

THE BOUNCING EGG

Egg-strav-ig-anz-a



Materials:

- 1 basketball
- 1 tennis ball
- 1 metre ruler
- 1 raw egg
- protective eye goggles

(optional) download the video of the astronaut dropping the feather and the hammer at the same time from here...

<http://home.cvc.org/physics/apollompeg.htm>

Characters:

Narrator 1: a witty 'nerdy' type

Narrator 2: a peppy cheerleader type.

Narrators please note that you are required to pause and over emphasise all puns associated with eggs

Assistant: a lively, enthusiastic character.

Professor I.M Hip: A person with an obvious love of science facts that just oozes cool.

The Script

Narrator 1: Welcome one and all to our **egg-stra-ordinary** egg demonstration.

Narrator 2: But before we begin, we'd like to introduce to you our **egg-citing** assistant...

Narrator 1 & Narrator 2 : **Anita Bath** (*Anita takes a bow*)

Narrator 1: As we progress through this activity our wonderful assistant,

Narrator 1 & 2: **Anita**

Narrator 1: will demonstrate some **egg-cellent** science.

Narrator 2: We are also privileged to have here today the world renowned **egg-spert** scientist Professor I.M Hip.

(Professor nods head knowingly toward the audience from a chair to the left of the stage)

Narrator 2: Anita will now hold a basketball and tennis ball at the same height.

Narrator 1: Which one of these balls do you think will hit the ground first?

(Choose a couple of people to tell you their answers)

Narrator 2: Ok Anita. Let them go!

Narrator 1: Wow! Did you see that?

Narrator 2: They hit the ground at *about* the same time.

Professor: Yes, in 1590 the famous scientist, Galileo Galilei demonstrated that it is not how much something weighs that makes it fall fast or slow

towards the ground.

Assistant: Yes, in fact he showed that gravity makes heavy objects and light ones fall at the same rate...

All: (Clear throat at same time and cold stares directed at the assistant)

Assistant: (*Mumbles to the audience*) Oh yeah, I remember, I'm just the humble assistant.

Narrator 1: Hey, but that can't be right because when you drop a plastic bag it falls to the ground at a slower rate.

Narrator 2: Yeah, but air gets in the way and makes it fall slowly. Actually anything that is thin, fluffy or flat will act a bit like a parachute and will fall more slowly.

Narrator 1: Ahhh, now it is much clearer to me.

Professor: In fact, the great scientist Galileo dropped two balls of the same size, but different weights off a tower and they hit the ground at the same time.

Assistant: If I can throw in my two cents worth, when the astronaut **eggs-plorer**

Dave Scott of Apollo 15 was on the moon, (*characters glare at the assistant*) he did the same **egg-speriment**. *But this time there* was no air to get in the way. He dropped a hammer and a feather at the same time and they hit the lunar surface together.

Professor: (*glares at assistant*) and if you'd like to, you can see a video of this experiment on the Internet at...

<http://home.cvc.org/physics/apollompeg.htm>

Narrator 2: (*interrupts professor*) anyway, if you want this URL come and see us after the show.

Narrator 1: Our assistant will now stand up a metre ruler and place a basketball on top of it.

Narrator 2: Predict, or guess, how far up the ruler you think the ball will bounce if we drop it.

Narrator 1: (*Insert name*) what is your guess?

Student: (*give them time to answer*)

Narrator 2: *(Insert name)* what is your prediction?

Student: *(give them time to answer)*

Narrator 1: Ok Anita, drop the ball and tell us about how high it bounced.

Assistant: Wow! It bounced (...cms)

Narrator 2: Anita is now going to place a tennis ball at the top of the ruler.

Narrator 1: Ok scientists, make your predictions *(or guess)* how far up the ruler you think the ball will bounce.

Narrator 1: *(Insert name)* what is your guess?

Narrator 2: *(Insert name)* what is your prediction?

Narrator 1: Ok Anita, drop the ball and tell us about how high it bounced.

Assistant: *(getting bored)* Wow! It bounced (...cms)

Narrator 2: Now for the fun bit.

Narrator 1: Ok Anita, put the raw egg on top of the ruler and let the scientists in the audience predict how high it will bounce.

Assistant: No! It will smash and I'll have to clean up the mess.

Narrator 2: Ok, you're right.

Narrator 1: Our assistant will now hold a basketball with a tennis ball on top of it.

Narrator 1: Predict what you think will happen to the tennis ball if we drop the two balls together.

Narrator 1: *(Insert name)* what is your guess?

Narrator 2: *(Insert name)* what is your prediction?

Narrator 1: Ok Anita. Make sure you've got your protective goggles on and let's do it.

Professor: Wow! Did you see that? The tennis ball bounced higher than when we just dropped it from the top of the ruler.

Assistant: I wonder why *that* is?

(all members raise their fingers to their chins in deep contemplation for a few seconds)



Narrator 1: Our assistant will now place the egg on the bottom of the basketball.

Narrator 2: What do you think will happen to the egg?

Narrator 1: *(Insert name)* what is your guess?

Narrator 2: *(Insert name)* what is your prediction?

Narrator 1: Ok Anita, let's do it.

Assistant: No, the egg will smash and I'll have to clean up the mess.

Narrator 1: Ok, Ok. Our assistant will now place the egg on top of the basketball at waist height and then let both of them go at the same time.

Narrator 2: What do you think will happen to the egg?

Narrator 1: *(Insert name)* what is your guess?

Narrator 2: *(Insert name)* what is your prediction?

Narrator 1: Anita Bath, are you OK to do this?

Assistant: No. I think the egg will break all over the basketball and I'll have to clean up the mess.

Narrator 1: Do any of you scientists in the audience agree with Anita?

Narrator 2: Ok, in the name of Science, let's test it and find out.

All: (in a serious voice) **Only perform this demonstration under strict responsible adult supervision and make sure your safety goggles are secure.**

Assistant: *(perform the demonstration at least 10 metres from your audience and make sure you have safety goggles on)*

Narrator 2 & Assistant: WOW! Why did it go so far?

Assistant: I'll give you a hint. The egg 'stole' some of the energy from the ball.

Narrator 2: How about you now try and explain to your friends why the egg went so high...

Narrator 1: Now can you draw a diagram of us doing this activity so you can explain the demonstration to an adult when you get home.

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<http://gvc03c32.virtualclassroom.org/>

and if you have some comments for us please email them to

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