Scene #	Description	Narration
1	On Slide 1 Newton's First Law is displayed and the narrator reads the law out loud.	OK, in today's lesson, we're going to talk about Newton's first and second laws. Newton's first law of motion states that an object at rest remains at rest and an object in motion remains in motion at a constant velocity unless acted upon by an unbalanced force.
2	On Slide 2 the narrator talks about inertia, as he explains inertia the key points are showing on the slide. Images of a table with a red checkered tablecloth and a person sitting out on a couch watching TV are on the slide.	Newton's first law of motion is often referred to as the law of inertia. Inertia is Latin for laziness. Inertia's definition is that it is an object's tendency to resist changes in its motion. So an object that is at rest does not want to move. And an object that is moving does not want to stop moving. Inertia is very similar to mass. It is not the same. But mass is a way of telling how much inertia an object may have. The more mass the more inertia. The more inertia the more resistant to changes in motion. So large objects are going to be very, very difficult to move or get moving. And they're also going to be very, very difficult to stop moving once in motion. Some examples of inertia are the tablecloth trick. A magician pulls a table cloth from underneath all the dishes, yet the dishes remain on the table. The game Jenga, Couch potatoes. When you get lazy, you don't feel like doing anything and that is kind of like a natural inertia. And then large, moving objects. Like I said before, large objects are very difficult to get moving. And they're also very difficult to stop moving. I like to think of Indiana Jones being chased by the big boulder. That big boulder is going to be very, very difficult to stop.
3	The third slide summarize the two cases for Newton's first law. As the narrator tells about them the key	Newton's first law is two cases. Case one is when the forces are balanced.

	points he mentions are showing on the slide.	When the forces are balanced on an object, there is no acceleration, meaning that there is no net force and the velocity is not changing. So you'll see here that the net force is actually zero and the object is either at rest or moving with a constant velocity. I need you to remember that you can be moving. You just cannot be accelerating, OK. And there's a difference. So if you're moving at a constant velocity, there's no acceleration. And we call this the state of equilibrium. And that's when all the forces are balanced on an object. The second case is when the forces are not balanced. This means that the net force is not equal to zero. And this means that acceleration is present. In other words, there is a changing velocity. And then we want to know how much acceleration and that's kind of where Newton's second law starts to give us a little bit of description.
4	Slide four summarizes Newton’s second law of motion. The narrator reads the second law out loud as it appears on the slide. Below the summary of the law the words acceleration increases when net force increases (an arrow is showing for increase). It also says Acceleration decreases when mass increases (arrows are showing for increase and decrease).	So Newton's second law of motion is that the acceleration of an object is directly proportional to the net force acting on the object and inversely proportional to the object's mass. Whoa, what does that mean? That's a lot of wording. A lot of big words in there. So we're going to simplify it. So when acceleration increases, so does net force. That's the relationship between acceleration and net force. When acceleration decreases, or acceleration will decrease when mass increases. So it's going to be more difficult to get a larger mass to accelerate. You're going to need a larger force.
5	Slide five shows the equation for Newton’s second law of motion. F=ma (Force=mass times acceleration).	So this can really be put together in Newton's law of motion, second law of motions formula, which is the force is equal to the mass times the acceleration. And that's this famous formula of F equals ma.

6	Slide six has a practice problem displayed. The narrator reads the problem out loud. In green an airplane is drawn, as well as m=30,000kg and a=1.5m/s squared. The narrator walks through the steps of the equation and the solution as it is written down.	Let's do a practice problem. How much force or thrust must a 30,000 kilogram jet plane develop to achieve an acceleration of 1.5 meters per second squared? Well, the first thing we're going to want to do is we're going to draw a picture and write down our givens. And then we're going to want to write down the equation, F equals ma. And then we're going to plug-in our numbers. So we have 30,000 kilograms times 1.5 meters per second squared. And we get an answer of 45,000 newtons for the force.