

Staying Centered

Try It Out

Stand the pyramid up and gently rest the tip of bird's beak on the top of the pyramid. There's a tiny circle it fits into. Let go of the bird. What happens?


What's going on?

The **center of gravity** is the average location of the weight of an object, or a certain spot on an object where the weight is perfectly balanced. This bird's center of gravity is in its beak. The weight of the wings is perfectly balanced with the weight of the rest of the bird's body, right around the tip of the beak.

What's the big deal?

The center of gravity of an object is *very* important if that object is an aircraft. The force of the thrust of an engine must be directed *through* an aircraft's center of gravity for it to fly straight. It's also an important part of you, and your brain has a pretty good sense for where it is, allowing you to balance on one foot.



 The center of gravity of planes (Images: Piqsels, Yoga International)

Wonder While You Walk...

Physicists often prefer the term **center of mass**. For regular-sized objects on the surface of the earth, this is basically the same as the center of gravity. When would it *not* be the same?