# Engineering Mathematics

Year 11 Homework Booklet 3 Due Date: _____

**Pupil:** **Class:**

**Homework should be completed each weekly and handed in to your teacher on the date it is due.**

**Any issues with the homework must be addressed with your teacher before the due date.**

| Week | Task title | Summary |
|---|---|---|
| **17** | Research Task | List as many of the base SI units as well as their multiples and submultiples. |
| **18** | Research Task | Produce a fact sheet about André-Marie Ampère, the physicist after whom the electric current unit was named. |
| **19** | Research Task | Use what you have learnt today to create an A3 poster that outlines engineering concepts of temperature. |
| **20** | Research Task | Research how much a 58kg body would weigh on three planets other than earth. |
| **21** | Research Task | Research and produce a fact file about Newton's Force laws |
| **22** | Research Task | Complete the maths exercise and define the terms. |
| **23** | Research Task | Research the Great Stupa at Sanchi and use the information |
| **24** | Research Task | Calculate the energy supplied by the battery in Joules |

# Home study 17: Revise and Prepare

List as many of the base SI units as well as their multiples and submultiples.

## Home study 18: Research

Produce a fact sheet about André-Marie Ampère, the physicist after whom the electric current unit was named.

# Home study 19: Poster

Use what you have learnt today to create an A3 poster that outlines engineering concepts of temperature.

For example,

- What is temperature?
- What are the different units in which temperature is measured?
- How are those units converted?

# Home study 20: Research

Research how much a 58kg body would weigh on three planets other than earth.

| Planet | Weight |
| --- | --- |
| | |
| | |
| | |
| | |

Explain the reason behind those results.

| Planet | Reason |
| --- | --- |
| | |
| | |
| | |

# Home study 21: Research

Research and produce a fact file about Newton’s Force laws

# Home study 22: Recap and calculate

Complete this exercise:

| | |
|---|---|
| What is 5.2mm3 in m3? | |
| What is 24cm2 in m2? | |
| What is 34m3 in μm3? | |
| What is 0.96 x 106m2 in km2? | |

Define the key terms

| |
|---|
| **Mass:** |
| **Weight:** |
| **Density:** |

# Home study 23: Indian architecture

The Great Stupa at Sanchi is one of the oldest stone structures in India. This Buddhist sits on top of a hill. It was built by Emperor Aśoka in the 3rd century BCE. Its nucleus is a hemispherical brick structure built over the relics of the chief disciples of Buddha. It is a perfect example of a combination of solid figures.

1. What shape does the base have?

2. Calculate its area if the height of the monument is 21m.

# Home study 24: Research and calculate

A 12V 36W lamp is lit to normal brightness using a 12V car battery of negligible internal resistance. The lamp is switched on for one hour (3600s).

For the time of one hour, calculate the energy supplied by the battery in Joules.