

Spotlighted unit

Details on a specific unit of work at the school.



Level	7	Title / theme	VEX Robotics (Integrated Studies – STEM stream)
Summary / intention	Students learn about digital systems by programming robots both virtually and in real life.		

Strands addressed Digital Systems Data and information Creating digital solutions

Session	Activity summary	Learning intention	Success criteria	Key resources
1	Building Earthquake machine (basic build) with the VEX kit. Using the remaining VEX kit pieces to build towers.	Introduction to building using VEX kits. Students are given instructions to build an earthquake machine. They are then asked to build the tallest tower using the remaining pieces and with restrictions and requirements.	<ul style="list-style-type: none">Students can successfully build the earthquake machine. They will also use information gathered from their tower build to construct taller and stronger towers in the following rounds of the challenge.	education.vex.com/stemlabs/iq/activities
2	Robotics Research Task	Connecting real world examples of robots as well as discussing how to improve the structure of their tallest towers from the earthquake build. Students are asked to research a robot of their choice and develop a PowerPoint showing their understanding of robots in the real world.	<ul style="list-style-type: none">Informative PowerPoint created and questions answered relating to robots in the real world.	PowerPoint handout

3	Build robot	Teamwork to build a clawbot using the VEX educational kit that will be able to pick up an object and perform challenges. Also, this robot is used for team building games and activities.	<ul style="list-style-type: none"> Students can work in a team to successfully build a robot 	education.vex.com/stemplabs/iq/activities
4	Program robot to move and pick up objects	Using programming skills learnt from above to program the real robot to move and pick up objects	<ul style="list-style-type: none"> Students can problem solve and work as a team to program their clawbot to move to different rooms and pick up objects 	education.vex.com/stemplabs/iq/activities
5	Program robot to detect objects using sensors	Using programming skills learnt from above to program the real robot to detect objects	<ul style="list-style-type: none"> Students can problem solve and work as a team to program their clawbot to detect objects using sensors 	education.vex.com/stemplabs/iq/activities
6	Introduction to programming in the virtual space	Program the virtual robot to move in certain direction and turn to complete the task	<ul style="list-style-type: none"> Student can program the virtual robot to complete the task 	education.vex.com/vr/
7	Introduction to sensors in the virtual space	Program the virtual robot to move and use sensors	<ul style="list-style-type: none"> Student can use the robot with sensors to complete various skills and challenges within the virtual environment 	education.vex.com/vr/