

# Core Maths Bridging Work

Core Maths is about using your maths skills and knowledge of the real world to solve practical problems. The key skills include:

- Using number and percentages
- Making sensible estimates
- Noticing mathematical details in something
- Forming a sensible argument
- Convincing someone else that you are correct

These skills are useful across many subjects and careers, so they are worth practising!

The tasks that follow will help you to work on your maths reasoning skills ready for the core maths course in September. Some of the questions seem quite easy, other look harder, so try what you can.

- For questions that look easy, you will need to think about how you will *convince* someone that your answer is correct
- For questions that look harder, can you do any research online to help you?

## Task 1 – Order, Order!

The first task is here: <https://nrich.maths.org/7500>

For each set of quantities, put them in order. Present your answers clearly, justifying your answers. For example, you may want to use calculations and/or diagrams to explain your answer.

NOTE: please don't just Google the answers! You will need to be able to estimate things like this in the course without using the Internet, so start practising now. We would prefer a rough estimate with an attempt at some working rather than an exact answer that has clearly been Googled.

## Challenge - Optional

If you want a similar problem with some harder numbers, try: <https://nrich.maths.org/6505&part>

You may need to do some research online to help with this one! If you look up anything, write down what you find and where you found it (e.g. copy the links to nay websites you use).

## Task 2 – A Pattern to Find...

Try these questions: <https://nrich.maths.org/stealcables>

Make sure that you answer all the questions, including:

- Finding the number of cables needed
- Finding the formula for the answer
- Justifying your answer
- Commenting on the other ideas on the page

As always, make sure that you present your work clearly.

## Task 3 – Alternative Record Book

Complete this task: <https://nrich.maths.org/7363>

- You will need to do some research for this and present your work carefully, with a detailed discussion of your choices.
- This is quite an open-ended task, so go ahead and impress us!

## Task 4 – Book Review

Please read something about maths in the real world and write a short review of whatever you read. Some ideas for reading:

- One of the books below
- An news article about maths
  - For example, there are lots of articles at the moment discussing the maths of pandemics

You can choose anything that is about maths in the real world – you do not need to buy any of the books below, but they are very good!

### *Interesting books:*

**Maths on the Back of an Envelope: Clever ways to (roughly) calculate anything**

<https://www.amazon.co.uk/Maths-Back-Envelope-calculate-anything-ebook/dp/B07Q1YY1C5>

**How to Cut a Cake: And Other Mathematical Conundrums**

<https://www.amazon.co.uk/How-Cut-Cake-mathematical-conundrums-ebook/dp/B00AMF5BE8>

**Why Do Buses Come in Threes?: The Hidden Maths of Everyday Life**

<https://www.amazon.co.uk/Why-Do-Buses-Come-Threes-ebook/dp/B00OZRQT0Y>

**The Number Mysteries: A Mathematical Odyssey through Everyday Life**

<https://www.amazon.co.uk/Number-Mysteries-Mathematical-Odyssey-Everyday-ebook/dp/B003UV90IO>

**Humble Pi: A Comedy of Maths Errors**

<https://www.amazon.co.uk/Humble-Pi-Comedy-Maths-Errors-ebook/dp/B07CV5FN CN>

**How Long is a Piece of String?**

<https://www.amazon.co.uk/How-Long-Piece-String-Mathematics-ebook/dp/B00PPHSUBO>

***Please hand in all your work by 25<sup>th</sup> August 2020***

When you have finished all the tasks, please email it to both:

- [phil.marshall@edgbarrowschool.co.uk](mailto:phil.marshall@edgbarrowschool.co.uk)
- [daniel.simpson@edgbarrowschool.co.uk](mailto:daniel.simpson@edgbarrowschool.co.uk)

We are both available if you have any questions about the work, core maths or 6<sup>th</sup> form study.

**Good luck and we look forward to seeing your work!**