



Province of the
EASTERN CAPE
EDUCATION

HOSPITALITY STUDIES

GRADE 10

TERM 2 WEEK 4

EGG NOTES

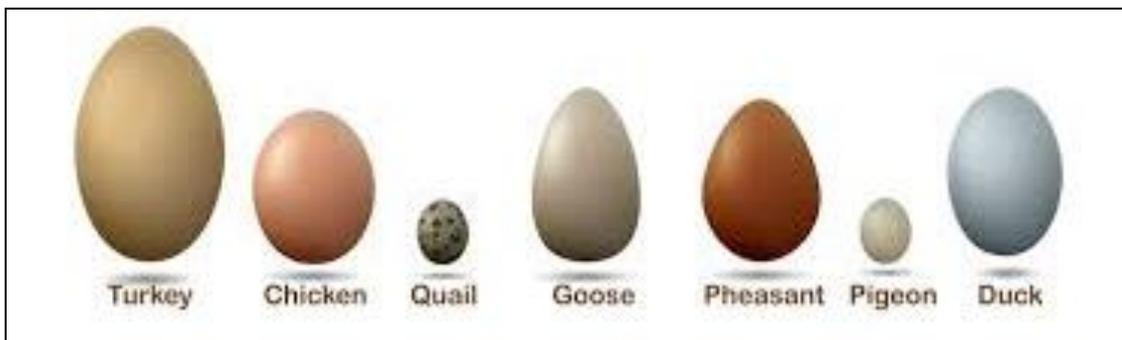
This document consists of 13 pages.

Nutritional Value

- Fall under Meat and meat products
- High in protein
- Needed to build and repairs muscles

TYPES OF EGGS

- **Chicken eggs** – most common (used in recipes unless stated otherwise)
- **Duck egg** – stronger flavour – used for omelettes and fried eggs
- **Goose eggs** – twice the size of chicken eggs / slightly oily taste, so suitable for cakes
- **Quail eggs** – tiny, tasty eggs used as a starter or cocktail. Served hard-boiled with salt or can be preserved in vinegar
- **Ostrich eggs** – 8-12 times larger than chicken eggs. Strong flavour with a very hard shell. Suited for baking.



TYPE OF EGG PRODUCTS

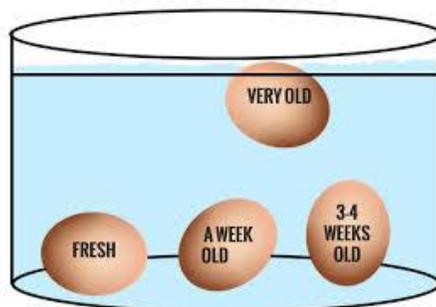
- **Fresh** eggs must have a sell-by date on packaging
- **Frozen** eggs are available as:
 - *Egg pulp* – consists of blended whole egg (no shell) that have been homogenised and pasteurised before freezing. Used for mass production of cakes and pastries, omelettes and scrambled eggs (saves time/labour)
 - *Frozen egg whites* do not whip well, but are used for their binding properties. Freeze in small quantities.
 - *Frozen egg yolks* are used for emulsifying.

- **Dehydrated** eggs are available as whole, yolks or whites.
 - *Whole* – used as egg pulp or in dry mixtures like soups, custard powders and cake mixes. Keep in the fridge.
 - *Egg whites* – (dried albumen) have good whipping properties. Used for meringues.
 - *Egg yolks* - used for their emulsifying properties in dry mixes



CHARACTERISTICS OF GOOD QUALITY EGGS

- Shell = clean and uncracked
- Stale eggs have shiny shells
- Stale eggs float in water
- The shell membranes are two layers that enclose the yolk and white. They split at the blunt end, to create an air cell. As the egg gets older, moisture is lost from the white, the membrane shrinks and the air cell becomes larger.
- Thick gelatinous white surrounds the yolk. When the egg is cracked open, the white must be round, high and firm and not flat. The older the egg, the more liquid the white.
- The yellowness of the yolk is determined by the hens' diet and does not reflect the nutritional value. The yolk should be translucent and firm.
- The egg should have no internal defects like blood spots, meat spots, black spots or a broken yolk.



SIZES OF EGGS

- Eggs are graded according to their size / mass i.e: small / medium / large / extra large and jumbo
- A large egg's volume is about 50ml (white =30ml and yolk = 20ml)



COOKING METHODS

(1) BOILING

- Soft boiled or hard boiled (with or without shells)
- Whole or with other ingredients:
 - **Egg croquettes** – egg mixture rolls, crumbed and fried
 - **Eggs au gratin** – sliced hard-boiled eggs, covered with white sauce, breadcrumbs and cheese, and baked
 - **Eggs mornay** – served with cheese sauce
 - **Scotch eggs** – hard boiled eggs, covered with sausage meat, crumbed and fried
 - **Hors d'oeuvres** – savoury appetiser

Boiled eggs are prepared to order and served in an eggcup. Or they can be boiled beforehand, shelled and kept chilled for later use.

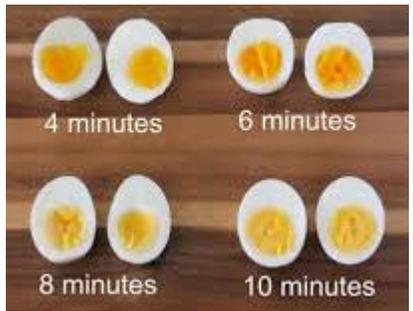
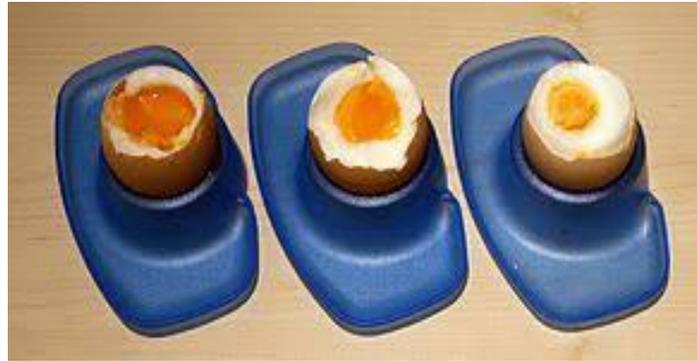
When you boil eggs, add 1 teaspoon of vinegar to the water – this prevents the egg whites from leaking out of cracked shells.

The degree of cooking ranges from a soft-set white and runny yolk to a firm set white and yolk. Once eggs are boiled, put them straight into cold water – this makes the white shrink away from the shell, so it will be easier to shell.

A green ring around the yolk of hard-boiled eggs may be caused by cooking at high temperatures or for too long, or if they are left in their cooking water for too long.

GUIDELINES FOR BOILING EGGS

- Simmer rather than boil. This allows the heat to penetrate evenly and lessens the risk of eggs cracking against each other in the pot.
- Make a tiny hole with a pin at the blunt / round end of the egg – this hole helps to release pressure build-up inside the egg as it cooks
- Use enough water to cover the / submerge the eggs



Boiling Times



Eggs au Gratin



Eggs Mornay



Egg Croquettes



Scotch Eggs

(2) POACHING

Cooking a shelled egg in hot water, milk or cream. Egg proteins coagulate at 65°C so the liquid does not have to boil. A temp of 85°C will maintain the tender quality of a coagulated egg.

Eggs are poached in liquid or a poaching pan (steaming).

Poached egg dishes include: Eggs Benedict, Eggs Florentine and Eggs Bombay.

GUIDELINES FOR POACHING EGGS

- Keep the liquid at simmering point
- Add a few drops of vinegar or salt to help the whites set.
- Break fresh egg into a cup and slide gently into the water.
- Simmer until lightly set.
- Should have a compact round shape. A film of coagulated white should cover the yolk, which should be liquid or semi-liquid. The white should be completely coagulated, but gel-like and tender.
- Remove with a slotted spoon, trim the whites and serve.
- They can be stored in cold water and reheat later in hot water for a couple of seconds.



Poaching Eggs



Poached egg on toast



Eggs Florentine



Eggs Benedict



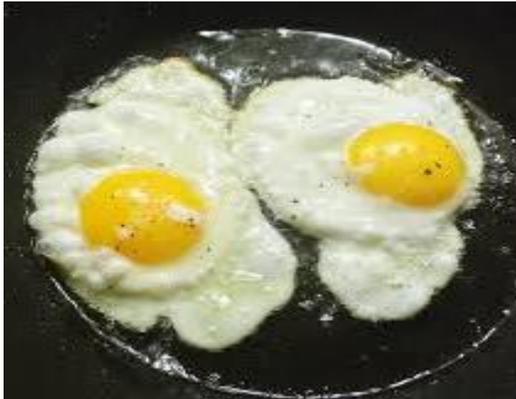
Eggs Bombay

(3) FRYING

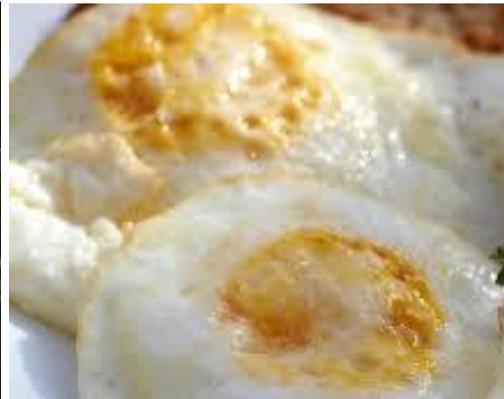
Usually fried in butter or oil and served for breakfast.
Cook the top and underside without crisping or burning the whites.
The degree of cooking ranges from soft set yolk to hard set yolk.
Cook to order and serve immediately.

GUIDELINES FOR SHALLOW-FRYING EGGS

- Cook in butter or oil over a moderate heat
- Break the eggs into the hot (but not sizzling) fat one by one.
- Cook according to customers' preference.
- ***Sunny-side up*** – cook slowly without turning until white is set, & yolk is still soft.
- ***Easy-over*** - fry the egg on one side and then gently flip it over and cook lightly on the other side.
- Cook whites til they are shiny, uniformly set and tender. They should not be brown, blistered or crisp on the edges
- Make sure they are not greasy.



Fried – Sunny side-up



Fried – Over easy

(4) SCRAMBLING

- If they are not cooked to order, they should be undercooked.
- They should cook slowly with gentle stirring.
- A lower heat and longer cooking time results in creamier eggs.
- They should be light and moist and not over-coagulated or split.
- Milk is usually added to the whisked eggs.
- Other flavourings like herbs, cheese, sautéed onions or chopped ham make be added.

GUIDELINES FOR SCRAMBLING EGGS

- Prepare by mixing whisked eggs, liquid (either water or milk) and seasoning in a bowl
- Use 2 eggs per person
- Precook any raw ingredients unless they are smoked or cured and add half way through the cooking process.
- If using cheese, grate it and add near the end.
- Use a heavy bottomed pan that conducts heat uniformly, or a bain marie.
- Remove pan from heat as soon as the eggs are cooked.
- The egg should be tender with no liquid.



(5) OMELETTES

Similar to scrambled eggs, but need to cook at a higher temp to form a solid sheet of coagulated egg.
They can be sweet or savoury.

a) Folded / French omelette:

- Filling is spread over the middle before folding over to serve.
- Outside surface is golden brown and the inner texture is soft and moist
- Light with an even, tender texture and a fresh, well-flavoured taste

b) Frittatas: (Italy)

- Flat omelettes cooked with a filling (onions, peppers, bacon etc...)
- Served flat without folding
- Also called a Spanish omelette or tortilla

c) Soufflé omelettes

- Eggs are separated
- Whites and yolks are whisked separately before being folded together and poured into a hot greased pan.
- They are spongy and light in texture.

STEPS IN MAKING OMELETTES

- (1) Melt the butter
- (2) Pour in the egg mixture
- (3) As the edges set, lift them so the uncooked egg flows underneath
- (4) Run a spatula around the edges
- (5) Add toppings
- (6) Fold in half
- (7) Serve



(6) CUSTARDS

Custard – a liquid that is thickened or set by the coagulation of egg protein. It can be sweet or savoury.

Two basic types:

- a) baked custard – yellow with a smooth, gel-like texture
- b) stirred custard – cream-coloured with smooth texture and delicate flavour

An oven temp of 180°C is used for baking custards. A bain-marie is used to prevent the temp of the custard from reaching 85°C. If this happens, the custard will be holey, watery and a concave top surface. It will also separate. (syneresis)

As soon as the custard is cooked, stop the cooking process by placing it in cold water.

Most baked custards are sweet (eg crème brulee and crème caramel)
Quiche is a savoury custard baked in a pastry shell.



FACTORS THAT INFLUENCE COAGULATION

At higher temperatures, egg whites become tough and porous, and shrink. The yolk becomes dry and crumbly, and the whole egg toughens and shrinks.

The temperature at which eggs coagulate is altered by the addition of other ingredients and by the concentration / ratio of the egg in the mixture.

- added sugar raises the temp at which the mixture sets / coagulates
- added salt lowers the temp for setting
- diluted egg mixtures will coagulate at higher temperature. (diluted with milk or water)
- the more concentrated the protein, the lower the setting temp will be

BEATING OF EGG WHITES

- Whisking – turning whites into a stiff mixture.
- Use a large dry, clean bowl and a balloon whisk.
- Whisk whites at room temperature in order to incorporate as much air as possible.
- Use whisked whites asap – they consist mainly of water and will go watery if left for too long
- Over-whisking whites results in a dry, granular texture and loss of volume.
- Use a metal spoon to fold whisked whites into a mixture.
- Always add whites to the mixture and not the other way round.
- Cool the mixture to room temp before adding whites.
- Never add whisked whites to a hot mixture – the delicate structure will collapse and turn stringy.
- Fat, oil, yolk and water will prevent whisking.
- Acids (lemon juice, cream of tartar or vinegar) will stabilise the foam
- Sugar delays foaming and reduces the volume. (greater volume will be achieved by stiffly beating the whites first and then adding sugar)

THE STAGES FOR BEATEN EGG WHITES

(1) **Soft peak**

- whites are beaten until they stand up in small peaks which curl slightly when the beater is lifted.
- Surface looks slightly damp
- Use for light and foamy products eg soufflés

(2) **Stiff peak**

- Beat whites more stiffly
- Peaks should stand up
- Surface should look drier when beater is lifted
- Used for meringues

(3) **Dry stage**

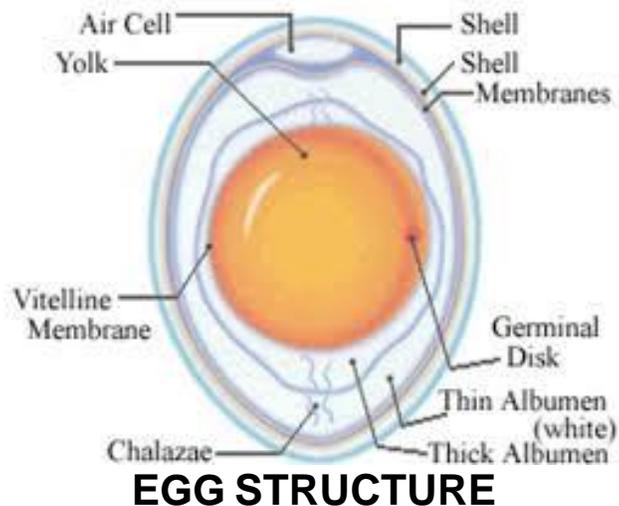
- Whites have been over beaten
- Elasticity is destroyed and volume is destroyed.



STORAGE OF EGGS

Eggs are highly perishable and fragile.

- Don't wash before storing – the protective layer will be removed
- Store in packing trays to prevent breakages
- Store with round / blunt end facing upwards
- Store in fridge away from strong odours that the porous shell can absorb
- Store leftover yolk in the fridge for 1-3 days by covering it with oil, milk or water
- Use cracked eggs asap
- Use eggs at room temp.



COAGULATION TEMPERATURES FOR EGGS:

Egg whites: 60°-65°C

Egg Yolks: 65°-70°C

Whole beaten eggs: 68°C

Whole beaten eggs with added liquid: 79°-85°C

CULINARY USES OF EGGS

USES	DESCRIPTION	EXAMPLES
THICKENING	Mixtures thicken because the proteins coagulate. Keep the mixture below 65°C to prevent curdling	<ul style="list-style-type: none">• Soups• Sauces• Custards
BINDING	Beaten eggs coagulate and hold the mixture together	<ul style="list-style-type: none">• Stuffing for meat• Meatballs
COATING	Beaten eggs protect and give a crisp coating to food	<ul style="list-style-type: none">• Pane
GLAZING	Beaten eggs give raw pastry and scones a golden appearance	<ul style="list-style-type: none">• Scones• Pastry
ENRICHING	To increase the flavour and nutritional value	<ul style="list-style-type: none">• Cakes• Puddings
AERATING	Air is trapped when eggs are whisked, and gives a fluffy end product	<ul style="list-style-type: none">• Meringues• Soufflés• Cakes
EMULSIFYING	Acts as an emulsifying agent by binding immiscible ingredients	<ul style="list-style-type: none">• Mayonnaise• Hollandaise
CLARIFYING	Clears stocks and consommés	<ul style="list-style-type: none">• Consommés
GARNISHING	Cut up cooked eggs are used to garnish dishes	<ul style="list-style-type: none">• Salads• Snack platters
FILLING	Hard boiled eggs are chopped and mixed with mayonnaise	<ul style="list-style-type: none">• Sandwiches
EGG DISHES	Dishes where the main ingredient is egg	<ul style="list-style-type: none">• Omelettes• Custards etc

