

Passports



The Sky is the Limit!

Grade: K-2

Description of our Tour:

Information for Trip Leader:

Lesson Outcomes:

The student will learn:

- The parts of a plane
- How planes fly
- The history of flying and the Wright Brothers' contribution.

Activities:

Activity # 1: Making an Airplane!

Have your students test their piloting skills by making and flying model airplanes! At the end of this resource guide you will find the directions and template for this simple activity. Model how to make an airplane to your students and then let them create and decorate their own. Afterwards, the students can practice flying their airplanes to see whose flies the furthest.



Activity # 2: Coloring Activity

At the end of this resource guide you will find cute air transportation pictures that you students can color before or after participating in this passport.

Challenge Questions:

1. *What are the main things a plane needs in order to fly?*
2. *Name the people who were the first to fly and where the first flight took place.*
3. *How does a plane fly?*

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Responses:

1. Wings, an engine, tail, pilot, etc.
2. The Wright Brothers had the first flight at Kitty Hawk, NC. Orville Wright was actually piloting the plane when it first flew.
3. Young students may not know the specific terms, but something along the lines of: when the plane goes really fast, the wings help the airplane lift off the ground. (The **Thrust** force must be greater than the **Drag** force and the **Lift** force must be greater than the **weight** of the plane.)

Vocabulary Words:

Airplane: a motor-driven or jet-propelled aircraft kept aloft by the forces of air upon its wings

Cockpit: The area of the plane where the pilots sit

Engine: the machine that provides the plane with power.

Flight: the act, manner, or power of flying

Landing: When the plane comes back and lands on the ground

Pilot: The person who drives the plane.

Tail: similar to an animal's tail, on a plane it's at the back end.

Take-Off: When the plane first lifts off the ground and goes into flight.

Wright Brothers: They were the first to fly a plane.

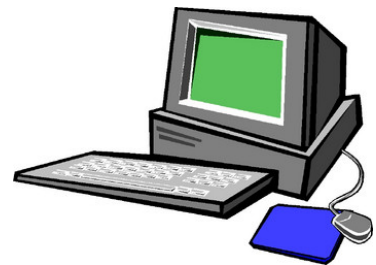
Wing: similar to the wing of a bird, on a plane it's the main lateral supporting surface

Web Resources:

How Planes Work

<http://travel.howstuffworks.com/airplane.htm>

Click on this link and share this simple explanation of how airplanes fly.



The History of Flight

<http://www.ueet.nasa.gov/StudentSite/historyofflight.html>

Click on this link to share with the students some advances in flight from the past to the present.

Writing Prompts:

- If I could be a pilot, I'd go to _____ because...
- I think flying is _____ because...
- Why do people fly, rather than drive a car or take a bus?
- Would you ever want to be a pilot? Why?

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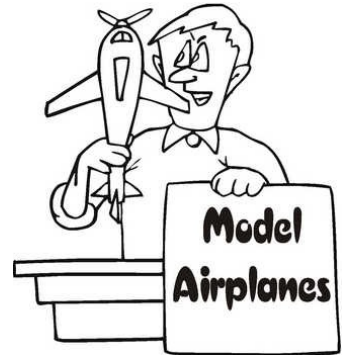
Making Model Airplanes

Materials:

- Printer
- Paper
- CLEAN styrofoam meat tray OR the top of a styrofoam egg carton
- Scissors
- paint or markers (see NOTE)

NOTE: you can't paint styrofoam with tempera paint or washable markers. It doesn't cover well and it will flake off when it's dry. Acrylic paint or permanent markers work well, but most of us don't want our kids using them. A solution is to have the students assemble the craft on day 1. In the evening, an adult can paint the craft with white acrylic paint (you can buy it for less than \$1 at Walmart or the craft store and it will work for many crafts). It dries overnight and in the morning the students can paint over it with tempera paint or color over it with Crayola markers!

AN ALTERNATE IDEA TO PAINTING: You can print the template and trace it over discard paper (junk mail) and then glue the paper templates on to the Styrofoam templates (a very thin coat).

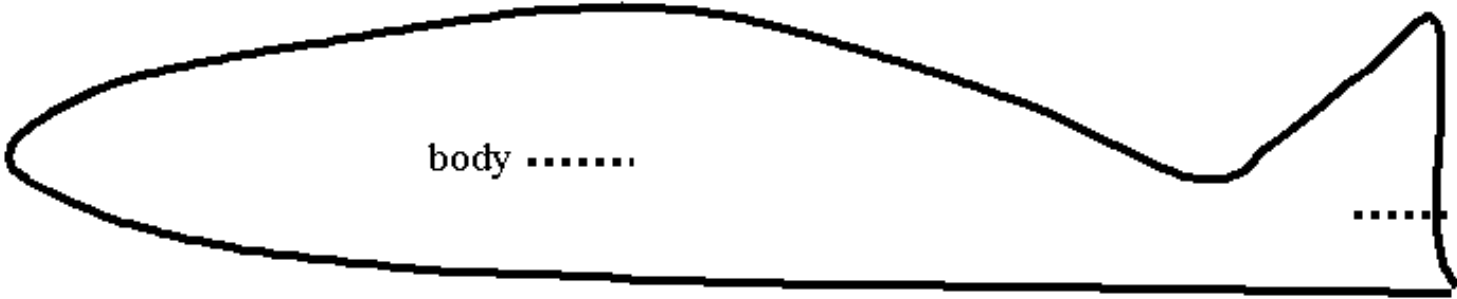


DIRECTIONS:

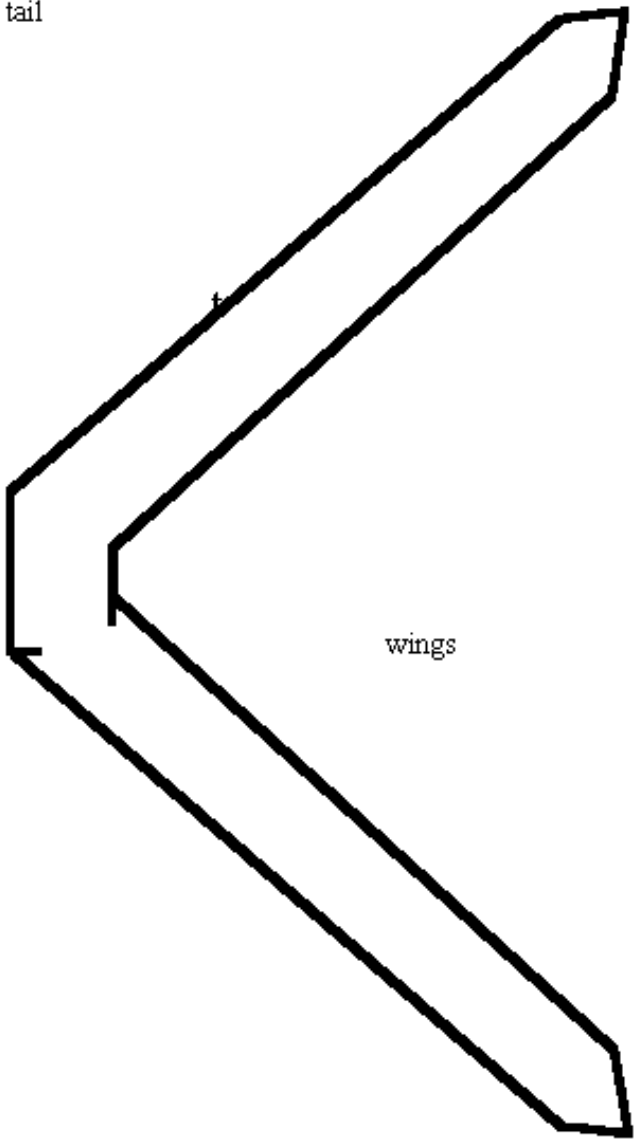
- Print the template. Set your page margins to zero so the templates print out fully
- Cut out the template pieces.
- Trace the template pieces onto a clean styrofoam meat tray or the top of a styrofoam egg carton
- Cut a slit in the body of the plane near the middle for the wings
- Cut a slit in the body of the plane at the back for the tail
- Slide the wing piece and the tail piece onto the appropriate places (it's a bit hard because the styrofoam is thick, but it will squeeze... the tightness is what will hold your project together).
- Paint the plane the desired color.
- Add designs like windows, airline insignias, etc with paint or markers.

After the students have made their planes, take them outside to the school's playground and allow the students to test out the flight ability of their planes. Have a contest to see whose plane flies the farthest and note which plane had the shortest flight. Then, show the students the planes and discuss how the wings played an important part of the flight. Ask the students what would happen if the wings on the plane that flew the shortest distance were constructed better (longer, smoother, etc.) and allow them to respond. Remind the students that the wings on a plane are one of the main factors that determine its ability to fly. Then, allow the students to try again to make the wings on their plane and retest their flight to see if it goes farther than it did the first time. Use the worksheet listed below for the students to record their flight distances.

*Template from www.dltk-kids.com



tail

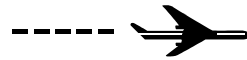


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Flying My Own Plane

My first plane flew:

A short distance



An average distance

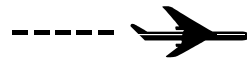


A long distance



My second plane flew:

A short distance



An average distance

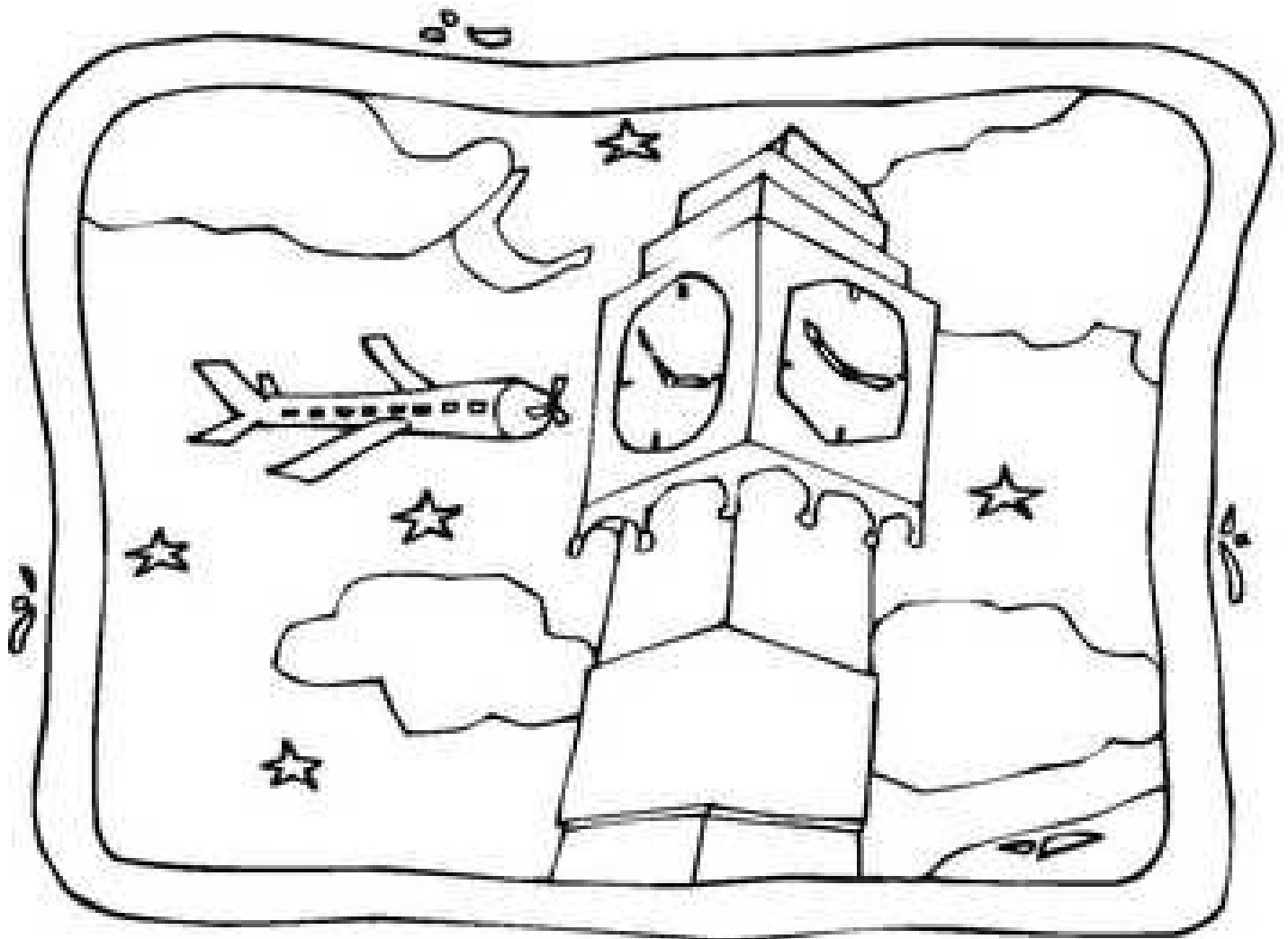


A long distance

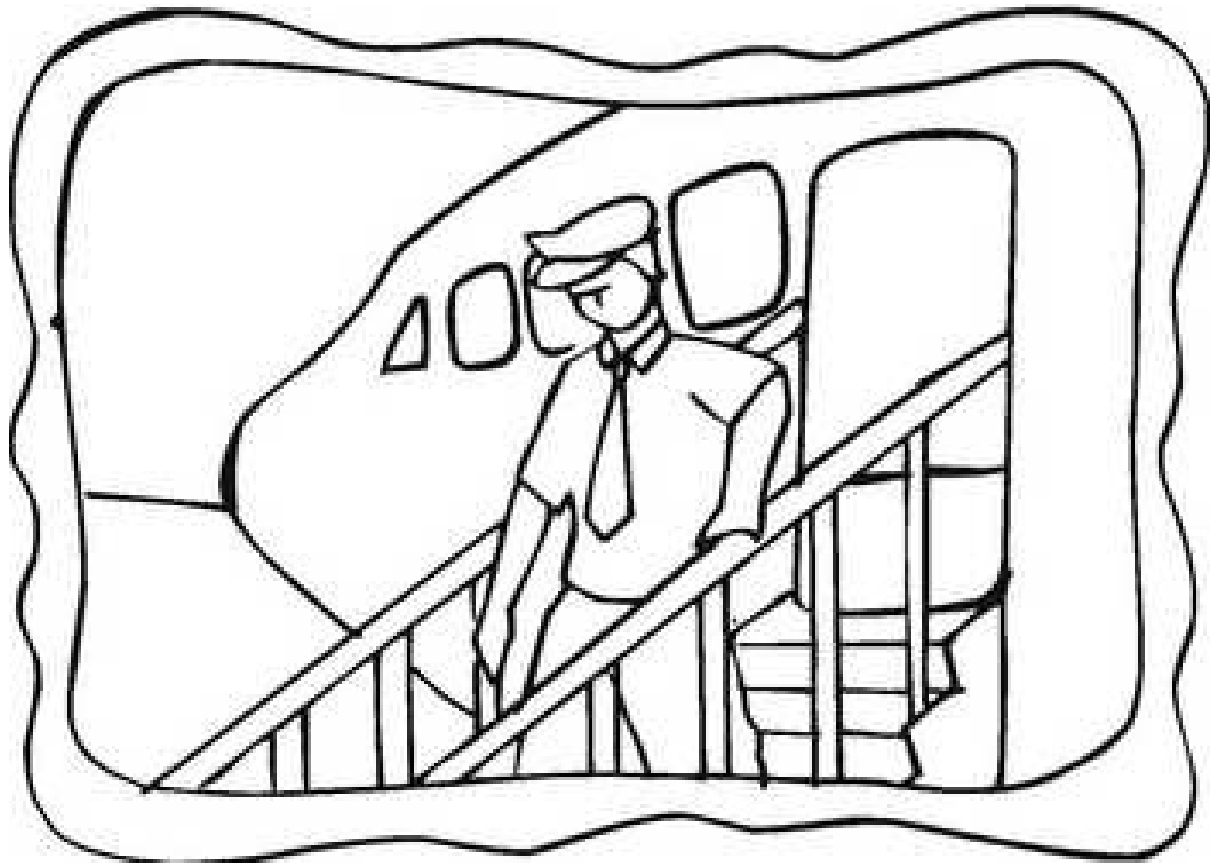
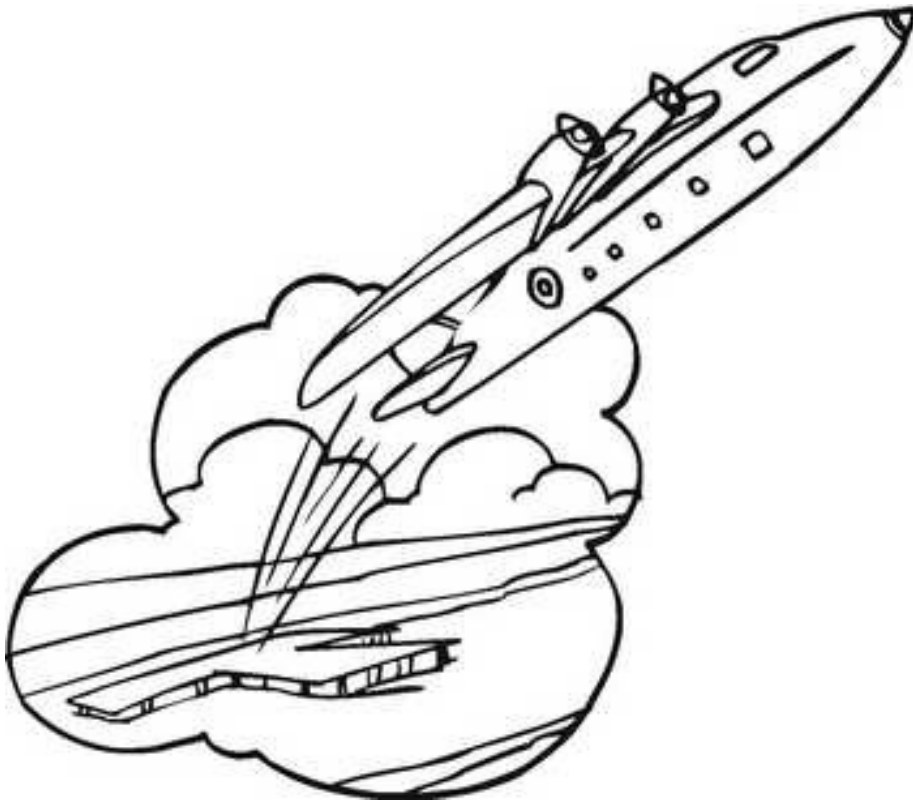


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Coloring Activities



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