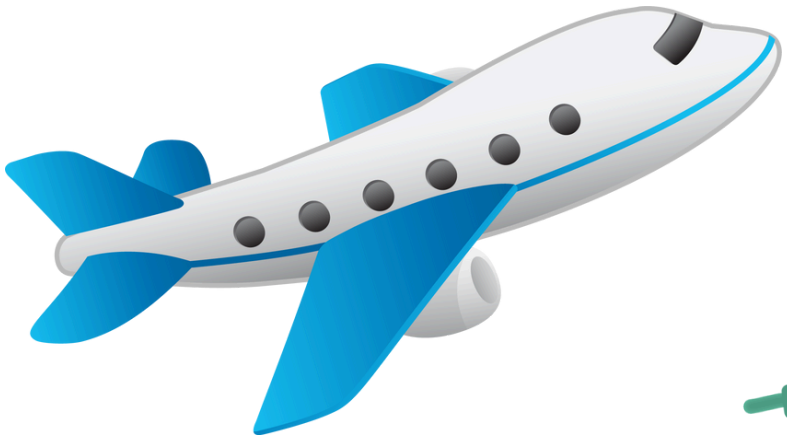
CLOVERBUDDIES

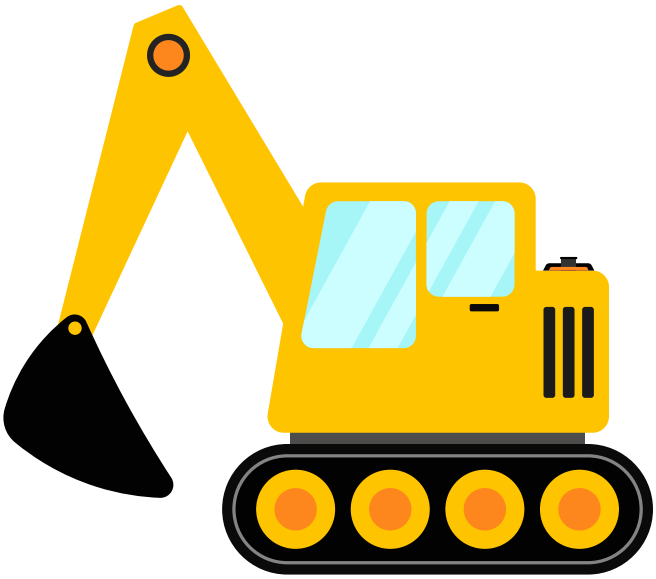
A 4-H EXPLORATION ACTIVITY SERIES FOR CLOVERBUD MEMBERS

AUGUST 2024

PROJECT EXPLORATION:

MECHANICAL SCIENCES





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TOOLS IN TOWN

Mechanical Sciences is a special part of 4-H and is separated into six projects: Bicycling, Electricity, Scale Models, Small Engines, Tractors, and Woodworking. For each of these projects, you need tools to accomplish your tasks! Use the maze below to get the screw driver back to their toolboxes so it's back in the right spot.

START

FINISH

TRACTOR TIME

Tractors are a big part of the Mechanical Sciences Project. Once you're older and can join Tractors 1, you will get to learn and identify parts of the tractor, understand the basics of tractor maintenance, learn about different fuels and engine cooling systems, research different safety features, and learn safety rules. Color in the picture below of a tractor and see if you already have some knowledge in labeling the parts you can see!

JOHN DEERE

SOURCE: HTTPS://WWW.DEERE.COM/EN/CONNECT-WITH-JOHN-DEERE/JOHN-DEERE-KIDS/

What's that sign?

Bicycling is an exciting 4-H project in Mechanical Sciences that you can learn more about after being a Cloverbud! Whether you have never ridden a bike, have a trike or just got your training wheels off, bicycle safety is something that everyone needs to know to be safe on the roads and sidewalks. Take some time look at the traffic signs below. When you are done, write what you think each sign means on the lines underneath each picture.

SHOCKING FUN!

Electricity is another popular 4-H project in the Mechanical Sciences. Electricity is an important part of all our lives - it's what gives us light, helps cook our food and keeps stores and factories working. In the experiment below, you'll see how electricity creates forces of attraction and repulsion!

MATERIALS:

- Two Balloons
- String
- Tape
- Scissors
- Yourself!

INSTRUCTIONS:

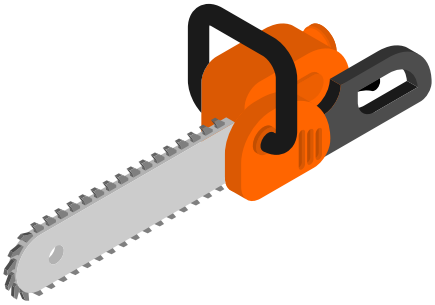
1. Blow up both of your balloons, tying them up at the end.
2. With your string and tape, hang one balloon from the ceiling about eye level.
3. Now add electrons (holding a negative charge) to the hanging balloon by rubbing it in your hair (or if your hair is too short, rub it on your shirt!).
4. Now rub your other balloon in your hair/shirt to add a negative electrical charge to that one too.
5. Hold the balloon you just charged in your hands and move it close to the hanging balloon. If you've given it enough charge it will force the hanging balloon away!

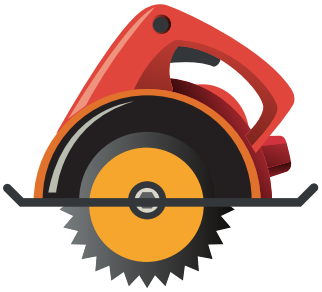
You can also repeat this experiment with only charging one balloon - and seeing if anything different happens when you move the balloons toward each other!

Source: https://frugalfun4boys.com/static-electricity-science-experiments/

START YOUR ENGINES

The Small Engines 4-H project can be a lot of fun. If you enjoy getting your hands dirty or figuring out how things work, this is the project for you! Look at the machines and tools below that have small engines in them. These engines are what make machines run. Can you name them all on the lines below? Do you know what each one is used for? Give your best guess!





WOOD WORKING

Woodworking is a super fun 4-H project within the Mechanical Sciences. There is something so satisfying about making something with your own two hands. Have you ever used woodworking tools before - like maybe a hammer or screwdriver? See if you can find all of the tools below in the puzzle below. If you don't know what a certain tool is, ask an adult to help you research or find a picture of what it is!

BAND SAW

ROUTER

VISE

SAND PAPER

DRILL PRESS

SCROLL SAW

PLANER

used to shave wood from the surface of boards.

device consisting of two parallel jaws for holding a workpiece; one of the jaws is fixed and the other movable by a screw, a lever, or a cam.

used to remove material from surfaces, either to make them smoother, to remove a layer of material, or sometimes to make the surface rougher.

tool for making cutouts, duplicates from a pattern, sharp edges, cut joints, decorative surface cuts and more.

used to cut intricate curves in wood, metal, or other materials. The fineness of its blade allows it to cut more delicately than a power jigsaw, and more easily than a hand coping saw or fretsaw.

device for producing holes in hard substances.

power saw with a long, sharp blade consisting of a continuous band of toothed metal stretched between two or more wheels to cut material.

JULY ANSWER KEYS

Answers to all Cloverbuddies activities will appear on the back cover of the following month's issue. For answers to this issue, watch for next month's installment of Cloverbuddies!

PUTTING THE WORLD TOGETHER:

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