Alligator Workshop overview

Lego Computing Workshop – Lego software, motion sensor, Hungry Alligator

*Summary: The children will be taught how to use the Lego software and instructions and create their own designs. They will then build an Alligator robot, connect a motion sensor and write algorithms to control their creation. The children will be encouraged to upgrade and improve the Alligator by adding more Lego pieces.*

National Curriculum objectives covered: [ICT](http://www.juniorstem.co.uk/programmingworkshops.html) [Design Technology](http://www.juniorstem.co.uk/designtechnologyworkshops.html) [science](http://www.juniorstem.co.uk/science-workshops-primary-schools-ks1-ks2.html)

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| **Session breakdown** | **Objectives** | **Activities** |
| *Introduction* | * Introduce Juniorstem and give a brief outline of the day. * Assess prior knowledge and introduce STEM subjects/Robotics * Introduce kits/equipment * Tell children their learning Targets and the skills I will be looking for |  |
| *Identifying Lego pieces and working accurately* | * How to use colour, shape and studs to identify pieces * To use studs to work accurately * How to join pieces and strengthen structures * Workshop rules | * Teach and learn |
| *Lego software and algorithms* | * To teach children how to write an algorithm using Lego software blocks   (INPUT/OUTPUT, motor on/off, direction, power, timer, sounds, lights and display) | * Interactive class teaching with volunteers * Practical challenge: Make your own simple motor machine – write an algorithm to control it |
| *Using sensors* | * To teach children how a motion sensor works (INPUT/OUTPUT) * How to use a motion sensor as a switch in an algorithm | * Challenge: Control a part of your algorithm using the movement sensor |
| *Tidy up* | * Keep work area tidy and replace equipment for future use | * Class tidies up! |
| *Gears and pulleys* | * Teach children how pulleys and gears work | * Teach and learn |
| *Model instructions* | * Teach children how to use the Lego instructions * Review engineering skills | * Teach and learn |
| *Build* | * Use skills taught to build alligator Robot . | * Practical challenge |
| *Program* | * Use programming skills taught to write and algorithm to control the Robot alligator | * Practical challenge |
| *Design* | * Add/change Lego pieces to improve the alligator/add features. | * Practical challenge |
| *Tidy up and review learning targets* | * To self assess and review learning * Careers in STEM subjects | * Class discussion |