

# USING ANALOGUE INPUTS - LDRs, POTENTIOMETERS AND THERMISTORS

V.Ryan © 2000 - 2010

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](http://www.technologystudent.com)) before attempting the design sheet .

THESE MATERIALS CAN BE PRINTED AND USED BY TEACHERS AND STUDENTS.  
THEY MUST NOT BE EDITED IN ANY WAY OR PLACED ON ANY OTHER MEDIA INCLUDING WEB SITES AND INTRANETS.  
NOT FOR COMMERCIAL USE.  
THIS WORK IS PROTECTED BY COPYRIGHT LAW.  
IT IS ILLEGAL TO DISPLAY THIS WORK ON ANY WEBSITE/MEDIA STORAGE OTHER THAN [www.technologystudent.com](http://www.technologystudent.com)

# USING ANALOGUE INPUTS - LDRs, POTENTIOMETERS AND THERMISTORS

V.Ryan © 2010 World Association of Technology Teachers

1. Using either an LDR, potentiometer or thermistors as an example, explain the difference between a digital input and an analogue input.

---

---

---

---

2. Draw an LDR, potentiometer and thermistor. Include the correct symbol for each of these analogue components.

LDR		POTENTIOMETER		THERMISTOR	
SKETCH	SYMBOL	SKETCH	SYMBOL	SKETCH	SYMBOL

3. A description of a practical application of a thermistor and microcontroller circuit, is written below.

Describe a practical application for two further analogue sensors, LDR and potentiometer.

**THERMISTOR:** As the temperature changes, the resistance of a thermistor also changes. A thermistor can be used as an analogue sensor, for a programmed microcontroller circuit. If used in a car, as the temperature falls to near freezing, a microcontroller circuit could illuminate an output LED on the dash board. A audio warning (such as a buzzer), could be programmed to sound, as well. This would warn the driver, of the possibility of ice on the roads.

**LDR:**

---

---

---

---

**POTENTIOMETER:**

---

---

---

---

4. Using the internet as a research tool, find another component or circuit, that could be used as an analogue input, for a microcontroller circuit.

Describe/explain the component / circuit and explain why you think it is 'analogue' not digital.

---

---

---

---