

Teachers guide - Scratch

Using Video Sensing

Code Playground



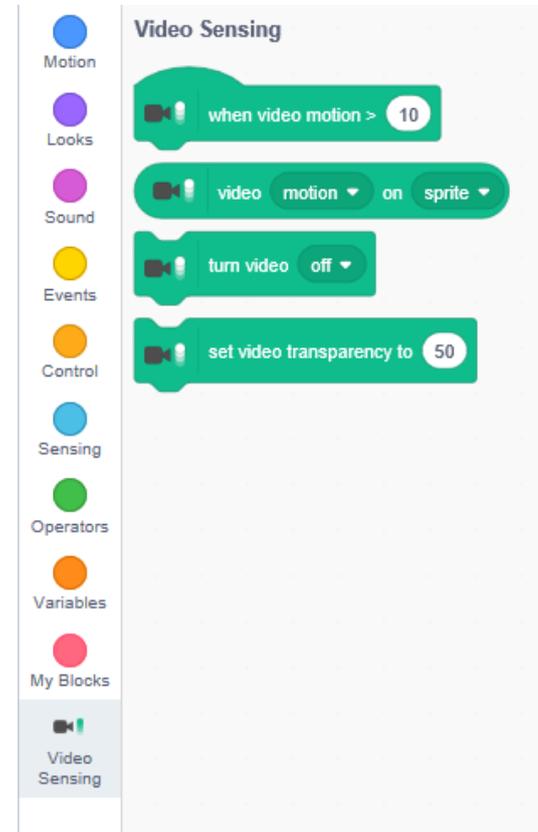
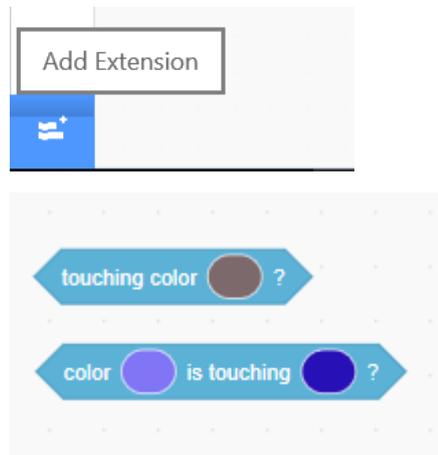
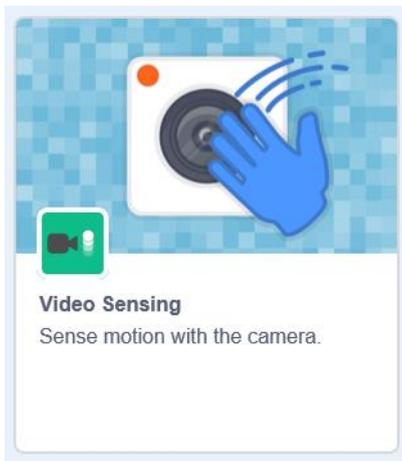
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The 'Video Sensing' blocks are found in the extension library – you'll need to add them yourself manually. They work really well with the colour sensing blocks which you'll find already in the light blue 'Sensing' tab.

You'll get four new blocks as shown to the right.

The 'Video Sensing' blocks use a camera, so make sure your device either has a built in webcam, or you attach one before you begin!

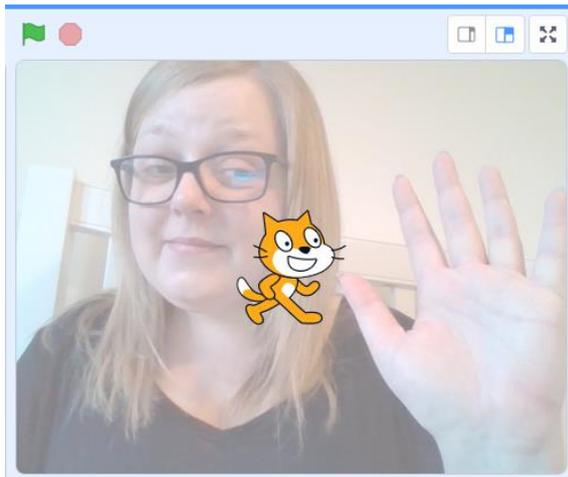


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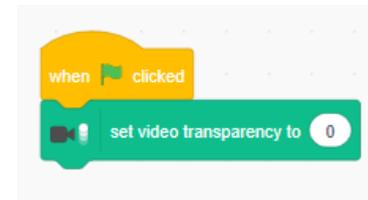
Scratch project

Adding the video sensing extension will add your video feed to the backdrop of your game screen. If this doesn't work, try refreshing your project and starting again, or check your computer privacy settings for allowing access to your camera.

Your video transparency will be automatically set to 50, which gives the slight faded effect you can see here.

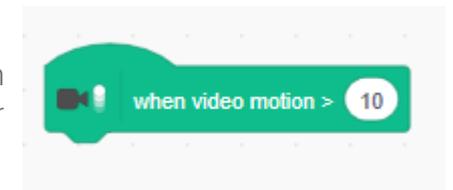


Use the 'set video transparency' block to change this effect using numbers 0-100, where 0 gives a clear, solid video feed, and 100 makes the video completely transparent, so that it can't be seen on the project.



The 'when video motion' block sets up the video sensitivity. Video sensing can be quite sensitive, and can even detect blinking, so it can be quite useful to play around with this number to work out the best value to use for your project.

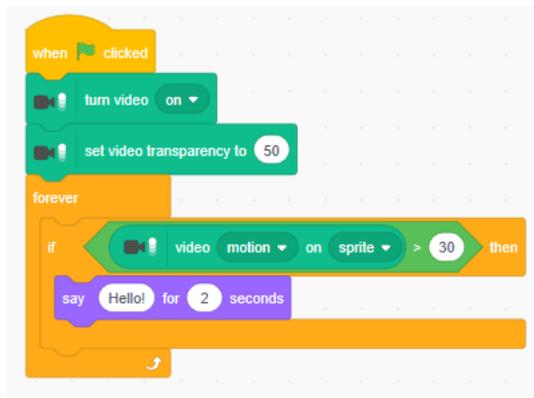
The value is set to 10 by default, and this is pretty sensitive so it can be difficult to have any control over motion sensing with such a low value.



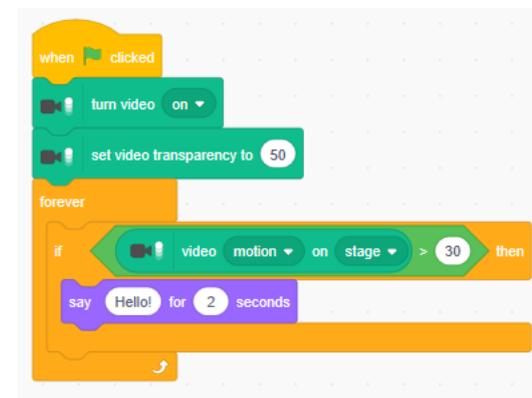
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Let's look at some examples. We've set up our script so that the video starts when we click the green flag, and we can see the video feed in the background. We've set our motion sensitivity to 30, so that when we wave, the Sprite will say 'Hello' back to us:



This example is detecting video motion on the sprite, meaning that when we wave over the area covered by the Scratch cat, he'll say hello

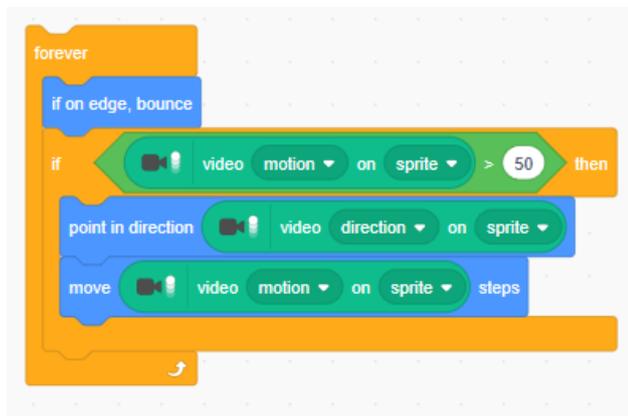


This example is detecting video motion on the entire stage, meaning that when we wave anywhere in the game screen, the Scratch cat will say hello

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This example is a little more complicated. Here, the sprite will move a distance relative to the amount of motion it detects, in the direction it senses the motion. So, if you swiped your hand over the sprite, left to right, the sprite will move to the right. The more motion it detects, the further it will move. This is a very simple example, as you'll notice the sprite probably moves a lot more than you'd like, in directions you don't expect because of the amount of uncontrollable motion.

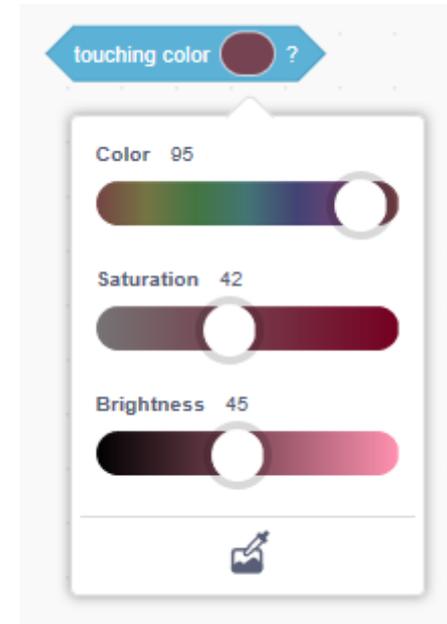
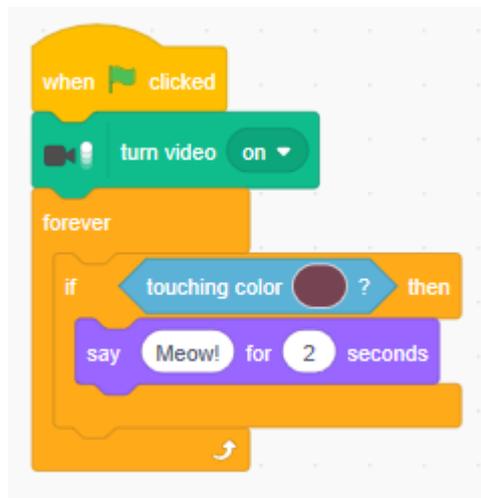


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Using colour sensing blocks is a good way to use video to have your project interact with the physical environment. The same way your sprite can detect colours on the stage, it can detect colours picked up by your camera and interact with them.

You could create a script which tells your Scratch cat to meow when it comes into contact with a particular colour. By having video sensing switched on, if Scratch cat senses this colour in the video feed, you'll get the same results!



Top tip – You will need to use the dropper tool to make sure you use the exact colour that is picked up by your webcam. If the light changes in the space you're using, the colour could change!

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Example projects using video sensing

- Pop the balloon! Code the balloon sprite to pop when you burst it.
- Create a platform game using every day items found in the classroom as 'obstacles' that you sprite needs to avoid, jump over and run along
- Use video sensing to create a colourful orchestra in your classroom. Assign a note or sound to a coloured balloon or piece of paper and turn the entire game screen into a sprite (create a coloured square the same size as the stage and set transparency level to 100). Have the children compose a short tune by standing in the view of the camera and bringing each colour into view to play a song.
- Create a two player ping pong game – two students each have a coloured 'paddle' to keep the ball from reaching their side of the game screen

Notes

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