

PHYSICS VIRTUAL PLAYGROUND

Use Algodoo software to create a unique simulation to explain important concepts of physics. You should:

- Download Algodoo from Managed Software on your laptop.
- Learn to use it.
- Choose a concept from physics and create a simulation or series of simulations to demonstrate it.
- Use screen recording software such as Quick Time Player to record the working of the simulation with either voice-over description or visible text descriptions of how it demonstrates the concept.
- Make note of the values you used in the simulation (velocities, angles, forces, masses, angles, etc.)

Share the video with Mr. Mont.

Topic	Concepts
Forces	1st Law, 2nd Law, 3rd Law
Motion	kinematics equations, free fall
Projectiles	Independence of x and y, angle's effect on range maximum height and time
Circular Motion	angular vs tangential velocity, forces that provide centripetal force, centrifugal "force", g's of a turn
Center of Mass/ Rotation	locating center of mass, toppling & stability, rotational variables depend on radius, center of mass and the laws of physics, conservation of angular momentum
Energy	conservation of energy, heat losses
Momentum	conservation of momentum, elastic vs inelastic collisions

GRADE	ACCURACY	CLARITY	STYLE
A	<p>The voice-over or text based description is detailed and correctly explains the concept. The simulation is a valid demonstration of the concept.</p>	<p>The voice-over or text base description provides an extremely clear and easy to understand explanation of the concept. The simulation clearly demonstrates the concept.</p>	<p>The simulation has been put together with care, is well-designed, tastefully colored and engaging.</p>
B	<p>The voice-over or text based description correctly explains the concept. The simulation is a valid demonstration of the concept.</p>	<p>The voice-over or text base description provides a clear explanation of the concepts. The simulation demonstrates the concept.</p>	<p>The simulation is well-designed and not unappealing.</p>
C	<p>The voice-over or text based description explains the concept, perhaps with minor flaws. The simulation is a valid demonstration of the concept.</p>	<p>The voice-over or text base description provides an explanation of the concepts, but could be a little clearer. The simulation demonstrates the concept.</p>	<p>The simulation gets the job done, but could have been a little better designed.</p>
D	<p>The voice-over or text based description explains the concept, but has errors. The simulation is not a valid demonstration of the concept.</p>	<p>The voice-over or text base description provides an explanation of the concepts, in unclear. The simulation does not demonstrate the concept.</p>	<p>The simulation is poorly designed.</p>