

Balance

A

Hammer

What is Needed

A hammer

What to Do

Rest the head of a hammer in your outstretched hand, with the handle sticking up in the air. The head of the hammer will be "nesting" in the palm of your hand. It is content to stay in this position of rest, since its center of gravity is as close as it can get to the center of the Earth at the moment. It is in what is known as stable equilibrium.

Now turn the hammer around so the handle is pushing against your palm. With the head of the hammer in the air, note how hard it is to keep the hammer in position. This is unstable equilibrium.

What is Happening

In the first experience, with the handle sticking upward, the hammer is content to stay in this position of rest, since its center of gravity is as close as it can get to the center of the earth at the moment.

In the second experience, with the head of the hammer in the air, this is known as unstable equilibrium. The head of the hammer, having the most mass, will seek to get closer to the ground, so topple over easily.

Purdue University Physics Dept. Physics on the Road Hands - On Lida Wu Illustrate

