

# Science in the Kitchen

Investigate which ingredients change state in the kitchen. How and why do they change state?

Identify reversible and irreversible changes in the kitchen such as freezing, melting, evaporating, condensing. Discuss how these principles are used in recipes.

Find out what creates the taste and scent of an ingredient? Investigate what effect temperature has on the taste or scent of ingredients.

Design and conduct an experiment to compare the length of time it takes to bring a pot of water to the boil with and without a lid. How can you make sure that the experiment is fair? How will the results be useful in the kitchen?

Investigate why a fresh egg sinks and an old egg floats. Research the structure of the egg – what is it that is causing the egg to float more and more, the older it gets?

Investigate what yeast is and how it makes bread rise? When making bread, what promotes the growth of yeast?

Identify different ways of preserving food, e.g. salt, vinegar, sugar, etc. Conduct an experiment to find the most effective preserving agent.

Peel a potato without washing your hands and put it in a clean, labelled zip-lock bag. Now wash your hands with soap, rinse and dry them. Peel another potato and put it in a second clean, labelled zip-lock bag. Leave them somewhere warm, out of direct sunlight, for a day or two. Which one has grown more mould? Why?

Explore how crystal size affects the texture of frozen yoghurt.

Explore the process of oxidation and use this knowledge to explain why we use acidulated water to prevent some kinds of cut fruit and vegetables from browning (e.g. artichokes, pears or potatoes).