Gravity

The pull toward the very center of the Earth — and the two directions it gives us

The Big Idea

***Gravity** pulls everything toward the CENTER of the Earth, constantly, with no off switch. Anything unsupported falls — and "down" in Australia and "down" here point to the same middle, which is why nobody falls off anywhere.*

Weight is gravity's pull on a thing, read in pounds. Gravity also hands builders their two directions: **vertical** is lined up with the pull (the plumb line finds it), **horizontal** lies level across (still water and the rolling marble find it). Heavy and light things fall **together**; balloons rise only because the heavier air sinks past and shoves them up; and the moon is forever **falling around** the Earth — an orbit is gravity's pull bending a straight flight into a circle.

Why does gravity exist at all? Honest answer: nobody knows yet. Science keeps that question open, out loud.

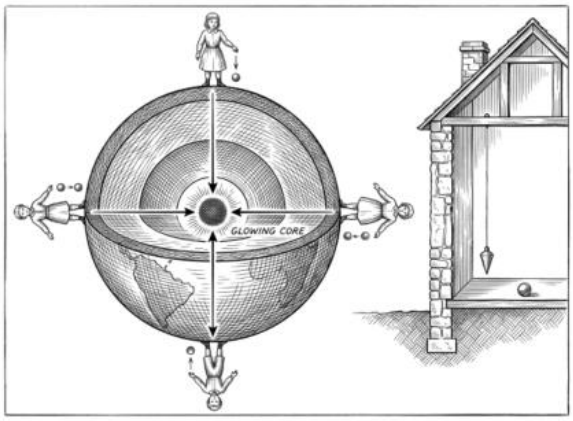


Fig. 1 — four children, four drops, one destination: every "down" runs straight to the Earth's middle — and the plumb line and level floor agree

Words to Know

gravity
the Earth's constant pull toward its center

weight
how hard the pull is on a thing, in pounds

vertical
lined up with gravity — the plumb line finds it

horizontal
lying level across — still water and a resting marble find it

level
the builder's bubble tool that certifies horizontal

orbit
falling around and around without ever landing

Watch For This in Everyday Life

- Hold a weight on a string — *"watch it find vertical, every time."*
- Check any shelf with a marble — *"horizontal, or a reject?"*
- Watch a helium balloon rise — *"what is really shoving it up?"*