



Exploring Science, Technology Engineering, Arts and Maths

Activities to explore using resources and technology	Questions	Answers
<p>FORCES:</p> <ul style="list-style-type: none"> • Vortex tubes • Air canon (velocity, heat dynamics) • Air blower(velocity) • Bernolli Blower (velocity, gravity,) • Water and oil tubes (gravity, pressure, density and velocity) • Car race tracks (motion, velocity and friction) • Ball run (gravity) • Ball race track (velocity, motion) • Uneven pendulum • Magnetism <p>ELECTRICITY</p> <ul style="list-style-type: none"> • Von Graaff Machine 	<ol style="list-style-type: none"> 1. What can forces do? 2. Which ball moved the fastest? <ol style="list-style-type: none"> a. Why? 3. Which racing lane is the slowest? <ol style="list-style-type: none"> a. Why? 4. Which car moved the fastest? <ol style="list-style-type: none"> a. Why? 5. What goes out of the air blower the fastest, a ball or scarf? 6. What do we call the blower that can thrust the balls in the air and keep them there? 7. What force is used to keep the balls off the plastic nozzles? 8. Can you design your own ball run track? 9. How many poles are there on a magnet? <ol style="list-style-type: none"> a. What are they called? 10. What causes the Von Graaff machine to make sparks? 	<ol style="list-style-type: none"> 1. 2. a. 3. a. 4. a. 5. 6. 7. 8. 9. 10.

<p>BIOLOGY:</p> <ul style="list-style-type: none"> • What is in the egg? • The ecosystem in, on and around a tree • Sea Creatures around the Submarine • Dinosaurs • Animals • Plants • Anatomy • Fish • Microscope 	<ol style="list-style-type: none"> 11. What deduction can you make after you opened the different eggs? 12. Who lives in a tree? 13. What do we call a male chicken? 14. What do we call a female chicken? 15. What is the names of the different stages in the life cycle of a caterpillar? 16. Name some of the sea creatures you can find on a reef. 17. Why are leatherback turtles in danger of extinction? 18. How many Maui dolphins are left in the world? 19. How many different shark species could you find in the kinetic sand box? 20. What kinds of dinosaurs can you recognize when you look at the shape and size of their mouths and teeth? 21. Name some of the animals you can find in the forest. 22. What do you call those thin long little things in the middle of the flower with the pollen on? 23. What part of the plant grows into the dirt to extract nutrients and minerals for the plant? 24. What is protecting your heart from a hard blow that might hurt it? 25. Find the x-ray of a hand. Match your hand on it. Draw the outline of your hand on the back of a paper and let your friend draw hers or his with a different colour pen. Whose hand is bigger? 	<ol style="list-style-type: none"> 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23.
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	<p>26. What colour are your eyes? Can you draw an eye? What do you call the black bit in the middle of your eye?</p> <p>27. What are the little stripey fish in the fish tank called?</p> <p>28. How many are there?</p> <p>29. What is the temperature of the water in the fish tank?</p> <p>30. Put your finger under the microscope and look at your nail. What does it look like? What surprised you?</p>	<p>24.</p> <p>25.</p> <p>26.</p> <p>27.</p> <p>28.</p> <p>29.</p> <p>30.</p>
<p>ENGINEERING:</p> <ul style="list-style-type: none"> • Gears • Pulley system • Airplanes • Lego and Duplo • Trains 	 <p>31. Are these gears going in the right direction?</p> <p>32. What two directions can a pulley system work?</p>	<p>31.</p>

	<p>33. Where can I find propellers on airplanes?</p> <ol style="list-style-type: none"> a. Does the air get sucked into the engine from the front or the back to make the airplane move forward? b. What do you call the movement of the air through the propeller? <p>34. Draw the outline of the shadow of the castle you built with the blocks.</p> <p>35. Please build a platform for a Lego man to climb on and a swing seat for him to sit and hook onto a zip line. Feel free to design it on paper first</p> <p>36. Build a bridge and connect the rail road to the train tracks.</p>	<p>32.</p> <ol style="list-style-type: none"> a. b. <p>33.</p> <p>34.</p> <p>35.</p> <p>36.</p>
<p>CHEMISTRY</p> <ul style="list-style-type: none"> • Experiments 	<p>37. What experiments did you do?</p> <ol style="list-style-type: none"> a. What was the outcome? 	<p>37.</p>
<p>MATHS and PROBLEM SOLVING</p> <ul style="list-style-type: none"> • Fractions • Fibonacci Fractals • Puzzles • Weight and volume <p>Shapes</p>	<p>38. How many pieces of an apple do you need for you and two friends? How do you write that?</p> <p>39. Look at the spirals in all the pictures. Use your finger to draw them on each picture and then use a pencil to copy it on paper.</p> <p>40. Plan and code in the pathway for Bee-bot</p>	<p>38.</p> <p>39.</p> <p>40.</p>

<ul style="list-style-type: none"> Bee-Bot 	<p>to reach a designated designation.</p>	<p>.</p> <p>.</p>
<p>EARTH SCIENCE: WEATHER</p> <ul style="list-style-type: none"> Rain cycle Rocks, fossils, pebbles and minerals Seasons <p>SPACE</p> <ul style="list-style-type: none"> Rocket ship Planets 	<p>41. What falls down from the sky onto the mountains, flows into rivers and lakes to the sea?</p> <p>42. What stories did the rocks tell you?</p> <p>43. Why is it colder in Winter than in Summer in NZ?</p> <p>44. How many different planets are there in our Milky Way Galaxy?</p> <p>45. How many planets are orbiting our star, the sun?</p>	<p>41</p> <p>42</p> <p>43.</p> <p>44.</p> <p>45.</p> <p>.</p>
<p>SOUND and LIGHT</p> <ul style="list-style-type: none"> Music instruments Fluorescent light Light box Light prisms and light 	<p>46. How do you play “Twinkle twinkle little star” on the sono bars.</p> <p>47. What kind of colours shines brightly in the dark room?</p> <p>48. Build a 3D construction on the light box using mirrors.</p> <p>49. Play with the light prisms and make “rainbows.”</p>	<p>46.</p> <p>47</p> <p>48.</p> <p>49.</p> <p>50.</p>

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