Thank you for choosing us to spend the morning with and share in our passion for all things student engagement!

**Kimberly Stalker**
2018 Seminole County Middle School Teacher of the Year
South Seminole Middle School
Kimberly_Stalker@scps.k12.fl.us
@thesciencestalker

**Melissa Szentmiklosi**
2014 SSMS Teacher of the Year
2015 SSMS STEM Teacher of the Year
South Seminole Middle School
Melissa_Szentmiklosi@scps.k12.fl.us

Get ready for a ride of a lifetime as you learn how creativity can get learners excited and engaged by infusing energy standard based stations with carnival attractions, where the final goal is creating an “Energetic” attraction!

By: Kimberly Stalker
Melissa Szentmiklosi

Hashtags:
#UCFSTEM #EnergyCarnival #UCFKnights #ScienceStalker
Come one, come all to the Energy Carnival! This park map will act as a guide for today's attractions.

Have an ENTERGENTIC time!

**Park Opening**
Inspiration & Introduction

**Fortune Teller:**
Energy Game
Pg. 3-4
Please feel free to take notes on pg. 9-10!
**Design Challenge**

1. **Explore the Challenge:**
   After watching the video write down some ideas or questions you might have about this project. It could be theme ideas, the renewable energy sources you want your ride to run off of, details you have questions about, etc.

<table>
<thead>
<tr>
<th>Ideas</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **Brainstorming/Rough Draft:**
   Using the ride checklist to guide you, begin to sketch an idea of what your attraction will include in the space below. REMEMBER-the CEO (your teacher) will be using this to grade your attraction, the more information the better!

   Have students complete a peer review on this rough draft. Using the rubric or checklist, have students complete a silent gallery walk and provide positive feedback and suggestions on a sticky note.

   Effective student feedback can be difficult to teach. *Peergrade* is a free online tool that allows students to upload their work, give feedback anonymously using the rubric or make comments. Then students can rate the feedback as helpful or not.

---

**Directions:** Before beginning Energy UNO, you will INDEPENDENTLY match the term with its description below.

--- 1. Potential Energy
    - Energy that is stored
--- 2. Kinetic Energy
    - Energy due to motion of an object
--- 3. Mechanical Energy
    - Energy of motion and position of an object (KE + PE)
--- 4. Chemical Energy
    - Potential Energy stored in chemical bonds, which hold atoms together.
--- 5. Gravitational Potential Energy
    - Energy an object has due to position.
--- 6. Radiant/Light Energy
    - The only type of energy that can be seen.
--- 7. Sound Energy
    - Energy that is associated with vibrations of matter
--- 8. Thermal Energy
    - The total KE and PE of the particles in an object. This type of energy transfers heat
--- 9. Law of Conservation of energy
    - In a system, as energy is transformed it is neither lost nor created. Rather, energy is conserved.
**Challenge**

**Checklist:**

<table>
<thead>
<tr>
<th>Check the box below as you complete each part</th>
<th>Ride Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide on the type of attraction ride you want to create. Remember: It cannot be a roller coaster. (examples: spinning swing, free fall, water ride, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

**Your ride MUST include & display the following information:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name/ Theme of your ride</td>
<td>Sketch or drawing of your ride with color</td>
</tr>
<tr>
<td>State what alternative energy source you are using to power your ride and WHY you are using this energy source.</td>
<td></td>
</tr>
<tr>
<td>Label ALL types of energy that are being your ride. EXAMPLES: Mechanical Energy, Chemical, Electrical, Thermal, Radiant, Sound, etc.</td>
<td></td>
</tr>
<tr>
<td>Label ALL energy transformations that occur while the ride is operating. EXAMPLES: PE, KE, ME, and all other forms of energy that apply.</td>
<td></td>
</tr>
<tr>
<td>Explain how your ride obeys the Law of Conservation of Energy.</td>
<td></td>
</tr>
</tbody>
</table>

---

**Fortune Teller**

**Objective:** Get students engaged by playing this energy content driven game (plated like uno) where students will match terms, concepts, and pictures with the ultimate goal being left with NO cards

**Matching:**

- Before beginning the game students will independently match the terms with their descriptions. Then students can compare answers.
- This will assist students confidence level while they are playing “Energy UNO”

**Setup:**

- Choose a dealer! Dealer will shuffle cards and give each player 7 cards dealt face down.
- Place the remaining cards face down in the middle to make a “draw” pile.
- Flip the top card over to make a “discard” pile.

**Play Game:**

- Once every player has viewed their cards the person to the left of the dealer will begin first.
- Each player will try to match the content of the card in the Discard pile to what they have in their hand and place it on top of the discard pile.
  - You MUST match either by the term, definition, symbol/action. For example, if the discard pile has a Kinetic Energy Card you must place either an example, picture, or definition that represents Kinetic Energy.
  - You are not matching the COLORS only the CONTENT! Except for action cards (see back).
- If you cannot match the card in the Discard pile you must draw a card from the Draw pile until you find a match.
- The moment a player has just one card they must yell “UNO!”. If they are caught not saying “Uno” by another player before any card has been played, the player must draw two new cards.
- If the Draw pile becomes depleted, shuffle the Discard pile to regenerate a new Draw pile.
- The game continues until a player has no cards remaining!
Crazy Coaster

Brainstorm: Independently brainstorm a design for your coaster.

Job: ________________________________

Crazy Coaster Sketch: Sketch a rough draft of your successful rollercoaster with KE and PE labels.

Reflection: Changes you would make to your rollercoaster

Objective: Design and construct a roller coaster using only the provided supplies that will successfully get a marble from point A to point B, while exploring mechanical energy.

Materials:
- 5 Cups
- 10 Paper Plates
- 10 Straws
- Scissors
- 1 Marble
- 1 Roll of tape

Procedures:
1. Your Coaster must have different heights, turns, loops, tunnels, etc. through... be creative!

   Techie Teacher Tip: The QR code links to a virtual rollercoaster creator where through trial and error learners can create a working coaster and then go onto step 3 by either sketching and labeling or using app.

2. Perform multiple test runs to make sure your marble can reach the end before time is up!

   Using your sticky notes label the following:

   - Greatest Kinetic Energy
   - Least Kinetic Energy
   - PE \(\rightarrow\) KE
   - Greatest Potential Energy
   - Least Potential Energy
   - KE \(\rightarrow\) PE

   Techie Teacher Tip: Using the Seesaw app students can take a picture of their coaster and use text or audio to label and explain the types of mechanical energy! Then students can submit for you to use as a formative assessment!