The Great Easter Motion Challenge

The Mission: Use your knowledge of forces and motion to create something that moves—either in the real world or on the screen!

Choose **one** of the following three paths to complete over the holidays:

Option 1: The "Pulley-Powered" Easter Basket (Physical Science)

Using what you learned about electric cars and forces, design a machine that can lift or pull an Easter egg (or a small toy) using a **pulley system**.

- **The Task:** Create a simple pulley using household items (like empty thread spools, pencils, string, and a small basket).
- **The Science:** Can you design a "fixed pulley" or a "movable pulley"? Observe how much force it takes to lift the object.
- **The Output:** Take a photo or draw a diagram of your machine. Label the **effort**, the **load**, and the **pulley**.

Option 2: The "Cyber-Sprint" Animation (Computing)

Put your Scratch skills to the test by animating a race between two vehicles—perhaps a digital version of the electric cars we studied!

- **The Task:** Create a Scratch project where two sprites race across the screen.
- **The Coding:** Use "broadcast" blocks to start the race and "random" operators to make the winner a surprise every time.
- **The Force Factor:** Try to animate one sprite so it looks like it is being pulled by a pulley or pushed by a powerful force.
- **The Output:** Share your project link or record a short video clip of your animation running.

Option 3: "Forces in Action" Stop-Motion (Media & Science)

If you have access to a tablet or phone, use a free stop-motion app to show a "Force Story."

- **The Task:** Tell a story of a toy car or character encountering different forces (Friction, Gravity, or a Pull).
- **The Technique:** Take small photos and move your object just a tiny bit each time. Remember: 10–12 photos usually make 1 second of video!
- **The Output:** Bring your video file (30–60 seconds) back to class to show the group.

📝 Reflections to include:

Whichever project you choose, be ready to answer these two questions when we return:

1. **Where was the force?** (Was it a push, a pull, or gravity?)
2. **What was the hardest part to build or code?** > **Teacher Tip:** You might want to provide a simple "Planning Sheet" where they can sketch their pulley design or storyboard their animation before they start building!