

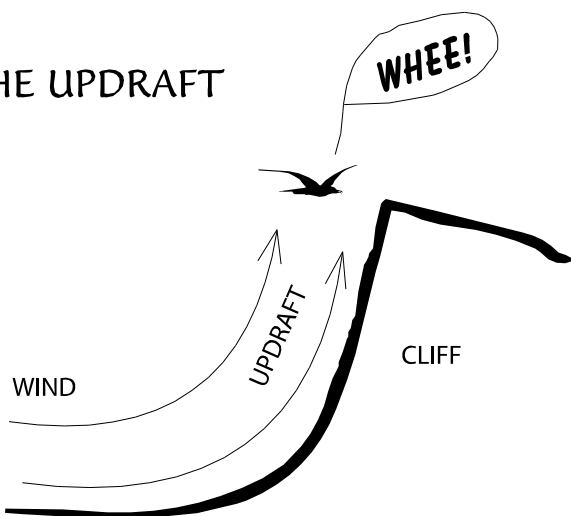
GLIDING - Riding the Wind

Have you ever seen a bird gliding on the wind? Gliding is easier than flying because the bird does almost no work. That means it won't get tired or hungry as fast. Today you will study tricks that birds use to gain height with very little effort.

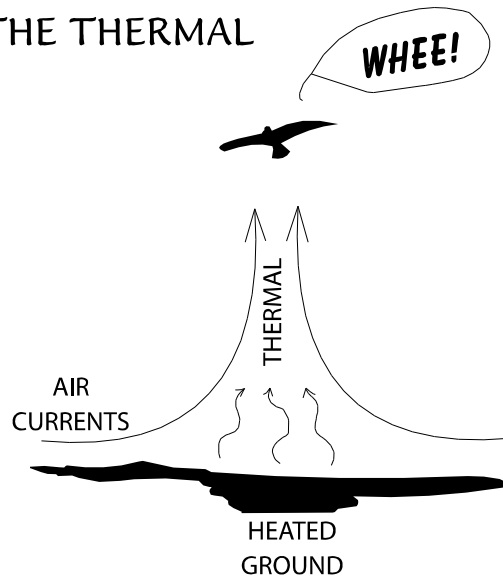
Here are two ways that rising air can give a bird a free ride. The UPDRAFT is pretty easy to understand. Wind blowing toward a cliff has no way to go but up. The THERMAL can lift a bird because warm air rises. A freshly plowed field gives off heat which warms the air. The warmed air expands and that causes it to rise. It works the same way as a hot air balloon.



THE UPDRAFT



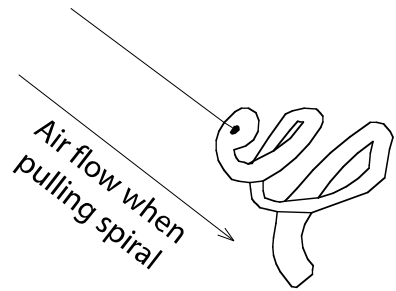
THE THERMAL



EXPERIMENT: INVESTIGATING A THERMAL

WHAT YOU NEED: paper spiral, about 2 feet of thread, scissors, a lamp with an incandescent bulb, and a tiny piece of tape. You provide the scissors, lamp and tape. Save the remaining thread for future experiments.

WHAT TO DO: Cut out the spiral. Use tape to attach the thread to the center of the spiral. This is your AIR MOVEMENT DETECTOR. Test your spiral by pulling it through the air. Which way does it spin?



COUNTERCLOCKWISE? CLOCKWISE? (circle one)

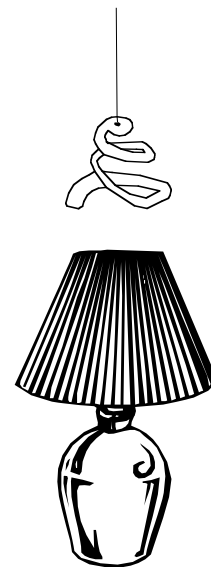
Finding a thermal is as simple as finding a heat source. Check light bulbs by holding your hand about a foot above the bulb. If you feel the heat from the bulb, it will work. Many modern bulbs, such as LED and CFL, produce little or no heat. This is great for saving energy, but it can't power our experiment.

Hang your spiral over a lamp.
Record which way the spiral rotates.

COUNTERCLOCKWISE? CLOCKWISE? (circle one)

Compare this to the direction the spiral spins when pulling it through the air.

According to your spiral, is the air above the lamp rising or falling?



This upward motion of heated air is a thermal. Soaring birds use thermals because thermals lift birds up without the birds using their own energy.

WHAT KINDS OF BIRDS RIDE THERMALS? SOARING BIRDS.

These are birds that can maintain flight without flapping their wings.

Eagles	Buzzards	Ospreys	Seagulls	
Hawks	Vultures	Herons	Albatrosses	
Falcons	Condors	Cranes	Pelicans	and others

