

Food Additives

Primary school: Teacher's pack



Lesson Plan

Duration:

1 hour approximately

Resources:

Action on Additives website, included work sheets/activities, interactive whiteboard or computers for the children, printable additives card sheet, food/drink packet examples

Time	Link with the LO	Role of the teacher (including activities, key questions, resources, TA, assessment points)	Role of the pupil
15 mins	Starter	<p>1. Start by showing the group a drink and a sweets packet and ask,</p> <ul style="list-style-type: none"> - what do you think is in this? <p>2. Next focus on the label and the actual ingredients</p> <ul style="list-style-type: none"> - Do you think these ingredients are good for us? - Why/why not? - Are they suprised about the long list of ingredients? <p>This will show the difference between what we can see and what is actually included</p>	
10 mins	Main body of lesson	<p>3. Go through the included Fact Sheet, outlining what additives are, the problems and the uses. All of the required information is included on the fact sheet</p>	
10mins		<p>4. To make sure the class has understood, get them to do the quick comprehension exercise, while you circulate the class to make sure all have understood</p>	
10 mins		<p>5. Using an interactive white board – complete the 2nd worksheet as a class, getting willing pupils to come and find the answer on the website. If no interactive white board is available, either have each pupil on an individual computer, or skip</p>	

		this exercise.	
10 mins		6. Next use the extension worksheet -this will require thought based work on the arguments involved with the issue. Alternatively, you could use the worksheet to ask the children questions about their thoughts on the topic.	
10 mins	Plenary	What was the general consensus of the class on the topic of additives?	

Fact Sheet

1. What are additives?

- Food additives are chemicals which are found in a lot of the processed foods and drinks which we consume in the UK.

- Some commonly used types of food additives are colourings, flavourings and 'preservatives.' They are used to make food look and taste more attractive and to help prevent food going mouldy or stale.

- The Government has recently become worried about some of these chemicals that companies put in certain foods.

- These chemicals are currently allowed to be added, but some people think that we do not know enough about all of the health effects that these chemicals might cause.

- The Food Standards Agency, a Government organisation responsible for food safety, commissioned some research that looked at six of the many

Box A: The seven additives

from the Southampton Study

6 colours:



Tartrazine (E102)



Quinoline yellow (E104)



Sunset yellow (E110)



Carmoisine (E122)



Ponceau 4R (E124)



Allura red (E129)

1 preservative:



Sodium benzoate (E211)

food colourings that are used to make foods bright and appealing to children (see *Box A*).

- The research also looked at one preservative –sodium benzoate – used to make food last longer before ‘decaying’ (see *Box A*).

2. Why are they used?

- Many additives, especially the ones listed in *Box A*, are very brightly coloured.
- Manufacturers use them to try to make their products more appealing to adults and children, despite many of the products being full of sugar, for example sweets, cakes and fizzy drinks.

3. What problems do they cause?

- The Government research on additives involved a group of children who were of primary school age.
- The research showed that mixes of the six colourings and one preservative caused some young people to lose concentration more easily and become ‘hyperactive’ at home and in class.
- Low concentration and hyperactivity is a concern as it may prevent children from learning, and makes life harder for teachers, parents and children.
- By removing these additives from their diet, some children may be able to get on better at school and behave better.

4. What types of products can you find these chemicals in?

The list of individual items is wide ranging, but some types of food in which the additives can be found include:

- × Some sweets and cakes
- × Some drinks
- × Some foods bought at shops and restaurants
- × Some medicines

5. How can you tell if they are in foods?

▪ By law, if any additive is present in a product, it must be listed on the ingredients list, which is found on the label of and foods or medicines bought in shops.

Additives can be listed by their name or by their 'E number.'

▪ If you buy food at a restaurant or take away outlet you will not know if it contains these additives as the foods have no labels.

▪ There are so many of these additives, it is hard to remember which ones the Government thinks you should be most worried about. See the additives card that you can carry with you when you shop to help you check food labels.



Additives card ([download from www.actiononadditives.com](http://www.actiononadditives.com))

6. Why are the additives still allowed if they are bad for us?

- One problem with these additives is that they have been shown to cause hyperactivity. Another problem is that they are used to make 'junk' food more appealing.
- The Government has asked all kinds of people what they think about the use of these chemicals: parents, scientists, food companies and charities. Many of these groups have different ideas about how worried we should be about the additives.
- Many parents and charities that are worried about how healthy our food is, would like the additives to be banned from all food and drink.
- Recently, the government has called for a 'voluntary ban' on the use of the six colours from the Southampton Study (see *Box A*) in food and drink products. This means that companies are advised to find other colourings to put into their products, but they do not have to. The Government has not yet decided what action to take on the preservative Sodium Benzoate, and may do more research.

- The European Parliament is also worried about this topic and has recently decided that warning labels should be used on food containing these colours saying, "*may have an adverse effect on activity and attention in children.*" These labels will start to be used by the end of 2010.
- Some companies are changing to 'all natural colours and flavours' but many products still contain these additives.

7. What can companies use instead?

- Some companies have begun to get their products' colours from natural sources, such as beetroot for red, and plant chlorophyll for green.

Worksheet 1 - Fill in the gaps

Food Additives are chemicals which are used in food to add colour and flavour. They can also be used to make foods last longer before going mouldy.

The government recently did some research involving 6 colours – Tartrazine (E102), Quinoline Yellow (E104), Sunset Yellow (E110), Carmoisine (E122), Ponceau 4R (E124), Allura red (E129).

You can tell if an additive is contained in a packaged product because it must be listed on the label.

Additives are a problem because they can lead to hyperactive behaviour in some children.

They also help to promote junk food such as sweets and fizzy drinks, by making them more colourful.

Because of the side effects which have been found to be associated with some colours, the food standards agency has called for a voluntary ban.

The European Parliament has voted for a warning label to be included on products which contain them.

Words to use:

colour warning chemicals label voluntary
hyperactive sweets Sunset Yellow colourful

Worksheet 2

Answer these question using www.actiononadditives.com

1. Name 3 products from the website which contain Sunset Yellow, or “E110”

When you open up the Action on Additives website there is a list of the Additives on the right hand side. Tick the box for E110 and a list will Come up. Pick any of these.

2. Name two products with E129 in them.

Again, same principle as previous question but tick the E129 box before searching

3. What is E129 also called?

Allura Red

4. Type “peas” into the search box on the right hand side of the website. Which colouring do many processed peas contain?

Most processed or mushy peas are coloured with Tartrazine. This is because during the process of turning fresh peas into mushy peas, the peas lose colour. Manufacturers add the colour to make the peas look more like fresh peas. It’s rather strange when you think about it isn’t it?

5. What are some of the other ingredients in some of these foods that also might not be so healthy if eaten in more than small amounts?

This is the students chance to get thinking about sugars, fat, salt etc... which are included in many of the products that contain the colours.

Worksheet 3

Write a letter to your local MP, telling them what you think about the use of additives and what you feel should be done about the issue. You can find out who your MP is by visiting www.writetothem.com and typing in your postcode

This will encourage the class to think about the issue and express it as a letter to someone of importance. Help them with letter format if you or they wish, and encourage them to think about the issue in detail.

Extension Worksheet

The following questions should be optional depending on the abilities of your group

1 Do you like these brightly coloured foods? Do you ever buy products like these?

The aim of this question is to get the class to recognise that colours are used to make food appealing, especially to children.

2. How could you avoid eating these additives?

This is a chance for the class to realise that there are ways to avoid them but it is hard. Remind them of the card and encourage them to use it. Another way would be to eat fewer processed foods and more unprocessed foods like fruits and vegetables. For instance, it would be healthier to have an apple instead of an apple flavour food or drink.

3. Why do you think it might sometimes be hard to avoid these additives?

Extension of the previous question – one problem is that it can take a long time to check every label if you are doing a big shop. Sometimes the additives are listed by their name and sometimes by their E number. Another problem is that food that is sold in restaurants does not have an ingredients label.

4. When it comes to food, what other things do you think it is important to think about?

This question gives the pupils a chance to consider the nutritional content of food and drink. Foods high in sugar, salt or saturated fat should only be eaten in very small amounts. Problems associated with sugary foods include tooth decay, and illnesses like diabetes.

Glossary

Additive – a chemical used in foods which can be used to change the appearance or the taste or to make the food last a long time without going mouldy or stale. An additive might be from a natural source, or artificially manufactured.

Allura Red – A red food colouring common in food and drink and medicines. Also called E129.

Carmoisine – A red food colouring used in foods, drinks and medicines. Also called E122.

Commissioned – when a person or an organisation is officially chosen to do a special piece of work.

E number – Every single additive that is allowed to be used in the European Union has its own E number. The E stands for European, and then each additive has a different number. Natural food additives such as beetroot red also have E numbers.

Hyperactivity – Hyperactivity is a word that is used to describe behavioural difficulties affecting learning, memory, movement, language, mood, and sleep patterns.

Ponceau Red 4R – Another red food colouring, also known as E124.

Preservative – a chemical which is added to food to prevent it from becoming mouldy or decaying.

Processed – Processed food means any food that has gone through any kind of process in order to transform it into something else. It might be a simple process, for instance, wheat is grown in fields and after harvesting it goes through a grinding process to turn it into flour, so you could say that flour is a processed food. Bread however, is a more highly processed food as it contains flour and other ingredients which have already been processed and goes through a lot of different processes

before it becomes bread. Manufacturers often also add preservatives to make it last a lot longer before going stale.

Quinoline Yellow – Yellow food colouring, also known as E104.

Sodium Benzoate – Unlike the others, this is a food preservative used in many food types. It is also known as E211. Some people believe that it can make asthma worse.

Sunset Yellow – Yellow/orange food colouring also known as E110.

Tartrazine – A yellow food colouring also known as E102.

Voluntary ban - The Government wants food companies to stop using the six food colours listed here and will encourage them to do so. The companies will not however, be forced by law to stop using the colours.

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