

## How to use your homemade tilt sensor

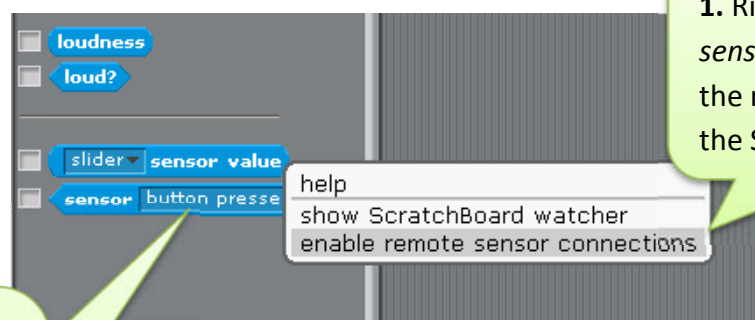
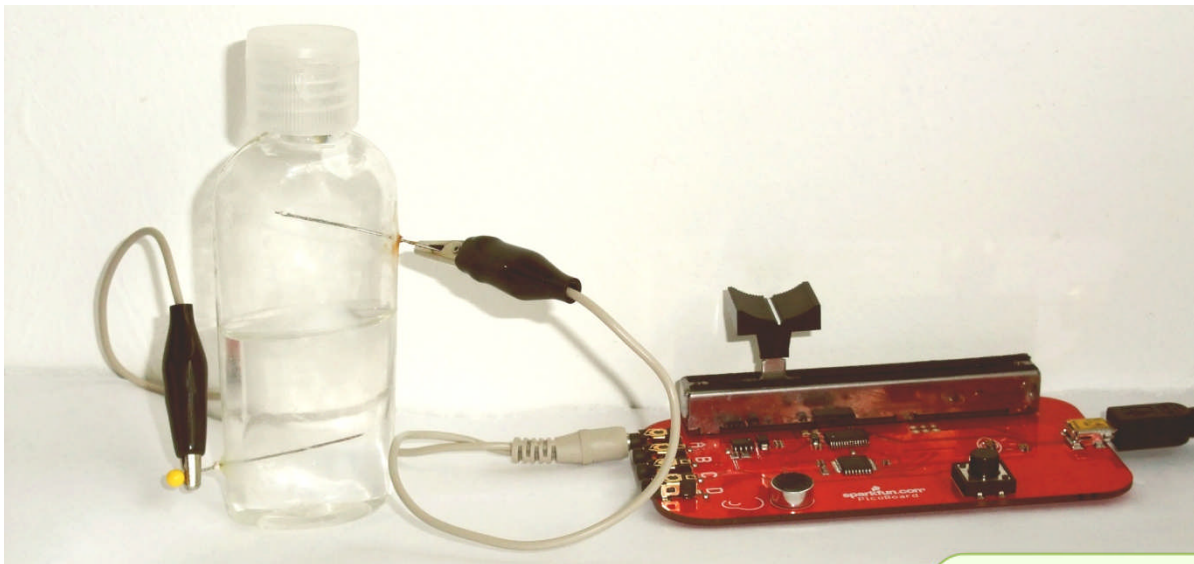
In order to use your sensor you'll need to plug it in.

Plug the Scratchboard into the computer.

Plug the sensor into the plug labelled A on the Scratchboard using the crocodile clips.

Scratch sensors give readings from 0 to 100. Touching the crocodile clips together gives a reading of 0, as there is no resistance. Separating them so there is no electrical circuit gives a reading of 100.

Remember, although Scratch sensors can give a reading from 0 to 100, it is likely that your homemade sensor will give readings with a smaller range.



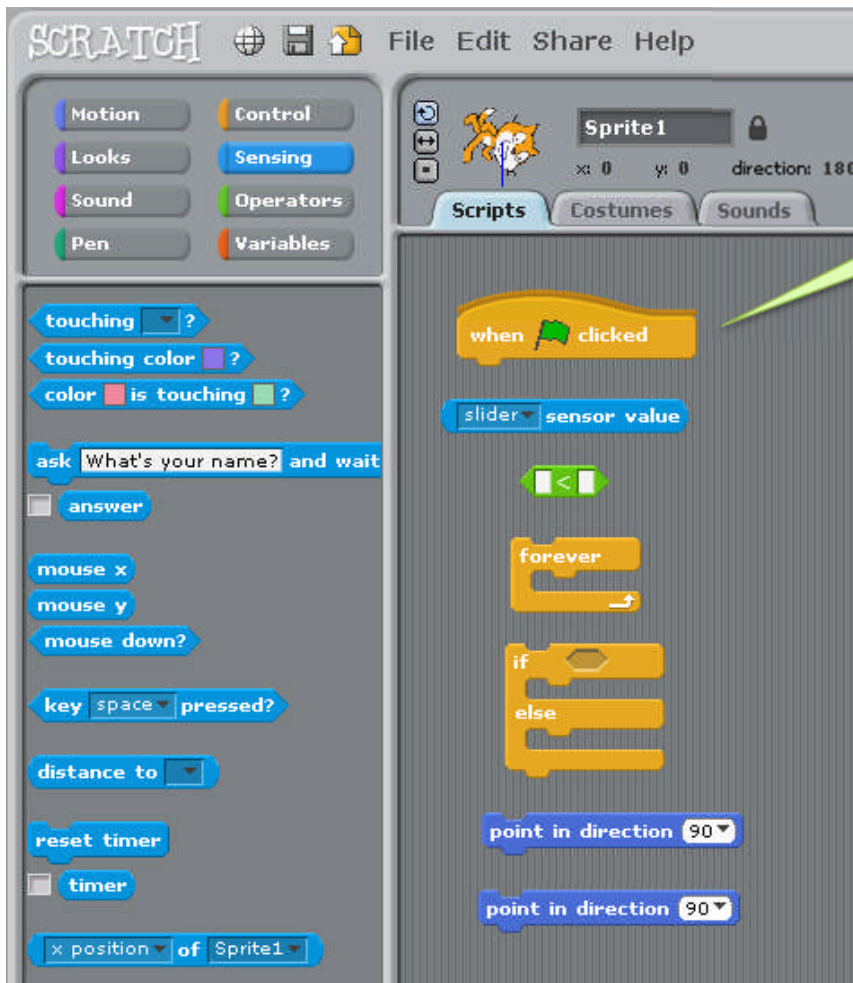
1. Right click on the *sensor value* box to get to the menu, click to enable the Scratch Board.

2. Click *show ScratchBoard watcher* to view the readings from all the sensors. It will allow you to check it's working.

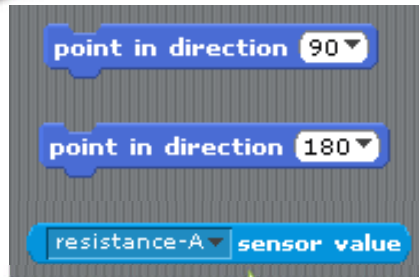


3. This window will appear on the screen, showing all sensor readings.

**Safety:** Please note that you use these resources at your own risk. Correct use of some components requires care.



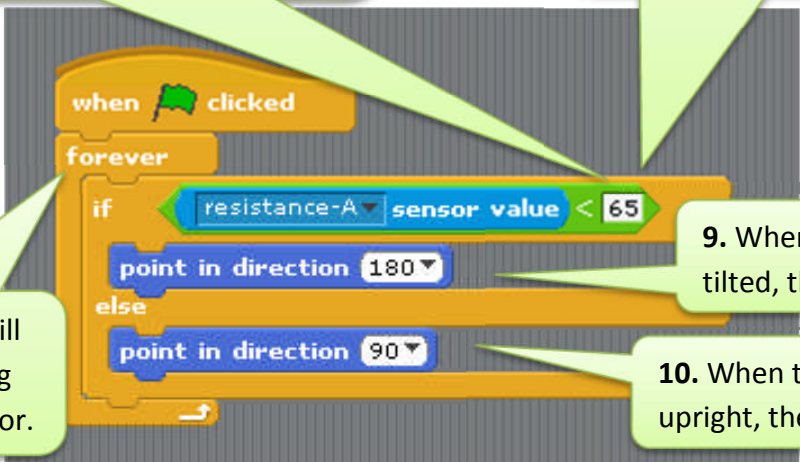
4. Find these blocks. You will need them to create the script shown below.



5. Use the drop-down menu to change these blocks to values as shown.

6. You need to find a reading that will distinguish between upright and horizontal.  
To do this, tilt your sensor and look at the value for A on ScratchBoard watcher. Take a second reading while the sensor is upright. Choose a number about halfway between the two.

7. Resistance is higher when there is no connection, thus if the number is higher, the sensor is upright; therefore if it is below this number, it's tilted.



8. This loop means it will keep sensing and taking readings from the sensor.

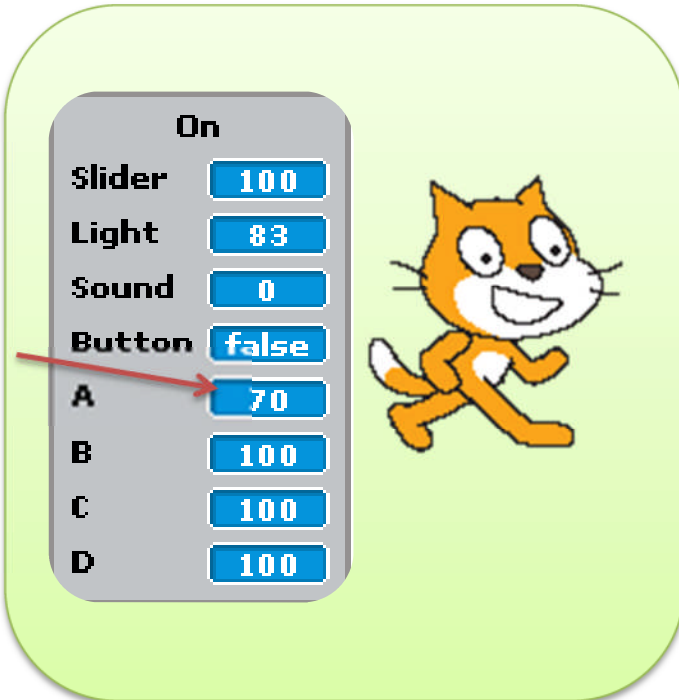
9. When the sensor is tilted, the sprite tilts too.

10. When the sensor is upright, the sprite is upright.

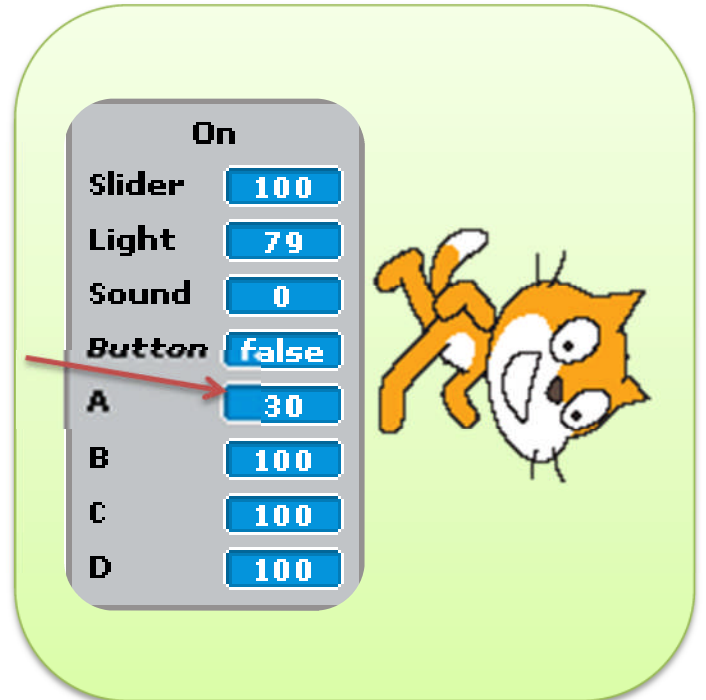
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What you should expect to see is something like this  
(though your values may be different)

### Sensor Upright



### Sensor Tilted



Now that you've managed to tilt the sprite, this method can also be used to trigger other events.

This is just a simple example, you can use your imagination and create your own...

For example:

Perhaps as a Lunch box alarm, if the lid is opened the tilt sensor is turned upright and triggers a change in costume and a sound effect as an alarm. See the next page for details...

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Lid Closed:

File Edit Share Help

Sprite1  
x: 0 y: 0 direction: 90

Scripts Costumes Sounds

when clicked

forever

repeat until [resistance-A sensor value < 50]

switch to costume [costume1]

play sound [ComputerBeeps1] until done

switch to costume [costume2]

Tilt simp

On

Slider	100
Light	83
Sound	0
Button	false
A	26
B	100
C	100
D	100

Lunch is Safe

x: 246 y: 187

New sprite: [star] [star] [question mark]

Sprite1

Lid Open:

File Edit Share Help

Sprite1  
x: 0 y: 0 direction: 90

Scripts Costumes Sounds

when clicked

forever

repeat until [resistance-A sensor value < 50]

switch to costume [costume1]

play sound [ComputerBeeps1] until done

switch to costume [costume2]

Tilt simp

On

Slider	100
Light	82
Sound	0
Button	false
A	63
B	100
C	100
D	100

Intruder Alert!

x: 162 y: -400

New sprite: [star] [star] [question mark]

Sprite1