

Name _____

Class _____

Date _____

By the end of this worksheet I can...

- ☐ complete a system diagram from a specification
- ☐ complete a sub-system diagram with a boundary, sub-systems and interactions
- ☐ give every output device its own driver

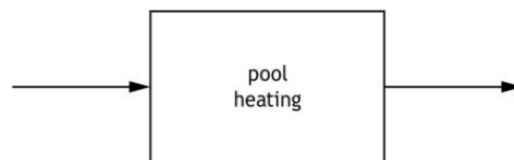
I DO**How to approach it** Based on the 2024 assignment

- Read the specification and underline every input, output and sensor.
- Show the **external input** (what the user sets) and the **external output** clearly.
- Inside the dashed **system boundary**: microcontroller, driver, output device and sensor.
- Use arrows to show each interaction between sub-systems, including the feedback.

YOU DO**Task 1: pool heating** Specification below

- The desired temperature of the water is set manually by a pool attendant.
- The temperature of the water is constantly monitored. When it falls below the set level, a microcontroller switches on a heater.
- When the temperature rises above the set level, the microcontroller switches off the heater.

1 Complete the system diagram to meet the specification. Show the external input and output clearly. (2 marks)



2 Complete the sub-system diagram to meet the specification. Show the external input and output, all sub-systems, the system boundary and the interactions between sub-systems. Any output device needs its own driver. (6 marks)



Check and reflect

Mark your answers with the answer sheet. Which “I can” statement above still needs work? Look back at the notes for that topic on the site.
