Intro to Valiant robots

Week 1 exercises



Building and Programming robots in TINKERCAD

This week you be introduced to the Valiant robots through TinkerCAD. This workshop aims to develop your text programming skills.

Please complete the bronze requirements before starting the silver, and complete the silver before starting the gold.



Getting Started









BRONZE Challenge:

Steps:

- 2. Add code to the forever loop() to flash the LED on and off:

```
digitalWrite(13, HIGH);
delay(100);
```



. . .

SILVER Challenge:

Steps:

- 1. Inside the setup() function:
 - a. Add the pin mode to set the LDR pin (A0) as an input pin pinMode(A0, INPUT);
 - b. Initialise the Serial monitor Serial.begin(9600);
- 2. Above the setup() function:
 - a. Create a variable to store the readings from the LDR

int myInput = 0;



SILVER Challenge:

Steps:

- 3. Inside the loop() function:
 - a. Assign the reading from the LDR to your variable
 myInput = analogRead(A0);
 - b. Print out the light level from the LDR to the serial monitor Serial.println(myInput);



GOLD Challenge:

Aims:

- Introduce various 'bugs' into your code to understand the error messages you get
- One at a time, make the following modifications to your program then try to run the simulation to see what error message you get. Then fix the change before trying the next.
- Try each change in a few different places
 - Remove a closing Curly bracket }
 - Remove an opening Curly bracket {
 - Remove a semi-colon ;
 - Remove a pair of round brackets ()
 - Introduce a spelling mistake



What else can you add to this program?

- Add variables to define the pins the LED and LDR are connected to. Use these variables instead of pin numbers in your program
- In a previous circuit, with an LDR and LED, look at the text version of an if statement used to turn on the LED when it is dark. Try adding this to your new circuit.



Thank You

