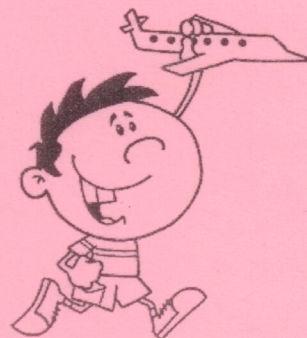


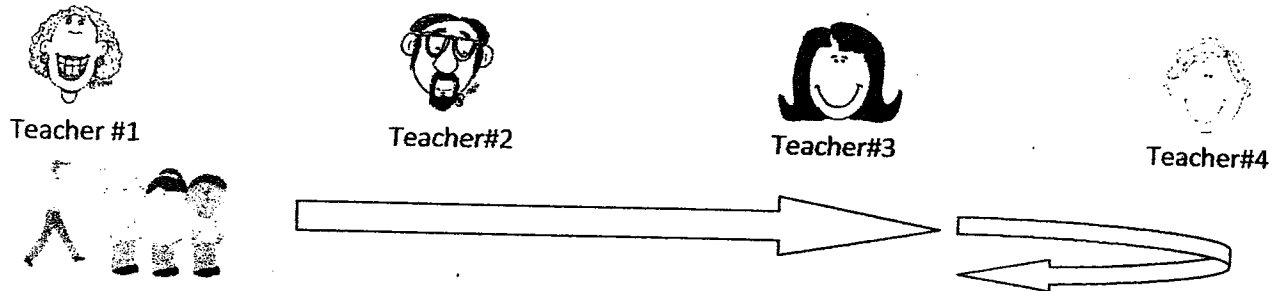
AEROSPACE DAY



ROTATION METHODS

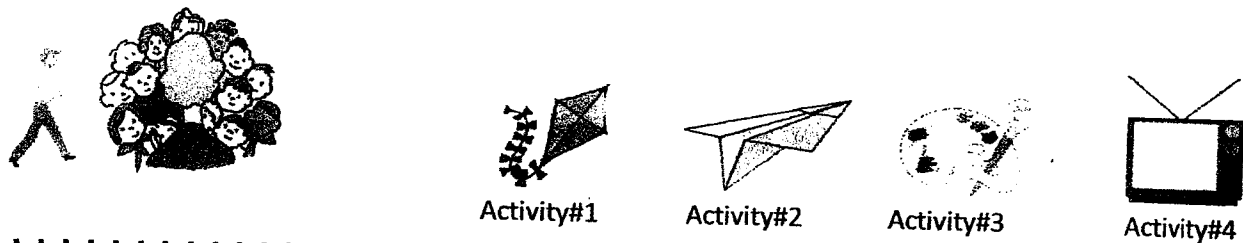
METHOD #1

- Teacher is stationary (remains in classroom). Teacher runs the same activity 4 times.
- Students rotate from classroom to classroom.
- Parent volunteer assists.



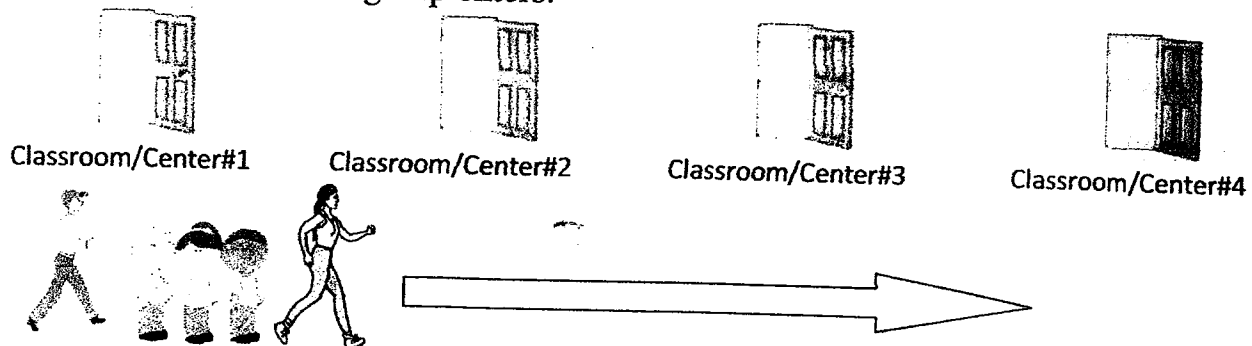
METHOD #2

- Teacher & students are stationary (remain in classroom). Teacher runs all 4 activities.
- Parent volunteer assists.



METHOD #3

- Each classroom serves as a center.
(ex: classroom#1 is used for Loop Plane Activity)
(ex: classroom#2 is used for painting picture of space shuttle.) ...and so on.
- Teacher, students and parent volunteer rotate. Teacher runs the activity already set up in each classroom that the group enters.



REMINDER TO:



AEROSPACE DAY

PREK, K, 1, 2, 3, 4, 5

Grade Level Check List

1. **Select method of rotation to use.**
(Please refer to handout entitled "Rotation Methods" for descriptions of rotation options.)
2. **Determine start and end time .**
(It might be necessary to resume after recess, lunch, and/or intervention.)
3. **Select 4 activities.**
(Use the ones listed on the attached handout or replace them with ones you prefer.)
4. **Determine time allotment for center activities .**
*(Ex: 20 minutes per activity + 5-10min for lining up and rotating)....or
 (Ex:30 minutes per activity + 5-10 min for lining up and rotating)....or
 (Ex:30 minutes per activity. No rotation) ...or....*
5. **Gather supplies needed for activities.**
6. **Today or by this Friday, give any worksheets you want photocopied to Mrs. Sharif.**
 - (a) Clip copy paper to worksheet. (Extra paper will be returned.)
 - (b) Attach note stating
 1. your name. (I need know to whom to return the copies.)
 2. number of copies needed.
 3. special notes. (Ex: 2 sided)
7. **Familiarize yourself with project/activity by making a sample or viewing it.**
(Make the paper airplane. Can it be made it allotted time? Will students have enough time to test it a few times? How will you handle clean up time?)
8. **Prep and store supplies/materials, if necessary.**
(Ex: Teachers of lower grades might need to precut.)
9. **Contact 3 -4 parents to assist on Aerospace Day - at least 1 parent per class.**
Send Reminder home, Friday or Monday prior.
*(1 parent per class However, a parent is likely not needed for DVD activity, but can help elsewhere.)
 (Duties: Parents help students implement task correctly and answer questions as needed. Also, once teacher has students lined up in an orderly manner, parent can walk them from class to class, if needed.)*

FIRST GRADE ACTIVITIES

1. DVD + CLASS DISCUSSION

DVD Options to select from:

1. NEWS COVERAGE OF SPACE SHUTTLE COMING TO CALIFORNIA

(This DVD is supplied by Mrs. Sharif.)

(Types of discussion questions might be: What is a shuttle? Where did it go? What is NASA? How would you persuade NASA to bring and store the shuttle in California? What was your favorite part of the experience? Why? What kind of job do you have to get to be part of the shuttle program? What skills do you need to learn in school that would help you achieve this goal?...etc)

2. MAGIC SCHOOL BUS - SPACE ADVENTURES (approx: 30-35 min per episode)

(a) Episode 1 "Gets Lost in Space"

(b) Episode 2 "Out of This World"

(c) Episode 3 "Taking Flight"

3. Excerpt from a NOVA or NASA PROGRAM

4. Your Suggestions

2. ART - "BUILD YOUR OWN SPACESHIP" *(Refer to attached handout.)*

Supplies needed:

1. Blue or Black construction paper for background
2. Worksheets photocopied
3. Scissors
4. Glue
5. Star stickers, or yellow paint with small paint brushes and cups.
6. Crayons *(In case students finish early.)*
7. Pencil

If students finish: Worksheet - "Connect the Dots" and Color worksheet
(Refer to attached handout.)

3. FOSS -"BALLOON ROCKET" Demonstration & Discussion

(Refer to attached handout.)

4. FOSS -"MAKE A PINWHEEL" *(Refer to your grade level created lesson - PD)*

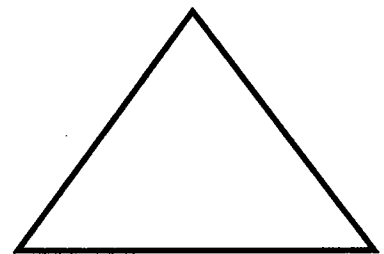
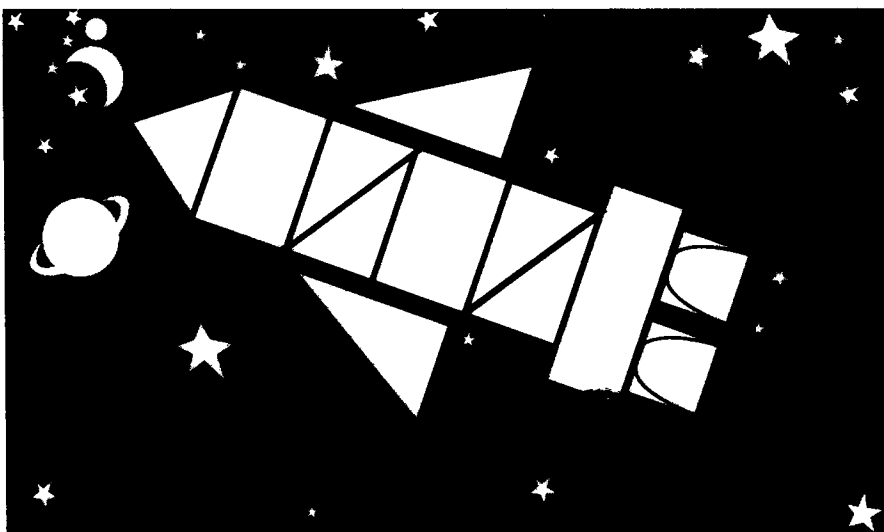
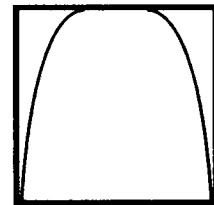
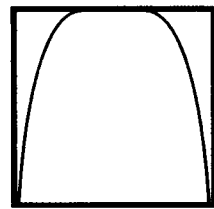
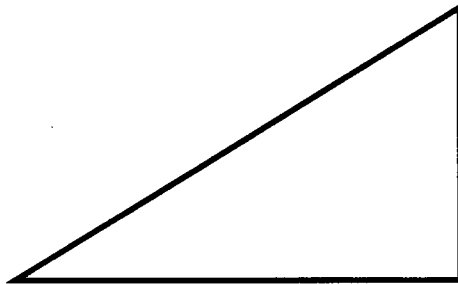
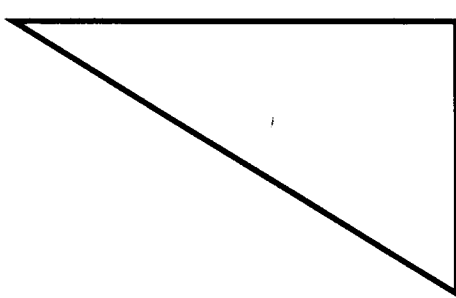
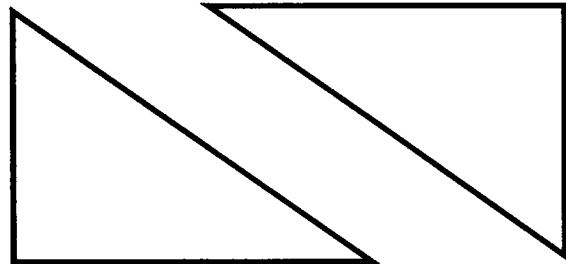
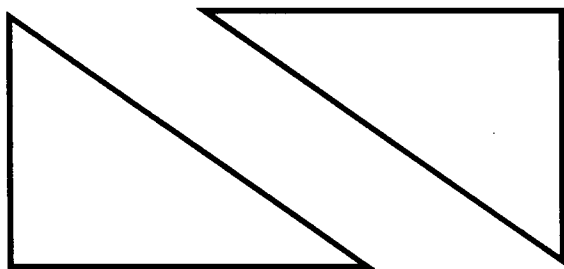
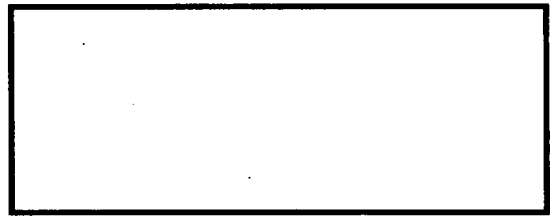
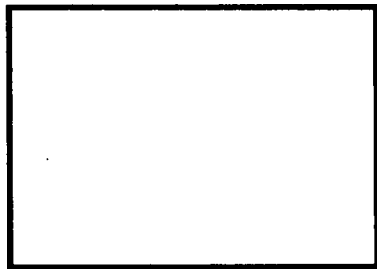
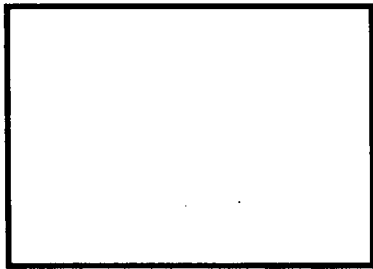
5. MAKING PAPER AIRPLANES - 1 or 2 designs *(Refer to attached handouts.)*

1. Use Overhead or Hover Cam to demonstrate step by step as students follow along. Show them how to fold paper to make one or two different simple paper airplane designs. Write names on each airplane. Go outside to fly them multiple times and to observe the affect the air or wind has on them. Decorate.

Build Your Own Spaceship

Cut out each shape. Use all the pieces.

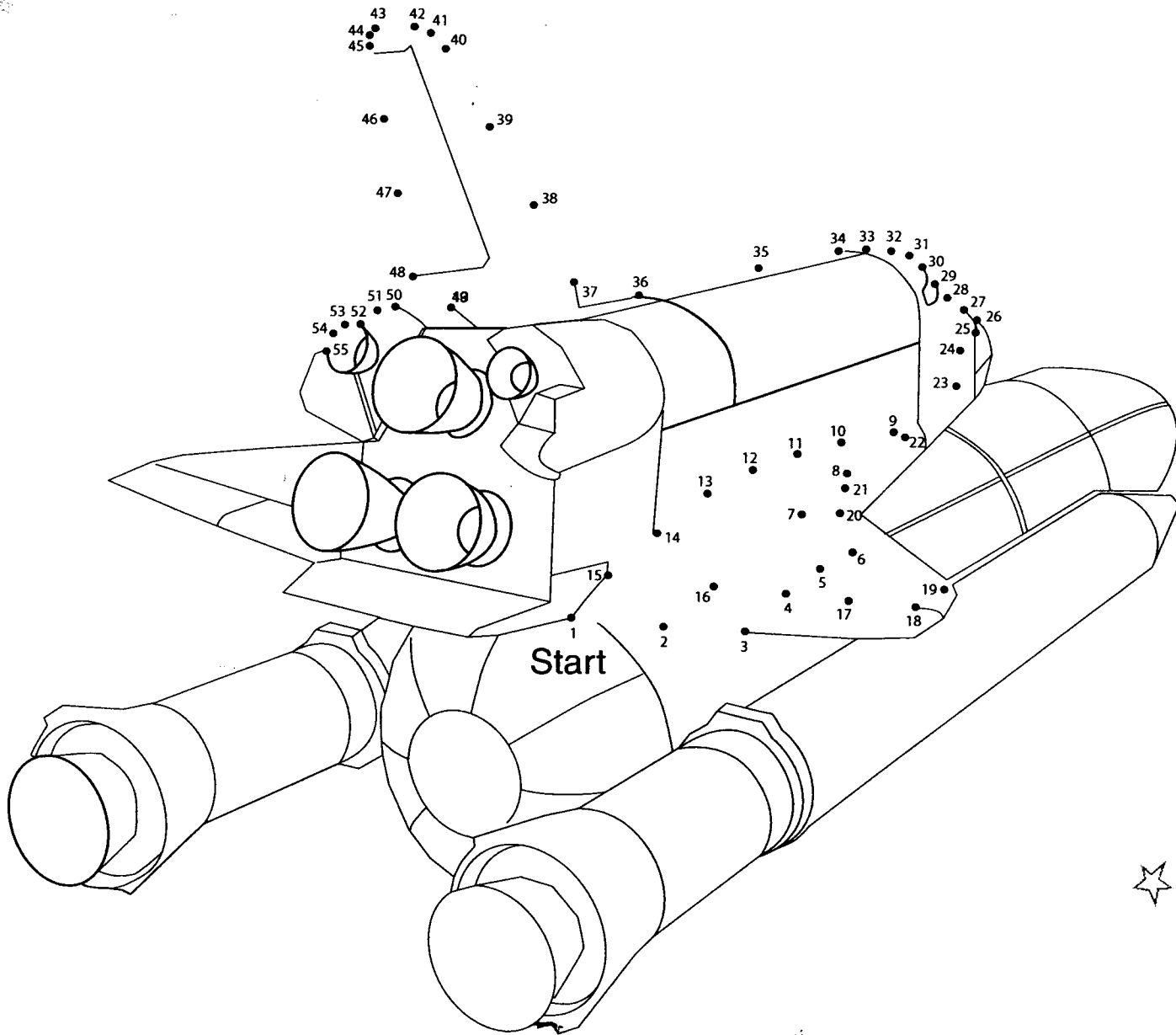
Put them together to build your own spaceship.



CONNECT THE DOTS



...build your own Space Shuttle
by connecting the dots and
coloring the spacecraft...



MAKE A BALLOON ROCKET



YOU WILL NEED:

- 1 balloon (round ones will work, but the longer "airship" balloons work best)
EXTEND ACTIVITY BY GETTING DIFFERENT SIZE BALLOONS AND TEST THEM ALL
- 1 long piece of kite string (about 10-15 feet long)
- 1 plastic straw
- tape

WHAT TO DO:

1. Tie one end of the string to a chair, door knob, or other support.
2. Put the other end of the string through the straw.
3. Pull the string tight and tie it to another support in the room.
4. Blow up the balloon (but don't tie it.) Pinch the end of the balloon and tape the balloon to the straw as shown above. You're ready for launch.
5. Let go and watch the rocket fly!
6. REPEAT with a different size balloon

HOW DOES IT WORK?

So how does it work? It's all about the air...and thrust. As the air rushes out of the balloon, it creates a forward motion called **THRUST**. Thrust is a pushing force created by energy. In the balloon experiment, our thrust comes from the energy of the balloon forcing the air out. Different sizes and shapes of balloon will create more or less thrust. In a real rocket, thrust is created by the force of burning rocket fuel as it blasts from the rockets engine - as the engines blast down, the rocket goes up!

MAKE IT AN EXPERIMENT

The project above is a **DEMONSTRATION**. To make it a true experiment, you can try to answer these questions:

1. Does the shape of the balloon affect how far (or fast) the rocket travels?
2. Does the length of the straw affect how far (or fast) the rocket travels?
3. Does the type of string affect how far (or fast) the rocket travels? (try fishing line, nylon string, cotton string, etc.)
4. Does the angle of the string affect how far (or fast) the rocket travels?

Windsor Hills
Aerospace Project Unit Plan



Culminating Project

Describe the culminating Aerospace Project your students will engage in. Briefly describe what students are doing.

"Bottle Blast Off" Building a rocket.

What science skills and knowledge will students learn as a result of this project?

- Students will use the thrust of "air" to fly rocket.
- Will learn how to modify rocket and its parts to improve the flight.

Unit Plan

Identify the 3 FOSS lessons that will lead up to culminating project:

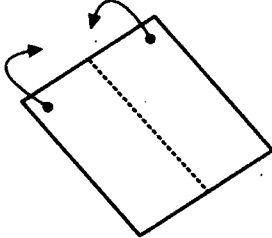
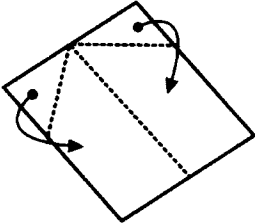
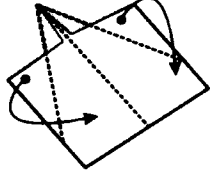
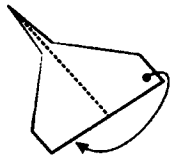
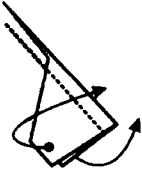
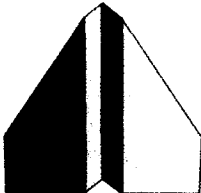
Title of FOSS Lesson	Title of FOSS Lesson	Title of FOSS Lesson
	Pinwheel	Parachute
Brief Description of Lesson: - Use a straw to move feather different objects by blowing on them	Brief Description of Lesson: - make a pinwheel	Brief Description of Lesson: - make a parachute using tissue, string and paper clip
Key Concepts: - How air moves different objects	Key Concepts: - Power of air - Wind directions - wind tunnels	Key Concepts: - parachute creates drag - weights change how fast the parachute drops

Standards

What CONTENT standards does this unit cover?

What Investigation & Experimentation standards does this unit cover?

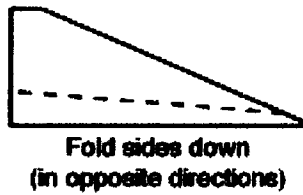
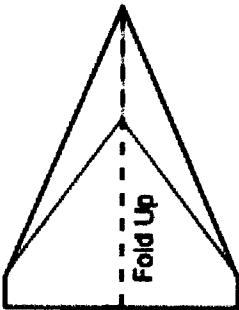
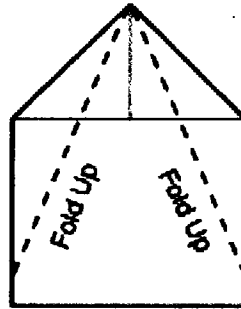
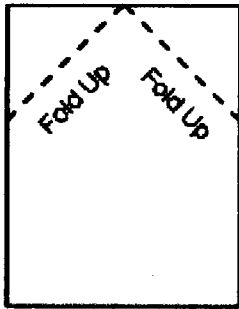
How to Make the Arrow Airplane

<p>Step 1: Get a sheet of paper Pre-cut paper into SQUARES. (ex: 8" X 8") or use 8 1/2" X 11"</p>	
<p>Step 2: Make a center crease Fold the <u>square</u> sheet of paper on the middle, parallel to 2 of the sides. Reopen the sheet back. This crease was needed only for further use.</p>	
<p>Step 3: make diagonal folds Pick two of the edges of the sheet and make diagonal folds. They should start from the previously made crease and meet their edges on it, forming two triangles.</p>	
<p>Step 4: More diagonal folds Now use the formed top point to start two more diagonal folds. The paper should be fold down over the previous folds. That's pretty hard to explain with words</p>	
<p>Step 5: Form the body Now after you receive the figure you will see in the photo, fold backward on the central crease to form the body. The complex of triangles that you made in the previous steps remain outside.</p>	
<p>Final step: Make the wings Finally, fold the wings starting an inch from the new formed end. The creases must be parallel to the central crease.</p>	
<p>ARROW AIRPLANE View of arrow airplane as seen from the top. Write NAME on airplane. FLY it. DECORATE it with markers, crayons, stickers, or paint.</p>	

MAKING PAPER AIRPLANES #2

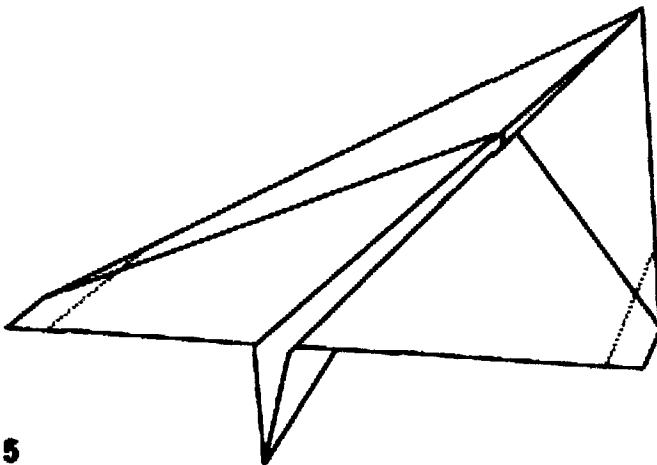
How to Make the Paper Dart Airplane

SIMPLE PAPER AIRPLANE



3

4



Write NAME on airplane. FLY it. DECORATE it with markers, crayons, stickers, or paint

Paper Dart Airplane

