

# Engineering

## Maintenance



### BTEC unit covered

Engineering: Unit 4 Engineering maintenance

### Key terms

**Hazard:** A gas produced by the breakdown of organic matter in the absence of oxygen.

**Rotor:** A rotor is a rotating part of a motor or an AC machine, used to transmit the motor forces to the output shaft.

**Stator:** The static / stationary part of a motor on an AC machine.

## Learning objectives

- To learn about engineering maintenance and the different types of maintenance undertaken by Thames Water engineers

## Suggested activities

- This lesson contextualises students' understanding of the importance of maintenance and maintenance procedures by providing an insight into the work of Thames Water engineers and the maintenance of the sludge pumps used within the business. Use slide 2 to ask students what they think is meant by the term 'maintenance'.
- **Student task:** Slides 3-6 investigate the meaning of the word and challenge students to explain the main types of planned maintenance procedures before providing definitions.

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**Recommended resources** Slides 2-6

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- Slide 7 provides a brief overview of the Thames Water business so students are better able to visualise possible implications of equipment failure.
- **Student task:** Slide 8 asks students to think about the importance of maintenance procedures to Thames Water's business.

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**Recommended resources** Slides 7-8

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- Slides 9-11 explain the purpose of the sludge pump – looking specifically at what it is, what it does and where it is found within the business.
- **Student task:** Students to answer the question posed on slide 12 before running through the answers on slide 13 as a group.
- Slides 14-16 look at two key components of a sludge pump (the rotor and stator) which are the subject of planned maintenance procedures.
- **Student task:** Students to suggest some possible faults found on these components.
- Slides 18-21 look at some of the typical faults found on the rotor and stator.

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**Recommended resources** Slides 9-21

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- **Student task:** Slide 22 challenges students to consider the 'knock-on' effects of sludge pump failure before providing answers on slide 23.
- Slides 24-25 conclude the presentation by looking at typical maintenance to the sludge pump, with slide 25 providing an extract from a service manual, outlining recommended maintenance intervals.

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**Recommended resources** Slides 22-25

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