

Boats Afloat

Design and build a boat that floats.

What to do



1. Choose materials to design a boat. Think about which material could sink or float.



2. Build a boat using one of the materials.



3. Place the boat in the water to see if it floats. If your boat does not float, redesign it using different materials or shapes.

Did You Know?

The objects behave differently in the water. Some float; some do not. It depends mainly on two factors: density (the amount of matter an object has) and buoyancy (the power to float in a fluid). By testing a boat until it sinks, and watching closely, children can see where the design can be improved using their own ideas and experiences to find solutions to problems. Trial and error are very important in the design process. Often, engineers test a design until it fails in order to see where improvements are needed.

Snake Charmer

Learn how you can lift up a snake by generating static electricity.

What to do



1. Cut out the snake draw in the tissue paper and place it in the aluminum pan.



2. Rub the balloon repeatedly with fabric (You can choose between different types) to “charge” the balloon and create static electricity.



3. Approach the balloon to the head of the snake and when it rises it, begins to separate the balloon slowly until the body of the snake has risen.

Did You Know?

There are different types of electricity, and one of them is called static electricity. A static charge happens when two surfaces touch each other and the electrons move from one object to another. One of the objects will have a positive charge and the other a negative charge. If you rub an object quickly, like a balloon, or your feet on the carpet, these will build-up a rather large charge. If your hair sticks straight up, this means that your hair has been charged.

Sticky Situations

Find out which tape has the best adhesive by testing how many washers can hold.

What to do



1. Watch carefully the different tapes and record your prediction about which one will stick the best.



2. Choose one type of tape and cut a piece to use. Tape the center of the yarn handle of your "Tape Tester" to the bottom of the paper plate.



3. Add one washer at a time to the paper cup until the tape comes off the paper plate and the cup drops. Record the number of washers the tape tester held before falling.

Did You Know?

Prediction and verification are important keys for science. A prediction is a guess what might happen based on observation or prior knowledge. Verification is to test through an experiment how good is a prediction. For children, predict and verify small everyday events are helpful tools to find patterns and consider consequences. For example, when you are in the grocery store, you can say to your child: "There is a lot of food in the bag. Do you think it's too heavy?" and then let him/her hold it to check".

Morning Metal

Check if there is iron in your breakfast cereal.

What to do



1. Use a marker to divide a paper plate into three sections. Label each section with each one of the cereals present.



2. Run the magnet through one of the bowls with the crushed cereal and check the magnet to see how much cereal is stuck.



3. Use the popsicle stick to scrape the iron off the magnet onto the labeled section of the paper plate and add tape to lock in the iron. Repeat step 2 and 3 for the other cereals to compare results.

Did You Know?

Through simple experiments we can test which are the properties that our food contains and so we can choose which ones bring us the greatest benefits to our body. With *Morning Metal* you check how the cereal sticks to the magnet because of the iron it contains. The human body requires iron for the production of special molecules, known as hemoglobin, in red blood cells. It is the iron in the hemoglobin that attracts the oxygen, allowing the blood cells to carry the oxygen to the rest of the body.

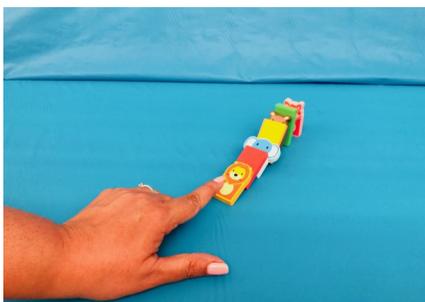
Domino Chain Reaction

Build a chain reaction using dominoes and other household materials.

What to do



1. Take, at least, five dominoes and stand them on end, close together, one after another.



2. Push the first domino towards the others, and a chain reaction should start causing all the others to fall.



3. Redesign your chain reaction if your first one was not successful, or if you want to make it more challenge by adding obstacles like household materials or toys.

Did You Know?

A chain reaction happens when the action of one object causes a similar action or reaction in other objects. With domino runs, the momentum (forward push) of one domino as it tips over causes the next domino to fall. This chain reaction continues down the line all the way to the end of the domino run. Creating a chain reaction requires that you design, build, test, and redesign to assure that your reaction will continue from the start to finish.