

# Cartoon Physics Project

1. Create a google doc/presentation/  
jamboard or whatever you prefer.

2. Access the google folder of cartoons

<https://drive.google.com/drive/folders/1ZDQxQ48M8nF0bFdfl-Ze4-len0ErP0Lx?usp=sharing>

3. Find an example of each of the three laws of physics being violated. For each one:
- a. Say which law.
  - b. Use screenshots from the cartoon to illustrate.
  - c. Explain how the law is being violated.

OR

3. Find an example of each of the three laws of physics being obeyed. For each one:
- a. Say which law.
  - b. Use screenshots from the cartoon to illustrate.
  - c. Explain how the law is being obeyed.

WOW OPPORTUNITY: DO BOTH!

# The Three Laws of Motion

1st Law	Objects continue to move at a constant speed in the same direction, unless an external force acts.	If you notice something changing speed or direction, was there actually a force that caused it?
2nd Law	If a force isn't being canceled out by another force, the object it acts on will change speed or direction according to:  $\text{accel} = \frac{\text{Force}}{\text{mass}}$	If something does change motion as a result of a force, was the acceleration proportional to the force? Was the change in motion reasonable given the mass?
3rd Law	Forces always occur in equal and opposite pairs. When A pushes B one way, B pushes A back the other way.	In order to go one way, you must push something the other way.

# Samples



## SAMPLE OF A LAW BEING VIOLATED

Law being violated: 2nd Law

Explanation: According to the 2nd Law, a force will cause an acceleration. The force of gravity is acting on the coyote, but he remains at rest and doesn't accelerate until he notices that there's no ground.



## SAMPLE OF A LAW BEING OBEYED

Law being violated: 3rd Law

Explanation: According to the 3rd Law, forces occur in equal and opposite pairs. The jackhammer pushes downward on the ground, and receives the same force upward, causing the coyote to come up off the ground.

