

The Loop

Mr. Hall, Mr. Rus

Rus: Hi, I'm Mr. Rus...

Hall: I'm Mr. Hall...

Rus: Today, we'll be watching BMX pro, Mat Hoffman

Hall: and pro skateboarder Tony Hawk

Rus: as they try to conquer "The Loop".

Hall: It's easy to see the **work** involved as Hoffman climbs the steep ramp.

Rus: (wait 'til slo mo) Even with the padding in place, you can tell Hoffman hits the ground with a lot of **force**. And the ground hits him back with an equal amount of force.

Newton's Third Law.

Hall: On his second attempt, we see Mat **accelerating** down the ramp...

Rus: but, alas, **gravity** turns out to be stronger than our BMX star!

Hall: Hoffman makes yet a third attempt, building up tremendous **speed**... but once again, fails to complete the loop.

Rus: Hoffman will not be denied...he makes a fourth attempt, but is still unsuccessful.

Hall: Enter Tony Hawk, professional skateboarder...

Rus: It's Tony's turn to try and convert work to **potential energy** and then into **kinetic energy**.

Hall: It's *all* about the Law of **Conservation of Energy**, isn't it.

Rus: And while Tony doesn't complete the loop, his skateboard does. In fact, **inertia** keeps his skateboard moving right off the end of the ramp until it meets an outside force: the lake. A good example of **Newton's First Law**.

Hall: Fortunately for Tony, Bunny the Lifeguard is on hand to save his board from the lake.

Rus: (wait for Bam to show up) Next up: Skateboarder Bam Margera

Hall: (wait 'til Bam is going down hill) Bad news for Bam: his **weight** brings him crashing down.

Rus: (wait for 2 boarders to be talking) Tony gives Bam a little friendly advice.

Hall: Bam gives the loop another try.

Rus: Better this time, but Bam still doesn't quite make it.

Hall: Tony Hawk gives the course one more try.

Rus: This time he's successful – he covers the **distance** of 100 feet with a **time** of around 7 seconds.

Hall: Close behind, Hoffman also completes the loop seeming to defy gravity. Mat also adds a nice flip, **height:** 15-20 feet, into the lake at the end for style points.