

Especially for kids and their families



The Mini Page

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By BETTY DEBNAM

Let's Learn About Flying

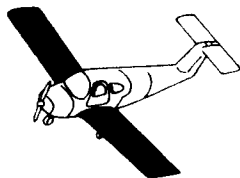
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The Parts of a Plane

Small Planes



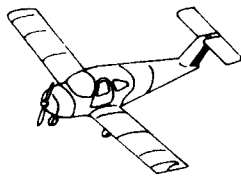
Ailerons: (ail-e-rons): movable edges of a wing that move in opposite directions (one up and one down). They make the plane turn.



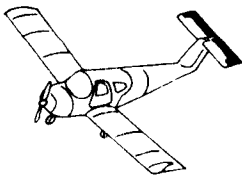
Wing: parts that give lift and support the weight of the plane while it is in flight.



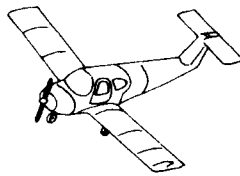
Cockpit: the control center where the pilot sits.



Rudder: the vertical tail part that moves left or right and helps the plane keep steady.



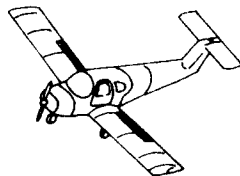
Elevator: movable horizontal part making the plane move up or down.



Propeller: a twisted turning blade that usually pulls the plane through the air.



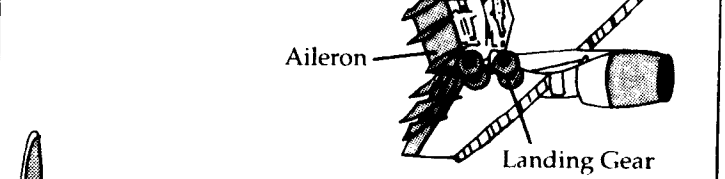
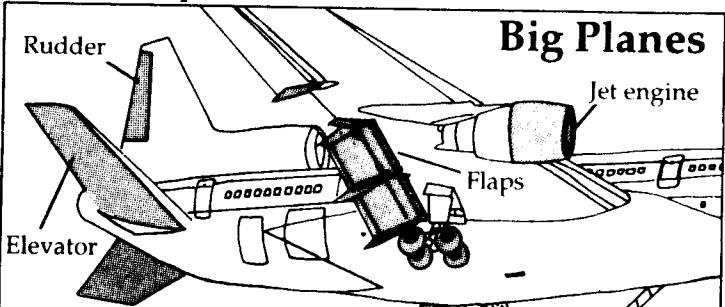
Fuselage: body of the plane for the crew, passengers and cargo.



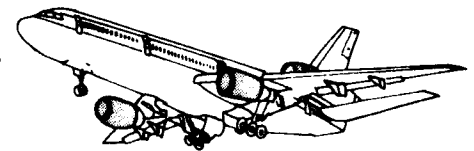
Flaps: can move only down. When they're down on landing, they act as air brakes. When down on takeoff, they increase the "lift."

Are you taking a flight soon? It's fun to learn more about planes.

Big Planes



Propellers pull airplanes through the air. But not all planes have propellers.

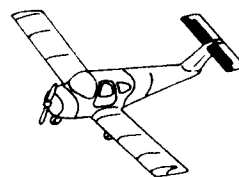


Jets have engines that push them through the air.

Horizontal (hor-uh-ZON-tal) means across, from left to right.

Vertical (VER-tuh-kull) means from top to bottom, upright.

The Mini Page thanks the Federal Aviation Association for help with this issue.



Horizontal stabilizer: used to balance the plane.



Landing gear: the wheels or floats (on sea planes).

An airplane's four forces

Lift, gravity, thrust and drag:
These are the four forces that act on an airplane flight.

LIFT is created by the shape of the wing, which makes the air pressure above the plane's wing less than the pressure below. This causes the plane to lift upward.

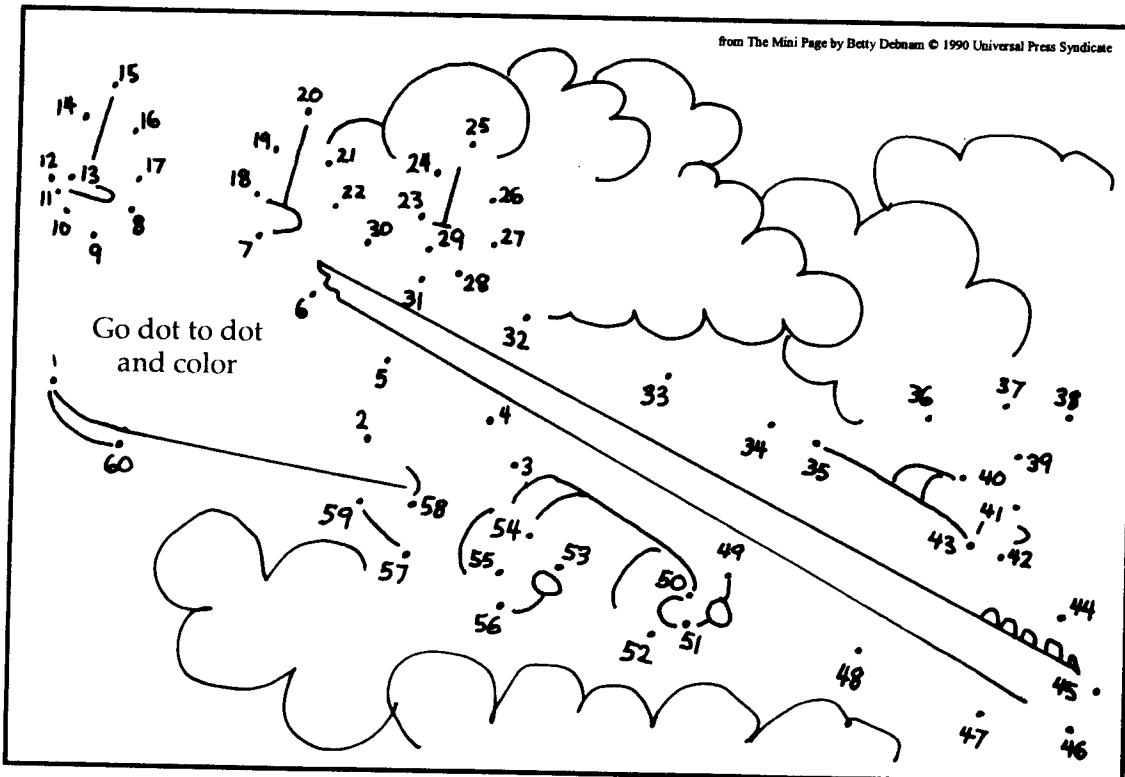
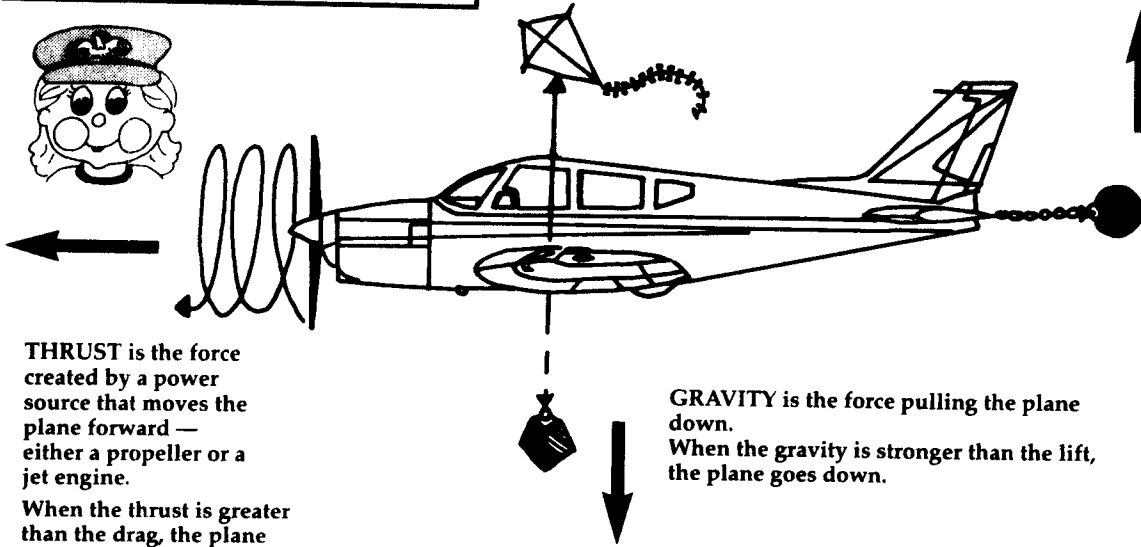
When the lift is greater than the gravity, the plane goes up.

DRAG is the force that slows the forward movement of the plane through the air.

When the drag is increased, the plane slows down.

THRUST is the force created by a power source that moves the plane forward — either a propeller or a jet engine.
When the thrust is greater than the drag, the plane moves forward.

GRAVITY is the force pulling the plane down.
When the gravity is stronger than the lift, the plane goes down.



Up early in history

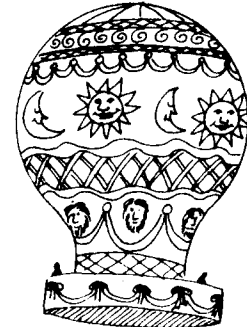
Ever since men first saw birds fly, they have tried to figure out how to do it themselves.



The ancient Greeks and Romans believed in gods who had wings and could fly.



The English made up folk tales about a man who trained geese to fly him to the moon.



Man's first successful flight in a craft came in the 1700s. The Montgolfier brothers of France built the first hot-air balloon.

Pilot talk



Pilots and ground people must make everything perfectly clear. They use the phonetic (fon-et-ik) alphabet.

They give each letter and then add a word beginning with that letter to make certain they are understood.

| | |
|-----------|------------|
| A Alfa | N November |
| B Bravo | O Oscar |
| C Charlie | P Papa |
| D Delta | Q Quebec |
| E Echo | R Romeo |
| F Foxtrot | S Sierra |
| G Golf | T Tango |
| H Hotel | U Uniform |
| I India | V Victor |
| J Juliet | W Whiskey |
| K Kilo | X X-ray |
| L Lima | Y Yankee |
| M Mike | Z Zulu |

This alphabet would be fun for the whole family to learn.

The wing shape

There is a reason that most plane wings are shaped this way. The top of the wing is curved. The bottom is flat.

As a plane flies, some of the air moves under the wing.

Faster moving air creates less pressure.



Slower moving air creates more pressure.

Some of it goes over the top.

The air going over the top must travel farther and faster to reach the back edge at the same time as the slower air going underneath. This makes the air pressure going over the top of the wing lower than the air pressure going across the flat bottom.

With less air pressure above, and more pressure below, the plane gets the lift it needs.

The Mini Page thanks the Federal Aviation Administration, Aviation Education Program, and Beechcraft for help with this issue.

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Airplanes TRY 'N FIND

Words that are parts of an airplane are hidden in the block below. See if you can find: AILERONS, COCKPIT, ELEVATOR, ENGINE, FIN, FLAPS, FUSELAGE, LANDING GEAR, PROPELLER, RUDDER, WINGS, AIRPLANE, TAIL, THRUST, DRAG, LIFT, GRAVITY, CONTROLS, WHEELS.

DO YOU LIKE TO FLY?



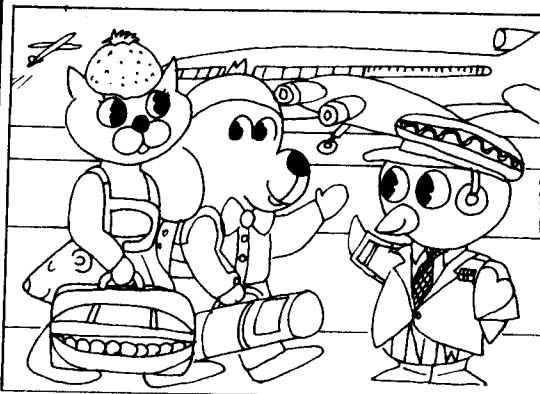
A W I N G S I W H E E L S F L
 A R B J C O C K P I T M E U I
 I U P R O P E L L E R K L S F
 L D C T L L T H R U S T E E T
 E D F A C O N T R O L S V L F
 R E I I A I R P L A N E A A L
 O R N L F G R A V I T Y T G A
 N D R A G G E N G I N E O E P
 S L A N D I N G G E A R R H S

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Mini Spy . . .



Mini Spy and Basset are taking a trip on an airplane. See if you can find:

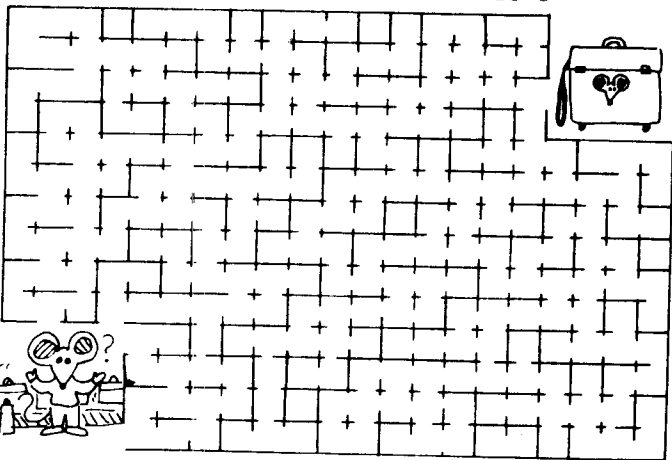


- strawberry
- mushroom
- question mark
- hot dog
- word MINI
- canoe
- heart
- ruler
- tin can
- peapod
- letter J
- sleeping bear's face
- letter A



MAZE

Help Alpha Mouse find the luggage.



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Teacher's Guide

For use by teachers and parents at home and at school.
 For use with issue: The Parts of a Plane

Main idea: This issue is about the parts of an airplane. The following is a list of activities to be used with this issue. They are listed in order of difficulty, with the easier pre-reader assignments listed first. Ask the children to do the following:

1. Count the number of pictures of airplanes.
2. What are some things you can see flying or floating in the air? (For example, a feather, a balloon or a bird.)
3. Draw a picture of yourself dressed as an airline pilot beside an airplane you would like to fly.
4. Have you ever been on an airplane? What was it like? What skills are needed to be a pilot? How have airplanes made our lives easier? What will airplanes and flight be like in the future? Ask your parents what flying was like when they were young.
5. Look through your paper for pictures of different types of transportation. How are they alike? How does each one move? What is your favorite means of transportation?
6. Spell your name as a pilot might if he or she were talking to someone on the ground. Why do you think they do that?
7. Find the following words: ailerons, gravity, support, thrust, vertical, pressure, horizontal, drag, propellers, force. Define and make up a new sentence for each one.