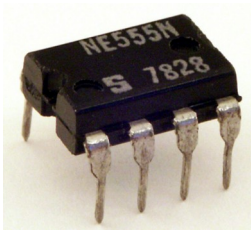
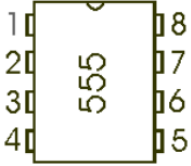

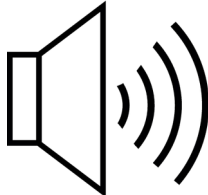

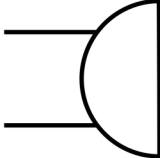


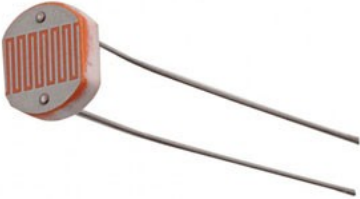
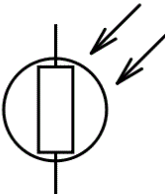

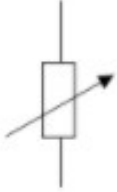

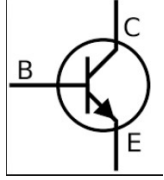





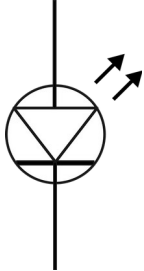



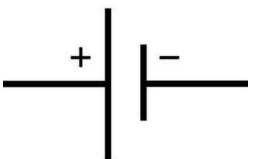

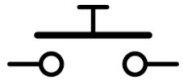


# Year 10 DGT 2020 Assessment -1

## Study Guide

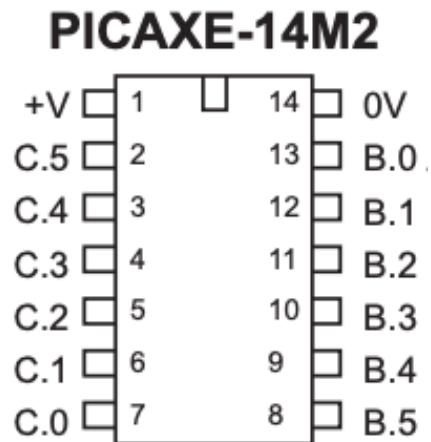
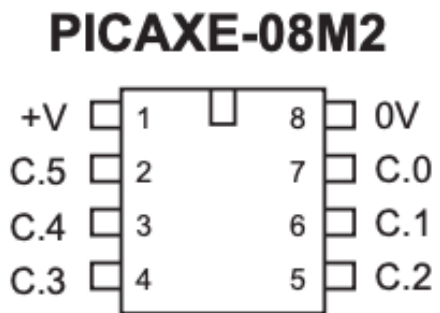
### Electronic Components – Symbols and names

Image	Component Name	Symbol
	555 timer	
	speaker	
	buzzer	
	Fixed Value Resistor	
	LDR	

	<p>Potentiometer</p>	
	<p>Transistor</p>	
	<p>Electrolyte Capacitor</p>	
	<p>Non- Electrolyte Capacitor</p>	
	<p>LED</p>	

	<p>cell</p>	
	<p>Push Switch</p>	
	<p>Slide Switch</p>	

**08M2 and 14M2 Picaxe Micro-Controller**



## Picaxe programmes

Using the 08M2 Picaxe to write a programme with comments to alternatively flash red and green LED's on/off for 1 second and repeat continuously.

Green led = pin c.1

Red led = pin c.4

1. start: 'A label address
2. high c.1 'Turn on pin c.1
3. low c.4 'Turn off pin c.4
4. pause 1000 'Pause for 1000 milliseconds which equals to 1s
5. low c.1 'Turn off pin c.1
6. high c.4 'Turn on pin c.4
7. pause 1000 'Pause for 1000 milliseconds which equals to 1s
8. goto start 'Go to start and repeat the programme

Moodlight Code:

Using the 14M2 Picaxe to write a programme with comments to alternatively flash red and green LED's on/off for 1 second and repeat continuously.

```
start:
'red led

for b0=10 to 255 step 5
pwmout b.2,64,b0
debug b0
pause 100
next b0
for b0=255 to 10 step -5
pwmout b.2,64,b0
debug b0
pause 100
next b0
goto greenled

greenled:
'green led
for b1=10 to 255 step 5
pwmout b.4,64,b1
debug b1
pause 100
next b1
for b1=255 to 10 step -5
pwmout b.4,64,b1
debug b1
pause 100
next b1
goto blueled

blueled:
'blue led
for b2=10 to 255 step 5
pwmout c.2,64,b2
debug b2
pause 100
next b2
for b2=255 to 10 step -5
pwmout c.2,64,b2
debug b2
pause 100
next b2
goto start
```

## Soldering

Comparing the two solder joints in images 1 and 2.



Image-1



Image-2

Good points – Image 2:

- 1-Solder joints are formed evenly
- 2- Solder contacts both the circuit board and the component leads

Bad points- Image 1

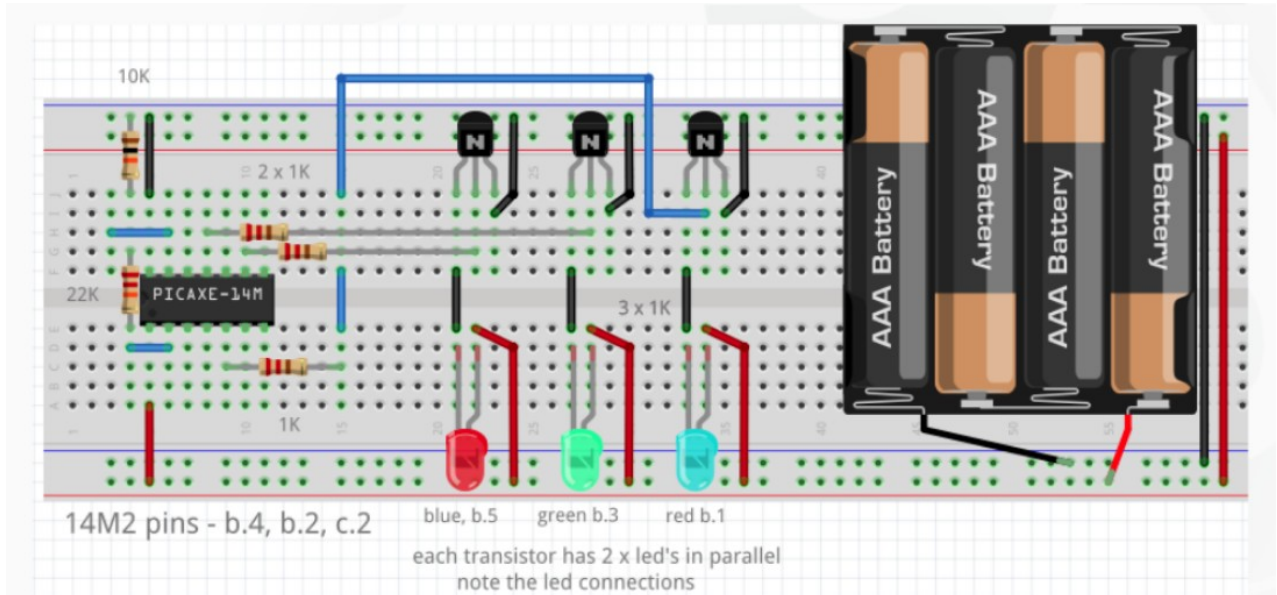
- 1- Too much solder
- 2- Solder does not contact both the circuit board and the component leads

Consequences of a badly soldered joint;

- 1/ Poor contact between the circuit and the component = lack of continuity
- 2/ Burned tracks resulting in poor continuity and/or a ruined circuit board

## Breadboard circuit

Moodlight breadboard circuit:



## Using the Multi Meters

The multi meter has connection points for the positive and negative leads. Points where these leads connect to the meter when measuring **VOLTAGE**

### Meter dial settings:

1- Multimeter measuring resistance:



## 2- Multi meter measuring DC voltage



## 3- Multimeter measuring continuity test

