AMA
ACADEMY OF MODEL AERONAUTICS

PROJECT № 4

Paper Kite

AUTHORIZED AMA
STE(A)M PROGRAM

PROJECT Nº 4
Paper Kite

INFO FOR PARENTS:

For this project, parents have the option of either guiding their child through the project themselves or completing the project with the aid of live AMA instruction.

GOALS & OBJECTIVES

Question: *What will children know and be able to do as a result of this project?*

Answer: Follow written and spoken instructions.

ENGAGE WITH BOTH FINE & GROSS MOTOR SKILLS

Fine Motor Skills: Children will be able to refine their use of scissors, simple building methods, taking measurements, etc. by constructing the kite.

Gross Motor Skills: Children will be able to refine their abilities to estimate height and distance through the flying of the kite.

EXHIBIT CREATIVITY THROUGH ARTISTIC EXPRESSION

Children have the opportunity to decorate their kites through various media. If paint, craft paper, additional streamers, etc. are available, encourage the child to utilize these materials to express their creativity. Feel free to research kite designs from other cultures and time periods to help inspire your child.

DETERMINE CAUSE & EFFECT

Children will have the opportunity to better understand how the act of flying a kite is directly related to the four forces of flight.
Question: *What previous knowledge do children need to have to successfully complete this project?*

Answer: It would be helpful, but not required, if the child:

1. Has some previous exposure to arts and crafts of some kind.
2. Has some prior knowledge of kites.

Question: *What are some guiding questions for this project?*

Answer: Guiding questions will help your child think creatively as they pursue this activity and encourage them to explore the topic further in the future.

1. How is a kite like an airplane? How is it different?
2. A kite is a toy, but what other uses could it have? Can you think of ways a kite can be used in other ways, other than for fun?
3. This kite is made from a brown paper bag. What other materials do you think could be used to make a kite?
4. How high do you think a kite can fly? How big do you think a kite can be? How small do you think a kite can be?
5. Why do you think it's easier to fly a kite during a windy day? Can you think of any ways to recreate a windy environment?

A BRIEF HISTORY OF KITES

For centuries before the Wright Brothers took off at Kitty Hawk, people were enchanted by the concept of flight and enjoyed it through a simple, yet compelling, proto-aircraft: the kite. Designed to mimic a bird's flight and considered by many today as a simple child's toy to be enjoyed on a windy day, kites have had a profound impact on many aspects of world culture throughout history, including religion, mythology, science, and play.

There is no way to know exactly when the first kites were flown; however, many historians credit Chinese philosophers, Mo Di and Gongshu Ban, with inventing the kite in the 5th century CE. Today, Weifang, China, is considered the birthplace of kites where the annual Weifang International Kite Festival is held each April.

Kites gradually spread from China throughout Asia, where they were utilized in many different ways. In Japan, they were used in religious ceremonies in order to carry prayers or wishes to the gods. They were thought to ward off bad luck and usher in a successful harvest.

During the Edo era in Japan, only people in the highest classes —which included feudal lords and samurai—were allowed the luxury of leisurely pursuit like kite flying, which was considered a privilege.

Kites didn't gain in popularity in India until around 1500 CE. Popular romantic stories written during this time period described sweethearts sending love letters to each other via kite delivery when they couldn't see each other in person.

Kites eventually made their way to the Western world via explorer Marco Polo as well as Portuguese sailors, who brought them back from their travels as gifts for their children.

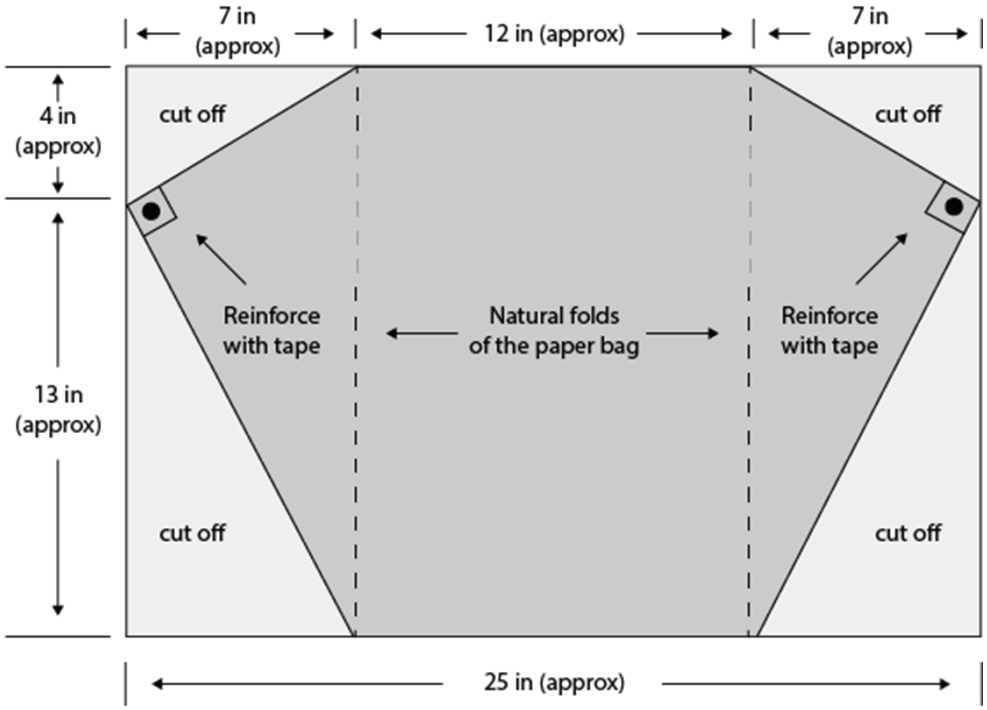
In 1749, a British scientist named Alexander Wilson utilized kites to measure air temperature in various layers of the atmosphere.

In 1752, Benjamin Franklin famously used a kite to prove that lightning was, in fact, electricity.

Even the Wright brothers experimented with kites before they took their historic first flight in an airplane!

MAKING YOUR KITE

1. Cut out the side and bottom of a standard-sized brown paper grocery bag.
2. Unfold the bag and mark out the dimensions given in the illustration.
3. Reinforce the string-attachment points with tape and attach string (approximately 6 feet in length, depending on the kite). Tie a simple loop knot, at the midpoint of the bridle.
4. Attach the streamer to the bottom of your kite. Feel free to add other ribbons or streamers that you might have around the house.
5. Decorate as desired using colored markers, pencils, and stickers.



STANDARDS

Did you know that the Four Forces of Flight affect more than just airplanes?

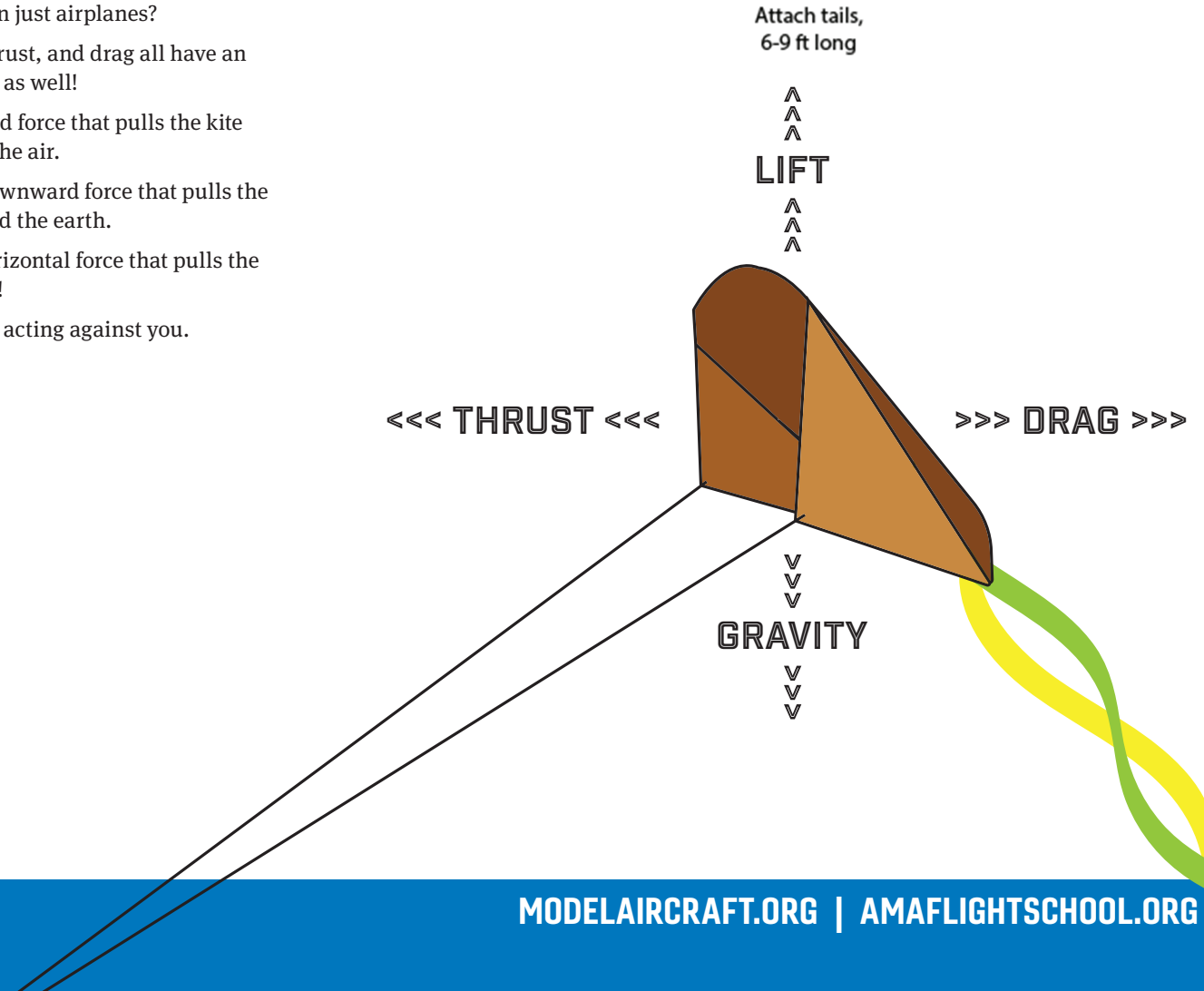
Lift, gravity, thrust, and drag all have an impact on kites as well!

Lift: The upward force that pulls the kite vertically into the air.

Gravity: The downward force that pulls the kite back toward the earth.

Thrust: The horizontal force that pulls the kite string: you!

Drag: The force acting against you.



AMA'S MISSION:

TO PROMOTE, ADVANCE, AND SAFEGUARD

MODEL AVIATION

AS A HOBBY, SPORT, AND EDUCATIONAL TOOL.