Science of Food Treats



The science behind jelly, cookies, whipped cream and much more!

Sharon Parsons

Nelson Literacy Directions

Science of FOOD TREATS

For teachers' inspection ONLY



Dear Reader

Everyone loves a food treat now and then – anything from whipped cream to jelly to fairy bread! I thought it would be fun to investigate the science behind turning cream from a liquid into a fluffy consistency and what happens when jelly changes from a hot liquid into a wobbly solid.

ENJOY USING YOUR IMAGINATION TO "TASTE" THE TREATS IN THIS BOOK.

One of my favourite research tasks was investigating how hundreds and thousands are made – you can discover how this happens on pages 7–9.

I also enjoyed taking photographs of my friends, Kate and her mum, when they made choc-nut-chip cookies, jelly and whipped cream in my kitchen. The best job was tasting the results!

Enjoy!

Sharon Parsons

My sincere thanks to the following people for their time, information, images and enthusiasm for this book:

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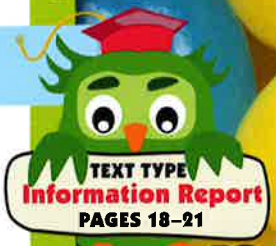
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1 Food Treats

Cream, Chocolate, Jelly

Everyone should eat healthy food for most of the time … but sometimes we need to have smaller amounts of food treats. So while you're reading about whipped cream, jelly, chocolate chip cookies and hundreds and thousands on fairy bread, imagine their tastes in your mouth! Perhaps you have other favourite food treats that may include chocolate.



fun fairy bread



delicious whipped cream



wobbly jelly



Chocolate chips are usually made from compound chocolate.

Chocolate Treats

Most people love the taste of chocolate – it's so versatile because chocolate can be melted into liquid and also enjoyed as a solid.

One popular chocolate treat is to dip Spanish *churros* into warm melted chocolate.



Churros *are ready to be dipped into warm melted chocolate and enjoyed!*

ORIGIN OF *CHURROS*

Churros are Spanish doughnuts. They are made from a *churro* dough, which is piped through a *churrera* to form the traditional ridged shape. They are deep fried until crunchy on the outside, drained and sprinkled with sugar. Finally, they can be dipped in melted chocolate and enjoyed!

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Is it Milk Chocolate or Compound Chocolate?

Milk chocolate is made from cocoa beans and milk solids. Processed cocoa beans provide cocoa solids and cocoa butter. The cocoa solids add flavour to the chocolate and the cocoa butter adds a smooth texture. The milk solids add a sweeter taste and a creamier texture.

Compound chocolate does not use cocoa butter. Vegetable oils are used instead, which makes the chocolate easier to melt and set. Many Easter eggs use compound chocolate. The vegetable oils affect the flavour of the compound chocolate.



Cocoa beans come from the seeds of the cacao plant.



a cross-section of a cacao pod



takeaway churros



A strawberry dipped in milk chocolate is delectable!



A chocolate fountain is fun!

JOB FEATURE

Food Scientists

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focused on microscopic work

Food Scientists

Food scientists usually work in laboratories where they study and test food and drinks in order to make them safer, tastier and more nutritious. Food production companies often employ food scientists to ensure that the food they produce is safe and nutritious when it is packaged.

Students who want to be food scientists must:

- study science subjects, such as chemistry and microbiology
- enjoy working with people
- want to work with all kinds of foods.



teamwork is important

2 Hundreds and Thousands Science

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Almost no young kid's birthday party table is complete without a plate piled high with fairy bread. For over 200 years, hundreds and thousands have been sprinkled on bread, cakes and buns for decoration and fun.















NONPAREILS

In the food industry, hundreds and thousands are known as "nonpareils". The words "non pareil" are French for "nothing equal to". Their size varies from 1.2 to 1.5 millimetres in diameter. They are available in single colours and rainbow blends.

Who **Makes** Hundreds and Thousands?

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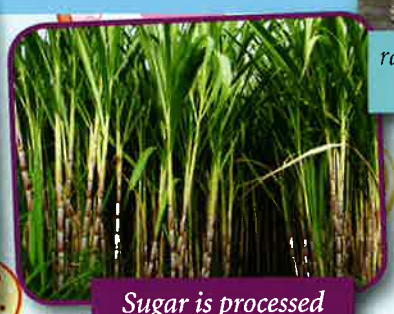
Carroll Industries, in Auckland, New Zealand, is one of many companies around the world that make hundreds and thousands, and other sprinkles for baking decoration. The company shares their science secrets for making hundreds and thousands.

1 Get Ingredients

Raw ingredients are delivered to the warehouse: **starch** and **sugar**.



Starch is made from maize.



Sugar is processed from sugar cane.



raw ingredients stacked in the warehouse



processing raw ingredients

2 Mill Sugar

Sugar is milled in a **machine** to make a fine, powder-like icing sugar.



3 Mix Ingredients

A dry mix of the fine icing sugar, starch and special sugars is made in a large **blender**.



4 Coat Hundreds and Thousands

The dry mix coats the hundreds and thousands grains in large, heated **rotating pans** for up to three hours.



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5 Sieve Hundreds and Thousands

The hundreds and thousands are **sieved** so that only those within the acceptable size range remain.



6 Sort Hundreds and Thousands

The remaining white hundreds and thousands are fed into a large **rotating pan**.



7 Colour Hundreds and Thousands

One **colour** is sprayed onto the white hundreds and thousands. Each batch of white hundreds and thousands is coloured separately.





a two-colour mix

8 Dry Hundreds and Thousands

Each batch of coloured hundreds and thousands is dried in a **heat room** or special dryer to remove any moisture.

Dried hundreds and thousands are **sieved** again to ensure they are even in size.

Batches of single-coloured hundreds and thousands are blended together in a large **rotating pan**.

Then the hundreds and thousands are ready to be weighed on **scales**, poured into bags and packed into **cartons**, ready for delivery to your nearest supermarket.



fairy bread

VOILA!