National Cathedral

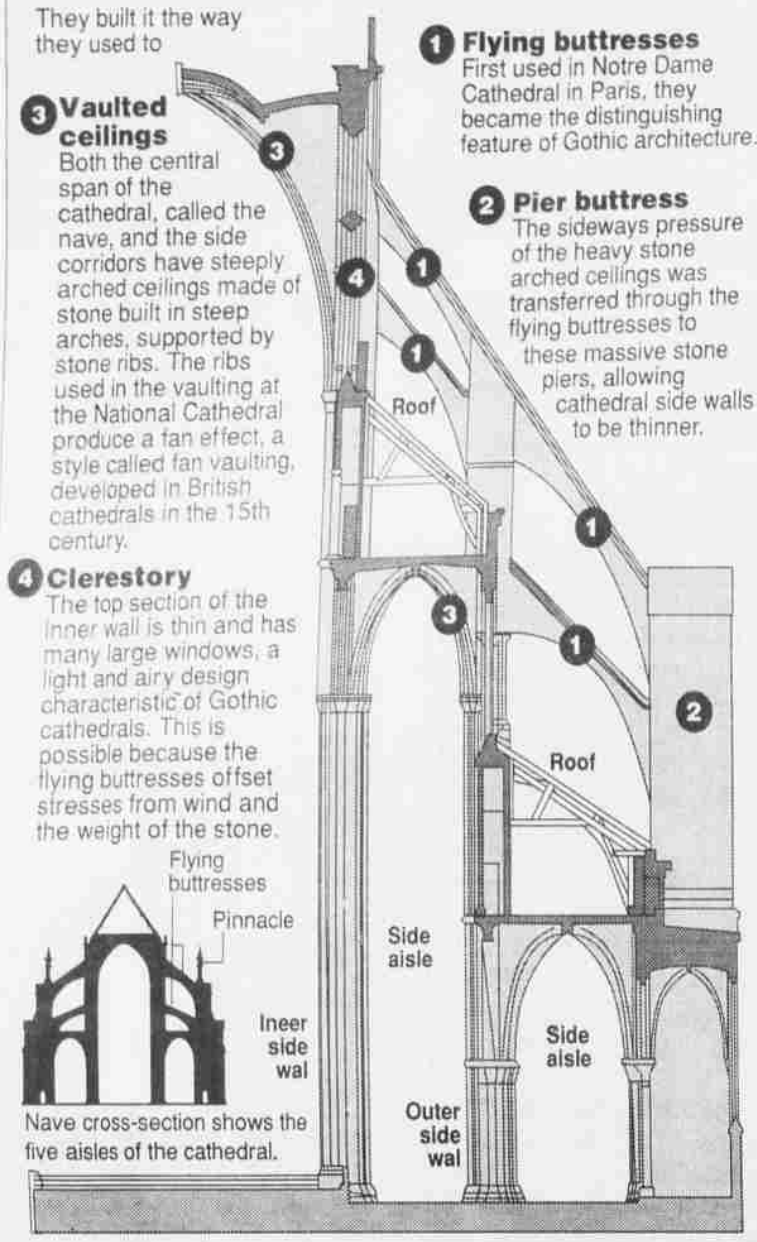
They built it the way they used to

1 Flying buttresses
First used in Notre Dame Cathedral in Paris, they became the distinguishing feature of Gothic architecture.

2 Pier buttress
The sideways pressure of the heavy stone arched ceilings was transferred through the flying buttresses to these massive stone piers, allowing cathedral side walls to be thinner.

3 Vaulted ceilings
Both the central span of the cathedral, called the nave, and the side corridors have steeply arched ceilings made of stone built in steep arches, supported by stone ribs. The ribs used in the vaulting at the National Cathedral produce a fan effect, a style called fan vaulting, developed in British cathedrals in the 15th century.

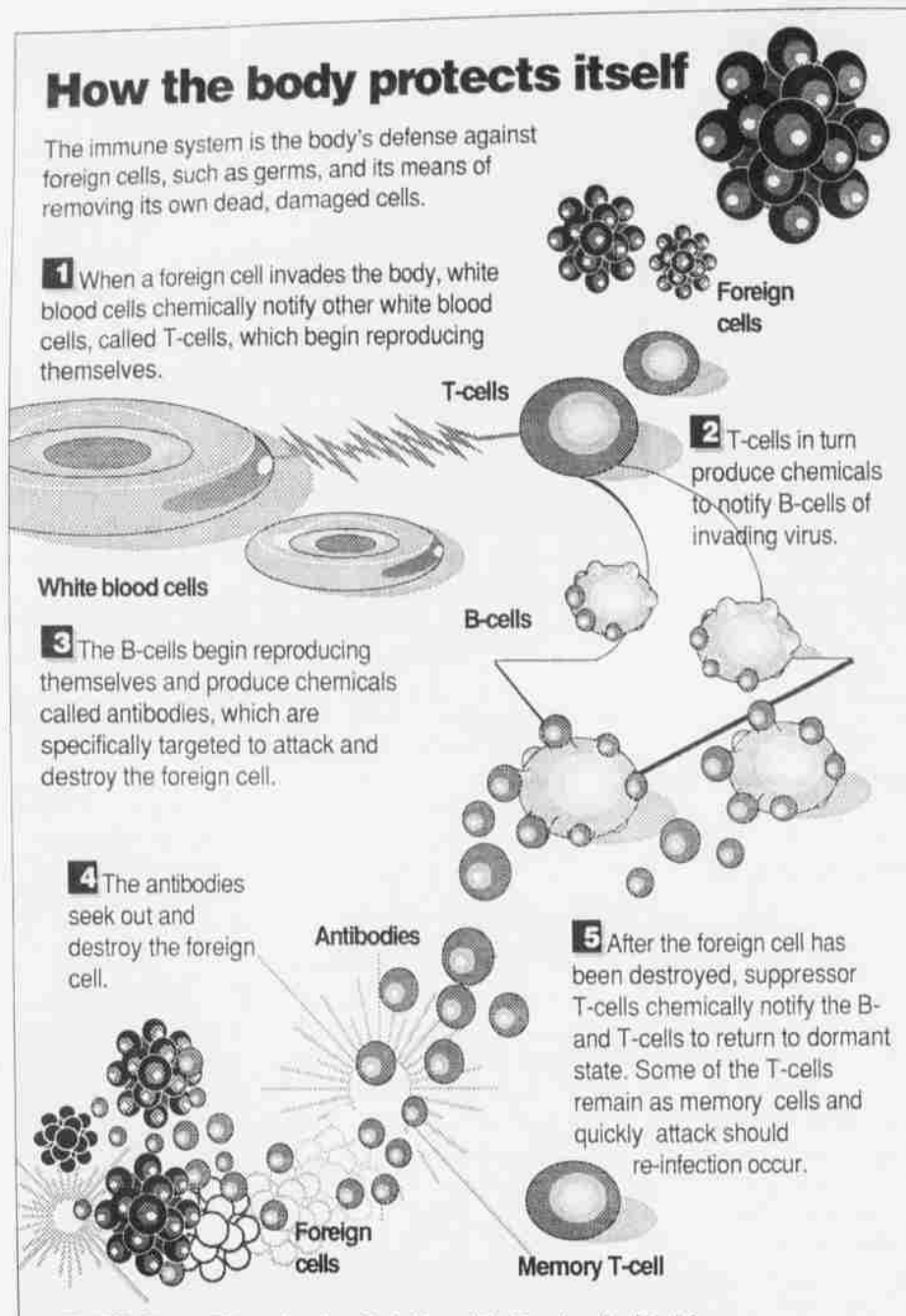
4 Clerestory
The top section of the inner wall is thin and has many large windows, a light and airy design characteristic of Gothic cathedrals. This is possible because the flying buttresses offset stresses from wind and the weight of the stone.



Nave cross-section shows the five aisles of the cathedral.

How the body protects itself

The immune system is the body's defense against foreign cells, such as germs, and its means of removing its own dead, damaged cells.



1 When a foreign cell invades the body, white blood cells chemically notify other white blood cells, called T-cells, which begin reproducing themselves.

2 T-cells in turn produce chemicals to notify B-cells of invading virus.

3 The B-cells begin reproducing themselves and produce chemicals called antibodies, which are specifically targeted to attack and destroy the foreign cell.

4 The antibodies seek out and destroy the foreign cell.

5 After the foreign cell has been destroyed, suppressor T-cells chemically notify the B- and T-cells to return to dormant state. Some of the T-cells remain as memory cells and quickly attack should re-infection occur.

SOURCE: Chicago Tribune, American Medical Association Encyclopedia of Medicine

Try this: Egg entertainment

The egg in the bottle trick

Can you really put an egg into a bottle - if the bottle has a neck that's slightly smaller than the egg - without mashing the egg?

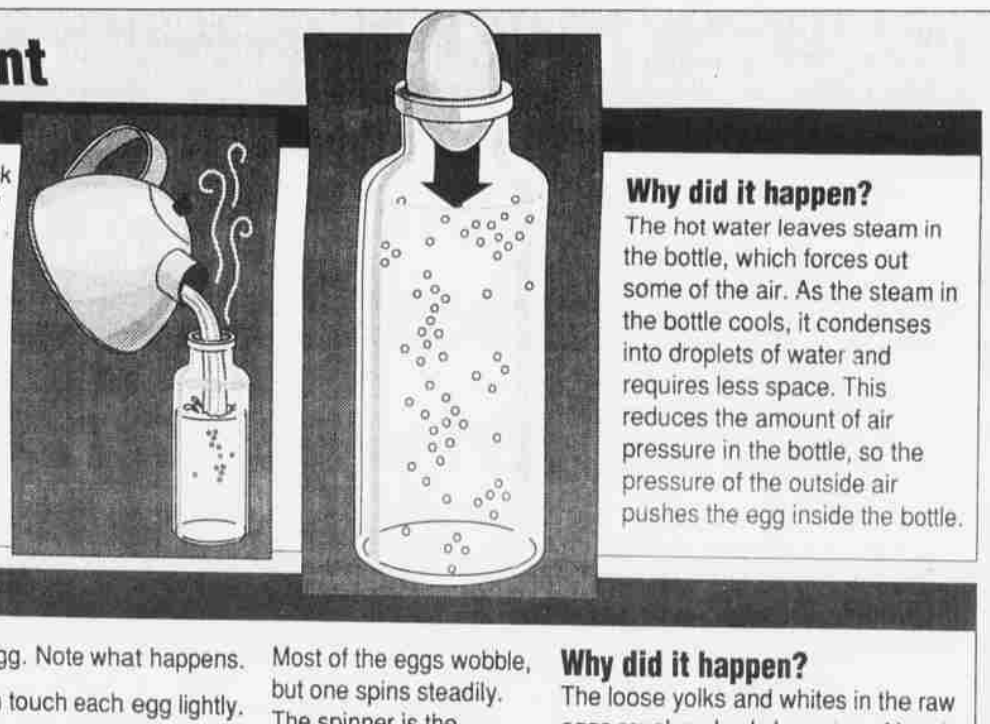
You'll need:
A peeled, hard-boiled egg; a small-necked jar, such as a water jug or baby bottle, and hot water.

1 Pour boiling water into the bottle.

2 Shake it around and then pour it out.

3 Quickly place the peeled egg over the mouth of the bottle.

Even though the egg is larger than the opening, the egg drops into the bottle.



Why did it happen?
The hot water leaves steam in the bottle, which forces out some of the air. As the steam in the bottle cools, it condenses into droplets of water and requires less space. This reduces the amount of air pressure in the bottle, so the pressure of the outside air pushes the egg inside the bottle.

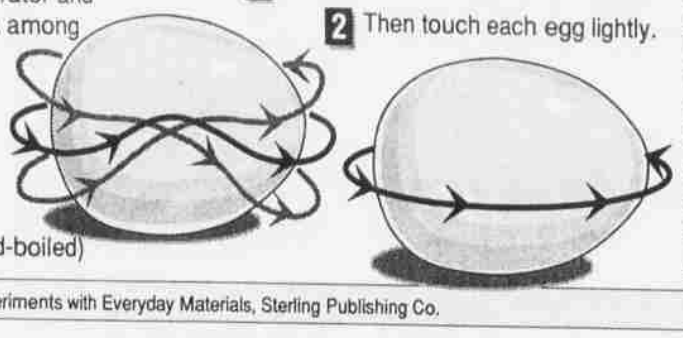
Finding the hard-boiled egg

What a dilemma! You've put a cooked egg back in the refrigerator and someone stuck it back among the raw eggs. You need the cooked one for a salad. But which one is it?

You'll need:
2 or more eggs (1 hard-boiled)

1 Spin each egg. Note what happens.

2 Then touch each egg lightly.



Most of the eggs wobble, but one spins steadily. The spinner is the hard-boiled egg. When you touch the spinning hard-boiled egg lightly, it stops spinning completely. The raw eggs move again after you've tried to stop them.

Why did it happen?
The loose yolks and whites in the raw eggs revolve slowly because of inertia, the tendency of an object to continue at rest or in motion. This causes the raw eggs to wobble and the raw eggs to continue to move even after you try to stop them. The solid white and yolk cause the hard-boiled egg to respond more quickly.

SOURCE: Simple Science Experiments with Everyday Materials, Sterling Publishing Co.

WRITERS MEETING

Those interested in working for The Yellin' Rebel should attend the staff meeting Tuesday, February 5 at 4 pm in the newspaper's office on the 3rd floor of the MSU.

SH-3H Sea King helicopter

Manufacturer: Sikorsky
Crew: 2 pilots, 2 system operators
Engines: 2 GE turboshafts
Weight: 21,000 lbs. takeoff max.
Size: 73 ft. long, 62-ft. rotors
Ceiling: 14,700 ft. (service)
Range: 620 miles
Weapons: 2 Mk 46 torpedoes when used for anti-submarine combat

SOURCE: "The Ships and Aircraft of the U.S. Fleet," The Virginian-Pilot (Norfolk)