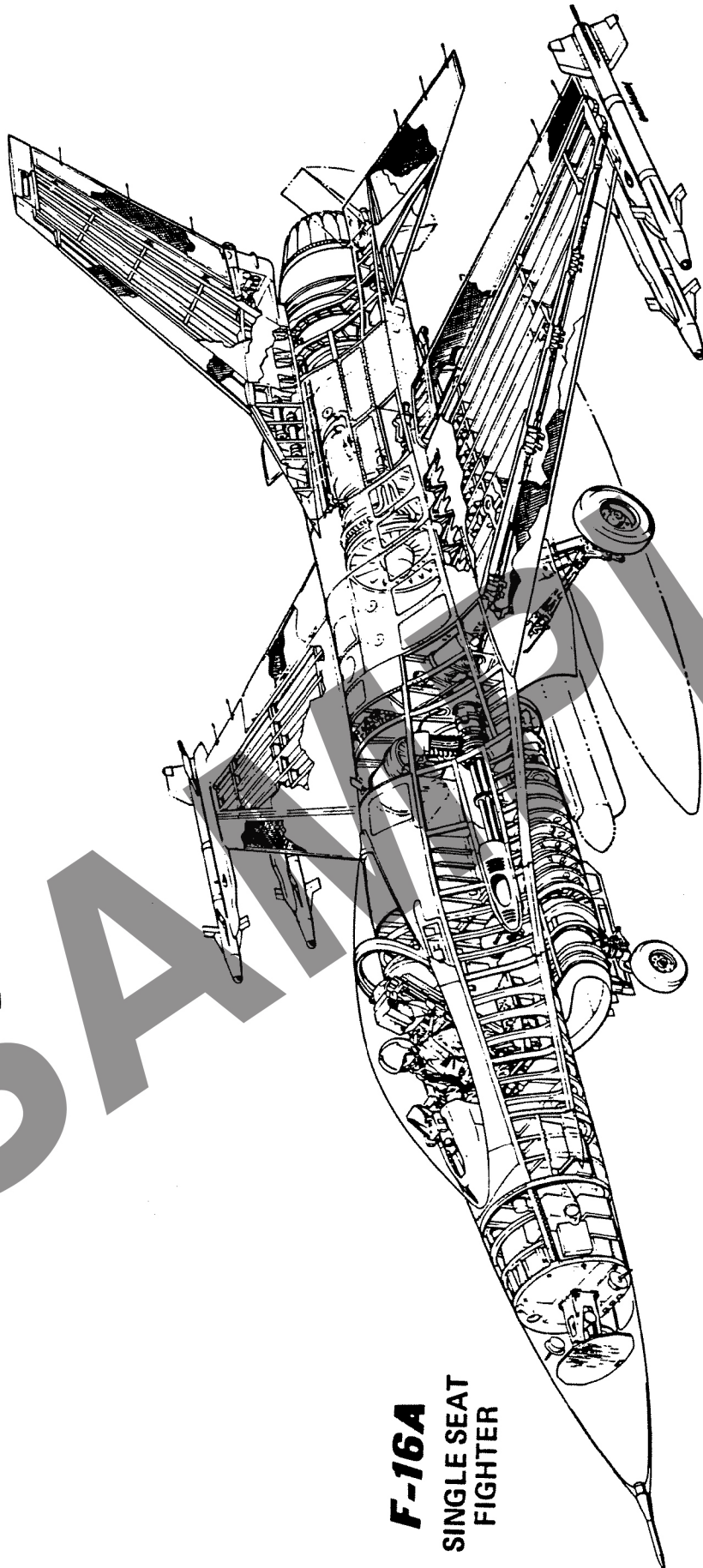


GENERAL DYNAMICS

F-16 Air Combat Fighter

F-16A
SINGLE SEAT
FIGHTER



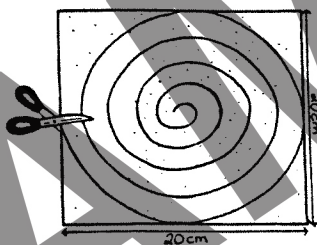
1LESSON #3 - BALLOONS

Student Objectives and Activities

- Students learn about hot air balloons and lighter-than-air balloons.
- Students also study gases and air and learn why hot air rises.
- In a related activity, students use pencil crayons to colour the original “**Montgolfier Brother’s Balloon**” in a colour-by-numbers exercise.

Suggested Teaching Strategies

- Begin the lesson by asking students the riddle:
Q. What do politicians and the large balloons that are able to carry people have in common?
A. They are both full of hot air.
- Continue with the notes explaining about balloon history. Having pictures of early balloons as examples is useful.
- To demonstrate how hot air rises, teachers can hang a coiled piece of paper above a lit candle, hot light bulb or toaster. Be sure to explain that the hot air is lighter and rises because the particles (molecules) of which it is made are further apart.

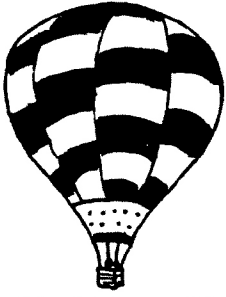


- In this activity, students colour the hot air balloon using the numbers on their pencil crayons to colour the picture, similar to paint-by-numbers. The colour scheme used is the one for Laurentian brand pencil crayons but other brands can be substituted with the teacher putting the colours on the board. (Only a few of the more common colours are used in this activity and are in bold)

(Colour Scheme)

- | | | |
|------------------------|-----------------------|---------------------|
| 1) Deep Yellow | 2) Orange | 3) Poppy Red |
| 4) Cerise (Pink) | 5) Purple | 6) Navy Blue |
| 7) Peacock Blue | 8) Emerald Green | 9) Deep Green |
| 10) Light Brown | 11) Dark Brown | 12) Black |
| 13) Royal Blue | 14) Soft Peach | 15) Green |
| 16) French Green | 17) Smoke Grey | 18) Blush Pink |
| 19) Cherry Red | 20) Arizona Topaz | 21) Roan Red |
| 22) Sky Magenta | 23) Cotton White | 24) Lemon Yellow |

- The coloured balloons are excellent for bulletin board displays or room decorations.



FLIGHT WORDSEARCH

NAME: _____

Find These Words:

AILERONS
AIRSHIP
BALLOON
BLIMP
DRAG
ELEVATORS
FUSELAGE
GLIDER

GODDARD
GRAVITY
HELICOPTER
JET
KITE
LEADING EDGE
LIFT
MONTGOLFIER

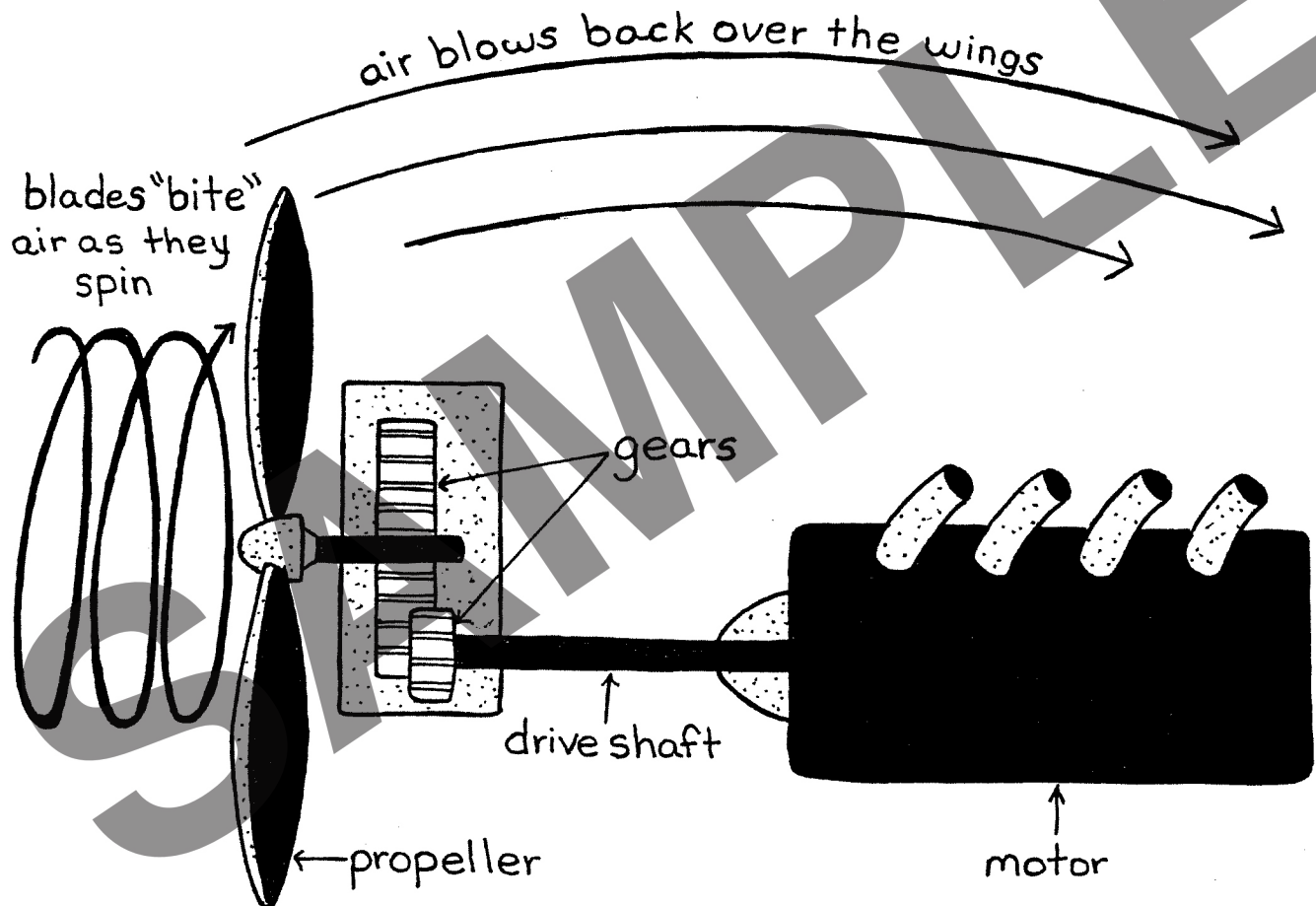
PRESSURE
PROPELLER
ROCKETS
RUDDER
THERMAL
THRUST
TRAILING EDGE
WING

T H H W H H C O U Q Z H E B G
P R O P E L L E R T T E L R O
N E A I L E R O N S G L E Y D
F E J I T S N D Q D A I V J D
Z Y Q I L O P D E M F C A Z A
C Y K B O I R G R L U O T T R
U E L L H P N E O A S P O T D
D G L S G I H G G T E T R T H
C A R W D T T N E R L E S H Q
B I B A T N I K U D A R G R T
A Z E F O W C S B L G V L U C
B L I M P O S I V A E E I S C
X L L B R E A I R F V R D T O
O D G I R U D D E R J M E H Y
M K G P Y H F F E Y G J R O U



Propeller-Driven Airplanes

Most smaller airplanes and all planes before 1940, use a propeller to move the plane through the air so the wings will create lift. A propeller is very similar to the blade of a fan. When the blades spin, they “bite” into the air in the front of the plane and push it toward the back of the plane. This causes the plane to move forward, moving air over the wings and creating lift. The engines that turn the propellers are usually quite similar to engines used to power cars.



Propeller driven planes are cheap to build and very reliable. However, they are not able to generate high speeds like jet planes.