Sauces

The main functions of a sauce are to add flavour, colour, moisture (texture) and additional nutrients. They can be added as an extra to a meal e.g. apple sauce with roast pork or horseradish sauce with roast beef or mixed in with a dish e.g. cheese sauce with macaroni to make ‘macaroni cheese’.

There are several types of sauces and they can be classified depending upon the way in which they are thickened:

- with coagulating egg protein such as custard
- emulsification e.g. mayonnaise
- with vegetable or fruit puree such as tomato sauce / apple sauce
- with starch – these can be white or brown sauces
- with gelatine e.g. glaze on a flan.

Using starch is a very popular way of making a sauce. It is a traditional method. Starch based sauces are made using wheatflour, cornflour or arrowroot.

Wheatflour is used in a white sauce and often a flavour is added e.g. parsley or cheese.
Cornflour is used to thicken custards and gravy.
Arrowroot is used in a glaze for fruit flans.

Gelatinisation

Many sauces are thickened by gelatinisation of starch. When mixed with a liquid and heated, starch thickens the liquid.

During gelatinisation the following occurs
- starch particles form a suspension in the liquid (they do not dissolve)
- Stirring the liquid keeps the starch particles suspended – if the suspension isn’t stirred they stick together and sink to the bottom – forming lumps. This will then not cook correctly.
- When the liquid reaches approximately 60°C the starch grains begin to swell as they absorb the water.
- As heating continues (approx 80°C) the particles break open and release starch. This makes the mixture thick and viscous. This is gelatinisation.
• Gelatinisation is completed when the liquid reaches 100°C. The liquid now forms a gel.
• On cooling the gel solidifies – it will set to form a mould e.g. Blancmange. This is the same for all starch-based sauces. It is important to remember that cornflour and arrowroot are pure starch where as wheat flour contains a high proportion of starch and also some protein.

**Sauces thickened with egg (Coagulation).**

Sauces thickened with egg are rich in flavour. Egg sets (coagulates) at a certain temperature and will then thicken the other ingredients. Hot sauces made with egg are not easily made because if adequate care is not taken the mixture will ‘curdle’ – this means that the sauce will separate and look ‘bitty’.

**Fruit or vegetable puree sauces**

Sauces that are thickened using vegetable or fruit purees are healthy because they contain minerals, vitamins and fibre. Vegetables and fruit also help to thicken a brown sauce e.g. adding tomatoes to a bolognaise sauce helps to thicken it. Sometimes pureed sauces have starch added to them to make them even thicker.

**Making the sauce**

Sauces can be made by three different methods:-

• the roux method of sauce making
• the blended method of sauce making
• the all in one method of sauce making

**The Roux Method**

The fat is melted and the flour is then stirred in and cooked on a medium heat. The liquid is added gradually off the heat. The sauce is then returned to the heat and brought back to the boil.

**Types of Roux**

• White roux - cooked for 1 minute, no colour

• Blond roux - cooked for 2-3 minutes. Flour starts to brown before liquid is added

• Brown roux – flour cooked thoroughly until deep brown to develop fullness of flavour before stock added. Base for stews.
The Blended Method

The starch is blended with the liquid, no fat is added. A small amount of the liquid is blended with the cornflour. The remaining liquid is heated. The liquid is poured onto the cornflour, stirring carefully. The sauce is returned to the pan and brought back to the boil.

All In One Method

All of the ingredients (fat, liquid and flour) are placed in a saucepan and brought to the boil, stirring all the time (a whisk or a wooden spoon could be used for this). Stirring has to be continuous to prevent the sauce from having lumps.

Sauces can be different thicknesses depending on how much liquid is used. The main three uses of sauces are
- pouring
- coating
- binding

<table>
<thead>
<tr>
<th>Main uses of sauces</th>
<th>Proportions of ingredients</th>
<th>Ratio</th>
<th>Method</th>
<th>Description of sauce</th>
<th>Example of dish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pouring white sauce</td>
<td>15g plain flour 15g fat 250ml milk</td>
<td>1:1:16</td>
<td>Roux or all in one method</td>
<td>Smooth. Pours freely Well flavoured</td>
<td>Custard Chocolate sauce</td>
</tr>
<tr>
<td>Coating white sauce</td>
<td>25g plain flour 25g fat 250ml milk</td>
<td>1:1:10</td>
<td>Roux or all in one method</td>
<td>Smooth Well flavoured Coats back of the spoon</td>
<td>Cauliflower cheese</td>
</tr>
<tr>
<td>Binding white sauce</td>
<td>50g plain flour 50g fat 250ml milk</td>
<td>1:1:5</td>
<td>Roux or all in one method</td>
<td>Smooth Well flavoured Very thick consistency – to hold or bind other ingredients together</td>
<td>Fish cakes Meat loaf</td>
</tr>
</tbody>
</table>
Brown Sauce

A brown sauce is made in the same way as a white sauce. The roux is cooked for longer until it turns brown. Brown stock (made from red meat) is added to the roux and heated until it gelatinises. The flavour of the sauce comes from boiling the stock for several hours. An easier and quicker way to make a brown sauce is to start out with a ‘sweated’ onion (*a little oil in a pan, heat oil, add chopped onions and stir, turn down heat, put lid on pan and allow onions to ‘sweat’ for 10 minutes*). Sweating onions makes the onion soft and sweet and then add other vegetables or meat and cook. Then flour is stirred in with other seasoning and liquid added – water, stock, tomato juice or coconut milk. This mixture is stirred over heat until the liquid has gelatinised and all the ingredients are soft. Many sauces are made in this way such as bolognese, curry and chilli sauce.

Modifying sauces

Modifying sauces is easily done.....
Some suggestions:-
- using different milks e.g. replace full fat milk with semi skimmed resulting in a reduced fat product
- adding different herbs  for additional colour and flavour e.g. parsley,
- sweetening the sauce – add sugar
- enriching the sauce – add  cheese ( also adds colour)
- altering the flavour – add chocolate (also sweetens the sauce)

Modified starch

Some starches are modified (processed) which enables thickening to take place without further cooking eg gravy granules which only require boiling water being added and then the mixture will thicken.

Web link for smart starches

[smart foods - bnf]

Recipe suggestions for sauces:-

[jamie oliver bbq sauce]
[jamie olivers bread sauce]
[jamie Oliver -tomato-sauce]