

SHARPER THINKER

We make hands-on electronic kits that springboard your child into science and technology.

Enjoy these free STEAM ideas and join our newsletter for more.

<p>In the garden: Soil, microbes, cycles</p> <ul style="list-style-type: none"> • Why fungi? Fungi walk (use gloves/watch for poisonous). • Fungi spore print • Hot compost – how it works • Long compost • Worm farm • Soil organisms • What's in one spadeful of soil? • Role of the sun in energy transfer • Carbon cycle • Water cycle 	<p>Kitchen Chemistry: Experiments</p> <ul style="list-style-type: none"> • Red cabbage indicator liquid • Make slime (compounds) • Separate sand, ironsand, salt (mixtures) • Make crystals: borax, salt • Identifying white powders (sugar, salt, baking powder, flour, baking soda etc – we don't taste so how?)
<p>In the garden: Creatures</p> <ul style="list-style-type: none"> • Pollinators – what are they? • Monarch butterfly study – plant swan plants • Identify pests vs beneficial insects • Role of birds – native vs introduced • Difference between bees and wasps • Build a skink habitat • Visit TiriTiri Matangi or Shakespeare Park • Make bird houses, bird feeders • Make a worm farm • Got clay? Make clay sculptures and airdry. 	<p>Kitchen Chemistry: Words and concepts to discuss</p> <ul style="list-style-type: none"> • Evaporation • Boiling/cooling • Distilling • Mixing/separating • Measuring weight/volume • Density • Changes of state (solid, liquid, gas) • Filtering • Temperature • Reaction
<p>In the garden: Build a 1 metre square garden:</p> <ul style="list-style-type: none"> • Soil analysis – what is best to plant? • Photosynthesis – leaf experiments • What's in a seed? • What does a seed need to grow? • What is the role of a flower? • What's inside a flower? • Why are flowers different colours? • How do plants grow? • Sprouting legumes (brown lentils work well) • Experiment with pest traps (moths, slugs) 	<p>Kitchen Chemistry: Make it</p> <ul style="list-style-type: none"> • Gingerbeer • Cheese • Hokey Pokey • Jam • Pickles • Sherbet • Bread • Yoghurt • Kombucha • Ice-cream
<p>Physics: Energy and forces</p> <ul style="list-style-type: none"> • Mix light vs mixing paint – what's the difference? • Waves and how they work – water, sound, light, in Space • Energy – where does it come from and how does it move around? • Forces – friction. Try to rub sticks and make fire. • Make simple circuits. What does a resistor do? Pull apart old electronic toys and see what you can use. (See what SharperThinker has!) • Rub balloons on hair for static electricity. • Magnets – how do they work? • Using levers to lift heavy things – could I lift an elephant? Ditto: pulleys. • Will a feather and a bowling ball fall at the same speed? YouTube this for a demo. • Why are there seasons? Night and day? Does the sun, moon, earth move? How? 	<p>Physics: Simple machines</p> <ul style="list-style-type: none"> • Look at Leonardo Da Vinci machines • Identify simple machines on a playground • Make a marble run out of lego (ramps, pulleys) • Make a backyard or model catapult • Look at vehicles and try to guess how they would break down into simple machines. <p>Physics questions:</p> <ul style="list-style-type: none"> • How does a plane fly? • Why doesn't a large iron ship sink? • How does petrol make a car go? • How does my house get power from a hydroplant? • How do I hear music from speakers?

THINK. MAKE. LEARN.

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