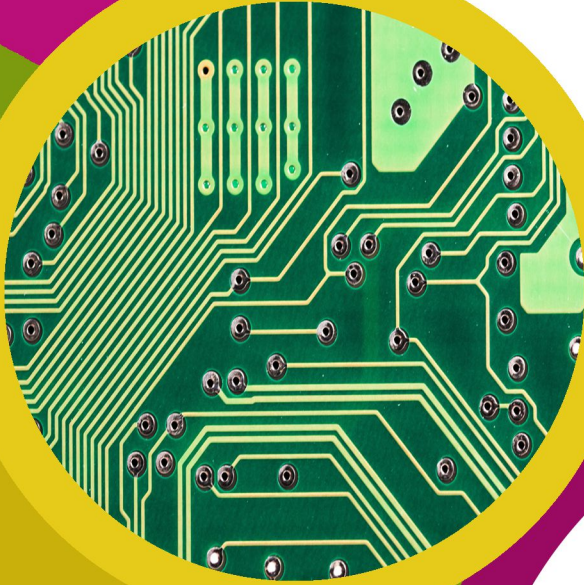


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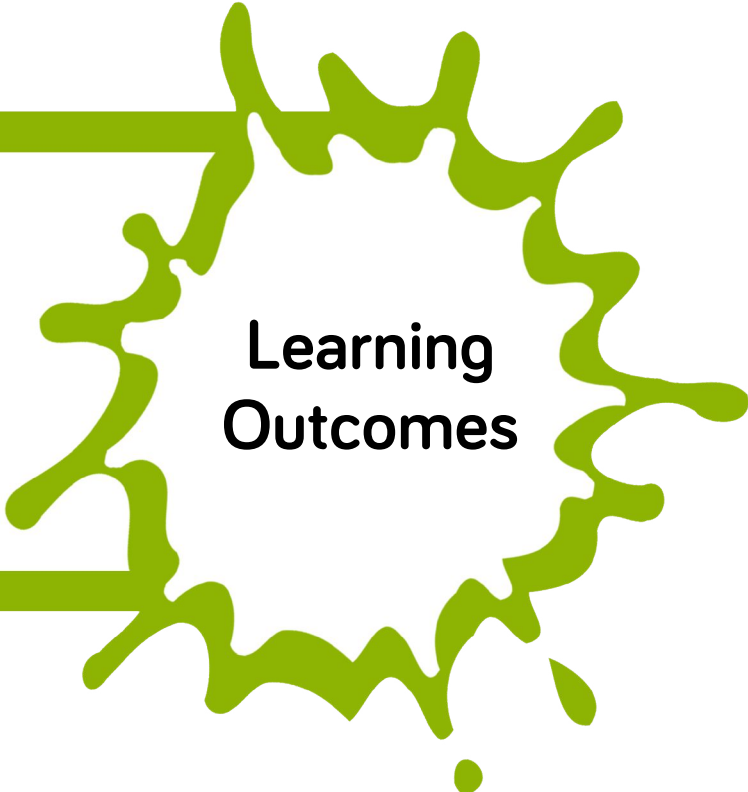
Technology, Ethics & The Future Workbook



Overview

In this workshop, we will study the evolution of technology and the ethical issues surrounding technology. Additionally students will develop their own piece of smart technology using Arduinos.

1. Improved awareness of ethical issues surrounding technology.
2. Basic understanding of Arduino circuits and code.



Learning Outcomes

Attendee Prerequisites

1. Basic programming experience - e.g. Scratch

What Is Technology?

In your own words define and describe technology.

Technology, Uses and Effects

In pairs, write a list of the devices you use and answer the following questions about each item.

- What do you use it for? Are these uses good/bad?
- How does it affect you? Does it help you? Is it useful to everyone?

| Device | Use | Good/Bad? |
|--------|-----|-----------|
| | | |
| | | |
| | | |
| | | |

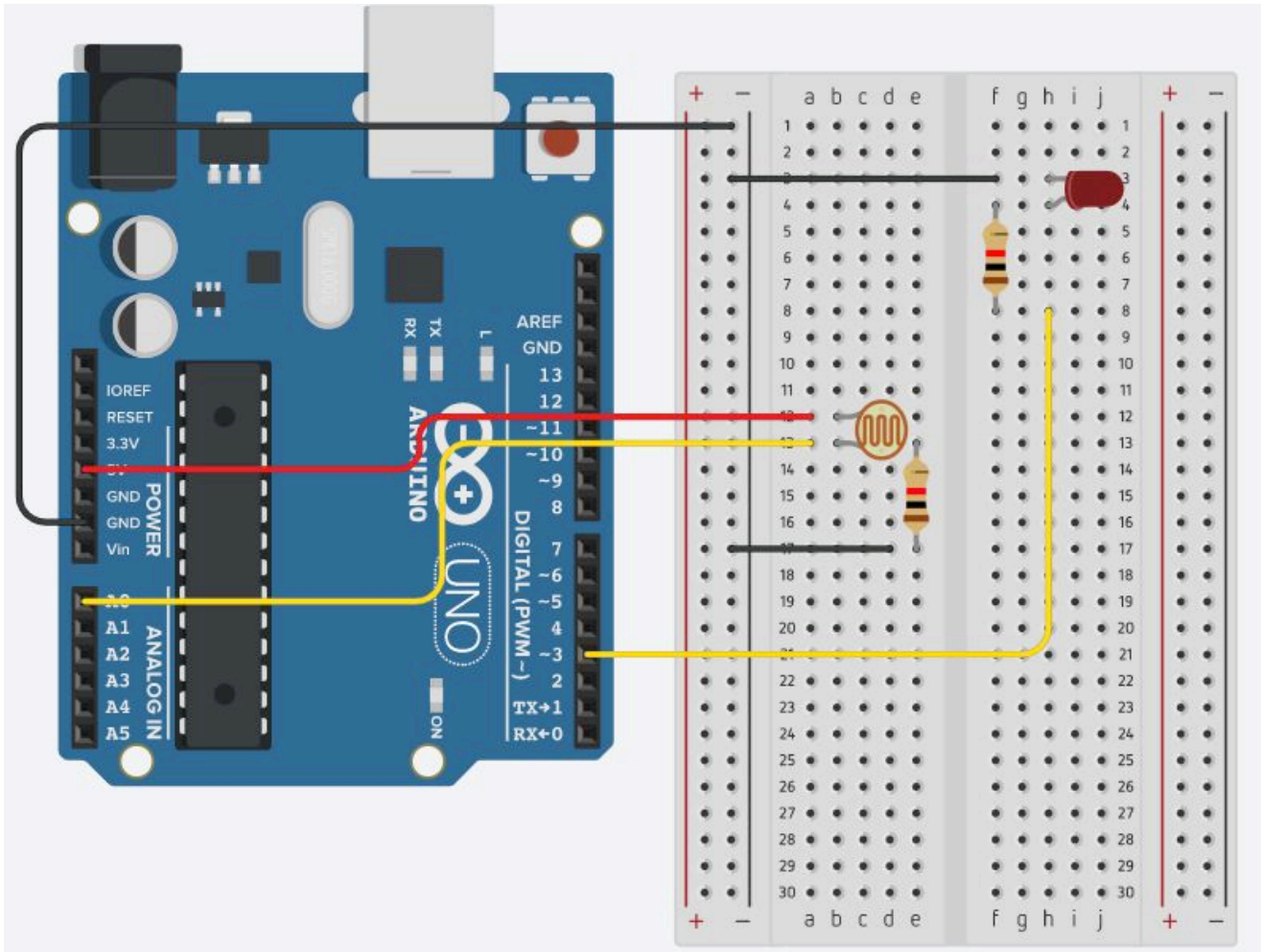
Bins - How Do They Use Technology?

Describe how you think bins can use technology.

Smart Homes/Cities - Benefits and Drawbacks

List some benefits and drawbacks of smart homes and cities. Think of both the functional benefits to society as well as the ethical issues that could occur.

Arduino Circuit



The Code - Variables

Match each variable to its correct data type:

Text

Number

Name

Age

Address

Marks

The Code

```
int sensorPin = 0;
int lightPin = 3;
int threshold = 400;

void setup() {
  Serial.begin(9600);
  pinMode(lightPin, OUTPUT);
}

void loop() {
  int sensorValue = analogRead(sensorPin);
  Serial.println(sensorValue, DEC);

  if (sensorValue < threshold){
    digitalWrite(lightPin, HIGH);
  }
  if (sensorValue > threshold){
    digitalWrite(lightPin, LOW);
  }
}
```

Don't forget to set the threshold to be a value that is useful to your surroundings/lighting conditions.

Driverless Cars - What Do They Do?

Write below all of the things that a developer of a driverless car has to consider. What should the car be able to do without any assistance? What type of sensors could they use? What should the car do in emergencies?

Driverless Cars - Issues

What issues do you think there are with driverless cars? Think about accidents, making decisions and responsibilities.



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