

## Numbers at Work

Every year, Tatton Park participates in a fantastic event - organised by Manchester Airport - called 'Numbers at Work'. The aim of this event is to show how a variety of businesses use Maths in their work. We have chosen to theme our activities around Tatton Park's Farm and our 'Field to Fork' project that tells the story of where our food comes from.

**Here are a few of the activities we have done for this event, which you can try in the classroom or at home...**

### Activity 1: Butter Making

**Question:** In the old days, how many grams of butter were produced at Tatton Farm in a year?

**Learn:** Old documents tell us that butter was produced at Tatton Park's Farm for many years. The way that butter was made then was very different to how it is made today. A milkmaid would milk a cow and allow the milk to settle in a dish kept in a cool place. This would make the cream rise to the top of the dish. After half a day, the cream would be skimmed off the top of the dish and prepared for churning. Churning means moving the mixture around and is a bit like stirring a soup. The constant movement of the cream would separate the yellow fat from the buttermilk. The leftover product (yellow fat) gives you butter.

**Activity:** Why not having a go at making butter at home? Half fill a jam jar with cream – it works best with double cream. Shake the jar for 5-7 minutes or until you can hear that a lump has formed inside. This is the churning process. Then remove the solids from the jar and place into a bowl. The leftover liquid is buttermilk, which can be used for other recipes. Pour some cold water over the butter and squash it with your hands into a bowl. Discard the water and repeat this process twice more. You have made butter! At this stage, you could add a small amount of herbs or a pinch of salt to the butter, or leave it as it is. Clean the jam jar you churned the butter in and rinse well. This can be used to store the butter. Keep it refrigerated and use within 7 days. The buttermilk will keep for 5 days in the fridge.

**Investigate:** Old documents tell us that 1313 ½ pounds of butter were produced at Tatton Park's Farm in a year. Pounds and ounces are an old fashioned way of measuring weight – now we use grams and kilograms.

**Activity:** Use the conversion table below to convert 1313 ½ pounds of butter into **grams**. We have included the method on the next sheet in case you get stuck.

1 pound	454 grams
2 pounds	908 grams
10 pounds	4,540 grams
50 pounds	22,700 grams
100 pounds	45,400 grams



**Method & Answer:** There are a variety of ways you can work this out, but below is one suggestion:

- 1000 pounds – conversion for 10 pounds x 100 (454,000 grams)
- 300 pounds – conversion for 100 pounds x 3 (136,200 grams)
- 10 pounds – listed on table (4,540 grams)
- 3 pounds – add together conversion for 2 pounds and 1 pound (1,362)

All these figures would be added together to get the final answer = 596,102 grams

**Did you know?** The amount of butter produced at Tatton Park in one year weighs MORE than a grizzly bear!

### Activity 2: Healthy Eating

**Learn:** All food contains calories – calories are units of energy, which keep us going during the day. However, it is important not to eat too many calories, as this can cause you to put on too much weight and sometimes become unwell. Boys aged between 4 and 8 need around 1400 calories per day. Girls aged between 4 and 8 need around 1200 calories per day. It is important that we understand the amount of calories contained in different foods, so that we can make good choices about what we eat.

**Activity:** Use the list below to select and write down 3 imaginary meals – breakfast, lunch and dinner. If you are a boy, you have 1400 calories to use and if you are a girl, you have 1200 calories to use. Try and use as much of this total amount as you can.

FOOD	CALORIES
A banana	150
A cheese sandwich	497
A slice of pizza	285
An apple	52
A bag of crisps	185
A fish finger	70
A bowl of pasta with sauce	200
A ham sandwich	461
A bar of chocolate	235
A cheeseburger	303
A jacket potato	93
An ice cream cone	207
Sausages and mashed potato	585
A bowl of cereal	110
A slice of toast and jam	117
A portion of chips	222
A slice of chocolate cake	235

**Did you know?** To burn off 1 calorie, we need to take 20 steps. Next time you enjoy a lovely slice of chocolate cake, remember that it takes 4700 steps to burn it off! Treats are important for a balanced diet, but we need plenty of exercise to keep our bodies happy and healthy!

