# INPUT, PROCESS, OUTPUT AND BINARY NUMBMERS

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On behalf of The World Association of Technology Teachers

# W.A.T.T.



## World Association of Technology Teachers

This exercise can be printed and used by teachers and students.  It is recommended that you view the website (www.technologystudent.com) before attempting the design sheet .

# INPUT, PROCESS, OUTPUT AND BINARY NUMBMERS

A technology pupil has devised a cheap microprocesor based system for a model of a theme park entrance. It will count people as they enter the park. The light / dark sensor detects a drop in light level as a person passes by. The programmed microprocesor detects each input from the sensor and lights the output LEDs. The LEDs display the total number of people in the park using the binary system.

| INPUT | PROCESS | OUTPUT |
|-------|---------|--------|



DARK SENSOR            PIC MICROPROCESSOR            LEDS
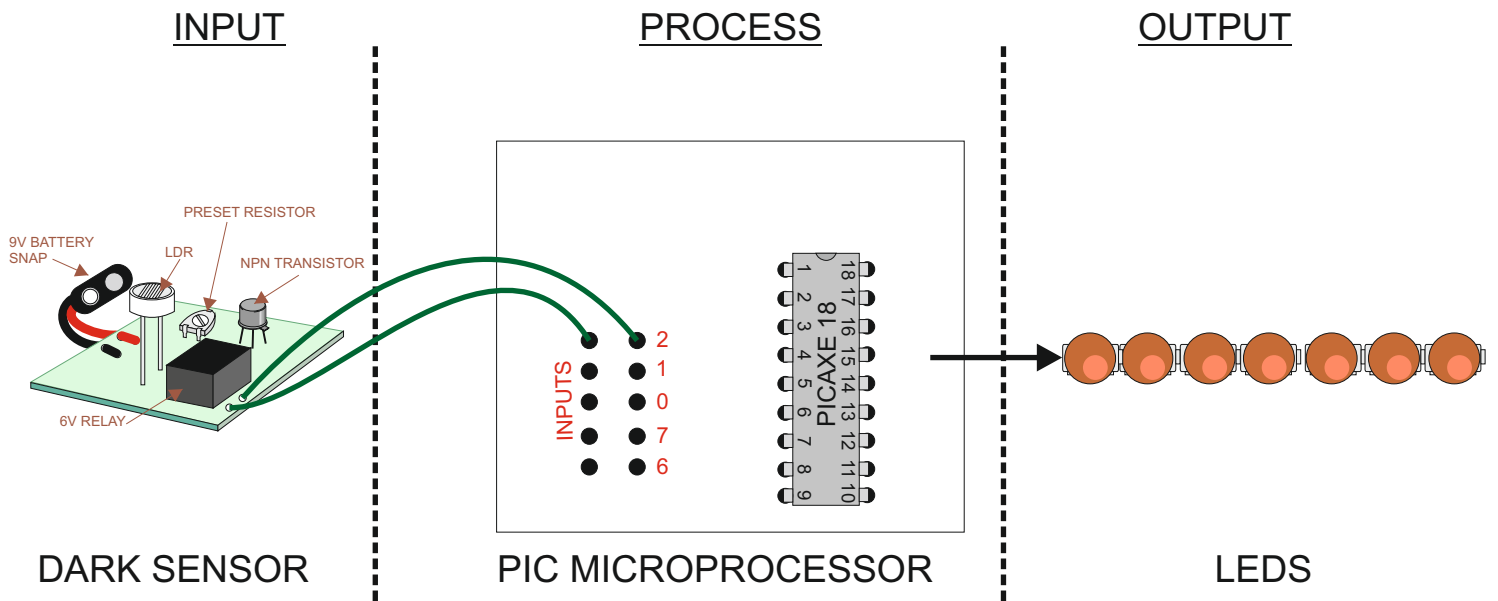
Complete the table below by writing the digital numbers as binary equivalents.

| BINARY CONVERSION | 64 | 32 | 16 | 8 | 4 | 2 | 1 |
|---|---|---|---|---|---|---|---|
| DECIMAL 10 | | | | | | | |
| DECIMAL 60 | | | | | | | |
| DECIMAL 38 | | | | | | | |
| DECIMAL 44 | | | | | | | |
| DECIMAL 19 | | | | | | | |
| DECIMAL 27 | | | | | | | |
| DECIMAL 7 | | | | | | | |

Name and explain two other types of sensors or components that could be used in place of the light/dark sensor

SENSOR 1  NAME: _____

EXPLANATION:  _____

_____

SENSOR 2  NAME: _____

EXPLANATION:  _____

_____

_____