Physics Final

High Speed Video Project

DUE WED JUNE 7

1. Create a google folder

Name it with the words “Physics Final” and your name. Then share it with Mr. Mont. The video and your explanation of the physics will go in that folder.

2. Film something in slow motion.

Use your phone to film something in slow motion. It could be an activity or sport. Make sure to get permission if it’s someone else you’re filming. If you don’t have a phone with a slow motion option, then you can film with Photo Booth on your laptop. Place the video in the Google Folder you created.

3. Create a presentation explaining the physics you observe.

Create a google presentation in the folder you created. Choose TWO the topics below and explain what is going on in the video from the perspective of that topic. Use screenshots and or diagrams in your presentation.

4. Choose 2 topics to talk about. (Choose 3 for an A.)

Forces: Name the forces involved. Draw a force diagram of those forces. Connect the net force to the motion: is it constant or is there a speed up or slow down?

Motion: Describe the motion. Are there accelerations? Talk about how the velocity is changing or staying constant. Sketch a velocity graph.

Projectiles: Describe the motion in the x and y separately. What was the launch angle, approximately? Did it launch and land at the same height or different heights? How much of a role did drag play?

Circular Motion: Was the object spinning or were whole objects moving along a circular path? Was the tangential velocity different on different parts of the object? What about the angular velocity? Was there a centripetal force? What provided it?

Center of Mass/Rotation: Were there balance issues related to center of mass? Where was the center of mass of the object? Were there toppling issues? What caused them? Were there rotations (CW or CCW)? What torques caused them?

Conservation of Energy: What kind of energy did the system start with? What energy conversions happened during the motion? Were there any losses to heat? What caused them?

Impulse/Conservation of Momentum: Were there collisions? What provided the impulses? Was momentum conserved or were there outside forces? Was everything in a line or was there momentum in two or more dimensions?