



# The Conveyor Belt

## Teacher notes



### Overview:

The aim of this activity is to highlight the importance of maths skills in Logistics careers. It links directly to the Key Stage 3, 4 and 5 Maths Curricula and supports Gatsby Benchmark 4.

This resource is not intended to last for a whole lesson. It best used as a lesson/topic starter or at the end of a lesson/topic or as a problem-solving exercise. Alternatively, it could be used as part of a carousel of activities along with, 'Flow' and 'Lorry Loading'.

The resource is intended to create discussion!

### Curriculum links:

- Reasoning mathematically
- Solving problems
- Model situations mathematically
- Estimation
- Compound units (Speed=distance/time)
- Select appropriate concepts, methods and techniques to apply to unfamiliar problems
- Fermi Estimation (Level 3 Core Maths)
- Appropriate measures of central tendency and spread (optional)

### Suggested ways to use the resource

Project the picture of the warehouse (on page 3), or the [link to the image](#) from its original source.

Handout the worksheet.

Offer prompt questions, e.g. "is there anything on the photo that you know the size of?" to start the discussion and explain what is meant by an assumption.

Encourage students to work in pairs/small groups and feedback their solutions to the class.

**Further ideas:** Collect the classes results, calculate the different averages and the range of the data. Consider the 'wisdom of the crowd' – is that more likely to give a 'better' answer?

For further curriculum linked careers resources visit: <https://amsp.org.uk/teachers/11-16-maths/resources/linking-curriculum-learning-to-careers/>

# The Conveyor belt

From one end to the other!

The conveyor belt on the right-hand side of this image enters the warehouse and runs 90% of the way along its length. Items need to be taken all the way to the end of the conveyor belt to be sorted.



Image ref: <https://www.manchestereveningnews.co.uk/business/amazon-manchester-airport-city-jobs-11013065>

Estimation is a very important skill in maths, especially in the workplace. The following questions will require you to make estimates based on your own assumptions.

**Stating clearly any assumptions that you make:**

- ✿ Estimate the length of the conveyor belt inside this warehouse.
- ✿ The conveyor belt moves at an average speed of 1.5 m/s. How long do you think it will take for an item travel from the start of this warehouse to the end of the conveyor belt?
- ✿ Items are spaced at an average of 5m apart and the conveyor belt runs 7 days a week, for most of the day. Estimate how many items will reach the end of the conveyor belt in a week.

