

Y10 – KO8a - GCSE FOOD PREPARATION AND NUTRITION: FOOD SCIENCE: PROTEIN

A DENATURATION

	TERM	DEFINITION
1	DENATURE	<ul style="list-style-type: none"> Proteins have a complex structure. When food is cooked proteins denature – this means the chemical bonds break down. Proteins unravel and therefore their shape changes.
2	WHAT CAUSES DENATURATION	<ul style="list-style-type: none"> Whisking, beating and kneading. Heat. Acids.
3	EXAMPLES OF DENATURATION IN COOKING	<ul style="list-style-type: none"> Marinating meat. Frying or boiling an egg. Whisking a sponge mixture. Whisking egg whites in a meringue.

B COAGULATION

	TERM	DEFINITION
1	COAGULATION	<ul style="list-style-type: none"> Once protein molecules have broken down (denature) they collide with other protein molecules and coagulate. Water becomes trapped between the protein molecules. Coagulation changes the appearance and texture of the food e.g. cooking a steak makes it firmer and easier to eat, egg whites turn from a see through liquid into a white solid.
2	WHAT CAUSES COAGULATION	<ul style="list-style-type: none"> Heat.
3	EXAMPLES OF COAGULATION IN COOKING	<ul style="list-style-type: none"> Quiche. Boiled egg. Cooking a steak. Eggs being added to a breadcrumb coating.

C FOAM FORMATION

	TERM	DEFINITION
1	FOAM FORMATION	<ul style="list-style-type: none"> Foams form when gas becomes trapped inside liquid. When liquids containing proteins are agitated the proteins denature – this causes them to stretch and air becomes trapped in the liquid. When the proteins coagulate this air becomes trapped creating a foam.
2	WHAT CAUSES FOAM FORMATION	<ul style="list-style-type: none"> Whisking.
3	EXAMPLES OF FOAM FORMATION IN COOKING	<ul style="list-style-type: none"> Chocolate Mousse. Swiss Rolls. Sponge Flans.

D GLUTEN

	TERM	DEFINITION
1	GLUTEN	<ul style="list-style-type: none"> Gluten is a protein that is formed from TWO separate proteins called GLUTENIN and GLIADIN, which combine when liquid is added to flour to make a dough. Molecules of gluten are coiled – this means they are able to stretch and bend – this provides the dough with elasticity. Doughs need to be kneaded to work the gluten – this causes it to get longer, stronger and stretchier. When it reaches a high temperature, gluten coagulates and the dough stays stretched.
2	WHAT CAUSES GLUTEN	<ul style="list-style-type: none"> Gluten is found in flour. The more a product is kneaded the more the gluten allows the product to be light and airy.
3	EXAMPLES OF GLUTEN IN COOKING	Gluten can be found in food products including: <ul style="list-style-type: none"> Bread. Pasta. Pastries.