="mailto:alex.wiese@k12.sd.us">alex.wiese@k12.sd.us</a> (silver team)</p> <p><b>Math Teachers:</b>  Mr. Mashlan- <a href="mailto:Justin.Mashlan@k12.sd.us">Justin.Mashlan@k12.sd.us</a> (blue team)  Mr. Carroll- <a href="mailto:Scott.Carroll@k12.sd.us">Scott.Carroll@k12.sd.us</a> (red team)  Mr. Peters- <a href="mailto:Jon.Peters@k12.sd.us">Jon.Peters@k12.sd.us</a> (white team)  Mr. Wiese- <a href="mailto:Alex.Wiese@k12.sd.us">Alex.Wiese@k12.sd.us</a> (silver team)</p> <p><b>ELA Teachers:</b>  Ms. Relf- <a href="mailto:Baylee.Relf@k12.sd.us">Baylee.Relf@k12.sd.us</a> (white team)  Mr. Carroll- <a href="mailto:Aaron.Carroll@k12.sd.us">Aaron.Carroll@k12.sd.us</a> (red team)  Mrs. Klumper- <a href="mailto:Abby.Klumper@k12.sd.us">Abby.Klumper@k12.sd.us</a> (silver team)  Mrs. Block- <a href="mailto:Lindsey.Block@k12.sd.us">Lindsey.Block@k12.sd.us</a> (blue team)</p> <p><b>Social Studies Teachers:</b>  Ms. Klumper- <a href="mailto:Abby.Klumper@k12.sd.us">Abby.Klumper@k12.sd.us</a> (silver team)  Ms. Lubinus- <a href="mailto:Michelle.Lubinus@k12.sd.us">Michelle.Lubinus@k12.sd.us</a> (red team)  Ms. Farmen- <a href="mailto:Lindsey.Farmen@k12.sd.us">Lindsey.Farmen@k12.sd.us</a> (white team)  Ms. Strand- <a href="mailto:Jennifer.Strand@k12.sd.us">Jennifer.Strand@k12.sd.us</a> (blue team)</p>
<p><b>Notes: (OPTIONAL) Super Hero Day</b> - Dress in honor of all the front-line workers and your parents and guardians who are rocking it as co-distance learning educators! <b>#BVlynxdistancelearners</b></p>	

***Instructional materials are posted below (if applicable)***

## ALL ABOUT ROLLER COASTERS

Name: \_\_\_\_\_

\*Read the article below about famous roller coasters!



## ROLLER COASTERS

Coney Island is a large amusement park in New York. It was there on June 16, 1884, that people got to ride on the world's first roller coaster. It was called the Switchback Railroad. The track was 600 feet long. The train started at its highest point. It ran downhill and then uphill until it stopped. Riders got out while the train was pushed over a switch to a higher point onto a second track. Then they got back on and rode down to the starting place.

By 1920, there were more than 1,500 roller coasters in the United States. The Fireball at Riverview Park in Chicago traveled 75 miles per hour. It was 70 feet high. Then came the Bobs. It was even faster and traveled along 3,250 feet of track with 16 hills and 12 curves. In 1928, the Wildcat at Rocky Springs in

Pennsylvania was the steepest wooden coaster. It had a 90-foot drop.

The first steel coaster was built in 1959. It was the Matterhorn at Disneyland. After that, steel roller coasters were built with more daring designs. They had loops and corkscrew twists. In 1984, riders stood up on the King Cobra. The Batman, made in 1992, turns people upside down.

Amusement parks are still trying to outdo each other with the highest, fastest, and scariest "scream machines." In 2000, the Son of Beast was the record holder for wooden coasters. It is 218 feet tall. It speeds up to 78 m.p.h. For steel coasters, it was Millennium Force. It is 310 feet high. It goes 92 m.p.h.

## Questions

1. Describe where was the first roller coaster located? When was it created?
2. Complete the timeline by writing the names of the roller coasters Start at the bottom.

2000 \_\_\_\_\_

2000 \_\_\_\_\_

1992 \_\_\_\_\_

1984 \_\_\_\_\_

1959 \_\_\_\_\_

1928 \_\_\_\_\_

1920 \_\_\_\_\_

1884 \_\_\_\_\_

3. What did passengers have to do when riding the Switchback Railroad?

\_\_\_\_\_

4. Give two facts about The Bobs:

5. Where was the Matterhorn built? \_\_\_\_\_

6. What kind of roller coaster is the Son of Beast? \_\_\_\_\_

\_\_\_\_\_

7. What was special about the Batman roller coaster?

\_\_\_\_\_

8. Why do you think roller coasters are called “scream machines”? \_\_\_\_\_

\_\_\_\_\_

# ENERGY = The ability to do work

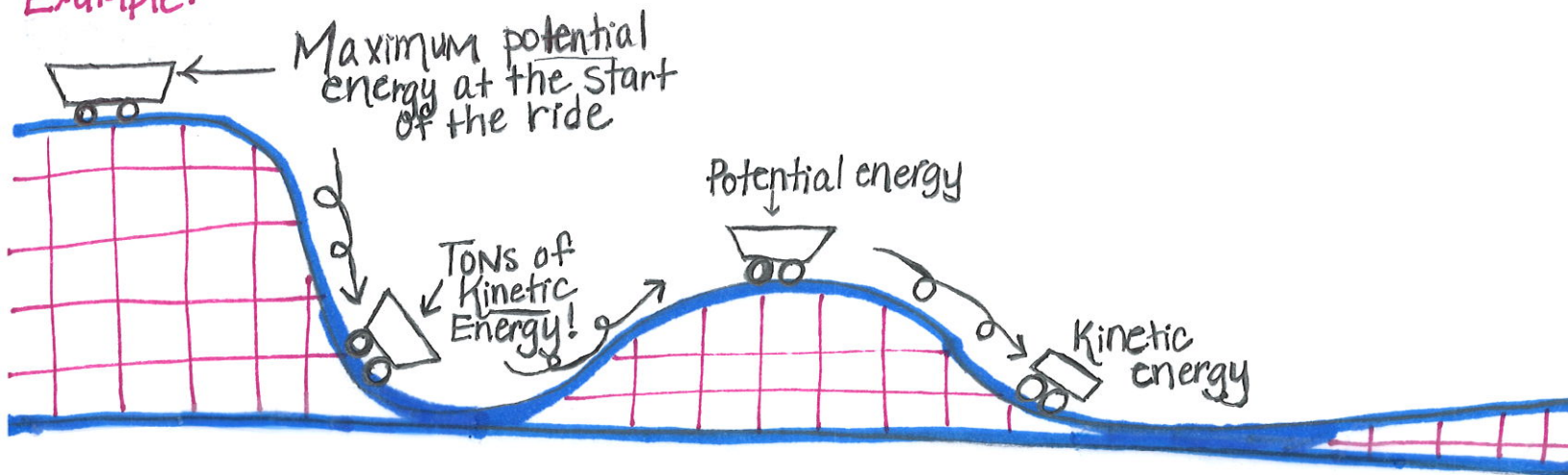
\* energy is grouped into two categories: Potential and Kinetic

• Potential =  
Stored energy, energy ready to be used

• Kinetic =  
energy of motion, it is energy at work

\* Potential energy is Kinetic energy waiting to happen! \*

Example:



## IT'S ALL ABOUT ENERGY!

The wind wizzes past your face and your stomach feels like it drops to your toes. The roller coaster races down a hill at top speed. It is an amazing ride!

As you go up the first hill, a motorized chain pulls the rollercoaster cart to the top. You may hear the click, click sounds as you go up! The first hill will always be the highest, it has the most POTENTIAL energy, or stored energy that is ready to be used. This potential energy gives the roller coaster cart the energy it needs to move fast! The amount of energy stored from falling down the first hill will carry the riders all the way to the end of the track. The taller the first hill, the farther the cart will travel. As the cart travels down the hill, the potential energy now changes to KINETIC energy, or energy of motion. The further down the hill, the faster it will go! As the cart goes up and down hills, the energy changes from potential to kinetic and back at each hill.

## ROLLER COASTER DESIGN TIME

Using the information above, it's time to create and draw your own roller coaster! You will sketch a newly created roller coaster. Label on your drawing where you would find kinetic and potential energy in your roller coaster. Also, give your roller coaster a name! 😊



**Draw a Roller Coaster!**

Draw and name a roller coaster below!

Label where you would find kinetic and potential energy in your roller coaster.

Roller Coaster Name.....

## Roller Coaster STEM Activity


\*We have read about roller coasters and learned about how potential and kinetic energy help roller coaster to work. Now we are going to create a roller coaster! **You will choose to either build a roller coaster with household materials OR create a roller coaster online.** You do NOT have to do both. Your roller coaster must be able to make it from the beginning of the roller coaster track to the end of the track without stopping.

### Roller Coaster Activity Choices:

#### **Choice #1: STEM Roller Coasters**

An amusement park wants to build a new roller coaster, and they need your help to create it! In order to make these models, you will use materials such as toilet paper rolls, paper, and tape. Using your knowledge of potential and kinetic energy, create a homemade roller coaster. In order to successfully complete the activity, the marble/ball must travel from the beginning to the end of the roller coaster.

1. Start by sketching your roller coaster **idea** below. Keep in mind the materials you have available at your house. 😊

Roller Coaster Sketch	Example:
	

~**Possible building materials:** Masking tape/tape, paper, aluminum foil, toilet paper/paper towel cardboard rolls, craft sticks, paper plates, plastic/paper cups, etc.

~**Possible Testing materials:** ping pong ball, marble, bouncy ball, etc.

2. Create your model! When you successfully get your ball (marble, ping pong, or bouncy ball) to travel through the roller coaster, give yourself a pat on the back! You Rock! 😊

#### **Choice #2: Online Roller Coaster Creator**

**Go to: Project Jason:** [https://assets.jason.org/resource\\_assets/4851/8673/coaster.html](https://assets.jason.org/resource_assets/4851/8673/coaster.html)

1. Click on Build a Roller Coaster Right now, then choose how you want your roller coaster to look and decide how many cars you would like.



2. Next, create your roller coaster track by adding hills and loops. You will move the black dot up, down, and over to create hills/loops. Make sure to have a large hill at the beginning to create potential energy for your roller coaster.
3. Once you have created your track, click next to launch your roller coaster.
4. Do not worry if your roller coaster does not work right away, it usually takes **several** tries! You may need to change the loops and hills. You may also need to slow your roller coaster down at the end, so it doesn't fly off the track.
5. If you need to make changes, click on next, then reset to get back to your track and make changes. Remember, your track must have enough potential energy for your cars to make it through the entire roller coaster track. Also, you can change the number of cars you have. Keep trying until your roller coaster makes it through the entire track...don't give up, you can do it!!
6. When your roller coaster successfully makes it through the track, give yourself a pat on the back!  
You Rock! 😊