

## Introduction

We are very pleased that you have taken an interest in the resources that we are providing on the HLT website and hope that you find them interesting.

Mathematics is a core subject in school as it is generally recognised that an understanding of numbers and calculation is a life skill. Mathematics is also a service subject, giving us a toolkit which allows us to solve problems which are encountered in many areas of work and research and innovation.

The resources in this unit are designed to show how maths can be and has been used to solve problems and analyse data in situations far beyond the maths classroom.

### For Parents and Carers -

Each of the attached resources will contain a web link to an article to read, this will give some context to the problem or discussion. Reading the article will be the starting point, it may generate some discussion if more than one person is able to do this. Where there are maths calculations to be done, you could ask your child to explain to you the process involved; communication of ideas is a very big part of the maths curriculum.

Many of the articles come from the [mathscareers.org.uk](http://mathscareers.org.uk) website. The articles are posted by people who use maths, to different levels, within their jobs or research. You may find other interesting articles and videos on the website that have not been included in this package.

**Whale watching** – Uses capture recapture (GCSE topic) which is based on the idea of equivalent fractions (KS3) and substituting into a formula (KS3)

**Bouncing Bomb** – Links to History and WW2 with a literacy focus as well as the maths which uses trigonometry (GCSE topic)

**Golden Ratio** – Looks at how mathematics can influence Art and Architecture amongst other things. The maths used here includes ratio and similar shapes (KS3), rearranging and substitution (GCSE), forming and solving a quadratic equation (GCSE).

**Carbon footprint** – This looks at the greenhouse gases generated in the production of some food types. The maths used involves ratio and units, reading information from a table. (KS3)

## **For the students**

These resources are designed to supplement the work that your school are providing. They are aiming to offer some answers to the question 'when will I need maths once I leave school?'

The problems will use some of the maths that you have been taught in school, and they may refer to some more advanced maths, but you will not be expected to know this. They also provide you an opportunity to read and try to understand and explain how maths can be used to solve real problems.

In your maths assessments and examinations at school, the problems that you are set will often be given a context. The more experience that you have of seeing maths used in context, the more familiar the exam problems will become.

There is little time in school to allow you the luxury of playing with your maths skills, make use of this opportunity to do something different.

If you have any queries about these resources please email me on

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I will endeavour to reply to you as soon as possible.

Have fun!