Blue Angels Aerodynamics

In this activity,

You’ll explore the forces behind high-powered jet flight from watching the U.S. Navy Blue Angels and then build your own Blue Angel paper model!

Ideas to Explore

You’ll investigate the four forces of flight (page 5) and see how they apply to jet flight.

Words to Know:

AERODYNAMICS – the way air moves around objects
FORCE – a push or pull caused by an interaction between objects
LIFT – the upward force created when air moves around a wing
DRAG – the backward force in flight caused by air resistance
THRUST – the force that moves an aircraft through the air
GRAVITY – the downward force caused by the Earth’s pull

Share it!

Share your Blue Angel with us on your social channels tagging @BoeingAcademy for a chance to be featured!
**Stuff You’ll Need:**

- Blue Angel Template; printed out (page 6)
- Forces of Flight diagram (page 5)
- Photo of Blue Angel - The Museum of Flight’s F/A-18 Hornet
- Computer/Tablet/Smartphone for watching videos
- Scissors
- Markers
- Straw
- Tape/Glue

**Watch this!**

**Click Here**

**Make It!**

**This one too!**

**And this one!**

**Step One**

Color in the livery, or the painted design, of your Blue Angel.
Step Two

2. Cut out all the pieces of the template – follow the thick solid lines around the three bigger shapes.

Step Three

3. Fold the tail into a V with a wide, flat middle by folding on the dashed lines.

Step Four

4. Line up the bottom of the folded tail with the bottom of the Blue Angel’s body; glue or tape the two together.

Step Five

5. Fold the cockpit on the dashed line to create a tent shape. Use glue or tape to attach the cockpit to the airplane using the four tabs.

Step Six

6. Attach the straw to the bottom of your model using tape to create a handle. Put on an airshow using your model! Make a few more and practice flying in formation.
Want More?

During your next visit to The Museum of Flight:

- Go see the Museum’s [McDonnell F-4C Phantom II](#), a former Blue Angel aircraft, located in the T.A. Wilson Great Gallery.

- Take a look at the [F/A-18 Hornet](#) in Blue Angels’ livery outside the Museum’s southwest corner.

- Or visit the Alaska Airlines Aerospace Education Center to learn more about [Aerospace Camp Experience](#).

Suggested Reading/Additional Resources:

- Learn more about the U.S. Navy Blue Angels and their history directly from their [website](#). You can also read some fun facts on [The Museum’s blog: 10 Blue Angels Fun Facts](#).

- Grab the Forces of Flight diagram (page 5). There are four forces of flight acting on an airplane in flight. Depending on what the pilot needs their airplane to do, the forces can be in balance (equal) or unbalanced (unequal). Watch any of the Blue Angel videos again. See if you can identify when the forces of lift, gravity, drag and thrust are acting upon the airplane. Use the definitions under “Words to Know” if you need help. For more information about the forces of flight, check out [How Things Fly](#) from the Smithsonian.

Have fun!

We’ll see you next time!

Make it Connect!

While watching the U.S. Navy Blue Angel videos, did you notice anything about the way the airplanes are moving in the air?

What do jets like the Blue Angels sound like when they fly?

What shapes do you see in the design of the Blue Angel jet? Why do you think they are designed this way?
Forces of Flight

LIFT

DRAG

THRUST

GRAVITY