

## **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