

# The Chocolate Factory

## Introduction

Start powerpoint: runs continuously in lab

- Everyone likes chocolate... ask who does/doesn't like chocolate??
- What does everyone already know about chocolate? How long has it been around? Where does it come from etc?? Do little chocolate bars just fall from the sky??  
Does it grow on trees????
- Well actually it does!!!!!!

Chocolate is made from cocoa beans, which are dark seeds found inside yellowy-green cacao pods on the Cacao tree (*Theobroma cacao*=food of the gods)

These trees grow in tropical areas, such as native Central and South America, Africa and SE Asia **Throw globe into lab**

## How is chocolate made?

These bitter cocoa beans have to undergo lots of lengthy scientific processes before they can be turned into lovely chocolate:

1. The pods have to be harvested and fermented before the beans can be removed  
❖ **Show cocoa beans**
2. The beans are then dried, sorted, roasted and their shells removed (this leaves the part called the 'nib' which is the product of the bean used to make the chocolate)
3. These nibs are then ground to form a thick brown liquid called 'cocoa mass'.  
❖ **Show cocoa mass**
4. The cocoa mass is then pressed to squeeze out/extract the 'cocoa butter' (fat)  
❖ **Show cocoa butter**
5. The remaining cocoa mass, after extraction of the cocoa butter is the 'cocoa powder'  
❖ **Show cocoa powder**

6. These ingredients are not just added together and stirred!!!! The cocoa powder and cocoa mass are then blended together, with milk and sugar in varying quantities to produce the various types of chocolate:

- **Plain/dark chocolate:** Mixture of cocoa powder, cocoa butter and sugar (no milk)
- **Milk chocolate:** Mixture of cocoa powder, cocoa butter, sugar and milk/or milk powder
- **White chocolate:** Cocoa butter, sugar and milk/or milk powder (no cocoa powder)

❖ Get volunteer: blindfold them and get them to distinguish between 3 choc types. Funny thing at end. All try later

### Why is chocolate so yummy??

Apart from the obvious taste, one of the reasons that chocolate is so delicious and loved by loads of people, is to do with its melting point! Chocolate melts just below body temperature... so it is solid at room temperature but if you put it on your hand or in your mouth then it melts very quickly!

❖ Does anyone know what body temp is?? Have a thermometer in the room to show room temp and choc not melting. Working in pairs etc get them to put fever scans on head and see what temp they are. Put choc in mouth to show choc melts at this temp!!! (Without chewing)

Body temp is 37C so that's what temp it should say on the fever scan! And the chocolate should melt at this temp! Good chocolate does melt just below body temp, so once it is on your mouth it melts very quickly, coating all the taste buds, creating a taste explosion!!

### Smelling

Do you all know what chocolate smells like??

Well, lets see if you can smell the difference between chocolate and some other things!!!

❖ Get groups to smell pots and try and find the chocolate one

## Smell is important to taste

Your smell is very important when it comes to taste... If you couldn't smell whilst tasting something... then you would not be able to taste it at all!

- ❖ Get everyone to hold their nose and eat an after eight.... They can't taste anything!! Once they let go of their nose they get a rush of minty taste!!!

## Summary

So, there is lots of chocolatey fun to be had and it one of the most delicious foods ever!!! But always remember that there is lots of history and science behind the making of our lovely chocolate!!!  
On your way out don't forget your chocolate treats!!!!!!

### **Optional extras in the chocolate making process:**

7. The next process on the way to forming chocolate is **conching**.

This is where the chocolate mixture is stirred or kneaded over and over for up to a week. This gives the chocolate its smooth texture

8. The chocolate is then cooled and then it undergoes its final process

known as **tempering**. This is repeated heating and cooling of the chocolatey mixture (which is carried out to stabilise the crystal formation of the cocoa butter, which is generally very unstable). Tempering gives the chocolate its glossy finish and is responsible for snappy bite and the way it melts

### **History:**

- Cacao tree and beans (around as early as 500AD) used by the Aztecs c.900 as currency. Used to make a drink by crushing beans into paste and adding spices...very bitter
- 1502 Chris Columbus first European to discover beans in S.America
- Beans taken to Spain...used as a royal drink adding vanilla and cinnamon
- 1650: Choc drink arrives in England and choc houses open up

- Chocolate began to appear in cakes and pastries
- 1828: experimenting with chocolate led to invention of the chocolate bar