I'm Don Pettit, I'm a NASA astronaut and I'm on the International Space Station. We're currently about 240 nautical miles above the surface of Earth.

Space Station is a serious place. We're doing serious research, scientific research, and engineering research. We have a regenerative life support system, which is a fancy way of saying that we've got a toilet that you use and then a machine that goes chugga chugga chugga chugga... and then you go to the...
galley and you make yourself a cup of
coffee and that's exactly what you are
thinking it is and this is a kind of
engineering research that we're doing on
Space Station it's needed so that when
we go to Mars we won't run out of water
and of course not only we have Angry
Birds if you ran out of water you'd have
Angry human beings too I want to do some
physics demonstrations that involve some
of the things you might see in the Angry
Birds game and of course I've got my
Angry Bird here but we need a pig well
I'm not very good at art it's a good
thing I decided to be a scientist at an engineer instead of an artist because I'd probably be starving by now okay here here is pig and of course pig is the archenemy of Angry Bird an angry bird had some eggs add Pig stole the eggs and don't ask me how I got the eggs on space station I've got a bungee spread across the hatchway and this bungee is kind of like a slingshot and I'm going to show the trajectory that red bird is gonna have when I fire them with this orbital slingshot launching red bird into space well hey
we're already at the space whoa look at

00:02:42,030 --> 00:02:47,640
that whoa all the way down that's an

00:02:45,780 --> 00:02:51,270
example of a trajectory it's a straight

00:02:47,639 --> 00:02:53,549
line from our perspective here gravity

00:02:51,270 --> 00:02:54,840
will attract an object if it's moving in

00:02:53,550 --> 00:02:57,120
a straight line and it will no longer

00:02:54,840 --> 00:03:01,319
move in a straight line it gets bent and

00:02:57,120 --> 00:03:03,330
it goes in a curved trajectory and guess

00:03:01,319 --> 00:03:04,650
what astronauts have to worry about

00:03:03,330 --> 00:03:07,130
these things because if you're in a

00:03:04,650 --> 00:03:10,020
rocket and say you're trying to get from

00:03:07,129 --> 00:03:12,120
one orbit and rendezvous with space

00:03:10,020 --> 00:03:14,640
station you end up going in curved

00:03:12,120 --> 00:03:16,620
trajectories and you need to know how to

00:03:14,639 --> 00:03:18,689
fire your rocket engines so that you can
go from where you are to where you want to be and if you understand the math if you understand the physics it will allow you to go out and get a neat job a job sort of like mine where you're an astronaut and you can fly in space learn about these subjects in school you can also learn about these subjects while you're playing games what happens when something like an angry bird gets their eggs stolen by Pig this is all that's left the pig after Pig got exploded and we got to see all of this in a weightless
environment which is what the Angry Bird space game is going to be like with gravity fields from planetary bodies you you