Red Eyed Portrait

CONTROL FREAK™
Powered by Crumble

Aims
- Through this activity students will learn to use sparkles. They should be able to make them flash. As they progress there are several variations and ways to make it more challenging (see bottom of page).

Basic Code
To make the eyes flash red behind the picture

```
program start
do forever
    set all sparkles to [red]
    wait 100 milliseconds
    turn all sparkles off
    wait 100 milliseconds
loop
```

Resources
- Crumble board
- USB cable
- Battery pack
- Batteries x3
- Wires x
- Sparkles x2
- LDR (intermediate)
- Craft materials

Construction Tips
Place a picture of a person or spooky picture over sparkles attached to a backing piece of cardboard. You can attach them easily (with no glue!) by making three holes and poking crocodile clips through them to secure them in place.

Suggested Uses
- Mix up with our other Halloween lesson plans for a Halloween display

Challenge Questions
- Can you make the colours fade from red into green?
- Can you make the portrait 'wink'?

Basic Code
To make the eyes flash red and green randomly

```
program start
do forever
    wait (random 50 to 500) milliseconds
    set all sparkles to [green]
    wait (random 50 to 500) milliseconds
    set all sparkles to [red]
loop
```

Intermediate Code
To make the eyes light up when it goes dark or a shadow passes over the picture

```
program start
do forever
    let (t) = analogue A
    if (t) < 100 then
        set all sparkles to [red]
    else
        turn all sparkles off
    end if
loop
```

Advanced Code
To make the eyes become brighter and darker

```
program start
do forever
    let (t) = 0
    do until (t) = 250
        set all sparkles to (t) 0 0
        wait 50 milliseconds
        increase (t) by 10
    loop
    wait 50 milliseconds
    do until (t) = 0
        set all sparkles to (t) 0 0
        wait 50 milliseconds
        decrease (t) by 10
    loop
loop
```

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