

Sensory Scientists

Key Stage 2 CFA Taste Lesson

Suggested presenter	Someone with a level of technical knowledge specifically around sensory science with training skills that include presenting/facilitating a group
Lesson Information	This session is aimed at Key Stage 2 pupils (Year 3, 4, 5 and 6 – age range 7-11 years)
Duration	Up to half a day
Aim	The purpose is for the children to become aware of the role of a sensory scientist in the food industry.
Learning Outcomes	The students will be able to; <ul style="list-style-type: none"> • Say what a sensory scientist does • Be able to name the five basic tastes and give examples of them • Know the parts of the body used to taste
Key Points	This lesson plan is a guide only. As the person delivering the lesson you are encouraged to adapt it to suit the class you are teaching. It is important to remember that the main point is to inspire and introduce young people to the food sector.

Please refer to the "How to guide – Preparing for the lesson"

Lesson Format

1. Introduction
2. Sensory Science
 - a. Activity 1
 - b. Mini plenary
3. Break
4. Tasting
 - a. Demonstration
 - b. Activity 2
 - c. Activity 3
 - d. Plenary
5. Finish

Resources Required

- ✓ Visual Timetable (*downloadable*)
- ✓ Blu-tac
- ✓ Safety rules chart (*downloadable*)
- ✓ Pictures of basic tastes (*downloadable*)
- ✓ Group worksheet (*downloadable*)
- ✓ Enough jelly babies for the class to have one each plus a few extras for the demo
- ✓ Blindfolds
- ✓ Kitchen roll
- ✓ Hair net for each child
- ✓ 2 sets of two flavoured fizzy drinks (cloudy lemon, cherry etc) with all labels removed
- ✓ Orange food colour
- ✓ Paper cups for the class
- ✓ Slips of paper/pencils for each child (activity 3)
- ✓ Any company products for demonstration or gifts

Set up the following on the tables beforehand

For each group: 4 labelled paper cups with the following in: lemon juice, vanilla, salt, sugar / spoons / water / pencils / group worksheet

Introduction

Introduce yourself and give your company name (only tell them where it is at this stage)

It's really important for children to have the big picture/ overview of the session and what they can expect in the time that you are there. Putting up a *visual timetable* (see downloadable resources) on the board is a useful way to engage all children but particularly those with special needs such as Aspergers / Autism because they feel safe and are able to behave better when they know what is going to happen.

Giving the Big Picture (30 seconds!)

- **Stick up the visual timetable**
- First, I'm going to tell you about the exciting job I do and the company I work for. (Import or stick on a picture of your place of work or company logo onto the visual timetable)
- Then I will show you some of the ways are able to taste food and I will need some volunteers. (I'll be choosing children who sit nicely and listen carefully.)
- Then you are going to get into groups and have a go yourselves.
- Then we will have a chat about what we found out
- Then it will be break time.
- After break we will have some more tasting demonstrations and activities in groups and talk about what we have learned today.
- At the end you can ask me any questions you have about what we have done today or about my job and where I work.
- By the end of our session you should know about my job and my factory and some of the things a Sensory Scientist does.

Your job and your company (no more than 2 mins)

- Put it in context of where they might have seen or eaten your chilled product.
- Try to make everything you say relevant to the children. Take into consideration their age and possible life experiences but stay flexible and expand or reduce the information you give depending on the ability, level of understanding and concentration they are showing.
- If they appear to fidget and get restless, it's probably time to stop talking even if you haven't finished all of what you planned to say. Tell them you can see that they are excited to start and go on with the next bit. You can come back to anything important you needed to say later.

NOTE: Pupils you work with will be of different abilities. Key Stage 2 pupils range between the ages of 7 to 11 but you will need to gauge their ability and possibly adapt how technical/scientific you make each session.

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Sensory Science (5 mins)

- Explain that there are different types of scientists who work in the food industry and that one of them is called a Sensory Scientist. They have a great job finding out about how things taste, smell, look and feel and whether consumers, like you, would like to eat the things that other scientists in the factory have invented. Or whether you would prefer the way they have changed an item to the original product.
- Today you are going to see how good your senses of taste and smell are.
- What part of our body do we taste with? The tongue is only partly true because we need our nose to help too.
- There are five basic tastes – one is ‘sweet’ can you name the others? Salty / bitter/ sour / umami (If/when they start to name flavours rather than tastes explain that it is the nose that helps you to ‘taste’ flavours and that they are going to test whether that is true in a little while.)
- Stick up the taste pictures in a prominent place as they name them and then explain the ones they don’t name.

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Activity 1 (30 mins)

- Explain that the children are going to find out how good their tongues are at tasting the basic tastes and that they need to taste the things on their tables and try to decide which food is which taste. They only have sweet, sour, bitter and salty. When they have decided they need to write the name of the food on the sheet to match the type of taste. Give an example and tell them the pots are labelled so that they can copy the words if they need to.
- Read the safety rules chart. Explain that they do not have to taste anything they don’t want to. All scientific testers have to be willing to take part but there is nothing harmful to them and it would be useful if they would have a go.
- Ask the teacher to split them into groups and send them to their tables to complete the task.
- As the groups complete their sheet, get them to then try mixing tastes together
 1. **Salt and sugar – what does it taste like?**
 2. **Lemon and water. Taste, then add sugar to it. Taste again. Which tasted nicer?**
 3. **Sugar and vanilla. Taste. What is the difference when the sugar is added?**

Mini plenary (10 minutes)

- When finished come back together as a class and for each group to bring their sheets. Go through what they should have written and see if they all agreed. Talk about favourite and least favourite type of taste and then what happened when they mixed the tastes together.
- Talk about the role of the Food Scientists in inventing new foods which mix different tastes and flavours together like they did when they mixed the sugar with the lemon and the role of the Sensory Scientists in testing it out on the public to see if they like it.

This is a good point at which to break for playtime/assembly or however the timetable allows.

Tasting

Demonstration (5 mins)

- This is the part where we test the job the nose has in tasting flavours.
- Ask for two volunteers to help you who like to eat sweets! (Tell them you will only choose those sitting quietly with their hand up!)
- Blind fold one of them and tell them you are giving them a jelly baby but they must hold their nose while eating it and tell you what flavour it is. If done correctly, they shouldn't be able to tell you because the nose needs to function to be able to work out the flavour.

Activity 2 (10 mins)

- Ask the children to get into pairs. One must shut their eyes (they mustn't cheat or it won't work!) and hold their nose while the other feeds them a jelly baby. Can they tell the flavour?
- Swap over.
- When finished bring the children back together.

Demonstration (5 mins)

- What else do we need to be able to taste? Saliva! For the food to have taste, chemicals in the food must first dissolve in saliva to be sensed by the taste buds. If there is no saliva you shouldn't be able to taste anything.
- How could we test whether this is true? Take their ideas, if they have any, and ask the class to evaluate whether they think they would work or not.
- If none suggest drying the tongue, you suggest it and ask for a couple of volunteers. Get them to dry their tongue with kitchen roll and then give one a sample of sugar and one of salt and see if they can tell the class which one they had.
- Talk about taste buds being present on the tongue but that they are microscopic. They are not the bumps you can see – they are called papillae and there are 4 kinds but only three of them contain taste buds.

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Activity 3 (20 mins)

- Demonstrate next how vision influences what we taste (but don't tell them that's what you are doing - just tell them it's another taste test.
- Take the two flavoured coloured drinks (make sure that none of your volunteers are allergic or sensitive to food colourings!) and the now orange coloured carbonated water.
- Ask the teacher to divide the class into two halves. The teacher will take one half and you will have the other.
- Both of you give everyone a cup and a slip of paper and pencil. Pour a mouthful of the first flavoured drink – get each child to taste it and write down what they think it is.
- Next pour the orange coloured water – get everyone to write down their thoughts again.
- Then the last flavour and write down.
- Bring the class together again and make a tally of what they thought each flavour was on the white board or flip chart (whatever is used in the class)
- Hopefully, some will say that the water was orange! Talk about how colour is added to food to influence what it tastes like. Unlike the nose, your eyes aren't physically involved in tasting but they can influence you by tricking your brain when you expect something to be a certain colour!

Plenary (5 mins)

- What have they learned today about how we taste our food? (Tongue, taste buds, nose and saliva) Recap if they miss anything out. What about other influences?
- What have they learned about the jobs Food and Sensory Scientists do? Is there anyone who thinks they might like to be a Sensory Scientist in the future?

Finish (5 minutes)

- Ask for any questions. Remind them that a question is something that they want to know or find out - be prepared for little ones to ask irrelevant questions and don't feel you have to answer them. If you are not comfortable or don't have time, tell them that it's not a question about what you do and ask them to think of a question about that, if they can, and you'll come back to them. (Do try to remember to ask them again if you can)
- Thank them for working so hard and leave any appropriate company information, handouts for the children to take home.

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