

THE STORY OF KINETIC AND POTENTIAL ENERGY

<http://www.youtube.com/watch?v=7K4V0NvUxRg>

FILL THE BLANKS

Once upon a time, a very small man had to do battle with a very large giant. The only thing that the very small man had going for him was his sling. When he let loose with it, the _____ of the stone combined with the _____ to give it _____ with which it was able to do work on the giant. Held by applying _____ and exerting that _____ and through a _____, the stone had energy thanks to its movement. Indeed, everything that moves has _____. Even the air around us. Once air is moving it has the energy to drive windmills. Just as when water is moving, it has the energy to drive watermills.

But if every moving thing has _____, does that mean that things which aren't moving don't have _____?

In that case, why are you staring up at the rock perched at the edge of the cliff?

Why be frightened of it? It can't have any _____ because it's not moving. And if it hasn't any kinetic energy, it can't do any _____ on you, can it?

But maybe you'd better move out of the way all the same. Why? Because of the rock's position on the edge of the cliff. It hasn't any _____ so far, but it looks like it is on the point of having quite a lot of movement any minute now. Because the force of _____ wants very much to make it fall off the cliff. That means that in a sense, the rock has a lot of energy stored up in it, a lot of what scientists call _____. Or the energy of _____. The slightest puff of wind and that _____ will immediately start being transformed into _____. That's how the energy of position becomes the energy of _____.

Uh oh, don't look now! But it's time to use some more _____ to do some more work on that giant. Whoops!

Hold on, what's happening? Let's do that again in slow motion.

The stone lost more and more _____ as it left your sling because of the force of _____ trying to pull it down. The higher it got, the slower it went, and the less _____ it had, until it last it came to complete stop and had no _____ left in it at all, and therefore no _____ in it, and no force that it could observe on the giant.

Where did all that _____ go? Is it lost forever?

No, it is being transformed into _____. The work that the little man put into slinging the stone is now stored up in the stone, but of course in reality, the stone only stops first for a split second, and then immediately starts coming down again, and then immediately starts collecting all the _____ that it had in the first place. Meanwhile back at the cliff edge, the giant finds all this very amusing, but he'd better watch out, because the most of the _____ it took for him to climb up to the top of cliff is now stored in him by virtue of his position. He's full of _____, just waiting to be converted back into kinetic energy any minute now. Timber!