




## What is the value of the contents in a lorry?

	Age group	13 and above
	Time	30 - 60 mins
	Subject	Computing



### National Curriculum links

This activity would suit KS4 students or the top end of KS3.

The national curriculum for computing for key stages 3 and 4 aims to ensure that all pupils *“can analyse problems in computational terms”* and *“are responsible, competent, confident and creative users of information and communication technology.”*

### England Key stage 3 subject content

#### Pupils should be taught to:

- design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems
- undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users

### England Key stage 4 subject content

#### Pupils should be taught to:

- develop and apply their analytic, problem-solving, design, and computational thinking skills

### Learning outcomes

#### Pupils should be able to:

- Create a spreadsheet to perform calculations.
- Use conditional formatting to highlight particular data sets.
- Enable the spreadsheet to present data in pie charts and bar graphs.

### Skills developed

- **Spreadsheets:** Formula use, graph/chart creation.
- **Communication:** Sharing thoughts with others on how they arrived at their solution.
- **Collaboration:** Working with others to discuss the problem.

## Prior Learning

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Learners will require a basic understanding of spreadsheets and how to use formulae in calculations. They will also need to understand how to calculate percentages.

## Requirements

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Students will need access to computers to complete this task.

## Overview of 'What is the value of the contents in a lorry?'

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This task is a real-world example of how spreadsheets can be utilised effectively to simplify data handling and calculation tasks.

Logistics companies need to know the contents of a lorry to ensure that all the contents arrive at their destination and are in the same condition as when they started their journey. Logistics companies also need to know the value of the contents in a lorry. This is because they need to insure the lorry contents so may include a fee for the value of the goods being transported in their overall charge to customers to cover this insurance cost. The overall charge for transporting goods will cover additional factors such as the distance the goods are transported, the mass and size of the goods. In this scenario students use spreadsheets to calculate the total value of items in a lorry and from this a 15% value fee, that the logistics company will add to their overall transportation charge.

Spreadsheets are an integral part of most businesses, and this example gives a real-world context for students to create and use a spreadsheet.

These skills, once learnt and applied to varying scenarios, help learners to approach any data-based problems that require a spreadsheet to view and analyse the data received.

## Resource Overview

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This resource includes these items:

- Teacher notes.
- Student activity sheet setting out the task and giving the information required .
- Exemplar spreadsheet solution which teachers may use to support students who need some scaffolding to get started.
- Presentation slides to help explain the tasks.
- Solution sheet presenting the answers in a grid.

## The context

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In this problem a logistics company, Dynamic, has received data from a customer, TEX4U about the electronic goods the customer would like transported by lorry. The data received outlines the item types, their quantity and value.

The task asks students to use the data to create a spreadsheet to:

- calculate the total value of each item type
- use currency cell formatting where appropriate
- use conditional formatting to highlight certain data
- calculate the total value of the lorry contents
- calculate the 15% value fee that will need to be added to the overall transportation charge
- present the quantity of each item type in the form of a pie chart
- present the total value for each item type as a bar graph

## Supporting notes

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- Learners might find it helpful to be reminded how to calculate a percentage and how to transfer this into a calculation on a spreadsheet.
- To reduce the time learners spend doing data entry, they could be given a spreadsheet, adapted from the solution spreadsheet provided, with the headings and some of the data already in place.

### Generation Logistics Education Hub

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This resource is one of the many engaging resources available from Generation Logistics on their Education Hub. For more details go to: [www.educationhub.generationlogistics.org/](http://www.educationhub.generationlogistics.org/)