

Tuesday – Super Science!

Today you are going to have lots of fun investigating and experimenting in your home and garden!

Here is a list of experiments for Junior Classes (Junior Infants-2nd Class) and a list for Senior Classes (3rd- 6th). You are welcome to try any and we are really looking forward to sharing photos of your scientific work!

If any of you would like to share an extra experiment of your own and your results, we would love to see those too!

Read the instructions carefully and have fun!

Junior Infants – 2nd Class

Save the Superhero



What You Will Need!

Container to hold water

Plastic superhero figure or doll

Sellotape

A variety of materials to test e.g. cork, bubble wrap, wood, plastic, metal

Method

Using different materials try to get your superhero floating safely on water!

Record which materials were best and take a photo if you can!

Scavenger Hunt!

Time to go outside and investigate the great outdoors!

Please print this page and tick what you can find! Good Luck!



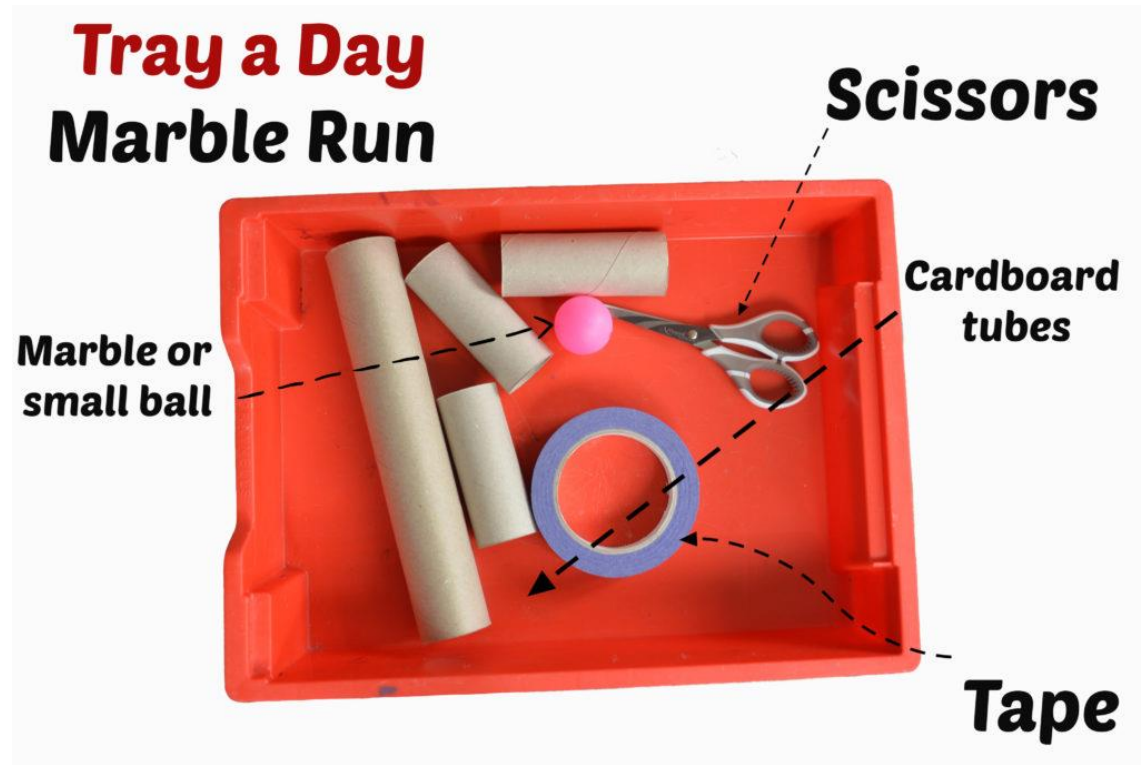
NATURE
SCAVENGER HUNT

<input type="checkbox"/>		Flower	<input type="checkbox"/>		Butterfly
<input type="checkbox"/>		Water	<input type="checkbox"/>		Grass
<input type="checkbox"/>		Tree	<input type="checkbox"/>		Green Leaf
<input type="checkbox"/>		Spiderweb	<input type="checkbox"/>		Brown Leaf
<input type="checkbox"/>		Bug	<input type="checkbox"/>		Ant
<input type="checkbox"/>		Rocks	<input type="checkbox"/>		Fern
<input type="checkbox"/>		Bird	<input type="checkbox"/>		Cloud
<input type="checkbox"/>		Tree Bark	<input type="checkbox"/>		Sand or Dirt

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RECYCLED MARBLE RUN

What you will need!



Tape – masking tape if you have it, but anything will work.

Cardboard tubes – kitchen roll, toilet roll etc. all work well.

Other bits of recycled packaging – boxes, bottles etc – optional

Egg cartons – optional

Large box or sheet of card to build it against

Marble or table tennis ball

Scissors

BUILD IT!



The best thing about building this **STEM Project** is that you can be as creative as you like!

3rd – 6th Class.

INFLATE A BALLOON WITH LEMON JUICE

WHAT YOU'LL NEED

A small bottle or jar
Lemon juice
Vinegar
Bicarbonate of soda
Balloons

INSTRUCTIONS

Stretch the balloon a bit first, this just makes it easier to inflate.

Fill your jar or bottle about one quarter full with lemon juice.

Use a funnel to tip the bicarbonate of soda (baking soda) into the neck of the balloon.

Place the balloon over the top of the bottle. When you're ready tip the balloon up so the baking soda drops into the lemon juice.

Watch the balloon inflate.

Another way to do this is to pour the baking soda directly into the jar and then quickly place the balloon over the top, but this can be a bit trickier to do.

EXTENSION TASK

Can you set up a fair experiment to investigate whether vinegar, lime or lemon juice produce the most gas? How will you be able to tell?

Think about which conditions you need to keep the same...(amount of baking soda and amount of vinegar and lemon juice)

WHY DOES LEMON JUICE INFLATE A BALLOON

The balloon should inflate because adding the lemon juice/vinegar to the bicarbonate of soda creates a chemical reaction, when the two combine they create the gas carbon dioxide. The gas rises up into the balloon blowing it up.

This is an example of a reaction between an acid (lemon juice/vinegar) and a base.

The Physics of Breakdancing.



1. Watch the video titled "The Physics of Breakdancing"

<https://youtu.be/DFHh6N0isE> .

2. Follow the weblink below to read all about "The Physics of Breakdancing" Be sure to read each of the following sections and watch the video that illustrates "Friction" too: (a) Gravity (b) Balance (c) Newton's Laws of Motion (d) Friction (e) Momentum

<https://www.rte.ie/learn/2020/0422/1134155-the-physics-of-breakdancing/>

3. Choose THREE of the following activities to try at home:

(a) Gravity-Throw a ball into the air, and watch the way it always falls back down to you. Jump into the air as high as you can and strike your favourite pose, don't worry, the force of gravity will always be there to pull you back down again.

(b) Balance-Grab a ruler. Place your finger in the centre, so that there is an equal amount of matter on each side. When you find it's centre of gravity, it'll balance on your finger.

(c) Newton's Laws of Motion-Put on your favourite song and boogie like its lockdown. Just moving around, you are using all three laws of motion!

(d) Friction-Try and slide across a wooden floor in your socks. Now take off your socks (pew, what's that smell!) and try and slide across the floor in your bare feet. Was there any difference? What else could you use to investigate forces of friction?

(e) Momentum-Spin around on one foot like a ballerina with your arms out. How many spins can you do? When you are spinning, really quickly bring your arms in closer to your body. Did you speed up? You have investigated results of the conservation of angular momentum, well done scientist!

Record your results and some photos if you can!

Mini Bottle Rocket



You'll need:

Small 500ml bottle - empty

Cork which fits tightly inside the bottle neck

Half a piece of kitchen roll

1 tablespoon baking soda - bicarbonate of soda

Vinegar or lemon juice

3 Straws

Tape



Instructions

Use the tape to attach the 3 straws to the side of the bottle so it stands up, upside down.

Pour about 2 cm of vinegar into the bottle.

Wrap the baking soda up in the kitchen roll to make a little parcel.

Choose a launch site outside. It needs to be on a hard surface.

When you're ready to launch, drop the baking soda parcel into the bottle, quickly add the cork, put the rocket down and stand back!

Warning - make sure you have a clear empty space and keep observers well back from the launch site as the rocket shoots up very quickly.

