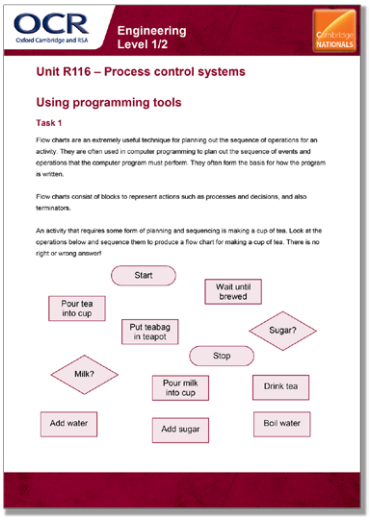
Unit R116 – Process control systems

Using programming tools

Instructions and answers for teachers

*These instructions should accompany the OCR resource **'Using programming tools'** activity which supports OCR Cambridge Nationals in Engineering.*



The Activity:

This resource comprises of 2 tasks.

This activity offers an opportunity for English skills development.

Associated materials:

'Using programming tools' activity sheet
'Using programming tools' PowerPoint presentation

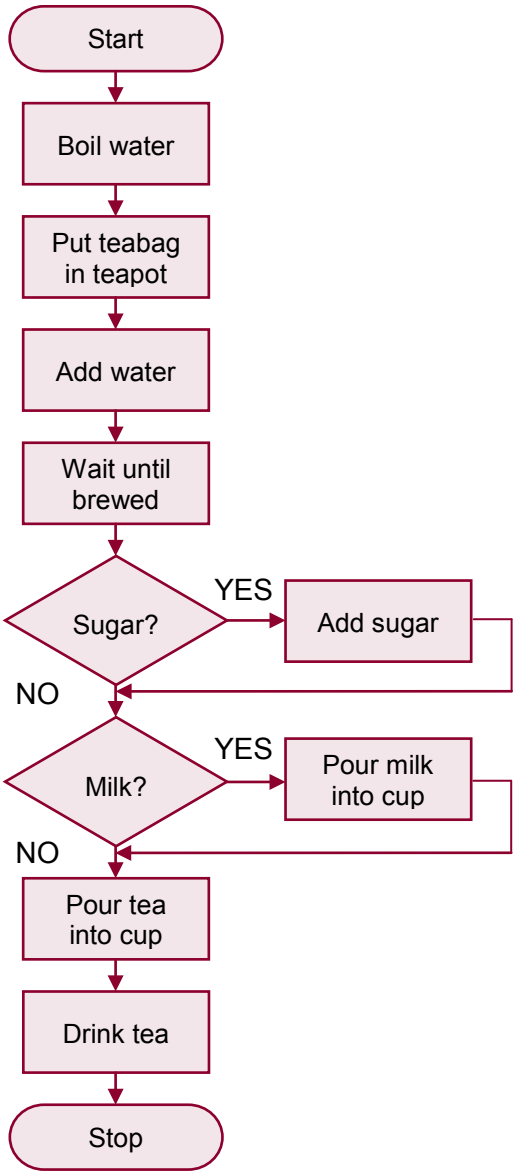
Suggested timings:

Tasks 1 and 2: 1 hour

Task 1

For this activity learners are tasked to produce a flow chart for making a cup of tea. Learners might require a teacher introduction to flow charts including the types and meaning of different flow chart operations and symbols (eg processes and decisions, and also terminators). The diagram below is one solution to the problem, but there is no correct or incorrect solution as the sequence in the flow chart may be altered. The decision blocks (diamonds) relate to prescribed operations however.

Learners might produce flow charts by hand or using information technology. The flow chart shown here was produced using Microsoft PowerPoint.



Task 2

For Task 2 learners should select an electrical or electronic control system and produce flow charts showing operating sequence. Examples might include a washing machine or DVD player. Teachers might introduce learners to a wider range of operations and symbols that could be used on a flow chart, such as delays, manual operations and data.

Learners might use suitable software to develop and present their flow charts.

The activity might be used as the basis for learners producing flow charts to aid with programming their own control system solution, and also with explain and presenting system operation.