## PROGRAMMING AND FLOW CHARTS



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 .

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## PROGRAMMING AND FLOW CHARTS

WORLD ASSOCIATION OF TECHNOLOGY TEACHERS https://www.facebook.com/groups/254963448192823/ www.technologystudent.com © 2017 V.Ryan © 2017
A technology student has developed an automatic traffic control system for a level crossing on the theme parks miniature railway system.

A pressure sensor detects when a pedestrian passes over it. The sensor is connected to INPUT 1 of a control system.

A light sensor detects the presence of a miniature train close to the crossing. The light sensor is connected to INPUT 2 of the control system.

When a pedestrian is detected the control system checks if a miniature train has passed the light sensor. Then the traffic lights run through a sequence of changes, eventually changing the lights from red to green, raising the barrier and allowing the car to cross the railway line safely.

If a train is present the traffic light s stay on red and the barrier stays lowered / closed.


The sequence of events are listed below. However. they are in the wrong order. Write the correct sequence of events in the available space. The first three stages have been completed.

TRAFFIC LIGHTS - AMBER OFF
BARRIER IN CLOSED POSITION
CHECK INPUT 2
TRAFFIC LIGHTS GREEN ON
TRAFFIC LIGHTS - AMBER AND RED ON
WAIT 5 SECONDS
TRAFFIC LIGHTS RED + AMBER ON
CHECK INPUT 1
BARRIER OPENS
WAIT 5 SECONDS
TRAFFIC LIGHTS - GREEN OFF
BARRIER LOWERED.
TRAFFIC LIGHTS - AMBER ON
WAIT FIVE SECONDS
WAIT 60 SECONDS
TRAFFIC LIGHTS - RED + AMBER OFF
TRAFFIC LIGHT - RED

TRAFFIC LIGHT - RED
BARRIER IN CLOSED POSITION
CHECK INPUT 1

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Convert your sequence into a flow chart using the boxes also shown below. The first four stages have been completed for you.

START/FINISH


INPUT / OUTPUT

DECISION


