Learning-Focused Lesson Plan

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Topic: Force and Motion

Learning Goals for this Lesson	**Standards:** 5.PS2.2, 5.PS2.3, 5.PS2.4
Students Will Know: *Common Forces *How varying the strength of a force affects the motion of an object. *How objects of varying mass are each affected by a similar force.	**Students Will Be Able To:** Students think about motion that they have seen before, as well as observe and identify repeating patterns of motion. Students also recognize that the force of friction resisting an object's motion can explain why that object slows or stops. They explore evidence for heat as a product of friction.
Lesson Essential Question *How do forces affect motion?	
Activating Strategy : Viewing Video as hook- https://www.generationgenius.com/videolessons/patterns-of-motion-and-friction-video-for-kids/	
Key vocabulary to preview and vocabulary strategy *force *friction *balanced force *unbalanced force *newtons *gravity	
Lesson instruction	
Learning Activity 1 TSW view the video in the activating strategy block. Once viewed TSW complete the "Let's break it down' article provided by reading with a partner and pair sharing ideas. **Assessment Prompt for LA 1** **Exit Ticket:** How does friction affect motion? Can you take it a step further and tell me how the length of a rope would affect a pendulum swing?	**Graphic Organizer** 'How Forces Affect Motion' data chart. Used to collect data from rubber band activity.
Learning Activity 2 Using the Flip Chart provided, TSW complete the rubber band activity following the instructions below: 1. Cut a rubber band in half, and tie the ends around the legs of a chair. 2. Place a piece of tape on the floor. Mark lines that are 1cm, 3cm, and 5cm behind the rubber band. 3. Place a toy truck against the rubber band. Pull the truck back to the 1cm mark and release. Mears the distance the truck travels ,and record the data. Repeat this 2 more times. 4. Repeat Step 3 using 3cm and 5cm marks 5. Place 4 bolts in the toy truck. Launch the truck from the 3cm mark, and record the distance it travels. Repeat this step two more times. 6. Add 4 more bolts to the truck. Repeat Step 5. **Assessment Prompt for LA 2:** Inquiry page 191, drawing conclusions, analyzing and extending.	

Learning Activity 3 Friction Ramps (borrowed from Oakley STEM Center) TSW will use the ramps to see how friction affects movement. Using the ramp and the different textures, TSW be able to analyze the speeds and forces using a spring scale and the different textured materials on the ramps. **Assessment Prompt for LA 3** "Sum it up" at the end of the lesson will be used. TSW show 80% mastery by scoring a 90% or higher on this assessment.	**Assignment:** "Sum it up" will be utilized at the end of each lesson.
Learning Activity 4 Ron's Ramp Adventure Kit (borrowed from Oakley STEM Center) TSW complete this activity with the Armadillo. Using the directions of the kit students will be able to engage, explore, analyze and extend learning with the different scenarios provided. **Assessment Prompt for LA 4** "Sum it up" at the end of the lesson will be used. TSW show 80% mastery by scoring a 90% or higher on this assessment.	
Summarizing Strategy Brain Check will be the summative assessment used to establish data at the end of each lesson. 80% of the students will show 90% or higher mastery on these standards and objectives.	