

CARTOON PHYSICS PHUN!

[ROADRUNNER/Wil E. Coyote](#)

TIME

A)0:00 Intro, both running
B)0:20 WEC off cliff in cloud, grabs punctuation, goes down (boom)
C)1:00 WEC with pole vault stick, spins around, hits cliff, becomes like copter, stops in mid air, falls (boom)
D)2:00 WEC on rocket, it goes off, he goes down (boom)
E)2:25 WEC with safe on rope/pulley, it falls, pulls him, hits ledge, both fall, (boom)
F)3:17 WEC on rocket, goes down, (boom)
G)3:34 WEC with firecracker in discus, tail burning
H)4:20 WEC with rocket, it goes off, he goes down (boom)
I)4:36 WEC with giant fly paper, it
J)5:02 WEC with rocket, lights himself, goes off with rocket, curves down, pauses, goes down (boom)
K)5:43 WEC with explosive tennis balls, hits one, he floats hits another off cactus, hits box (boom)
L)6:48 WEC and RR through giant pipe, become smaller, make sound, then go back, RR beeps at end tape pause/scramble....
M)8:35 WEC on wire with anvil, falls, no parachute (boom)
N)8:58 Box with TNT around water,
O)9:43 Into old cactus mine, with caps, into explosive room
P)11:01 Giant mousetrap
Q)11:09 rocket sled, goes up and firecrackers
R)11:26 rocket roller skates, then off cliff, up cliffs, etc... ends with water
S)12:41 RR crossing
T)13:29 both in cloud, WEC falls
U)14:15 camouflage hole, jack hammer
15:03 WEC builds wall, WEC sees self around wall, hurts self
V)16:05 bird seed below bumble bees
W)16:27 birdseed below anvil, WEC falls
X)16:50 mountain top slide
Y)17:09 WEC with catapult, rock
Z)17:25 WEC with harpoon, never stops

[ROGER RABBIT and Baby Herman: in "Somethin' Cookin'"](#)

AA)0:17 BH with baby bottle of milk in crib
BB)0:47 BH squeezes out of crib, across floor
CC)1:07 BH climbs up dresser drawers
DD)1:13 BH turns on stove
EE)1:16 RR tries to run on rug
FF)1:22 roller pin drops, RR slips on it
GG)1:32 pot falls loudly on RR's head
HH)1:39 RR into oven
II)1:42 BH balances on floating dishes
JJ)1:46 BH sees clock
KK)1:53 BH turns on water, spills it and soap from sink onto floor
LL)1:57 RR comes smokin' out of oven, goes around room in circle
MM)2:06 RR slips on soap, hits door, pushes baby onto clock
NN)2:19 RR slips on soap into wall socket for a shocking experience
OO)2:23 crack in wall causes kitchen stuff to loudly fall on RR
PP)2:29 BH swings on clock
QQ)2:32 chili causes RR to go across room, hit ironing board
RR)2:38 BH swings from shelf to shelf, knives fly across room
SS)2:45 knives hit RR
TUT)2:49 plunger from toaster hits RR
U)2:51 BH slips on toast
VV)2:57 plunger pulls RR across room
WW)3:00 RR fills up with air from vacuum, starts expanding, rising
XX)3:08 RR releases air, flies around room
YY)3:19 RR hits fridge, BH falls
ZZ)3:31 RR sees birds (not stars)

NAMES

In groups

1) Observe the two cartoon segments ([RoadRunner](#) and [RogerRabbit](#))

Write next to each physics concept (you may not be able to find them all) the letters from the scenes in the cartoons where you could identify the concept/principle or law being portrayed accurately.

Circle the scene letter where it was portrayed inaccurately.

Write a word or two next to the letter ONLY if you think it will be needed to explain why you picked that.

Then: Pick at least 5 (2 people) to 7 (3 people) scenes (or sequence of scenes, if that makes more sense).

Make sure they cover a range of topics.

Write at least a paragraph for each one explaining the physics concepts that you see portrayed in the scene, especially those that are portrayed accurately and inaccurately.

In your explanation, explain what quantities physicist might measure and calculations they might make in order to determine the principles and properties shown.

Diagrams or pictures are OK.

You may work on this together in or out of class, but must be handed in by the beginning of the exam.

PHYSICS PRINCIPLES:

Newton's First Law of Motion (Inertia)

Newton's Second Law of Motion ($F=ma$)

Newton's third Law of Motion (action/Reaction)

Force of Friction proportional to Normal Force

Projectile Motion as two motions (gravity, speed)

Conservation of Momentum in collisions

Elastic/Inelastic Collisions

Kinetic and Potential Energy

Conservation of Energy/Types of Energy

heat vs temperature

First Law of thermodynamics (work, heat)

Second Law of thermodynamics (entropy)

specific heat

heat of fusion/vaporization in phase changes

Gas Laws, Volume and temperature

Work and Simple Machines/Mechanical Advantage

Electricity: Current/Voltage

Volume and pressure

Density

Pascal's Principle (pressure constant)

Bernoulli's Principle

Simple harmonic Motion/Oscillators

Wave Interference

Wave Diffraction

Resonance/resonant frequency

Natural Pitch in objects

closed pipe/open pipe resonators

harmonics

Doppler Effect

beats

Centripetal Force

Circular acceleration/motion

Conservation of angular momentum

Light refraction

Light reflection

Guess what? I signed up for a psychics class at school. I'll be predicting stuff in no time!



*No, Calvin. You signed up for **physics** - a very challenging science class!*



*Sheesh! How can I make any money from a **Physics Friends Network**??!!*

UM, JASON, ABOUT YOUR PRESENTATION ON "PARABOLIC MOTION"...

