ADVENTURE ★ TAKES FLIGHT

AMA
Junior
CAMP

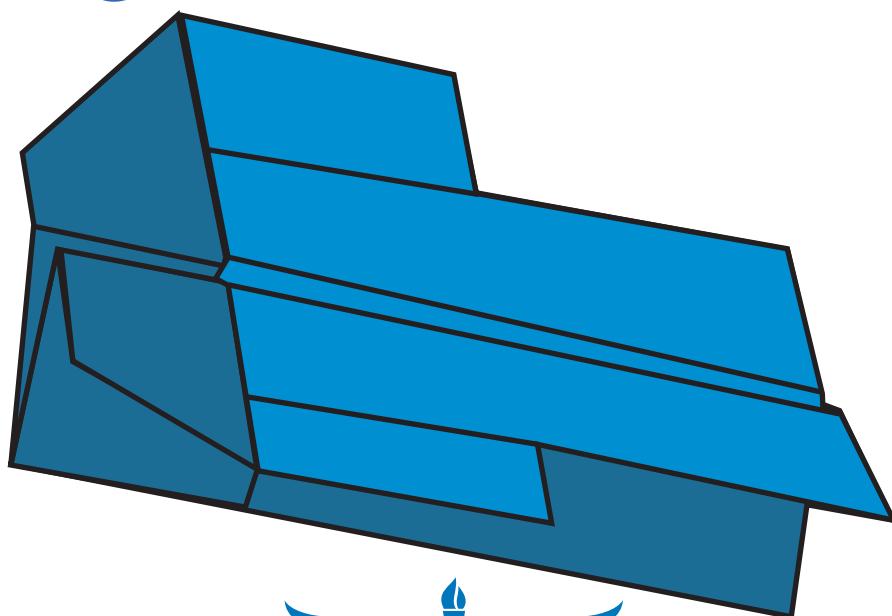AMA

PROJECT №1
T-Plane

AMA®
ACADEMY OF MODEL AERONAUTICS

AUTHORIZED AMA
STE(A)M PROGRAM

AGE GROUP: 5-13 BEGINNER

PROJECT Nº1

INFO FOR PARENTS:

While folding paper airplanes is an enjoyable, simple activity, it might be helpful for much younger students to have an adult nearby who can demonstrate steps after they are explained.

GOALS & OBJECTIVES

Fine motor skills: Measuring, cutting, and precisely folding/creasing are crucial to the success of this paper model. Adjusting the airplane without permanently altering or damaging it also requires careful control.

Visual learning: Paper airplane instructions are most clearly delivered visually and give students the chance to demonstrate their understanding of a concept immediately upon being presented with it.

Cause and effect: Every step in the making of a paper airplane is included for a reason. Depending on students' familiarity with paper aircraft, questions about physical forces (weight, lift, etc.) can be asked, such as, "Why do we want more weight near the nose? How would the finished airplane fly if we didn't put it there?"

BACKGROUND INFORMATION

It is unknown when the first paper airplane was made; however, many scholars suspect that the Japanese art of paper folding, also known as origami, which closely followed the invention of paper in China in 500 BCE, inspired some of the first paper airplane designs. Many of the early aviation pioneers utilized paper models in their pursuit of flight, including Leonardo da Vinci, Sir George Cayley (the first person to recognize and identify the four forces of flight), and the Wright brothers. The first modern paper airplane, as we would recognize it, was designed by Jack Northrop (cofounder of the Lockheed Corporation), who used paper airplanes as test models for larger aircraft.

GO FURTHER

This design offers a great introduction to the world of paper airplanes beyond the common dart shape with which you are probably familiar. It is very simple to make and easy to remember, but its slightly more complex shape means that it can give you a good idea of how real, full-scale airplanes fly and are controlled.

Because this airplane has wing and tail surfaces such as those you would find on a full-scale airplane, it can be controlled similarly as well. Try adjusting the curve of the wingtips, or the back edges of the tail, and see what effect you can have! Can you make the airplane turn left or right? How about flying in a circle? Can you make it climb, dive, or perform loops?

CREATIVE TIPS

Making model airplanes out of paper means they are very easy to decorate! Get out your colored pencils and markers (paint might be too heavy) and turn your airplane into a one-of-a-kind flying machine!

Find out how skilled a pilot you are by marking targets or "landing spots" for your airplane. See how accurately you can land or guide your flight path!
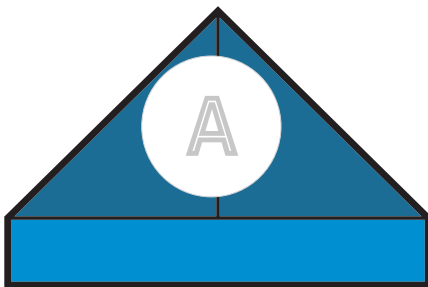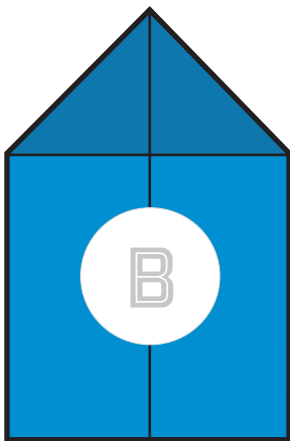
Step 1

Cut

Fold — A

Fold — B
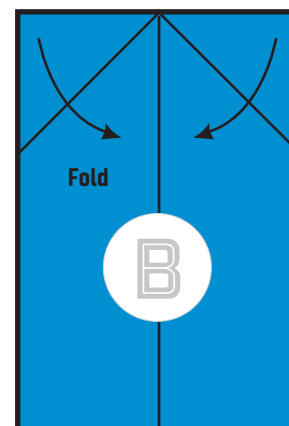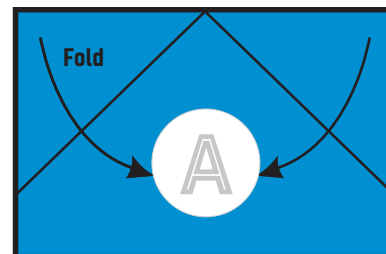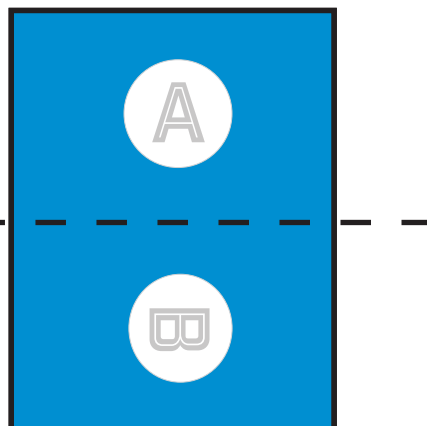
T-Plane

INSTRUCTIONS

1. For this airplane, you will need to cut a sheet of standard-size printer paper in half across its width ("hamburger style") to get two pieces that are identically sized and shaped. These pieces can be labeled "A" and "B."

2. Fold sheet A in half "hamburger style," sharply creasing it. Unfold it and lay it flat.

3. Fold the top corners of the paper down toward the center crease to form a triangle shape. Repeat steps 2 and 3 for sheet B, except make your first crease vertical, or "hot-dog style" instead.

4. Insert the triangle shape at the top of sheet B under the triangle-shaped flaps of sheet A. Flip both sheets over.

5. Fold the top corner of the triangle shape down to meet the bottom of sheet A so that it touches the vertical crease. Crease it and unfold it.

6. Fold the top corner down so it touches the crease you just made. Crease it sharply.

7. Re-fold along the crease you made in step

8. Re-fold the vertical crease along the center of the paper

9. Fold the wings down on each side, so that the two halves of sheet B that form the tail are folded in half.

10. Adjust the wings to your liking. Hold the airplane at its center of balance and toss forward. It is a good idea to toss gently for the first flight, but this tough design can be thrown hard and fast too!

Complete Part A

Complete Part B

2. Unfold

1.Fold

Fold

Fold

Fold