

Marble Roller Coaster Speaker Notes

Slide 1: “Marble Roller Coaster Challenge”

- Briefly introduce activity

Slide 2: Volunteer Introductions

- Each volunteer introduces themselves with their pronouns, major, and a fun fact

Slide 3: “Roller Coasters”

- Ask students what makes roller coasters fun
 - Mention drops, loops, speed, etc.
- Briefly go over history, what a roller coaster is made out of, engineering process of roller coaster construction
- Play video from 5:33-7:29 (Goes over transition of energy on a roller coaster)

Slide 4: “Energy”

- Quickly review concepts of potential and kinetic energy that were discussed in the video

Slide 5: “Velocity, Acceleration & Momentum”

- Introduce concepts of velocity, acceleration, and momentum
- Talk about different examples
- Relate concepts to a roller coaster
- Mention factors to consider in real life and in this challenge (stability, mass, etc.)

Slide 6: “Mechanical Engineering”

- Ask students if they have heard of mechanical engineering before and what they think it involves
- List out different roles of mechanical engineering
- If you are in mechanical engineering or have taken classes related, talk about them!
- Tie in how these roles fit in with roller coaster design

Slide 7: “Your Challenge”

- Present the workshop and what they will be doing

Slide 8: “Materials”

- Introduce materials that will be provided to them
- Encourage them to experiment with different supplies

Slide 9: “Get Started!”

- Tell students about the point system
- Start timer
- Walk around and answer questions, help out, encourage problem solving

Slide 10: “Our Design”

- Share aspects of the sample design
- Explain process of building the roller coaster

Slide 11: “Discussion Questions”

- Go through each question
- If students don't have any answers, try to ask simpler questions or answer with what you think!

Slide 12: “Thank you!”

- Offer to answer any questions about your experience in STEM and at UConn, transition to next part of MYO