

Try this: Paper kite

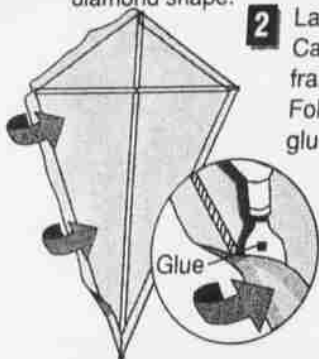
This experiment demonstrates how air flowing under a kite pushes it up into the sky.

Make a paper kite

You'll need:

Thin strong paper about 3 feet by 2 1/2 feet, thin sticks, a ball of string, piece of old cloth, glue, scissors, needle.

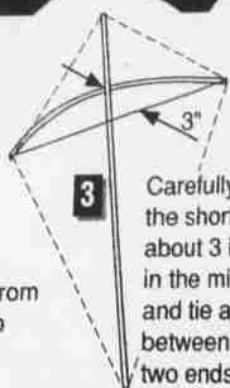
1 Choose two sticks to make the framework. The exact measurements are not important but one stick must be 1 1/2 times as long as the other. Make a notch in each end of the sticks for the string. Make a cross shape with the sticks and bind them together with string. Then join the corners with string to make a diamond shape.



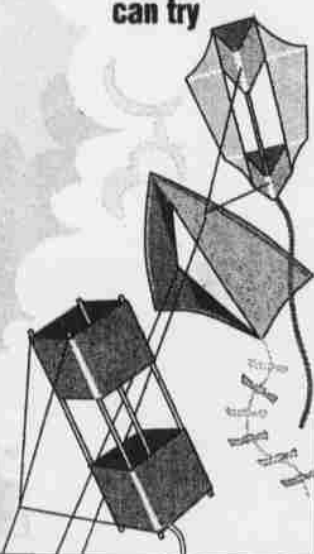
2 Lay the frame on top of the paper. Carefully cut the paper around the frame, leaving about 1 inch all around. Fold the paper to cover the frame and glue down the folds.

Why did it happen? As the kite is held into the wind, air pushes the kite upward so it can fly. Kites are made of very light materials so they stay up easily.

4 Make a kite tail using a piece of old cloth, ripped into strips. It should be about twice as long as the kite. Tie the tail to the tip of the kite. Attach a string to the long stick of the frame, one end above and one end below the crossover point. Tie the end of the ball of string a little above the middle of this string.



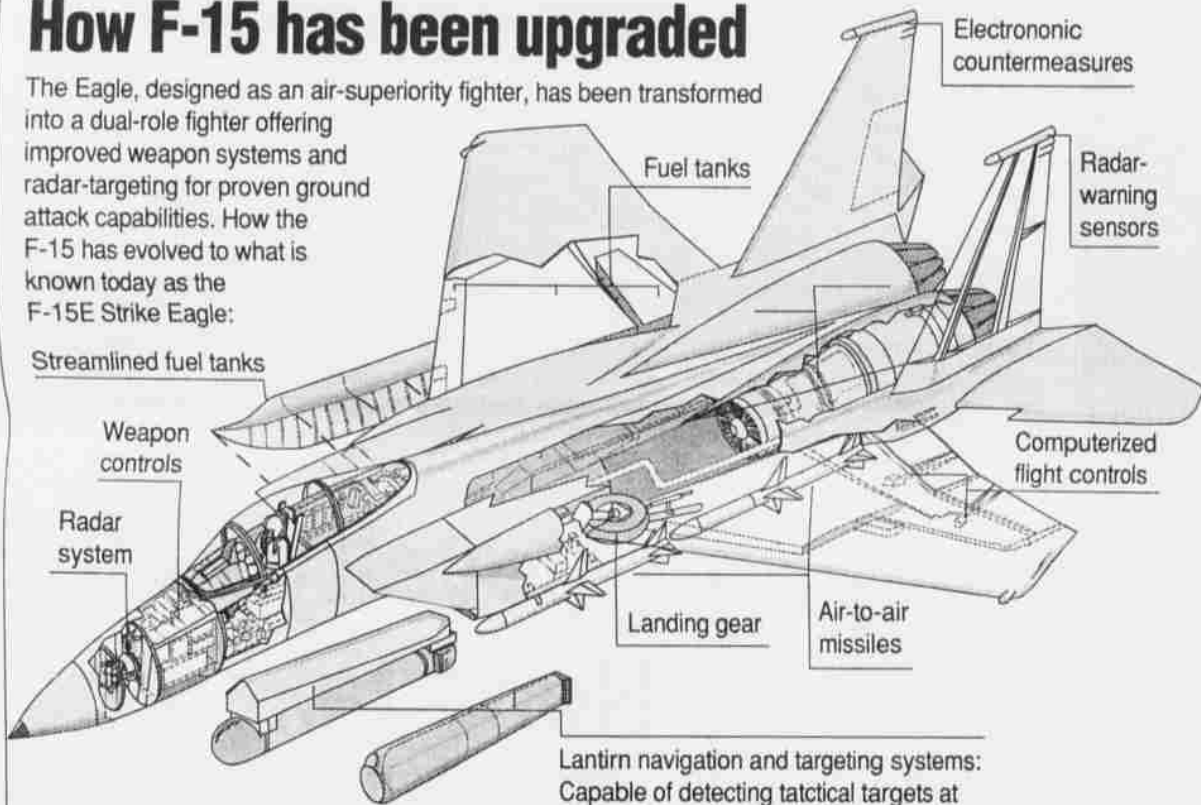
More kite shapes you can try



SOURCE: 175 Science Experiments to Amuse and Amaze Your Friends, Random House

How F-15 has been upgraded

The Eagle, designed as an air-superiority fighter, has been transformed into a dual-role fighter offering improved weapon systems and radar-targeting for proven ground attack capabilities. How the F-15 has evolved to what is known today as the F-15E Strike Eagle:



Lantirn navigation and targeting systems: Capable of detecting tactical targets at long-range, under all weather conditions

F-15A/B

- McDonnell Douglas; first flight 1972
- Single/twin seat, air superiority fighter
- Engine:** 2 F100-PW-100
- Speed:** Mach 2
- Armament:** Air-to-air missiles; 20mm gun; head-up display; radar; radar-warning sensors; countermeasures

F-15C/D

- Upgraded 1979
- Modifications:** More internal fuel; conformal, side-hugging fuel tanks (10,000 lbs. fuel with no additional drag; stronger landing gear; modified radar electronics; air-to-ground weapons capability

F-15MSIP

- Upgraded 1985
- MSIP:** Multi-Stage Improvement Program
- Modifications:** Improved electronic warfare system; new engines; new weapons controls; new radar wired for AIM-120 AMRAAM (Advanced Medium Range Air to Air Missile)

F-15E Strike Eagle

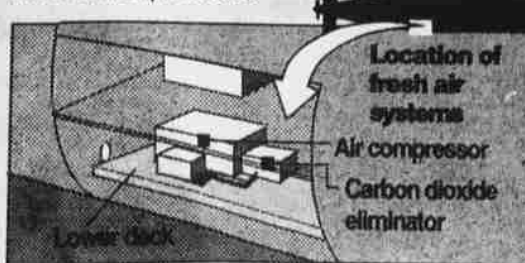
- Upgraded 1987
- Long-range attack fighter
- Modifications:** Stronger structure; fewer parts; two seats (pilot and weapons officer); new cockpit displays; new inertial navigation system; Lantirn pods for low altitude night attack

SOURCE: Dayton Daily News, U.S. Air Force, McDonnell Douglas; Research by Tim Gaffney

Oxygen for submarine crews

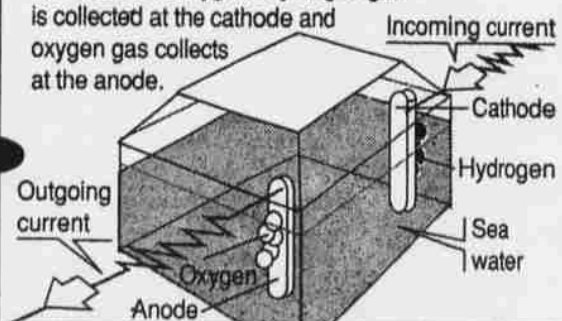
Nuclear submarines produce their own air supply while under the sea. A process called electrolysis extracts oxygen from the sea water. The oxygen is stored in high-pressure flasks until needed.

A chemical filtering system removes carbon dioxide from the atmosphere by passing it through absorbing liquids. Other contaminants, such as hydrogen, are removed by burning, filtering and chemical processes.



How electrolysis works

An electric current is passed through a liquid, which causes a chemical reaction. Electrolysis breaks up the liquid (sea water) into two gases: hydrogen and oxygen. Hydrogen gas is collected at the cathode and oxygen gas collects at the anode.

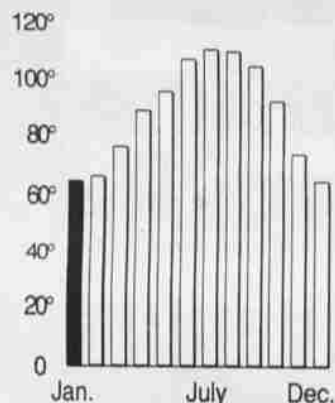


SOURCE: Chicago Tribune, World Book Encyclopedia, "McGraw Hill Encyclopedia of Science and Technology," "Illustrated Science and Invention Encyclopedia"

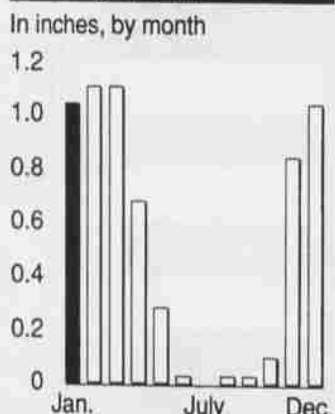
Iraq, Kuwait in cool, rainy season

Monthly temperatures and precipitation in southern Iraq, non-coastal areas of Kuwait:

Average daily high



Average rainfall



SOURCE: Knight-Ridder Global Weather Services

HELICOPTERS

Land and/or ship-based crafts:



AH-1 Cobra
Attack/gunship



AH-64 Apache
Attack helicopter



UH-60 Black Hawk
Air assault/combat support

SOURCE: The State, Columbia, SC; Associated Press; Modern Combat Aircraft, NAVSO P-3564 report