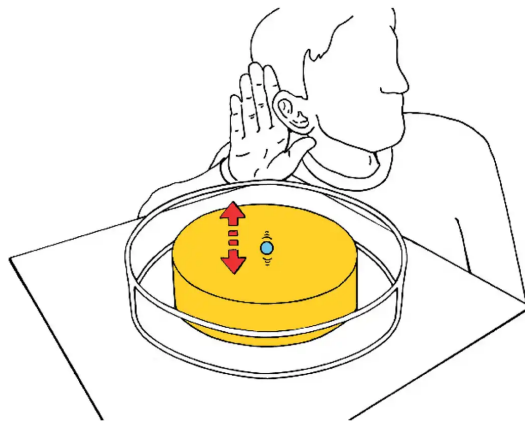


Bouncing ball

How many times does the ball bounce after you drop it?



Let the small steel ball fall through the hole onto the metal block.

Observe the ball.

Listen thoroughly

The steel ball bounces slowly at first and then faster and faster – until it sounds like a rising tone.

The frequency of the bounces increases exponentially.

Each time the ball bounces it loses some energy, and therefore the ball does not rise as high as it did on the previous bounce.

The amount that the height of bounce decreases is a constant fraction of the height, about 7% per bounce.

Since the rate of change is proportional to the size, the height of the bounce – and the time between bounces – decreases exponentially.