

#ExploreLegoClub

Seven Weeks of STEM

Week 1 - Dirt Track

Week 2 - Sailboat

Week 3 - Erupting Volcano

Week 4 - Gravity Roller

Week 5 - Rockets

Week 6 - Fidget Spinner

Week 7 - Wind Powered Machines

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Knowledge and Ideas for Everyone

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Week 1 - Dirt Track

Build a race track on a Lego base board and fill it with dirt, soil or sand. Race toy cars, monster trucks or motorbikes around the track. Which type of vehicle travels over the dirt the most easily?

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Week 2 - Sailboat

Build a boat big enough to hold one Lego minifigure. Add a sail using recycled paper or a piece of recycled plastic bag. Use your breath to power the boat. Sail it across a tray of water or a paddling pool. Time how long it takes to travel from one side to the other. Modify your design to make your sailboat faster.

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Week 3 - Erupting Volcano

Build a Lego volcano around a ~200ml recycled plastic bottle inside a shallow tray. Work with a responsible adult for the next steps. Put 3 tablespoons of baking soda into the bottle. In a cup, gently mix 1 tbsp of washing up liquid, 100ml of white vinegar and 1 tbsp of red food colouring or washable paint. Carefully add the liquid mixture to the bottle and stand back.

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Week 4 - Gravity Roller

Build a Lego gravity roller. Once started, it should keep itself going. Test your roller in different directions on a smooth table, make sure the surface is level or slightly downhill. Do some research into Lego gravity rollers, try a few different designs to see what makes the best roller.

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Week 5 - Rockets

Build a rocket using Lego or Duplo. Your rocket should be big enough to carry a Lego minifigure. Look up images of real rockets to inspire your creation. Take a photograph of your build and share it with us on the Explore York Libraries and Archives Facebook page.

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Week 6 - Fidget Spinner

Build a Lego fidget spinner. It should spin freely when held between your forefinger and thumb. Time how long it takes for your spinner to make 10 full revolutions. Can you modify your design to make it faster?

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Week 7 - Wind Powered Machines

Build a wind powered machine using Lego. It could be a windmill, sail, propeller or your own design. Use your breath, a hairdryer or a fan to power it. Time how long it takes your machine to make 10 revolutions or to travel 1 meter. Improve your design to make it faster.