

KOHL'S DESIGN IT! LAB

#DWDESIGNCHALLENGE

Focus: Energy and Motion!

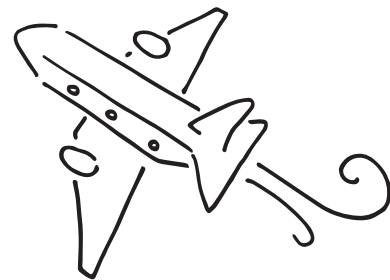
DESIGN CHALLENGE: AIRCRAFT DESIGN



Create a glider to coast through the air with style

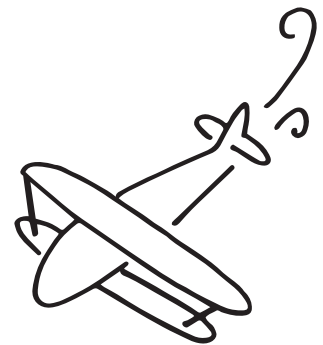
PLAN: **Brainstorm!**

- What size glider or airplane will you create?
- How will you design the wings and body?
- What will your glider gain energy from?
- What materials might work best for this project?



BUILD: **Experiment with materials!**

- First, make the body. Use a durable material like cardstock or cardboard as the structural base.
- Next, create your wings. Wings generate lift to hold the plane in the air. This is a chance to experiment with shapes - what wing shape might work best?
- Then, build a tail. The tail is located at the back of the plan and operates like a rudder and stabilizer.

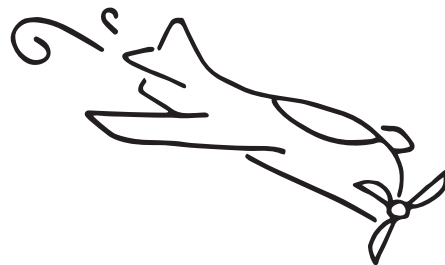


TEST: **Send your glider soaring!**

- Doesn't fly? -- What can you adjust?
- How could you improve? -- Farther? Faster? Higher?
- Can you create a launching system?

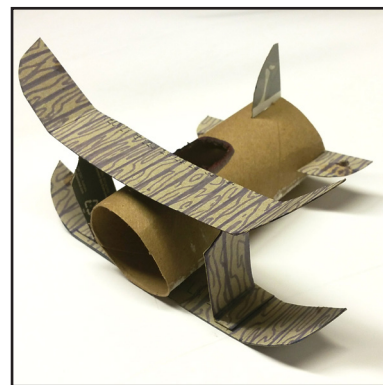
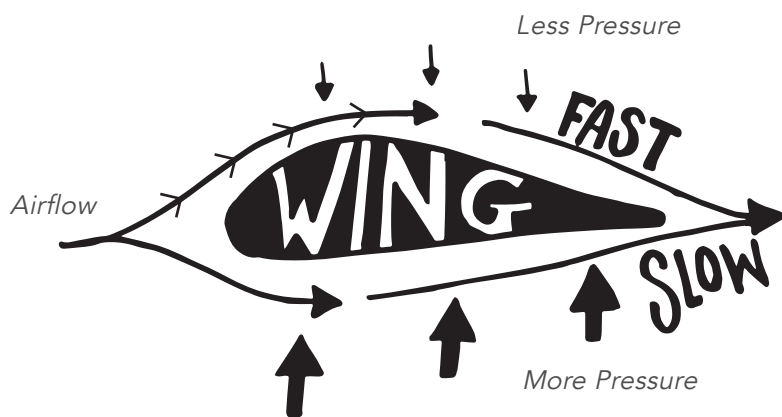
MATERIALS & TOOLS:

- Glue/tape
- Scissors
- Recycled Materials



PROJECT RESEARCH:

- *Bernoulli's Principle* describes that a difference in the speed of air around the wing will cause a difference in pressure. Therefore, as air moves faster over the top of the wing than below it, the pressure difference creates an upward force - this idea influences how plane wings are designed.
- *Aerodynamics* relate to the flow of air around an object or in this case, how air moves around a plane wing. Wings can be designed in a way to minimize drag (the inevitable slowing due to the objects motion through air).



PROJECT INSPIRATION:

- Take a look at these recycled material airplanes created using leftover snack packaging

