



Tilt Switch

National Curriculum Coverage

Pupils should be taught to: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts -use sequence, selection, and repetition in programs; work with variables and various forms of input and output -use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

1, Planning Ideas Phase

Explain that Lego Wedo comes with a tilt switch that outputs a number when it is tilted in a specific direction. Plug in a single Lego tilt switch and demonstrate how it works using this program. I often have the if statements all snapped together and ask pupils

Program Aim Open ended challenge to see what can the user can create and program using the Lego Wedo Tilt switch?

Learning needed before attempting this module
Pupils need to have done lots of basic Scratch programming and have completed at least one open ended gaming module. They also need to have done both the toilet fan and car park barrier modules.

Snap the maths operator into the if condition and add a tilt sensor value sensing block

Make sure you tick the tilt sensor value so you can see number value on the screen

continuously? Pupils will tell you to use a forever loop.

Explain that they can use this in any way they like. It could be a way of controlling an on screen program or they could link it with other Wedo and control the motor.

Allow pupils some time to think and discuss what they want to do in their groups or pairs. Hand out the example tilt program.

Give pupils boxes of Lego Wedo one between two is ideal but one between three would work. Add the restrictions about not swapping Lego between boxes.

2, Build Phase

Some pupils will start building things using the Wedo some will go onto the computer taking the tilt switch with them. Our job as teachers is just to facilitate their creative process.



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Tilt Switch P2

2, Build Phase Continued

I have never had a group that didn't have an idea but if they didn't I would show them how I could use the tilt switch to control the direction of a sprite. I would then ask them if they had made any games that involved steering or turning.

Some pupil projects will be shorter than others depending on whether they include a lot of Lego building. If someone finishes a short project ask them to briefly document their work and then if they can think of another use for the tilt switch.

3, Evaluating Projects

There are so many ways to do this. A quick way is to leave post it notes by each project and encourage pupils to try out each others projects. You could use the 2 stars and a wish criteria for two positive points and one improvement. Publishing videos or photos onto the class blog and encouraging feedback is another method.

These are a few of the projects my Y6 pupils made at Ringwood Junior School

Peter and Louis program create a motor bike handle

<http://code-it-cs.blogspot.co.uk/2014/05/peter-and-louis-program-their-game-to.html>

Caleb & Sam create a games controller

<http://code-it-cs.blogspot.co.uk/2014/05/caleb-sam-create-games-controller-using.html>

Callum and Harvey great joystick design

<http://code-it-cs.blogspot.co.uk/2014/05/lego-wedo-joystick-great-design-by.html>

