



Ingredient Cards

For GCSE OCR Food Preparation
and Nutrition: Vegetables

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Teacher's Introduction

This resource is designed to help you teach and discover the fascinating world of food we eat every day. Ingredient Cards are written with in mind the students who have chosen the challenge of studying the new subject – OCR GCSE Food Preparation and Nutrition.

What it covers

The Ingredient Cards introduce carefully chosen food ingredients – some to represent British cuisine and some to introduce world foods. The resource comprises 28 Vegetables sheets and 12 Task sheets.

1	Onion	Onion, leek, garlic and asparagus – Task sheet
2	Leek	
3	Asparagus	
4	Garlic	
5	Mushrooms	Mushrooms – Task sheet
6	Tomato*	Tomato – Task sheet
7	Courgette (zucchini)*	Courgette, pumpkin and cucumber – Task sheet
8	Pumpkin*	
9	Cucumber*	
10	Carrot	Root vegetables (carrot, parsnip, celeriac and swede) – Task sheet
11	Parsnip	
12	Celeriac	
13	Swede	
14	Bell pepper*	Bell pepper / sweet pepper – Task sheet
15	Potato	Potato and sweet potato – Task sheet
16	Sweet potato	
17	Cabbage	Cruciferous vegetables (cabbage, cauliflower and broccoli) – Task sheet
18	Cauliflower	
19	Broccoli	
20	Beetroot	Beetroot – Task sheet
21	Green peas	Green peas, sweetcorn and green beans – Task sheet
22	Sweetcorn	
23	Green beans	
24	Spinach	Leafy greens (spinach, lettuce and celery) – Task sheet
25	Lettuce	
26	Celery	
27	Olives*	Olives and avocado – Task sheet
28	Avocado*	

*Ingredients marked with a * are botanically classified as fruits as they develop from plants' flowers.*

How to use this resource

This resource covers all aspects of the new OCR GCSE specification for Food Preparation and Nutrition and is designed to increase the knowledge, improve the skills, arouse the curiosity and trigger the creativity of those using it.

Each Ingredient Card is dedicated to one ingredient. You can print and laminate these so that they can be safely used in the kitchen, without the risk of staining or damaging them.

- **What is It?** Briefly describes what part of a plant a given vegetable is and provides some trivia to make it more interesting for the student.
- **Common Cuisines.** This part indicates where a given ingredient comes from and where it is usually used in the world.
- **Nutritional Information.** Contains data about macro- and micronutrients present in a given food ingredient, both in 100 g and in a portion or piece, to help evaluate the nutritional value of the dishes made using it. It is presented in the form of a table, containing information about macro- and micronutrients as required by the OCR GCSE specification. If there is a '-' it means that there is no data available about the given nutrient. If there is a '0' it means that the ingredient does not contain the given nutrient.

IMPORTANT: *All nutritional data is provided for raw vegetables without skin.*

Please note that vegetables do not contain any cholesterol, and, therefore, it is not indicated separately on the Ingredient Cards.

Please bear in mind that nutritional data is estimated, and may differ depending on the variety, growth conditions, storage conditions and any processing applied to the food (e.g. freezing, pickling, drying, canning or juicing).

- **Health Benefits.** Indicates the health benefits of consuming the given food ingredient, with special attention to vitamins, minerals, unsaturated fats, protein, phytosterols, naturally occurring antioxidants and essential oils (where applicable).
- **Allergy and Health Risks.** Points out the main health hazards relating to the consumption of a given food ingredient, including the risk of an allergic reaction.
- **Alternatives.** Contains a list of other food products which can be used instead of the described ingredient in case of shortage, health conditions or other reasons why the original ingredient cannot be used.
- **Cooking Uses.** A catalogue of culinary uses of a given food ingredient. Indicates whether it can be eaten raw or cooked, and whether there are any special requirements for cooking or preparation (where applicable). It also lists the kinds of dish in which the ingredient can be used, in order to fully appreciate its features and value.
- **Storage.** Conditions in which to store the given product in order to preserve its nutritional value, colour, texture and flavour.

The vegetables are combined into small groups, and each group is followed by a **Task sheet** focused on the given ingredients. The purpose of each Task sheet is to check students' knowledge and encourage them to research more information, as well as experiment with the ingredient and discover its potential in cooking. Each task has been assigned a reference number to help cover the whole spectrum of the OCR GCSE Food Preparation and Nutrition specification. Simply copy one Task sheet per student for them to work on either during the lesson or at home. There are also exemplary answers to help you assess students' progress and determine more challenging exercises which require more effort.

The nutritional data is, in most cases, based on the United States Department of Agriculture database and McCance and Widdowson Composition of Foods database for Great Britain.

Where appropriate, other sources of information have been used, such as FODMAPer application issued by Monash University and label information for products most popular in Great Britain.

Note about the nutritional data provided and spec coverage:

The Ingredient Cards contain a wide range of information, including data about vitamins and minerals. Please note that the nutritional values supplied do not always reflect the requirements of the OCR GCSE specification for Food Preparation and Nutrition, as they provide additional data on potassium and magnesium.

We believe that the additional information provided will broaden the students' knowledge and improve their understanding of how nutrients work together in the human body. However, there is no need for students to focus on the vitamins or minerals not covered by the specification. The following table indicates which vitamins and minerals the OCR specification covers.

Vitamins		
Calcium		✓
Iron		✓
Sodium		✓
Fluoride		✓
Iodine		✓
Phosphorus		✓
Potassium		
Magnesium		
Minerals		
Fat soluble	Vitamin A	✓
	Vitamin D	✓
	Vitamin E	✓
	Vitamin K	✓
Water soluble	Vitamin B1 (Thiamine)	✓
	Vitamin B2 (Riboflavin)	✓
	Vitamin B3 (Niacin)	✓
	Vitamin B9 (Folic acid)	✓
	Vitamin B12 (Cobalamin)	✓
	Vitamin C (Ascorbic acid)	✓

September 2017

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* resulting from minor specification changes, suggestions from teachers and peer reviews, or occasional errors reported by customers

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1. ONION



What is It?

Onion is a vegetable bulb of the plant *Allium cepa* L. It is covered with a couple of layers of inedible husk (paper-like). It can be used as a natural brown pigment; for example, for dyeing. There are many varieties of onion, one of the most popular.

Common Cuisines:

Onion is a common ingredient in cuisines all around the world due to its pungent and easily changeable flavour. Onion is used in North African cuisine due to the sweetness it can give to dishes. In Asian cuisine it is used as a bulking agent in curries. You will find its use for onion in most cuisines you come across.

Nutritional Information:

These values may vary. Data is given for brown onion.

Nutritional value: typical value	Per 100 g	Per 1 large (150 g)
Energy	40 kcal	60 kcal
Macronutrients		
Fat	0.1 g	0.15 g
Saturated fats	0.04 g	0.063 g
Monounsaturated fats	0.01 g	0.019 g
Polyunsaturated fats	0.02 g	0.026 g
Carbohydrates	9.4 g	14 g
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	4.25 g	6.36 g
Fibre	1.7 g	2.5 g
Protein	1.1 g	1.65 g
Micronutrients		
Vitamin A	0	0
Vitamin D	0	0
Vitamin E	0.02 mg	0.03 mg
Vitamin K	0.4 mcg	0.6 mcg
Vitamin B1 (Thiamine)	0.05 mg	0.069 mg
Vitamin B2 (Riboflavin)	0.03 mg	0.041 mg
Vitamin B3 (Niacin)	0.12 mg	0.174 mg
Folate	19 mcg	28 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	7.4 mg	11.1 mg
Calcium	23 mg	34 mg
Iron	0.20 mg	0.32 mg
Sodium (Salt)	4 mg	6 mg
Fluoride	1.1 mcg	1.65 mcg
Iodine	2 mcg	3 mcg
Phosphorus	29 mg	44 mg
Potassium	146 mg	219 mg
Magnesium	10 mg	15 mg

g – grams, mg – milligrams, mcg – micrograms

Nutrition

Health Benefits:

Onion is rich in potassium which is necessary for maintaining proper heart function. Quercetin, which is an important antioxidant, is effective in the treatment of inflammation. It also contains compounds that support the treatment of colds and flu. This makes it appropriate for people with respiratory issues. Onion also provides vitamin C. The high calcium content helps strengthen bones in individuals, making it suitable for older people.

Allergy and Health Risks:

Although the quercetin in onion can help with allergies by stopping the production of histamine, it can also cause allergies in people with allergies to grass pollen. It is also worth limiting onion consumption due to its relatively high sugar content. Excessive consumption (especially raw onion) may result in heartburn.

Alter

For caramelising in dishes, use brown onion.
For savoury, pungent flavour, use red onion.
For flavour and aroma, use fresh onion.
For the harsh peppery taste, use green onion.

Cooking Uses:

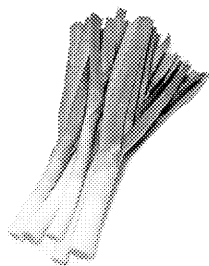
- **Caramelize** to use in soups, stews, and casseroles.
- **Keep raw** for use in salads, sandwiches, and garnishes.
- **Sauté** for use as a garnish for meats and vegetables.
- **Pickle** for use in salads and sandwiches.
- **Dehydrate** to use as a seasoning for meats, marinades, pastas, and breads.
- **Fry** for use in burgers, pizzas, and sandwiches.

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2. LEEK



What is It?

Plant closely related to onion built of many long leaves tight together to form a cylinder. The white part is very delicate and sweet in flavour. The green part is more nutritious.

Common Cuisines:

Leek was probably first grown in ancient Egypt, from where it was brought to Rome and other European countries. Nowadays it is a common ingredient worldwide; for example, in Turkish, French or Welsh cuisines.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 leek (140 g)
Energy	61 kcal	85.4 kcal
Macronutrients		
Fat	0.3 g	0.42 g
Saturated fats	0.04 g	0.056 g
Monounsaturated fats	0.004 g	0.0056 g
Polyunsaturated fats	0.16 g	0.224 g
Carbohydrates	14.15 g	19.81 g
Starch (polysaccharides)	-	-
Sugars (mono- and disaccharides)	3.9 g	5.46 g
Fibre	1.8 g	2.52 g
Protein	1.5 g	2.1 g
Micronutrients		
Vitamin A	83 mcg	116.2 mcg
Vitamin D	0	0
Vitamin E	0.92 mg	1.288 mg
Vitamin K	47 mcg	65.8 mcg
Vitamin B1 (Thiamine)	0.06 mg	0.084 mg
Vitamin B2 (Riboflavin)	0.03 mg	0.042 mg
Vitamin B3 (Niacin)	0.4 mg	0.56 mg
Folate	64 mcg	89.6 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	12 mg	16.8 mg
Calcium	59 mg	82.6 mg
Iron	2 mg	2.8 mg
Sodium (Salt)	20 mg	28 mg
Fluoride	0	0
Iodine	0	0
Phosphorus	35 mg	49 mg
Potassium	180 mg	252 mg
Magnesium	28 mg	39 mg

g – grams, mg – milligrams, mcg – micrograms

Nutritional Analysis

Health Benefits:

Leek is a source of beta carotene, which is good for proper eyesight, and choline, which is good for maintaining good memory. It is also a good treatment due to its high iron content. Leeks (polyphenols and antioxidants) can help lower 'bad' cholesterol levels in blood. Leeks can also be used in the treatment of kidney stones due to its diuretic activity. Leek also contains potassium, which is necessary for maintaining heart health. A piece of leek provides almost 10% of the daily requirement for iron, which is necessary to build red blood cells.

Allergy and Health Risks:

Leeks generally don't have many side effects, although excessive consumption can have a laxative effect. Raw leeks can cause heartburn.

Alternatives

For stronger, more pungent flavour: onion or garlic.
For similarly mild flavour: shallots.

Cooking Uses:

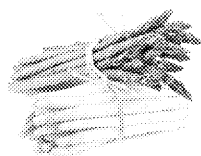
- **Keep raw** for use in salads.
- **Fry** for sauces, soups and stews.
- **Stew, steam or roast** for soups, stews and casseroles.
- **Fry, stew or steam** to use in dumplings or dumplings.
- **Mash** to add to mashed potatoes.

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3. ASPARAGUS



What is It?

Spring vegetable with a crunchy texture and delicate edible characteristic shape and delicate flavour. Available in green varieties. White asparagus is grown by earthing it up to prevent the creation of the green pigments. Only young asparagus spears turn woody and are hard to chew.

Common Cuisines:

Although asparagus is mostly grown in China, it is more characteristic of north-western European countries, such as Germany, France, Spain and the Netherlands.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 medium spear (16 g)
Energy	20 kcal	3 kcal
Macronutrients		
Fat	0.12 g	0.02 g
Saturated fats	0.04 g	0.006 g
Monounsaturated fats	0	0
Polyunsaturated fats	0.05 g	0.008 g
Carbohydrates	3.88 g	0.62 g
Starch (polysaccharides)	-	-
Sugars (mono- and disaccharides)	1.88 g	0.3 g
Fibre	2.1 g	0.3 g
Protein	2.2 g	0.35 g
Micronutrients		
Vitamin A	38 mcg	6 mcg
Vitamin D	0	0
Vitamin E	1.13 mg	0.18 mg
Vitamin K	41.6 mcg	6.7 mcg
Vitamin B1 (Thiamine)	0.143 mg	0.023 mg
Vitamin B2 (Riboflavin)	0.141 mg	0.023 mg
Vitamin B3 (Niacin)	0.98 mg	0.16 mg
Folate	52 mcg	8 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	5.6 mg	0.9 mg
Calcium	24 mg	4 mg
Iron	2.14 mg	0.34 mg
Sodium (Salt)	2 mg	0 mg
Fluoride	0	0
Iodine	0	0
Phosphorus	52 mg	8 mg
Potassium	202 mg	32 mg
Magnesium	14 mg	2 mg

g – grams, mg – milligrams, mcg – micrograms

Nutritional

Health Benefits:

Asparagus is very low in calories, a great element of low-calorie diets for people with hypertension. It is a source of vitamin K, necessary to prevent blood clotting, as well as folates, which are necessary for the production of new cells. It is also a source of calcium and teeth, muscle contraction and bone health. It also provides phytosterols (24 mg in 100 g) and quercetin. It also provides inulin (which is a prebiotic – a source of good bacteria in the gut).

Allergy and Health Risks

Asparagus contains purines, which can cause bladder and kidney stones. It is especially in people with digestive issues. Sulfur compounds, which may cause allergic reactions, especially in people with onion allergy. The symptoms include inflammation, tightness of the throat, and anaphylactic shock.

Alter

For the colour, texture and taste, use asparagus.

For crunchiness, use broccoli.

Cooking Uses:

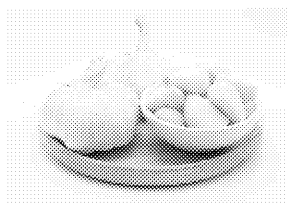
- **Steam** to serve as a side dish.
- **Bake** under a sauce to use in salads.
- **Pickle** to use in salads.
- **Fry or sauté** to use in salads.
- **Boil or steam** and serve with boiled eggs, sprinkled with cheese.

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4. GARLIC



What is It?

Aromatic vegetable built of small cloves tightly packed in a bulb and covered with a couple of layers of thin husk. Garlic is available in many oils and pungent in flavour, garlic is available in many

Common Cuisines:

Garlic is widely used in cookery around the world, including Vietnamese, Chinese, Thai, Korean and North African cuisines, and in southern European cuisines such as those from Italy or Bulgaria. Garlic consumption is forbidden in several religions and beliefs, such as Hinduism, Buddhism and Sikhism, as they believe it overstimulates the senses.

Nutritional Information:

These values may differ between similar products.

Nutritional value: typical value	Per 100 g	Per 1 clove (3 g)
Energy	149 kcal	4 kcal
Macronutrients		
Fat	0.5 g	0.01 g
Saturated fats	0.089 g	0.003 g
Monounsaturated fats	0.011 g	0
Polyunsaturated fats	0.248 g	0.007 g
Carbohydrates	33.06 g	0.99 g
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	1 g	0.03 g
Fibre	2.1 g	0.1 g
Protein	6.36 g	0.19 g
Micronutrients		
Vitamin A	0	0
Vitamin D	0	0
Vitamin E	0.08 mg	0
Vitamin K	1.7 mcg	0.1 mcg
Vitamin B1 (Thiamine)	0.2 mg	0.006 mg
Vitamin B2 (Riboflavin)	0.11 mg	0.003 mg
Vitamin B3 (Niacin)	0.7 mg	0.021 mg
Folate	3 mcg	0 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	31.2 mg	0.9 mg
Calcium	181 mg	5 mg
Iron	1.7 mg	0.05 mg
Sodium (Salt)	17 mg	1 mg
Fluoride	0	0
Iodine	3 mcg	0
Phosphorus	153 mg	1 mg
Potassium	401 mg	12 mg
Magnesium	25 mg	1 mg

g – grams, mg – milligrams, mcg – micrograms

Nutritional

Health Benefits:

Garlic is high in calcium, needed for the development of bones and teeth. It is also rich in potassium, which lowers blood pressure. Garlic contains flavonols (a group of polyphenols) which act as antioxidants and fight off inflammation. It is also a natural antibiotic, often used in the treatment of colds and flu.

Allergy and Health Risks:

Garlic should be avoided in people with a garlic allergy (recommended for people with a garlic allergy). Overconsumption may cause heartburn.

Alter

For the pungent aroma, use as a base for soups and stews.
For the sweet flavour, substitute with onion.
For spiciness in sauces and curries.
For the use in pesto and other dips, use onion.
For caramelising, use onion.

Cooking Uses:

- **Mince** or crush to use in soups and stews.
- **Caramelize** to use in gravies and sauces.
- **Caramelize** to make bread and other baked goods.
- **Dehydrate** to use as a base for curries, sauces and dressings.
- **Pickle** whole cloves – e.g. in cucumbers or peppers.
- **Infuse** to prepare aromatic spirits.

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ONION, LEEK, GARLIC AND ASPARAGUS

1. Name one religion or belief in which garlic or onion consumption is for reason behind this dietary restriction. [Section B: 6]

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2. Try to explain why you cry when chopping an onion, and indicate how

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3. Leek is the national emblem of a country. What is the name of that country containing leek is made there? [Section B: 5]

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4. Research some information about green asparagus, and indicate difference between green asparagus and white asparagus. [Section A: 11]

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5. Identify one major diet-related risk and describe how either onion, leek or asparagus can help to reduce or alleviate its symptoms or onset. [Section A: 1, Section B: 4]

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6. At what temperature and conditions should onion, garlic, leeks and asparagus be stored? [Section C: 1, Section C: 3]

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7. Identify and draw five different types of onions. Describe the difference between them, and suggest one ideal culinary use for each. [Section C: 2, Sect

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Extension [Section B: 5, skill 2, skill 3]

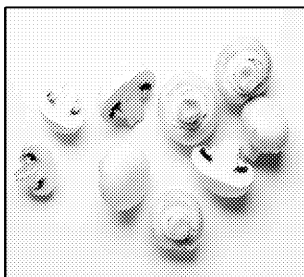
Choose one of the ingredients (onion, leek, asparagus or garlic) and would be characteristic of two different cuisines, but would contain that ingredient in them.

Design a recipe card for each of your dishes to show any key difference that ingredient in them.

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5. WHITE MUSHROOM / PORTOBELLI



What is It?

One of the many types of edible mushroom. White mushrooms are usually wild, but it is usually grown in polytunnels. It has soft flesh with a dark brown underside. Other mushrooms include chanterelles (also commercially cultivated) and a wide variety of other mushrooms such as chanterelle, boletus, blewit, morels, truffles and

Common Cuisines:

Widely used in North American and European cuisines, such as Italian, French or Polish. Each of the cuisines uses different varieties of mushroom, so the dishes are specific to the region they come from.

Nutritional Information:

These values may vary. The data shown is for white mushroom.

Nutritional value: typical value	Per 100 g	Per 1 mushroom (20 g)
Energy	22 kcal	4.4 kcal
Macronutrients		
Fat	0.34 g	0.068 g
Saturated fats	0.05 g	0.01 g
Monounsaturated fats	0	0
Polyunsaturated fats	0.16 g	0.03 g
Carbohydrates	3.25 g	0.65 g
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	1.98 g	0.4 g
Fibre	1 g	0.2 g
Protein	3.09 g	0.62 g
Micronutrients		
Vitamin A	0	0
Vitamin D	0.2 mcg	0.04 mcg
Vitamin E	0	0
Vitamin K	0	0
Vitamin B1 (Thiamine)	0.08 mg	0.016 mg
Vitamin B2 (Riboflavin)	0.4 mg	0.08 mg
Vitamin B3 (Niacin)	3.6 mg	0.72 mg
Folate	17 mcg	3.4 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	2 mg	0.4 mg
Calcium	3 mg	0.6 mg
Iron	0.5 mg	0.1 mg
Sodium (Salt)	5 mg	1 mg
Fluoride	0	0
Iodine	2 mcg	0.4 mg
Phosphorus	86 mg	17.2 mg
Potassium	318 mg	64 mg
Magnesium	9 mg	2 mg
g – grams, mg – milligrams, mcg – micrograms		

Nutritional

Health Benefits:

Mushrooms are very low in calories and fat, making them suitable for people on a low-calorie diet. They are also a good source of essential amino acids, which are important for protein. They also contain choline, which helps to reduce excess fat. Their high potassium level makes mushrooms a good choice for people with hypertension. They are a source of vitamin D, which is rare in fruit and vegetables.

Allergy and Health Risks:

Mushrooms should be avoided by people with allergies (three years old), the elderly and people with certain diseases, because the high potassium level makes them difficult to digest.

Alter

For the umami flavour, try using mushrooms in beef broth.

To bulk up the dish, use chopped mushrooms or Quorn™.

For texture, try using cauliflower.

Cooking Uses:

- Keep raw to eat as a snack (but not be eaten this way!)
- Stew or fry to use in soups
- Pickle to use in salads or dips
- Dry and pulverise or chop for use in bread
- Fry to use in risotto or pasta
- Fry to use in scrambled eggs
- Dry to use for umami flavour

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1. Explain why mushrooms may be considered a seasonal food. [Section B: 1]

2. Explain what 'umami' means, and list other foods which provide the same taste. [Section B: 1]

3. Design three dishes which contain mushrooms and are suitable for people with common food allergies. [Section A: 3]

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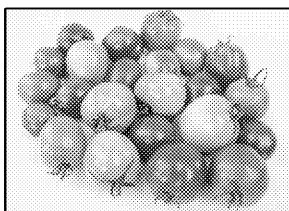


Extension [Section B: 1]

Create a leaflet in which you indicate the growth conditions required for varieties of fungus available in your area.



6. TOMATO



What is It?

Round or oval, soft fruit with many small seeds, usually a thin layer of skin which peels off easily after blanching. There are many varieties of tomato, which differ in colour, flavour, shape and size.

Common Cuisines:

Although tomatoes originate from South America, today they are a common ingredient in cuisines all around the world, such as Italian, Mexican, Spanish and Bulgarian. Tomatoes owe their popularity to their distinctive umami flavour, sweetness and ability to grow in various climatic conditions.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 medium tomato (170 g)
Energy	18 kcal	30.6 kcal
Macronutrients		
Fat	0.2 g	0.34 g
Saturated fats	0.028 g	0.04 g
Monounsaturated fats	0.031 g	0.05 g
Polyunsaturated fats	0.083 g	0.14 g
Carbohydrates	3.9 g	6.63 g
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	2.65 g	4.5 g
Fibre	1.2 g	2.04 g
Protein	0.88 g	1.49 g
Micronutrients		
Vitamin A	42 mcg	71.4 mcg
Vitamin D	0	0
Vitamin E	0.54 mg	0.92 mg
Vitamin K	7.9 mcg	13.43 mcg
Vitamin B1 (Thiamine)	0.04 mg	0.07 mg
Vitamin B2 (Riboflavin)	0.02 mg	0.034 mg
Vitamin B3 (Niacin)	0.6 mg	1.02 mg
Folate	15 mcg	25.5 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	14 mg	23.8 mg
Calcium	10 mg	17 mg
Iron	0.27 mg	0.46 mg
Sodium (Salt)	5 mg	8.5 mg
Fluoride	2.3 mcg	3.91 mcg
Iodine	2 mcg	3.4 mcg
Phosphorus	24 mg	40.8 mg
Potassium	237 mg	403 mg
Magnesium	11 mg	19 mg
g – grams, mg – milligrams, mcg – micrograms		

Nutrition

Health Benefits:

Tomatoes are very low in calories, providing virtually any amount, especially when eaten raw. They are a good source of beta carotene, which is important for eyesight. Their natural red pigment is a powerful antioxidant, which helps to prevent cancer. Tomatoes are a great source of vitamin K, which supports blood clotting. They are also a source of vitamin E, which helps to prevent ageing.

Allergy and Health Risks:

Green tomatoes contain a glycoalkaloid called tomatine, which may affect the central nervous system, causing convulsions or vomiting, so it is best to avoid green tomatoes. The skin may cause allergic reactions, especially for children and those with allergies, but this is not very common.

Alter

For texture, sweetness and acidity:

- persimmon
- butternut squash
- bell pepper
- kumquat or kiwi fruit
- roasted turnips

Cooking Uses:

- **Keep fresh** to use in salads
- **Squeeze** for a juice (and use the pulp for home-made ketchup)
- **Chop and simmer** for sauces
- **Dry** to use in pasta, sandwiches
- **Dry and mince** to make a tomato paste
- **Deseed and bake** with spices

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1. Indicate whether or not tomatoes are seasonal foods. Justify your answer.

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2. Indicate how different methods of processing will affect the nutritional value of tomatoes. [Section C: 1]

Drying:

.....

Blanching:

.....

Making a tomato juice:

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Making a tomato soup:

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3. Suggest what kind of knife and which gripping technique you should use to cut tomatoes. Identify the advantages and disadvantages of your choice. [skill 1]

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4. What kind of date mark would you find on the packaging of: [Section C: 3]

a) fresh cherry tomatoes?

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b) canned tomatoes?

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5. Describe the signs of food spoilage which you would expect to see on

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Extension [Section C: 2]

Choose five different varieties of tomato and set up a tasting panel to conduct different tests to evaluate their texture, sweetness, acidity, colour, size of

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7. COURGETTE (ZUCCHINI)

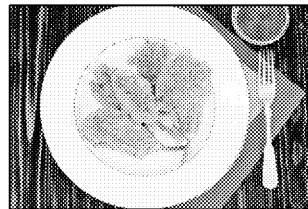


What is It?

Long summer squash, usually green in colour on the outside and greenish on the inside. Courgette flowers are also edible. If you are from America or Europe, you may find that courgette

Common Cuisines:

As with other varieties of squash, courgettes originally came from South or Central America. From there they were brought to Europe, and now they are widely used in Mediterranean countries, such as France, Egypt, Greece and Turkey.



Stir-fry
Stir-fry
was
prev
the
age

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 medium zucchini (300 g)
Energy	17 kcal	51 kcal
Macronutrients		
Fat	0.32 g	0.96
Saturated fats	0.084 g	0.252
Monounsaturated fats	0.011 g	0.033
Polyunsaturated fats	0.091 g	0.273
Carbohydrates	3.11 g	9.33
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	2.5 g	7.5
Fibre	1.0 g	3
Protein	1.21 g	3.63
Micronutrients		
Vitamin A	10 mcg	30
Vitamin D	0	0
Vitamin E	0.12 mg	0.36
Vitamin K	4.3 mcg	12.9
Vitamin B1 (Thiamine)	0.05 mg	0.15
Vitamin B2 (Riboflavin)	0.09 mg	0.27
Vitamin B3 (Niacin)	0.45 mg	1.35
Folate	24 mcg	72
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	18 mg	54
Calcium	16 mg	48
Iron	0.37 mg	1.11
Sodium (Salt)	8 mg	24
Fluoride	0	0
Iodine	0	0
Phosphorus	38 mg	114
Potassium	261 mg	783 mg
Magnesium	18 mg	54 mg

g – grams, mg – milligrams, mcg – micrograms

Nutritional

Health Benefits:

Courgette, like many other vegetables, is low in calories. It contains high levels of lutein and zeaxanthin, which support proper eyesight. Courgette is also a great food to maintain proper hydration for people with digestive problems. It is also rich in potassium – one courgette provides over 20% of RNI for this mineral.

Allergy and Health Risks:

Very rare cases of allergy to courgette have been reported. Courgette contains some amino acids that can crystallise in the human body and cause bladder stones, but these side effects are extremely rare.

Alter

For similar texture and taste: Use courgette in place of zucchini or squash.

To improve nutritional value: Add a source of vitamin C, which is higher in beta carotene.

Cooking Uses:

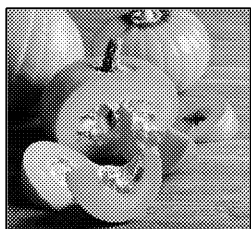
- **Stew** to use in ratatouille
- **Steam and blend** to make a puree
- **Grate** to add to pancakes
- **Pickle** to use in salads
- **Bake** with a stuffing as a vegetable
- **Grill** to use as a side dish
- **Raw and thinly sliced** in a salad

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8. PUMPKIN



What is It?

Large, orange round squash, most popular around Halloween and seeds are edible; seeds are also used to produce oils

Common Cuisines:

Pumpkin is a staple food in the USA around Halloween, where it is used to prepare pumpkin pie (and lanterns), and in Mexico (calabaza en tacha – candied pumpkin).

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per cup of 2.5cm cubes (116 g)
Energy	26 kcal	30 kcal
Macronutrients		
Fat	0.1 g	0.12 g
Saturated fats	0.052 g	0.06 g
Monounsaturated fats	0.013 g	0.015 g
Polyunsaturated fats	0.005 g	0.006 g
Carbohydrates	6.5 g	7.55 g
Starch (polysaccharides)	-	-
Sugars (mono- and disaccharides)	2.76 g	3.2 g
Fibre	0.5 g	0.6 g
Protein	1 g	1.16 g
Micronutrients		
Vitamin A	426 mcg	494 mcg
Vitamin D	0	0
Vitamin E	1.06 mg	1.23 mg
Vitamin K	1.1 mcg	1.3 mcg
Vitamin B1 (Thiamine)	0.05 mg	0.058 mg
Vitamin B2 (Riboflavin)	0.11 mg	0.13 mg
Vitamin B3 (Niacin)	0.6 mg	0.7 mg
Folate	16 mcg	19 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	9 mg	10.4 mg
Calcium	21 mg	24 mg
Iron	0.8 mg	0.93 mg
Sodium (Salt)	1 mg	1 mg
Fluoride	0	0
Iodine	0	0
Phosphorus	44 mg	51 mg
Potassium	340 mg	394 mg
Magnesium	12 mg	14 mg

g – grams, mg – milligrams, mcg – micrograms

Nutritional

Health Benefits:

Pumpkin is a great source of antioxidants such as lutein and beta-carotene, which are necessary for proper eyesight and cell membranes. It is very low in sodium, so may be considered a good choice for a low-sodium or low-calorie diet. It is also a good source of calcium and group B vitamins. Pumpkin is gentle on the digestive system and is often used in the treatment of kidney and bladder stones. It is also used for treating parasite infections and improving immunity, which improves immune function.

Allergy and Health Risks:

It is very rare to develop an allergy to pumpkin. It is usually safe to feed it to babies. However, eating the seeds may result in an allergic reaction.

Alter

For the delicate flavour and texture
For the colour and texture
For the texture and colour
parsnips or celeriac.

Cooking Uses:

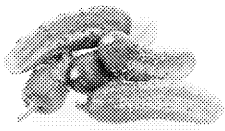
- Simmer and blend to make soup
- Mash to make gnocchi
- Roast or bake to use in pies
- Grate and bake in pies or cheesecake
- Pickle to use in salads
- Pickle or roast to use in feta cheese or other ingredients
- Purée to use in a latte

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9. CUCUMBER

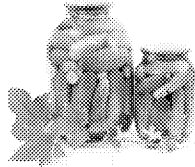


What is It?

Long, firm vegetable with dark green skin and light green delicate flesh. Usually eaten raw (with or without skin), but may also be pickled. Juicy. A cucumber is botanically a fruit. Cucumbers differ in shape and length. Some have a smooth skin, while others can have little spikes.

Common Cuisines:

Cucumbers are known and used worldwide, but it's worth paying special attention to Bulgarian cuisine, where cucumbers are used to prepare Shopska salad, and to Eastern European (e.g. Polish) cuisine, where cucumbers are pickled and used to prepare hot cucumber soups (winter) and cold buttermilk soups (summer).



Nutritional Information:

These values may differ between similar products.

Nutritional value: typical value	Per 100 g	Per 1 long cucumber (280 g)
Energy	12 kcal	34 kcal
Macronutrients		
Fat	0.16 g	0.45 g
Saturated fats	0.013 g	0.036 g
Monounsaturated fats	0.002 g	0.006 g
Polyunsaturated fats	0.003 g	0.008 g
Carbohydrates	2.16 g	6.05 g
Starch (polysaccharides)	-	-
Sugars (mono- and disaccharides)	1.38 g	3.86 g
Fibre	0.7 g	2 g
Protein	0.59 g	1.65 g
Micronutrients		
Vitamin A	4 mcg	11 mcg
Vitamin D	0	0
Vitamin E	0.03 mg	0.08 mg
Vitamin K	0	0
Vitamin B1 (Thiamine)	0.031 mg	0.087 mg
Vitamin B2 (Riboflavin)	0.025 mg	0.07 mg
Vitamin B3 (Niacin)	0.049 mg	0.1 mg
Folate	14 mcg	39 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	3.2 mg	9 mg
Calcium	14 mg	39 mg
Iron	0.22 mg	0.62 mg
Sodium (Salt)	2 mg	6 mg
Fluoride	1.3 mcg	3.6 mcg
Iodine	3 mcg	8.4 mcg
Phosphorus	21 mg	59 mg
Potassium	136 mg	381 mg
Magnesium	12 mg	34 mg

g – grams, **mg** – milligrams, **mcg** – micrograms

Nutrition

Health Benefits:

Almost 97% of cucumber makes it a great source of water, satisfying thirst. Cucumbers have strong teeth, and iodine. Cucumber has a low glycaemic index, making it suitable for diabetics, and low sodium, making it suitable for people with hypertension. It is also a source of probiotic bacteria, which can help with bowel movements.

Allergy and Health

Allergy to cucumbers is rare. If it does occur, this is most likely to happen with raw cucumbers. Cucumbers contain an enzyme which breaks down proteins. If you serve them with other vegetables, such as tomatoes, it can cause an allergic reaction.

Al

For the fresh, delicate taste
For the crunchiness, use in salads
For flavour and colour

Cooking Uses:

- Keep raw and sliced in salads, sandwiches, and tortillas
- Grate or slice to use in salads
- Blend to add to cold soups
- Pickle to use in salads and stews
- Fresh or pickled to use in dips
- Grate or slice to serve with vinegar, salt and oil

**remember that the enzyme in cucumber can damage vitamin C from other vegetables; it is OK to mix them if you are not sliced too finely and mixed directly before serving*

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COURGETTE, PUMPKIN AND CUCUMBER

1. Courgette, pumpkin and cucumber are considered seasonal vegetables which they are harvested. [Section B: 1]

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2. Research information about the vegetables above and describe whether they are local foods. [Section B: 1, Section B: 6]

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3. Which of the three vegetables (courgette, pumpkin or cucumber) is the most popular?

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4. Evaluate the advantages and disadvantages of developing genetically modified specified vegetables. [Section B: 3]

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Extension [Section B: 2, Section C: 2]

Research information on how to make pickled cucumbers, and then list the ingredients used in the process. List each step in the pickling process, and give pickling ingredients available. After two weeks, assess whether or not you have satisfied a tasting panel for your product.

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10. CARROT

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What is It?

Hard root vegetable, usually orange in colour, but different varieties can be light yellow to dark purple. In some countries, the greens are also eaten. Immature carrots are available in shops as 'baby carrots' – but these are a different variety.

Common Cuisines:

Carrots are used in cuisines all around the world. Around the fifteenth century they were brought to the UK, where they became a staple food. Carrots are popular in both savoury and sweet dishes due to their universal, slightly sweet taste and indistinct aroma.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 carrot (45 g)
Energy	41 kcal	18.45 kcal
Macronutrients		
Fat	0.24 g	0.11 g
Saturated fats	0.037 g	0.02 g
Monounsaturated fats	0.014 g	0.01 g
Polyunsaturated fats	0.117 g	0.05 g
Carbohydrates	9.58 g	4.3 g
Starch (polysaccharides)	1.43 g	0.64 g
Sugars (mono- and disaccharides)	4.74 g	2.13 g
Fibre	2.8 g	1.26 g
Protein	0.93 g	0.42 g
Micronutrients		
Vitamin A	835 mcg	376 mcg
Vitamin D	0	0
Vitamin E	0.66 mg	0.3 mg
Vitamin K	13.2 mcg	5.94 mcg
Vitamin B1 (Thiamine)	0.066 mg	0.03 mg
Vitamin B2 (Riboflavin)	0.058 mg	0.026 mg
Vitamin B3 (Niacin)	0.99 mg	0.45 mg
Folate	19 mcg	8.55 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	6 mg	2.7 mg
Calcium	33 mg	15 mg
Iron	0.3 mg	0.14 mg
Sodium (Salt)	69 mg	31 mg
Fluoride	3.2 mcg	1.44 mcg
Iodine	0	0
Phosphorus	35 mg	16 mg
Potassium	320 mg	144 mg
Magnesium	12 mg	5 mg

g – grams, mg – milligrams, mcg – micrograms

Nutritional

Health Benefits:

Carrot is known for its beta carotene, which is converted to vitamin A in the body. It helps with proper eyesight, and development of hair and nails. Raw carrot has been shown to be eaten by diabetics. It provides proper blood clotting. The fibre helps with proper bowel movements. Carrots can cause diarrhoea, while raw carrot helps with constipation.

Allergy and Health Risks:

Large amounts of vitamin A can be harmful to people suffering from liver disease. It is recommended to consult a doctor before consuming large amounts of carrot. Carrot has a relatively high glycemic index, so it should be avoided by people with diabetes. Carrot is a common allergen.

Alter

For similar texture and flavour: parsnip, root, daikon or celeriac.

For the colour and sweetness: butternut squash.

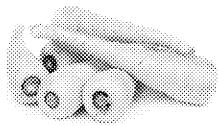
Cooking Uses:

- **Keep raw** to use in salads
- **Cook whole or chopped** in soups, stews, and casseroles
- **Blend** raw to use in juice
- **Cook and blend** to make baby food
- **Grate** to use in muffins
- **Pickle** (alone or with other vegetables) for a tangy flavour
- **Steam or roast** as a side dish

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11. PARSNIP



What is It?

White root vegetable native to Europe and Asia, often mistaken for a carrot because of its appearance. Despite being neglected and underutilised in many countries, it is one of the most popular winter vegetables in the UK. It has been a staple food in Eastern Europe before potatoes were imported.

Common Cuisines:

The use of parsnips is characteristic of British cuisine, but they are also used in Germany, France and the Netherlands. Parsnip very often grows in the wild (gaining it popularity during the World War II).

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 small parsnip (80 g)
Energy	75 kcal	60 kcal
Macronutrients		
Fat	0.30 g	0.24 g
Saturated fats	0.05 g	0.04 g
Monounsaturated fats	0.112 g	0.09 g
Polyunsaturated fats	0.047 g	0.04 g
Carbohydrates	18 g	14.4 g
Starch	6.2 g	4.96 g
(polysaccharides)		
Sugars (mono- and disaccharides)	4.8 g	3.84 g
Fibre	4.9 g	3.92 g
Protein	1.2 g	0.96 g
Micronutrients		
Vitamin A	0	0
Vitamin D	0	0
Vitamin E	1.5 mg	1.2 mg
Vitamin K	22.5 mcg	18 mcg
Vitamin B1 (Thiamine)	0.09 mg	0.07 mg
Vitamin B2 (Riboflavin)	0.05 mg	0.04 mg
Vitamin B3 (Niacin)	0.7 mg	0.56 mg
Folate	67 mcg	53.6 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	17 mg	13.6 mg
Calcium	36 mg	28.8 mg
Iron	0.6 mg	0.48 mg
Sodium (Salt)	10 mg	8 mg
Fluoride	0	0
Iodine	0	0
Phosphorus	71 mg	56.8 mg
Potassium	375 mg	300 mg
Magnesium	29 mg	23 mg
g – grams, mg – milligrams, mcg – micrograms		

Storage

Store in a cool, dry place. Shred or grate and store in moist paper towels for up to 2 weeks.

Nutrition

Health Benefits:

Parsnip is high in fibre, which is beneficial for a high-fibre diet. It provides vitamin K, which is important for blood clotting. Parsnip also stimulates diuresis. It is an electrolyte – one small parsnip provides 1.2g of potassium, which helps to lower blood pressure. It is also a good source of electrolyte – one small parsnip provides 1.2g of potassium for this mineral.

Allergy and Health Risks:

Parsnip contains furanocoumarins, which can cause allergic reactions and skin rashes. It is also a good source of potassium, which may make it unsuitable for people with high blood pressure. It contains more phosphorus than weight. It contains more phosphorus than weight, which may impair calcium metabolism. It is also a good source of potassium, which may make it unsuitable for people with high blood pressure. It contains more phosphorus than weight, which may impair calcium metabolism. It is also a good source of potassium, which may make it unsuitable for people with high blood pressure.

Alter

For texture and aroma, but not for the colour, use parsnip root.

For the colour and texture, use parsnip root. Slightly nutty flavour, use carefully.

Cooking Uses:

- **Steam, fry or roast** to use in a puree.
- **Bake or fry** in the form of a gratin.
- **Grate or dice** to add to soups.
- **Steam or boil** and blend into a puree.
- **Mash** to use in a puree.
- **Caramelize** to use as a garnish.
- **Shred and blanch** to use in a salad.

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12. CELERIAC



What is It?

Round creamy root with edible leaves –not to be mistaken for celery as celeriac is quite tough and nutty in flavour.

Common Cuisines:

Celeriac originated in the Mediterranean and then spread to the rest of Europe, where it is now considered a staple food. It is worth noting that celeriac can be used interchangeably with celery as the base for the famous Waldorf salad.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 cup of 2.5cm cubes (156 g)
Energy	42 kcal	66 kcal
Macronutrients		
Fat	0.3 g	0.47 g
Saturated fats	0.079 g	0.123 g
Monounsaturated fats	0.058 g	0.09 g
Polyunsaturated fats	0.148 g	0.231 g
Carbohydrates	9.2 g	14.35 g
Starch (polysaccharides)	0.5 g	0.75 g
Sugars (mono- and disaccharides)	1.6 g	2.5 g
Fibre	1.8 g	2.8 g
Protein	1.5 g	2.34 g
Micronutrients		
Vitamin A	0	0
Vitamin D	0	0
Vitamin E	0.36 mg	0.56 mg
Vitamin K	41 mcg	64 mcg
Vitamin B1 (Thiamine)	0.05 mg	0.078 mg
Vitamin B2 (Riboflavin)	0.06 mg	0.094 mg
Vitamin B3 (Niacin)	0.7 mg	1.1 mg
Folate	8 mcg	12 mcg
Vitamin B12		
Vitamin C (Ascorbic acid)	8 mg	12.5 mg
Calcium	43 mg	67 mg
Iron	0.7 mg	1.09 mg
Sodium (Salt)	100 mg	156 mg
Fluoride	0	0
Iodine	0	0
Phosphorus	115 mg	179 mg
Potassium	300 mg	468 mg
Magnesium	20 mg	31 mg

g – grams, mg – milligrams, mcg – micrograms

Storage

Celeriac
dark place
its stems

Nutritional

Health Benefits:

Celeriac is low in calories and helps the body to help blood clotting, which helps to prevent certain diseases. It is a source of niacin, necessary for the regulation of the body's metabolism and contains a level of antioxidants that can help to prevent carcinogenesis and slow down the aging process.

Allergy and Health Risks:

Celeriac is a strong allergen and should be consumed separately from other products to avoid contamination. It is also high in sodium, so avoid it in low-sodium diets.

Alter

For colour, flavour and smell: use parsnips or parsley root.

For texture in mash, use potatoes.

Cooking Uses:

- **Raw, grated and blanched** in soups.
- **Steam or simmer** to use in stews.
- **Roast or grill** to serve as a vegetable.
- **Coat in breadcrumbs** and fry in oil for a vegetarian-friendly dish.

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13. SWEDE



What is It?

Also known as rutabaga, swede evolved as a cross between a turnip and a rutabaga. This vegetable comes from industrial crops only (i.e. it does not contain any natural pesticides). Larger bulbs may be woody inside, so it's best to choose smaller ones.

Common Cuisines: Swedish, Finnish, Scottish

In Finland swede is used to make a traditional Christmas casserole. In Sweden it is cooked and mashed with potatoes and butter into *rotmos*. In Scotland it forms part of neeps and tatties, traditionally served with haggis.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 small swede (600 g)
Energy	24 kcal	144 kcal
Macronutrients		
Fat	0.3 g	1.8 g
Saturated fats	-	-
Monounsaturated fats	0.1 g	0.6 g
Polyunsaturated fats	0.2 g	1.2 g
Carbohydrates	5 g	30 g
Starch (polysaccharides)	0.1 g	0.6 g
Sugars (mono- and disaccharides)	4.9 g	29.4 g
Fibre	1.9 g	11.4 g
Protein	0.7 g	4.2 g
Micronutrients		
Vitamin A	0	0
Vitamin D	0	0
Vitamin E	0	0
Vitamin K	2 mcg	12 mcg
Vitamin B1 (Thiamine)	0.15 mg	0.9 mg
Vitamin B2 (Riboflavin)	0	0
Vitamin B3 (Niacin)	1.2 mg	7.2 mg
Folate	31 mcg	186 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	31 mg	186 mg
Calcium	53 mg	318 mg
Iron	0.1 mg	0.6 mg
Sodium (Salt)	15 mg	90 mg
Fluoride	0	0
Iodine	0	0
Phosphorus	40 mg	240 mg
Potassium	170 mg	1020 mg
Magnesium	9 mg	54 mg

g – grams, mg – milligrams, mcg – micrograms

Storage

Brush off the soil, then store in a cool, dry place. May be washed and blanched before use.

Nutritional Benefits

Health Benefits:

Swede is rich in sulfur compounds, which may help to prevent cancer. It also contains as well as some group B vitamins, which boosts the immune system. Swede may be enjoyed by most people, including diabetics, because it is low in starch or sugar, which would raise blood sugar levels. It provides insoluble fibre, which aids bowel movements.

Allergy and Health Risks:

Excessive consumption may cause allergic reactions in the mouth, similar to spinach.

Alterations

For the texture and colour

For colour, texture and flavour, substitute with root or turnip.

For crunchiness, substitute with water chestnuts).

Cooking Uses:

- **Cook and mash** to serve with meat or fish.
- **Dice or grate** to add to soups or stews.
- **Roast or steam** to serve with meat or fish.
- **Raw and grated** can be used in salads.

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ROOT VEGETABLES (CARROT, PARSNIP, CELERY) TASK SHEET

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1. List five dishes which are based on carrots. [Section A: 3, Section C: 1]

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2. Check the Reference Nutrient Intake (RNI) for teenagers and calculate (%) is provided by 100 g of **one** of the vegetables: carrot, parsnip or celery

Nutritional value: typical value	Reference Nutrient Intake for teenage boys	Reference Nutrient Intake for teenage girls	100 g of
Energy			
Macronutrients			
Fat			
Carbohydrates			
Starch (polysaccharides)			
Sugars (mono- and disaccharides)			
Fibre			
Protein			
Micronutrients			
Vitamin A			
Vitamin D			
Vitamin B1 (Thiamine)			
Vitamin B2 (Riboflavin)			
Vitamin B3 (Niacin)			
Folate			
Vitamin B12			
Vitamin C (Ascorbic acid)			
Calcium			
Iron			
Sodium (Salt)			
Iodine			
Phosphorus			
Potassium			
Magnesium			



Extension [Section A: 1, Section C: 1, skills 1–3]

Design a soup using one of the root vegetables listed. Then design a skill (e.g. chopping, stirring, boiling) and the equipment used (and techniques or skills required), the cooking method and the preparation of the vegetables.

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14. BELL PEPPER / SWEET



What is It?

Firm, red, yellow or green vegetable in the shape of a bell, with multiple seeds. Red bell peppers are used to make paprika (which is used to make chilli because of their high level of capsaicin – which makes them spicy and hot).

Common Cuisines:

Peppers are native to Mexico and South America, but were transferred to Europe in the fifteenth century and have gained popularity since.

Nutritional Information:

These values may differ between similar products. The information below is for red pepper.

Nutritional value: typical value	Per 100 g	Per 1 medium pepper (120 g)
Energy	31 kcal	37.2 kcal
Macronutrients		
Fat	0.3 g	0.36 g
Saturated fats	0.027 g	0.032 g
Monounsaturated fats	0.003 g	0.004 g
Polyunsaturated fats	0.04 g	0.05 g
Carbohydrates	6 g	7.2 g
Starch	0	0
(polysaccharides)		
Sugars (mono- and disaccharides)	4.2 g	5.04 g
Fibre	2.1 g	2.52 g
Protein	1 g	1.2 g
Micronutrients		
Vitamin A	157 mcg	188 mcg
Vitamin D	0	0
Vitamin E	1.58 mg	1.89 mg
Vitamin K	4.9 mcg	5.9 mcg
Vitamin B1 (Thiamine)	0.054 mg	0.06 mg
Vitamin B2 (Riboflavin)	0.085 mg	0.1 mg
Vitamin B3 (Niacin)	1 mg	1.2 mg
Folate	46 mcg	55 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	128 mg	153.6 mg
Calcium	7 mg	8.4 mg
Iron	0.43 mg	0.52 mg
Sodium (Salt)	4 mg	4.8 mg
Fluoride	0	0
Iodine	3 mcg	3.6 mcg
Phosphorus	26 mg	31.2 mg
Potassium	211 mg	253 mg
Magnesium	12 mg	14 mg
g – grams, mg – milligrams, mcg – micrograms		

Storage:

Peppers should be stored at a temperature of around 10°C. They should be kept in a kitchen towel and stored unwashed peppers in the refrigerator for up to 10 days. Refrigeration can cause peppers to become soft.

Nutrition

Health Benefits:

Red pepper is a great source of vitamin C, which is important for boosting the immune system. It also contains iron and skin-repairing ingredients. It contains beta carotene, necessary for healthy skin. It contains little fat, making it appropriate for people with heart disease. It contains quite high levels of vitamin K, which is important for clotting of blood.

Allergy and Health Risks:

Sweet pepper may cause allergic reactions in people allergic to birch pollen.

Alter

For colour and crunchiness: Add to salads.
For the tangy flavour, replace with vinegar.

Cooking Uses:

- **Chop** to add to stews and soups.
- **Dice** to use in soups and salads and sandwiches.
- **Stuff and bake** as a meat or vegetarian dish.
- **Grill or roast** to serve as a side dish.
- **Dehydrate** into a powder for use in soups and stews.
- **Grill and blend** into a sauce for use on pancakes, as well as on other dishes.

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1. Indicate the differences in nutritional value between red pepper and green pepper using McCance and Widdowson's 'Composition of foods' database available at <http://www.mccanceandwiddowson.com/>

Red sweet pepper	Green sweet pepper

2. Sweet pepper is very popular in Mexican cuisine – but not only Mexican cuisine. Which other cuisines use sweet pepper as a staple food. [Section B: 5]

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Extension [Area 5 Area 6]

Research information about various kinds of pepper and create a poster from it. You can also prepare a tasting panel for various kinds of pepper.

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15. POTATO



What is It?

Starchy, tuberous vegetable with a brown skin, usually oval shape. Potatoes are a very versatile ingredient, since a wide variety of dishes which can be prepared from them.

Store in a cool, dry place.

Common Cuisines:

Staple food in many countries, such as Russia (used to make pancakes and vodka), Germany (famous potato salad) and the United Kingdom (jacket potatoes). Although they originated in South America, nowadays almost 70% of the world's consumption of potatoes takes place in Asia.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 small potato (90 g)
Energy	77 kcal	69.3 kcal
Macronutrients		
Fat	0.09 g	0.081 g
Saturated fats	0.025 g	0.0225 g
Monounsaturated fats	0.002 g	0.0018 g
Polyunsaturated fats	0.042 g	0.0378 g
Carbohydrates	17.5 g	15.75 g
Starch (polysaccharides)	15.3 g	13.77 g
Sugars (mono- and disaccharides)	0.82 g	0.738 g
Fibre	2.1 g	1.89 g
Protein	2.05 g	1.845 g
Micronutrients		
Vitamin A	0	0
Vitamin D	0	0
Vitamin E	0	0
Vitamin K	2 mcg	1.8 mcg
Vitamin B1 (Thiamine)	0.081 mg	0.073 mg
Vitamin B2 (Riboflavin)	0.032 mg	0.029 mg
Vitamin B3 (Niacin)	1.06 mg	0.95 mg
Folate	15 mcg	13.5 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	20 mg	18 mg
Calcium	12 mg	10.8 mg
Iron	0.81 mg	0.73 mg
Sodium (Salt)	6 mg	5.4 mg
Fluoride	0	0
Iodine	1 mcg	0.9 mcg
Phosphorus	57 mg	51.3 mg
Potassium	425 mg	382 mg
Magnesium	23 mg	21 mg

g – grams, mg – milligrams, mcg – micrograms

Nutrition

Health Benefits:

Potatoes are the main source of energy for many people around the world. They are rich in potassium to support healthy bones, for the nervous system and vitamin C. Potatoes are very high in potassium, which helps to lower blood pressure and conduct electricity. A medium potato provides over 10% of the daily requirement for potassium. They are low in sodium and protein, making them a good choice for people with kidney disease.

Allergy and Health Risks:

Raw potatoes are toxic and can cause poisoning. Cooked potatoes are high in carbohydrates and contribute to weight gain and obesity. They have a high glycaemic index, which causes blood sugar levels to rise very quickly and can be a problem for people with diabetes.

Alter

For the texture, use sweet potatoes.
For colour and texture, use purple potatoes.
If you are looking for a starchy texture, use groats or quinoa.

Cooking Uses:

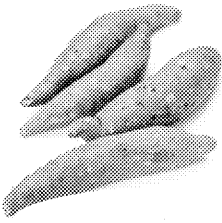
- **Mash, fry, roast or bake**
- **Stuff and bake** to eat as a snack
- **Boil or steam** to use in soups
- **Boil and mash** to use in casseroles
- **Extract the starch** to use in sweet sauces
- **Roast** whole with skin to serve as jacket potatoes
- **Grate** to eat as a snack
- **Grate** to make potato chips

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16. SWEET POTATO



What is It?

Longitudinal tuberous vegetable with a hard, orange flesh that is sweet in taste. The flesh is usually very hard and crisp.

Common Cuisines:

Sweet potatoes are a staple food for the poor in the Philippines, as they are easier and cheaper to grow than rice. In the USA, candied sweet potatoes are served for Thanksgiving.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 potato (130 g)
Energy	86 kcal	112 kcal
Macronutrients		
Fat	0.05 g	0.07 g
Saturated fats	0.018 g	0.023 g
Monounsaturated fats	0.001 g	0.001 g
Polyunsaturated fats	0.014 g	0.018 g
Carbohydrates	20.12 g	26.16 g
Starch (polysaccharides)	12.65 g	16.45 g
Sugars (mono- and disaccharides)	4.18 g	5.43 g
Fibre	3.0 g	3.9 g
Protein	1.57 g	2.04 g
Micronutrients		
Vitamin A	709 mcg	922 mcg
Vitamin D	0	0
Vitamin E	0.26 mg	0.34 mg
Vitamin K	1.8 mcg	2.3 mcg
Vitamin B1 (Thiamine)	0.078 mg	0.1 mg
Vitamin B2 (Riboflavin)	0.061 mg	0.079 mg
Vitamin B3 (Niacin)	0.557 mg	0.72 mg
Folate	11g	14 mg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	2.4 mg	3.1 mg
Calcium	30 mg	39 mg
Iron	0.61 mg	0.79 mg
Sodium (Salt)	55 mg	72 mg
Fluoride	-	-
Iodine	2 mcg	2.6 mcg
Phosphorus	47 mg	61 mg
Potassium	337 mg	438 mg
Magnesium	25 mg	32 mg

g – grams, **mg** – milligrams, **mcg** – micrograms

Nutrition

Health Benefits:

Sweet potatoes provide large amounts of beta carotene, necessary for membrane regeneration and vision. They are also rich in fibre, which supports digestion. They are also rich in vitamin C and supports fertility.

Allergy and Health Risks:

Sweet potatoes are quite high in sugar, so it is best not to include them in a diet for people who are trying to lose weight. They are also high in sodium, which needs to be controlled, especially for people with hypertension. Sweet potatoes rarely cause an allergic reaction, if it does occur, it is not life-threatening.

Alter

For texture and volume, use sweet potatoes in soups or squash.
For colour and sweetness, use sweet potatoes in casseroles or squash.

Cooking Uses:

- **Mash** (purée) to serve with meat or fish.
- **Dice or slice** to add to soups or casseroles.
- **Roast or fry** to eat as a side dish (e.g. chips or crisps).
- **Boil and mash** to prepare for a baby's food.
- **Boil and mash** to use in a recipe.

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1. What is the definition of a staple food? [Section A: 11]

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2. List five staple foods of the United Kingdom. [Section A: 11]

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3. Research and list countries where sweet potatoes are produced. Explain how importing sweet potatoes to the United Kingdom can affect the environment. [Section B: 1, Section C: 1]

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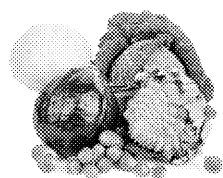
Extension [Section A: 1]

Design a poster (using the Ingredients Cards to help you) that highlights the benefits of eating sweet potatoes over white potatoes.

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17. CABBAGE



What is It?

Leafy, round plant of many varieties, such as savoy, pak choi, and Brussels sprouts. Cabbage is closely related to broccoli and cauliflower; they belong to the cruciferous family.

Common Cuisines:

Different varieties of cabbage are popular around the world – bok choy in China, kimchi in Vietnam, Brussel sprouts in the UK... In many European countries (such as Germany, France and Poland) cabbage is soured (pickled) to obtain sauerkraut – a very sour product full of probiotic bacteria.

Nutritional Information:

These values may differ between similar products.

Nutritional value: typical value	Per 100 g	Per 1 cup of shredded cabbage (70 g)
Energy	25 kcal	18 kcal
Macronutrients		
Fat	0.1 g	0.07 g
Saturated fats	0.034 g	0.024 g
Monounsaturated fats	0.017 g	0.012 g
Polyunsaturated fats	0.017 g	0.012 g
Carbohydrates	5.8 g	4.06 g
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	3.2 g	2.24 g
Fibre	2.5 g	1.8 g
Protein	1.28 g	0.9 g
Micronutrients		
Vitamin A	5 mcg	4 mcg
Vitamin D	0	0
Vitamin E	0.15 mg	0.10 mg
Vitamin K	76 mcg	53.2 mcg
Vitamin B1 (Thiamine)	0.061 mg	0.043 mg
Vitamin B2 (Riboflavin)	0.04 mg	0.028 mg
Vitamin B3 (Niacin)	0.234 mg	0.164 mg
Folate	43 mcg	30 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	36.6 mg	25.6 mg
Calcium	40 mg	28 mg
Iron	0.47 mg	0.33 mg
Sodium (Salt)	18 mg	13 mg
Fluoride	1.0 mcg	0.7 mcg
Iodine	2 mcg	1.4 mcg
Phosphorus	26 mg	18 mg
Potassium	170 mg	119 mg
Magnesium	12 mg	8 mg
g – grams, mg – milligrams, mcg – micrograms		

Nutritional

Health Benefits:

Cabbage is rich in vitamin K (needed for blood clotting), folate and vitamin C (100 g provides 10% of the daily requirement). It is also a good source of antioxidants and polyphenols, which help with ageing. Phytosterols in cabbage help to lower cholesterol levels in the blood and prevent heart disease.

Sauerkraut – which is becoming increasingly popular in Britain – is a rich source of vitamin C and other nutrients for health due to high levels of probiotics for proper functioning of the gut. Cabbage is low in calories, so it is a good choice for a low-calorie diet.

Allergy and Health Risks:

Cabbage is rich in sulfur compounds, which can cause gas and wind. Raw cabbage may also cause allergic reactions in some people, which may be harmful – especially in children with food allergies. Sauerkraut is high in sodium, so it should be avoided by people on a low-sodium diet (or those with kidney disease).

Alter

For white colour and similar texture: Use white cabbage, chard, arugula or collard.

Cooking Uses:

- **Raw, shredded** in salads or as a garnish.
- **Shred and simmer or steam** in soups, stews, and dishes such as colcannon.
- **Divide into leaves and steam** as a side dish, or use as a wrap for vegetables, and then simmer.
- **Shred and cook** with heart of palm or other vegetables in a dish.
- **Pickle** to make sauerkraut or stuffing.
- **Blend into a juice** for use in smoothies.

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18. CAULIFLOWER



What is It?

Cauliflower is part of the cruciferous family. The edible part is the inflorescence – a group of flowers arranged on a stem. It is available in many colourful varieties (including white, purple and green).

Common Cuisines:

Cauliflower is a popular ingredient in Europe, where it is used to prepare many dishes, such as cauliflower cheese in the UK. It is also used in India where it was introduced during the period of British colonialism. There are many varieties of cauliflower, each originating from a different country.

Nutritional Information:

These values may differ between similar products.

Nutritional value: typical value	Per 100 g	Per 1 floret (13 g)
Energy	25 kcal	12 kcal
Macronutrients		
Fat	0.28 g	0.04 g
Saturated fats	0.13 g	0.017 g
Monounsaturated fats	0.034 g	0.004 g
Polyunsaturated fats	0.031 g	0.004 g
Carbohydrates	4.97 g	0.65 g
Starch (polysaccharides)	0.2 g	0.026 g
Sugars (mono- and disaccharides)	1.91 g	0.25 g
Fibre	2.0 g	0.3 g
Protein	1.92 g	0.25 g
Micronutrients		
Vitamin A	0	0
Vitamin D	0	0
Vitamin E	0.08 mg	0.01 mg
Vitamin K	15.5 mcg	2 mcg
Vitamin B1 (Thiamine)	0.05 mg	0.007 mg
Vitamin B2 (Riboflavin)	0.06 mg	0.008 mg
Vitamin B3 (Niacin)	0.507 mg	0.066 mg
Folate	57 mcg	7 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	48.2 mg	6.3 mg
Calcium	22 mg	3 mg
Iron	0.42 mg	0.05 mg
Sodium (Salt)	30 mg	4 mg
Fluoride	1 mcg	0.1 mcg
Iodine	0	0
Phosphorus	44 mg	6 mg
Potassium	299 mg	39 mg
Magnesium	15 mg	2 mg

g – grams, mg – milligrams, mcg – micrograms

Nutrition

Health Benefits:

Cauliflower is a source of fibre and blood sugar and cholesterol (blood clotting) and vitamin C. It contains phytochemicals – substances that help to lower cholesterol levels in the blood. It also contains polyphenols (antioxidants) and is a low risk of developing certain cancers.

Allergy and Health Risks:

Cauliflower is rich in purines. If not broken down, can form uric acid. In people with gall bladder and kidney stones. As a cruciferous vegetable, it may cause gas in people with high levels of sulfur compounds.

Alter

For similar texture, but more tender, can be replaced by potatoes or celery.

Cooking Uses:

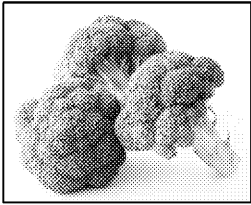
- Keep raw to eat as a salad
- Steam or boil to serve as a side or main dish
- Bake in a sauce (e.g. cauliflower cheese)
- Simmer or stew to make a soup
- Fry in batter or breadcrumbs
- Roast to eat as a main dish
- Grind in a food processor to make a base or biscuits
- Cut into pieces and add to gratins

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19. BROCCOLI



What is It?

Another member of the cruciferous family, with edible green florets. The taste of broccoli may be perceived as bitter due to high levels of glucanoraphanin.

Common Cuisines:

Since broccoli was first grown in Italy, it is most widely used in Europe. In the eighteenth century it was introduced to Great Britain, where it quickly became a staple food.

Nutritional Information:

These values may differ between similar products.

Nutritional value: typical value	Per 100 g	Per 1 stalk (150 g)
Energy	34 kcal	51 kcal
Macronutrients		
Fat	0.37 g	0.56 g
Saturated fats	0.039 g	0.059 g
Monounsaturated fats	0.011 g	0.017 g
Polyunsaturated fats	0.038 g	0.057 g
Carbohydrates	6.64 g	10.03 g
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	1.7 g	2.57 g
Fibre	2.6 g	3.9 g
Protein	2.82 g	4.26 g
Micronutrients		
Vitamin A	31 mcg	46 mcg
Vitamin D	0	0
Vitamin E	0.78 mg	1.17 mg
Vitamin K	101.6 mcg	153.4 mcg
Vitamin B1 (Thiamine)	0.071 mg	0.106 mg
Vitamin B2 (Riboflavin)	0.117 mg	0.176 mg
Vitamin B3 (Niacin)	0.639 mg	0.959 mg
Folate	63 mcg	94 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	89 mg	134 mg
Calcium	47 mg	70 mg
Iron	0.73 mg	1.09 mg
Sodium (Salt)	33 mg	50 mg
Fluoride	-	-
Iodine	2 mcg	3 mcg
Phosphorus	66 mg	99 mg
Potassium	316 mg	474 mg
Magnesium	21 mg	32 mg
g – grams, mg – milligrams, mcg – micrograms		

Nutritional

Health Benefits:

Broccoli is one of the healthiest vegetables, containing large amounts of micronutrients, such as vitamin C, folate, calcium and iron. It is high in fibre. It provides almost 10% of RNI for this superfood. The potassium in broccoli help to lower blood pressure. Moreover, broccoli provides high levels of beta carotene, lutein, zeaxanthin and antioxidants (polyphenols and antioxidants) which help in the prevention of cancer, diabetes and many other health-related conditions.

Allergy and Health Risks:

Consuming large quantities of broccoli may reduce the efficacy of certain medicines, such as blood thinners, increasing the risk of bleeding. It may also increase the risk of developing kidney stones. The high proportion of fibre may cause increased flatulence. Broccoli is also a common allergen for people with thyroid dysfunction.

Alter

For similar taste and colour use cauliflower sprouts.

For similar texture, use cauliflower.

Cooking Uses:

- **Simmer, steam, braise** in liquid.
- **Blanch or steam** to use in soups.
- **Bake** under a sauce to make a gratin.
- **Shred or divide into pieces** for salads and dips.
- **Blend raw** to use in smoothies.
- **Divide into pieces and fry** with bacon or ham to add to scrambled eggs.

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CRUCIFEROUS VEGETABLES (CABBAGE, CAULIFLOWER, BROCCOLI) – TASK SHEET

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1. Indicate what sized portion of cabbage, cauliflower and broccoli will provide for a 16-year-old. [Section A: 4]

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2. What method of heat transfer is used when: [Section C: 1]

a) steaming broccoli?

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b) roasting cauliflower?

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c) boiling cabbage?

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3. Describe how cooking broccoli will affect its texture, colour and smell.

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4. Explain why people with certain medical conditions should not eat cruciferous vegetables.

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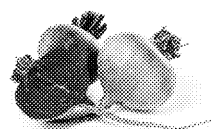
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Extension [Section B: 3]

Create an instruction card to indicate five ways of using leftover cabbage or cauliflower food waste at home. Hang it on the fridge to support your family in reducing food waste.

20. BEETROOT



What is It?

Beetroot is the edible tap root of a beet plant, but its leaves are also edible. The natural red pigment which gives beetroot its dark purple colour can be extracted for use as a natural food dye and for dyeing fabric. Sugar beet is a variety of beetroot cultivated for use as an animal feed.

Common Cuisines:

Although beetroot is eaten in many countries, including India and Australia, it is a very important part of Eastern European diets, where they are used to prepare a selection of dishes such as soups, salads, condiments or pickles.

Nutritional Information:

These values may differ between similar products.

Nutritional value: typical value	Per 100 g	Per 1 beetroot (5 cm diameter) approx. 80 g
Energy	43 kcal	35 kcal
Macronutrients		
Fat	0.17 g	0.14 g
Saturated fats	0.027 g	0.022 g
Monounsaturated fats	0.032 g	0.026 g
Polyunsaturated fats	0.06 g	0.049 g
Carbohydrates	9.56 g	7.84 g
Starch (polysaccharides)	-	-
Sugars (mono- and disaccharides)	6.76 g	5.54 g
Fibre	2.8 g	2.3 g
Protein	1.61 g	1.32 g
Micronutrients		
Vitamin A	2 mcg	2 mcg
Vitamin D	0	0
Vitamin E	0.04 mg	0.03 mg
Vitamin K	0.2 mcg	0.2 mcg
Vitamin B1 (Thiamine)	0.031 mg	0.025 mg
Vitamin B2 (Riboflavin)	0.04 mg	0.033 mg
Vitamin B3 (Niacin)	0.334 mg	0.274 mg
Folate	109 mcg	89 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	4.9 mg	4 mg
Calcium	16 mg	13 mg
Iron	0.8 mg	0.66 mg
Sodium (Salt)	78 mg	64 mg
Fluoride	-	-
Iodine	0	0
Phosphorus	40 mg	33 mg
Potassium	325 mg	260 mg
Magnesium	23 mg	18 mg

g – grams, mg – milligrams, mcg – micrograms

Storage:

Leaves should be washed and kept in a plastic bag. Beetroots should be stored with the leaves removed.

Nutrition

Health Benefits:

Beetroots are a good source of fibre, which promotes healthy bowel movements, and potassium, which aids in heart formation. But the main health benefit comes from betaine – the purple pigment – which is a natural antiviral and anticancer agent. It also helps to lower homocysteine in the blood, preventing the risk of heart failure. Beetroot also contains quercetin, which acts as an antioxidant.

Allergy and Health Risks:

Beetroot is quite high in sugar, so it should be avoided in diabetics. It may also change the colour of urine if there were blood in them (this is not dangerous). Beetroot contains oxalates, which can lead to the development of kidney and gall stones.

Alter

For texture and sweetness, use a small amount of sugar.
For colour, choose red cabbage or red food colouring (to reduce acidity).
To replace the leaves, use spinach or kale.

Cooking Uses:

- After cooking, remember to wash your hands – to preserve the deep purple colour.
- Steam whole and unpeeled** to use in soups and stews.
- Grate or slice cooked** beetroot to use in salads, as well as on canapés.
- Keep raw and blend** into smoothies to avoid the risk of choking.
- Grate raw** to use in cakes and breads.
- Grate raw or cooked** to use in soups and stews.
- Pickle** to use in salads and as a condiment.
- Bake or steam and grate** to use in soups and stews with meat.
- Grate cooked** beetroot as a condiment for cold cuts and sandwiches.
- Chop the leaves and simmer** to use in soups and stews.

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BEETROOT – TASK SHEET

1. Explain whether or not beetroot may be used in the dietary treatment of

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2. Indicate whether beetroot may be perceived as a seasonal vegetable. If not, indicate when it is harvested. [Section B: 1]

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Task

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3. Set up a taste panel in order to assess the features of a baked beetroot, using a rating test

	1	2	3
	Dislike very much	Dislike	Neither like nor dislike

	Taster 1	Taster 2	Taster 3	
Colour				
Texture				
Sweetness				
Overall taste				
Aroma				



Extension

[Section C: 2]

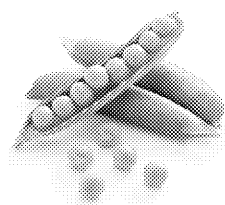
Perform the same taste test for a boiled beetroot. Are there any differences in tasters' opinions?

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21. GREEN PEAS



What is It?

Green peas are actually seeds encased in a crunchy and sweet pod. Both the peas and pod can be eaten. Dried peas are an excellent source of protein and a good protein alternative for meat.

Storage

Fresh peas should be stored in the fridge. Once shelled, the peas can be stored in an airtight container in the freezer. They can also be dried.

Common Cuisines:

Dried peas are a staple food in many countries (e.g. throughout Eastern Europe), while sugar snap peas are more popular in Western Europe as a snack. Green peas (*petit pois*) are popular worldwide, and are used as a main ingredient of many meals as well as a side dish.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 cup (145 g)
Energy	81 kcal	115 kcal
Macronutrients		
Fat	0.4 g	0.58 g
Saturated fats	0.071 g	0.103 g
Monounsaturated fats	0.035 g	0.051 g
Polyunsaturated fats	0.187 g	0.271 g
Carbohydrates	14.45 g	20.95 g
Starch (polysaccharides)	7.0 g	10.5 g
Sugars (mono- and disaccharides)	5.67 g	8.22 g
Fibre	5.7 g	8.3 g
Protein	5.42 g	7.86 g
Micronutrients		
Vitamin A	38 mcg	55 mcg
Vitamin D	0	0
Vitamin E	0.13 mg	0.19 mg
Vitamin K	24.8 mcg	36 mcg
Vitamin B1 (Thiamine)	0.266 mg	0.386 mg
Vitamin B2 (Riboflavin)	0.132 mg	0.191 mg
Vitamin B3 (Niacin)	2.09 mg	3.03 mg
Folate	65 mcg	94 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	40 mg	58 mg
Calcium	25 mg	36 mg
Iron	1.47 mg	2.13 mg
Sodium (Salt)	5 mg	7 mg
Fluoride	-	-
Iodine	2 mcg	3 mcg
Phosphorus	108 mg	157 mg
Potassium	244 mg	354 mg
Magnesium	33 mg	48 mg
g – grams, mg – milligrams, mcg – micrograms		

Nutritional Benefits:

Health Benefits:

Green peas provide high amounts of protein, making them an excellent part of a vegetarian diet, preventing constipation and promoting healthy movements. Peas are rich in growth factors necessary for the healthy function of the body, increasing immunity. High levels of zeaxanthin in peas help to maintain eye health and work as a potent antioxidant. Peas are also a good source of potassium. One cup of peas provides over 10% of the daily recommended intake of protein.

Allergy and Health Risks:

Peas contain purines, which may increase the risk of kidney and gall bladder stones, and gout (a disease in which uric acid crystals form in the joints). Peas are also quite high in sugars, so should be eaten in moderation by diabetics.

Alterations

For similar nutritional value, replace with lentils.
For similar texture and sweetness, replace with chickpeas.
For similar texture and colour, replace with black beans.

Cooking Uses:

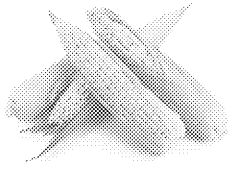
- Keep raw and fresh (to eat as a side dish)
- Boil, simmer or stew (with vegetables, meat, or aspic (meat jelly), salads, etc.)
- Cook and blend into a puree (for soups, dips, etc.)
- Dehydrate or dry to preserve (for use in pâtés and stuffing)
- Mash into a purée (for use in soups, dips, etc.)
- Steam to use in salads, casseroles, etc.

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22. SWEETCORN



What is It?

Also known as sugar corn (in America), sweetcorn is a sugary corn. It can be eaten raw, steamed or boiled (bought fresh or canned).

Common Cuisines:

Sweetcorn is popular in Brazil, where it is eaten with beans for protein complementation. In the USA it is usually eaten steamed or boiled on the cob, and served as a side dish. Popcorn is a popular snack worldwide.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 cup (145 g)
Energy	86 kcal	125 kcal
Macronutrients		
Fat	1.35 g	1.96 g
Saturated fats	0.325 g	0.471 g
Monounsaturated fats	0.432 g	0.626 g
Polyunsaturated fats	0.487 g	0.706 g
Carbohydrates	18.7 g	27.11 g
Starch (polysaccharides)	5.7 g	8.27 g
Sugars (mono- and disaccharides)	6.26 g	9.08 g
Fibre	2.0 g	2.9 g
Protein	3.27 g	4.74 g
Micronutrients		
Vitamin A	9 mcg	13 mcg
Vitamin D	0	0
Vitamin E	0.07 mg	0.1 mg
Vitamin K	0.3 mcg	0.4 mcg
Vitamin B1 (Thiamine)	0.155 mg	0.225 mg
Vitamin B2 (Riboflavin)	0.055 mg	0.08 mg
Vitamin B3 (Niacin)	1.77 mg	2.56 mg
Folate	42 mcg	61 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	6.8 mg	9.9 mg
Calcium	2 mg	3 mg
Iron	0.52 mg	0.75 mg
Sodium (Salt)	15 mg	22 mg
Fluoride	-	-
Iodine	0	0
Phosphorus	89 mg	129 mg
Potassium	270 mg	392 mg
Magnesium	37 mg	54 mg
g – grams, mg – milligrams, mcg – micrograms		

Nutrition

Health Benefits:

Sweetcorn is a rich source of energy for releasing energy from food. It is also a good source of folate, which is necessary for red blood cells to prevent anaemia. The dietary fibre in sweetcorn helps with bowel movements and avoid constipation. Sweetcorn is also a source of lutein and zeaxanthin, which are important for eyesight. Sweetcorn is rich in potassium, an important electrolyte, and magnesium, which is important for muscle contractions and heart health.

Allergy and Health Risks:

Sweetcorn is calorific and can be avoided by diabetics and those with a gluten intolerance. It can also cause digestive issues in people with a corn allergy or sensitivity (as in irritable bowel syndrome). Sweetcorn is the second most genetically modified food in the world. Some people may choose not to eat genetically modified foods for various reasons.

Alter

For texture and sweetness: Add to soups, stews, and casseroles.
For colour and crunchiness: Add to salads, stir-fries, and curries.
For the texture and taste: Add to beans or lentils.

Cooking Uses:

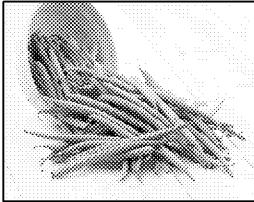
- **Eat raw** as a snack or add to salads.
- **Freeze, can or pickle** for use in soups, stews, and curries, stir-fries, and casseroles.
- **Boil, roast or steam** for use in soups, stews, and casseroles.
- **Steam or boil** to add to tortillas, or sauces (such as corn salsa).
- **Toast dry kernels** to be used as a garnish.

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23. GREEN BEANS



What is It?

Also known as snap beans (in America), these are bright green beans. Green beans may have a fibrous string, which has to be removed before cooking (otherwise it will get stuck between your teeth!).

Common Cuisines:

Green beans are eaten worldwide. In the USA they are used to prepare green bean casserole, while in Japan they are made into tempura. They are also very popular in European and Asian cuisines – usually served as a side dish.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 cup (130 g)
Energy	31 kcal	40.3 kcal
Macronutrients		
Fat	0.22 g	0.29 g
Saturated fats	0.05 g	0.065 g
Monounsaturated fats	0.01 g	0.013 g
Polyunsaturated fats	0.113 g	0.15 g
Carbohydrates	6.97 g	9.06 g
Starch (polysaccharides)	0.88 g	1.14 g
Sugars (mono- and disaccharides)	3.26 g	4.24 g
Fibre	2.7 g	3.5 g
Protein	1.83 g	2.38 g
Micronutrients		
Vitamin A	35 mcg	46 mcg
Vitamin D	0	0
Vitamin E	0.41 mg	0.53 mg
Vitamin K	43 mcg	55.9 mcg
Vitamin B1 (Thiamine)	0.082 mg	0.107 mg
Vitamin B2 (Riboflavin)	0.104 mg	0.135 mg
Vitamin B3 (Niacin)	0.734 mg	0.954 mg
Folate	33 mcg	43 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	12.2 mg	15.9 mg
Calcium	37 mg	48 mg
Iron	1.03 mg	1.34 mg
Sodium (Salt)	6 mg	8 mg
Fluoride	19 mcg	24.7 mcg
Iodine	2 mcg	2.6 mcg
Phosphorus	38 mg	49 mg
Potassium	211 mg	274 mg
Magnesium	25 mg	32 mg

g – grams, **mg** – milligrams, **mcg** – micrograms

Nutritional

Health Benefits:

Green beans are a tasty and nutritious source of many micronutrients such as folate, niacin and calcium. They also contain fluoride, necessary for the protection of enamel. Green beans contain polyphenols, which help to protect against various kinds of cancer. Green beans are also a good source of any flatulence, and may be beneficial for those on a FODMAP diet (a special diet for sufferers). A cup of green beans is a good source for magnesium, necessary for

Allergy and Health Risks:

Green beans contain a certain amount of oxalates, which can build up into kidney or gall bladder stones.

Alter

For the texture and colour

For colour and texture, choose fresh green beans.

Cooking Uses:

- If you use fresh green beans, remove the stems and strings
- **Boil or steam** to use as a side dish or add to a variety of additives to make a salad, breadcrumbs, butter, etc.
- **Cook** in soups, stews and casseroles
- **Steam or pickle** to use as a side dish or burgers
- **Wrap** in bacon and serve as a side dish
- **Chop** and add to stews and casseroles

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GREEN PEAS, SWEETCORN AND GREEN BEANS

1. Compare the nutritional values of green peas, sweetcorn and green beans. Which of the three vegetables is best used in a high fibre diet. [Section A:1, Section A: 7]

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2. Explain why vegetables have to be blanched before freezing. [Section B: 1]

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3. Depending on the country or region in which they are used, vegetables are cooked in different ways. Indicate how this applies to sweetcorn. [Section B: 5]

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Extension [Section C: 1]

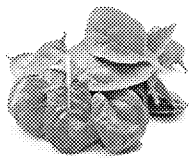
Cook fresh green beans using three different methods, e.g. boiling, steaming, then compare how each cooking method affected the appearance, colour and taste of the beans.

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24. SPINACH



What is It?

Dark green leaves originating in Asia. Baby spinach has smooth leaves while the leaves of mature spinach are thicker and leather-like.

Common Cuisines:

Spinach is popular in Indian cuisine, where it is used to prepare curries and bhajis. In the USA it is usually served steamed as a side dish. In Italy it is used to make stuffing for pasta (e.g. cannelloni and ravioli).

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per handful (30 g)
Energy	23 kcal	7 kcal
Macronutrients		
Fat	0.39 g	0.12 g
Saturated fats	0.063 g	0.019 g
Monounsaturated fats	0.01 g	0.003 g
Polyunsaturated fats	0.165 g	0.05 g
Carbohydrates	3.63 g	1.09 g
Starch (polysaccharides)	-	-
Sugars (mono- and disaccharides)	0.42 g	0.13 g
Fibre	2.2 g	0.7 g
Protein	2.86 g	0.86 g
Micronutrients		
Vitamin A	469 mcg	141 mcg
Vitamin D	0	0
Vitamin E	2.03 mg	0.61 mg
Vitamin K	482.9 mcg	144.9 mcg
Vitamin B1 (Thiamine)	0.078 mg	0.023 mg
Vitamin B2 (Riboflavin)	0.189 mg	0.057 mg
Vitamin B3 (Niacin)	0.724 mg	0.217 mg
Folate	194 mcg	58 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	28.1 mg	8.4 mg
Calcium	99 mg	30 mg
Iron	2.71 mg	0.81 mg
Sodium (Salt)	79 mg	24 mg
Fluoride	-	-
Iodine	2 mcg	0.6 mcg
Phosphorus	49 mg	15 mg
Potassium	558 mg	167 mg
Magnesium	79 mg	24 mg

g – grams, mg – milligrams, mcg – micrograms

Nutrition

Health Benefits:

Spinach is a great source of iron, building healthy red blood cells and vitamin C, which increases iron absorption and provides high doses of vitamin K for blood clotting. Very high amounts of lutein and zeaxanthin help to maintain eye health as antioxidants, lowering the risk of cataracts. Spinach is also an excellent source of potassium, which helps to balance blood pressure for proper muscle contraction.

Allergy and Health Risks:

Spinach contains a lot of oxalates, which increase the risk of kidney stones and worsen gout (a disease in which uric acid crystals cause swelling and pain). It also contains nitrates, which can impair its absorption in the body.

Alter

For the colour and texture: Use sorrel.

For similar colour and texture: arugula, beetroot leaves, rocket.

Cooking Uses:

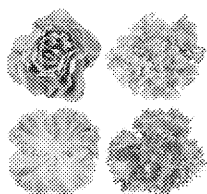
- Spinach contains oxalic acid, which can be harmful to the body, so it's best to mix it with milk, cream or cheese.
- Keep fresh and raw** to add a crunch to salads.
- Steam or simmer** with garlic and olive oil.
- Steam and blend** to make a smoothie or stuffing for dumplings and ravioli.
- Add whole or chopped** to soups, stews and casseroles.
- Blend raw** to make a juice or smoothie with milk, yogurt or another calcium source.

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25. LETTUCE



What is It?

Lettuce is a leafy vegetable used especially in salads. There are many varieties of lettuce, which differ in colour (usually green, but may also be red or purple) and shape of the leaves. Lettuce is made up of 95% water and is considered a useful source of macronutrients in a diet, but also provides water and micronutrients.

Common Cuisines:

Lettuce is usually the base of most popular salads, such as Caesar salad and salade niçoise or simply served sprinkled with vinaigrette sauce.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per serving (36 g)
Energy	15 kcal	5 kcal
Macronutrients		
Fat	0.15 g	0.05 g
Saturated fats	0.02 g	0.007 g
Monounsaturated fats	0.006 g	0.002 g
Polyunsaturated fats	0.082 g	0.03 g
Carbohydrates	2.87 g	1.03 g
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	0.78 g	0.28 g
Fibre	1.3 g	0.5 g
Protein	1.36 g	0.49 g
Micronutrients		
Vitamin A	370 mcg	133 mcg
Vitamin D	0	0
Vitamin E	0.22 mg	0.08 mg
Vitamin K	126.3 mcg	45.5 mcg
Vitamin B1 (Thiamine)	0.07 mg	0.025 mg
Vitamin B2 (Riboflavin)	0.08 mg	0.029 mg
Vitamin B3 (Niacin)	0.375 mg	0.135 mg
Folate	38 mcg	14 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	9.2 mg	3.3 mg
Calcium	36 mg	13 mg
Iron	0.86 mg	0.31 mg
Sodium (Salt)	28 mg	10 mg
Fluoride	-	-
Iodine	1 mcg	0.3 mcg
Phosphorus	29 mg	10 mg
Potassium	194 mg	70 mg
Magnesium	13 mg	5 mg

g – grams, mg – milligrams, mcg – micrograms

Storage

Wrap in plastic and store in the refrigerator. Lettuce is perishable.

Nutritional Benefits:

Health Benefits:

The main benefit of eating lettuce is its high water content – an underestimated benefit. Lettuce is also a good source of beta carotene, lutein and zeaxanthin, which are antioxidants. Lettuce also contains flavonoids, which lower LDL cholesterol and are rich in quercetin (another antioxidant). Lettuce is also a good source of developing cancer and of heart disease. It is low in calories and may be eaten raw.

Allergy and Health Risks:

Allergy to lettuce is very rare. Lettuce may cause side effects or digestive problems if it is heavily polluted with pesticides.

Alternatives

For the green colour and texture, try arugula, spinach, sorrel or basil.

Cooking Uses:

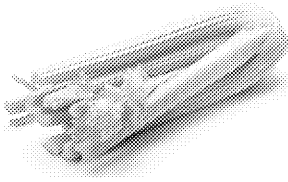
- **Keep raw and shred** lettuce for use in sandwiches, burgers, toppings, etc.
- **Wrap** to use instead of bread for sandwiches (finger foods and snacks).
- **Wrap and stuff** with cheese, meat, or anything else and serve as a snack.
- **Blend** into a juice, smoothie, or soup.

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26. CELERY



What is It?

Long, light green, juicy stem with small leaves on top (the white part growing under the ground) is called celeriac vegetable. Celery seeds may be eaten whole or ground.

Common Cuisines:

In 1893, celery was used to create the famous Waldorf salad in the Waldorf Astoria hotel in New York City, USA. In Europe, celery has gained popularity as a refreshing snack and ingredient of healthy drinks and smoothies.

Nutritional Information:

These values may differ between similar products.

Nutritional value: typical value	Per 100 g	Per 1 stalk (65 g)
Energy	16 kcal	10 kcal
Macronutrients		
Fat	0.17 g	0.11 g
Saturated fats	0.042 g	0.027 g
Monounsaturated fats	0.032 g	0.021 g
Polyunsaturated fats	0.079 g	0.051 g
Carbohydrates	2.97 g	1.93 g
Starch (polysaccharides)	0	0
Sugars (mono- and disaccharides)	1.34 g	0.87 g
Fibre	1.6 g	1 g
Protein	0.69 g	0.45 g
Micronutrients		
Vitamin A	22 mcg	14 mcg
Vitamin D	0	0
Vitamin E	0.27 mg	0.18 mg
Vitamin K	29.3 mcg	19 mcg
Vitamin B1 (Thiamine)	0.021 mg	0.014 mg
Vitamin B2 (Riboflavin)	0.057 mg	0.037 mg
Vitamin B3 (Niacin)	0.32 mg	0.208 mg
Folate	36 mcg	23 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	3.1 mg	2 mg
Calcium	40 mg	26 mg
Iron	0.2 mg	0.13 mg
Sodium (Salt)	80 mg	52 mg
Fluoride	4 mcg	2.6 mcg
Iodine	0	0
Phosphorus	24 mg	16 mg
Potassium	260 mg	166 mg
Magnesium	11 mg	7 mg

g – grams, mg – milligrams, mcg – micrograms

Storage:

Chopped celery can be stored in the fridge for a week if wrapped in plastic (shiny side out). Celery sticks should be stored in the fridge.

Nutrition

Health Benefits:

Comprising over 95% water, celery is especially on hot, sunny days. It provides water-soluble vitamins, as well as calcium and vitamin K, which are quite rare among vegetables. It also contains amounts of beta carotene and antioxidants to help prevent inflammation. It is also very low in calories. In large quantities, even by people with hypertension.

Allergy and Health Risks:

Celery is a strong allergen, and people with allergies should avoid it. It is also quite rich in sodium, so people with hypertension should avoid it.

Alter

For the crunchy texture, use celery sticks.
For the colour and flavour, use celery leaves.
Instead of the leaves, use celery seeds.

Cooking Uses:

- **Chop raw** to use in salads, soups, Waldorf salad or any other recipe.
- **Chop and fry** to use in stir-fries, soups, and casseroles.
- **Blend** to make juices and smoothies.
- **Chop fresh** and serve as a snack or in dips or hummus.
- **Chop the leaves** and use them to make a pesto sauce.
- **Sauté in butter** with celery seeds and mirepoix.
- **Grind celery seeds** to use in pickles and marinades.

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LEAFY GREENS (SPINACH, LETTUCE AND CELERY)

1. List five dishes which contain spinach. Make sure each of them comes from a different cuisine. [Section B: 5]

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2. Assess the nutritional value of a salad made with 100 g of lettuce, 50 g of cucumber and 10 g of tomato. Then indicate how it reflects the nutritional needs of a 16-year-old for vitamins. [Section A: 2]

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3. Some vegetables contain oxalates – substances which can accumulate in the body and lead to kidney stones or gall bladder stones, as well as rinse calcium out of the body, increasing the risk of osteoporosis. Give an example of such a vegetable, and explain how to prevent the negative effects of oxalate consumption. [Section A: 1, Section A: 2, Section A: 3]

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4. List four leafy greens that are similar to spinach and lettuce. [Section A: 11]

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Extension [Section C: 1, Skill 3, skill 8]

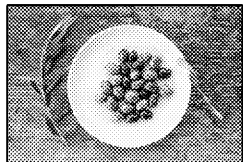
Cook fresh lettuce using three different methods, e.g. boiling, roasting and grilling. Compare how each cooking method affected the appearance, colour, flavour and texture of the lettuce leaves.

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27. OLIVES



What is It?

Olives are the oily fruit of an olive tree, cultivated since ancient times. They are used to make olive oil – one of the most precious and healthy oils in the world. Freshly pickled or harvested olive fruits are very oily.

Common Cuisines:

Olives are a staple food in the Mediterranean region, especially in Greece and southern France, where they are eaten whole as snacks as well as in salads and other dishes.

Nutritional Information:

These values may vary. Information is given for pickled green olives.

Nutritional value: typical value	Per 100 g	Per 1 olive (3 g)
Energy	145 kcal	4 kcal
Macronutrients		
Fat	15.32 g	0.41 g
Saturated fats	2.029 g	0.055 g
Monounsaturated fats	11.314 g	0.305 g
Polyunsaturated fats	1.307 g	0.035 g
Carbohydrates	3.84 g	0.1 g
Starch (polysaccharides)	-	-
Sugars (mono- and disaccharides)	0.54 g	0.01 g
Fibre	3.3 g	0.1 g
Protein	1.03 g	0.03 g
Micronutrients		
Vitamin A	20 mcg	1 mcg
Vitamin D	0	0
Vitamin E	3.81 mg	0.1 mg
Vitamin K	1.4 mcg	0
Vitamin B1 (Thiamine)	0.021 mg	0.001 mg
Vitamin B2 (Riboflavin)	0.007 mg	0
Vitamin B3 (Niacin)	0.237 mg	0.006 mg
Folate	3 mcg	0
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	0	0
Calcium	52 mg	1 mg
Iron	0.49 mg	0.01 mg
Sodium (Salt)	1556 mg	42 mg
Fluoride	-	-
Iodine	0	0
Phosphorus	4 mg	0 mg
Potassium	42 mg	1 mg
Magnesium	11 mg	0 mg

g – grams, mg – milligrams, mcg – micrograms

Nutrition

Health Benefits:

Olives are quite unique in the vegetable world. They are rich in fats, especially monounsaturated fats, which are necessary for maintaining cell membranes and play important roles in the functioning of the nervous system. They are also a source of polyphenols, which help in developing cardiovascular health.

Allergy and Health Risks:

Olives are very high in sodium. They should be avoided by people who have high blood pressure. They are also high in calories. They should be consumed in moderation by people on a low-calorie diet. They are also a source of monounsaturated fats, which are good for heart health.

Alter

For similar flavour and texture:

For saltiness, use pickled vegetables like cauliflower.

For similar texture, try roasted vegetables.

Cooking Uses:

- **Pickle** to eat as a snack or as a condiment. Add a stick with a piece of cheese.
- **Chop** to add to salads, sandwiches, tortillas, etc.
- **Add whole** to drinks (e.g. olive juice).
- **Chop** and add to bread or pasta. Add some herbs.
- **Blend** into a paste called olive tapenade. Use as a topping for crackers, or as a spread on sandwiches.
- **Chop** and add to meat or vegetable stuffing (e.g. for roasted chicken).

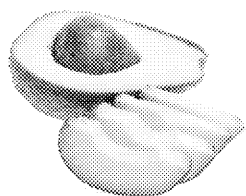
Store
Olive
brine
refrigerated

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28. AVOCADO



What is It?

Although, botanically, avocado is a fruit, it's mostly used as a vegetable. Known as an alligator pear, an avocado is a large berry of a fleshy fruit with a soft, oily and resemble cucumbers in smell.

Common Cuisines:

Avocado is widely used in Mexico, where it is used to prepare guacamole – now a popular dip worldwide. It is popular in vegetarian and vegan diets as a meat and butter substitute.

Nutritional Information:

These values may vary.

Nutritional value: typical value	Per 100 g	Per 1 avocado (200 g)
Energy	160 kcal	320 kcal
Macronutrients		
Fat	14.66 g	29.32 g
Saturated fats	2.126 g	4.252 g
Monounsaturated fats	9.799 g	19.598 g
Polyunsaturated fats	1.816 g	3.632 g
Carbohydrates	8.53 g	17.06 g
Starch (polysaccharides)	0.11 g	0.22 g
Sugars (mono- and disaccharides)	0.66 g	1.32 g
Fibre	6.7 g	13.4 g
Protein	2.00 g	4 g
Micronutrients		
Vitamin A	7 mcg	14 mcg
Vitamin D	0	0
Vitamin E	2.07 mg	4.14 mg
Vitamin K	21 mcg	42 mcg
Vitamin B1 (Thiamine)	0.067 mg	0.134 mg
Vitamin B2 (Riboflavin)	0.130 mg	0.26 mg
Vitamin B3 (Niacin)	1.738 mg	3.48 mg
Folate	81 mcg	162 mcg
Vitamin B12	0	0
Vitamin C (Ascorbic acid)	10 mg	20 mg
Calcium	12 mg	24 mg
Iron	0.55 mg	1.1 mg
Sodium (Salt)	7 mg	14 mg
Fluoride	7 mcg	14 mcg
Iodine	2 mcg	4 mcg
Phosphorus	52 mg	104 mg
Potassium	485 mg	970 mg
Magnesium	29 mg	58 mg

g – grams, mg – milligrams, mcg – micrograms

Storage:

Unripe avocados can be stored for up to three weeks, best kept at room temperature, preferably in a paper bag.

Nutritional

Health Benefits:

Avocados are a great source of healthy fats, including monounsaturated fats, folate, vitamin E and niacin. They are also a good source of fibre for building strong tooth enamel and supporting the thyroid gland. They are also a good source of dietary fibre and unsaturated fats – natural substances which help to increase cell membrane regeneration, boost testosterone and prevent the risk of heart disease. For this reason, they may be used in diets for people with heart diseases and hormonal issues. They are also a good source of potassium – one avocado provides about 10% of the daily requirement!

Allergy and Health Risks:

Avocados are high in fat – so eating too many can lead to obesity if eaten in excess (but this is rare). They can also cause mild allergic reactions in some people. Monounsaturated fatty acids can help to reduce autoimmune inflammatory diseases.

Alter

For texture, use melon.

For aroma, use cucumber.

For mashing (guacamole), try

For salads and sandwiches, use

Instead of guacamole, use hummus

For texture and creaminess in

desserts, use frozen banana.

Cooking Uses:

● **Mash or blend** into guacamole, smoothies, soups, dips, dressings, vegetables, as well as in

● **Slice** to add to salads, sandwiches, toast

● **Blend** to add to smoothies, soups, dips

● **Freeze** to use as a base for ice cream

● **Slice and fry** with scrambled eggs

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OLIVES AND AVOCADO – TASK 5

1. Explain why avocados should or should not be kept next to apples or bananas.
.....
.....
.....
2. Explain why a chopped avocado turns black, and explain how this process is happening. [Section C: 1]
.....
.....
.....
3. List three countries in which olives are grown. Can olives be called a local food?
.....
.....
.....
4. Assess what percentage of RNI is provided by 10 g of olives (approximate values) for the following nutrients for a 16-year-old, and then indicate whether olives are a good source for a 16-year-old's diet. [Section A: 2]

	RNI for boys	RNI for girls	10 g olives	
Fats	115 g	94 g		
Carbohydrates	370 g	302 g		
Proteins	111 g	90 g		
Fibre	25 g	25 g		
Vitamin A	700 mcg	600 mcg		
Sodium	1,600 mg	1,600 mg		



Extension [Section C: 2]

Try to find two different varieties of avocado, and set up a tasting panel to assess any differences in the tasters' opinions?

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Onion, leek, garlic and asparagus

1. Garlic and onion are forbidden in:
 - Some branches of **Hinduism** – some members of ISKCON (Hare Krishna) believe that garlic (which garlic assists with) distracts from devotion to Krishna.
 - Additionally, Brahmins cannot eat garlic and onion because they are believed that they negatively affect the ability to concentrate on meditation.
 - **Buddhism** – due to the smell, they aren't allowed near the temples.
 - **Sikhism** – to avoid overstimulation. They also don't consume garlic in large quantities as it is believed to excite (as an aphrodisiac) and this is not appropriate in a place of worship.
 - **Jainism** – they may cause overstimulation, generating excess heat in the body.
2. Onion is very rich in sulfur compounds. During cutting/chopping, these substances are released and irritate the eyes, causing tears to form. There are many ways of preventing this, for example:
 - Refrigerate the onion for some time so that the essential oils don't evaporate before chopping.
 - Cover your eyes with goggles so that the compounds cannot get into your eyes.
 - Put some tissues into your nose and breathe through your mouth during chopping.
 - Use a very sharp knife to reduce the damage to the cells and, therefore, the release of sulfur compounds.
 - Wet the knife with cold water before cutting the onion.
3. Wales; leek and potato soup (or any other national Welsh dish made with leek and potato).
4. Because it is grown in a different way from white asparagus, green asparagus contains more beta carotene. It also has a more delicate flavour and contains less fibre.
5. Students identify one from:
 - Obesity – all of these vegetables are low in calories, and can be eaten as part of a diet to combat obesity, as well as forming part of a healthy, balanced diet to prevent obesity.
 - Hypertension (high blood pressure) – garlic is rich in potassium, which helps to lower blood pressure.
 - Cancer – all of them are high in polyphenols, which are powerful antioxidants.
 - Osteoporosis – onion and garlic are rich in calcium, which supports bone health.
 - Atherosclerosis / coronary heart disease – leek and asparagus are rich in fibre, which helps to lower blood cholesterol levels and help to prevent the accumulation of plaque in the arteries.
 - Anaemia – leek and asparagus provide large amounts of folates and some iron, which are essential for the production of red blood cells.
 - Bowel cancer and/or diverticulitis – asparagus is rich in inulin, which is a prebiotic that promotes the growth of good microflora, which has proven anticancer properties.
 Or any other suitable answer.
6. The vegetables are best kept in a:
 - cool place – preferably a fridge for asparagus and leek, but a cool cupboard for onions and garlic
 - dark place – to protect them from sunlight (which could destroy the vitamins and cause sprouting)
 - dry place – to prevent spoilage caused by moulds

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7. Answers could include:

- Sweet onion: sweet, mild taste; firm texture after cooking; best for: frying, roasted vegetables
- Red onion: gentle aroma; crunchy; best for: eating raw in salads, sauces, make a chutney
- White onion: the crunchiest and sharpest in flavour; best used in salads,
- Yellow onion: all-purpose onion; may be very pungent; great for: roasting in soups and sauces
- Shallot: mild and subtle in flavour; less pungent aroma; great for: pickling

Mushrooms

- Different varieties of mushroom require very specific growth conditions, such as warmth.
 - As such, they will mostly grow only in locations which meet these criteria.
 - Most mushrooms grow in the autumn (with a few exceptions), which makes them a seasonal food.
 - They will not grow in other seasons due to the moisture level or temperature.
- Umami means 'savoury' or 'meaty' and it's a taste caused by reception of glutamate. It occurs in many food products, such as mushrooms, meat, tomatoes, cheese, soy sauce, seaweed, nuts, broccoli and grapes.

- Students must design three dishes, potentially with the use of different kinds of mushrooms. The dishes should be low in sodium, total fat, saturated fat and trans fats, as these all affect cardiovascular health. Sodium increases blood pressure, whereas fat, saturated fat and trans fats increase cholesterol levels.

The dishes should contain sources of antioxidants, or dietary fibre, which may help to reduce cholesterol levels in the blood, and help to reduce the risk of plaque adhesion to the arteries.

Tomato

- Tomatoes require warm, sunny weather to grow and ripen.
 - Naturally grown tomatoes are seasonal foods, because they produce fruit only in certain seasons.
 - Tomatoes can also be grown in polytunnels and, as such, can be grown all year round, making them as non-seasonal.
- The processing of food will affect it in various ways:
 - Drying – will reduce the amount of water in tomatoes, and, therefore, some of the nutrients will be evaporated.
 - Blanching – as this process is quick, it will not affect the nutritional value of the tomatoes.
 - Juicing – the pulp containing seeds and skin will be left on the membrane, which contains fibre and fat-soluble vitamins.
 - Tomato soup – long cooking and high temperature will cause some of the vitamin C – to degrade.
- Students should name a suitable kind of knife for chopping tomatoes and then provide some advantages or disadvantages of their choice. For example:
 - Vegetable knife – clean edge enables a clean cut and less juice being spilled; plus: can cut thin slices; minus: the knife can easily slip and cut the hand of the cook
 - Serrated knife – the 'teeth' of the knife can help to avoid slipping and cut through the skin safely; safe to use, nicely shaped slices; minus: can cause the tomato to lose more juice
 - Claw grip: better to use for slicing large tomatoes
 - Bridge hold: best used to halve small tomatoes, such as cherry or date tomatoes

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4. a) Fresh tomatoes do not have any kind of a date mark indicated (like all other vegetables have a date of packaging shown. Accept some already packed fresh tomatoes)
- b) Best before
5. Tomatoes can be subject to:
 - Enzymic action – this will help them to ripen, but can then cause them to
 - Mould and yeast growth – this will most likely appear as white, green or
 - surface; may also cause the tomato to become sour

Courgette, pumpkin and cucumber

1. The seasons for these vegetables are:
 - Courgette – from June to September
 - Pumpkin – late October to December
 - Cucumber – from June to September, but, thanks to polytunnels, they are
2. All of the mentioned vegetables are grown in the UK so can be considered local. Do some research whether they are grown in the vicinity.
3. Pumpkin, as it has the most iron in general as well as the best ratio of iron to Vitamin C increases iron absorption so more iron would be absorbed from a pumpkin than a cucumber (theoretically, at least, as many other factors interfere with the absorption of iron).
4. Students indicate at least two advantages and two disadvantages from:

Advantages

 - GM crops facilitate a higher yield, so more food can be grown.
 - GM crops can help to alleviate/eliminate hunger.
 - GM vegetables can be pest-resistant, so no pesticides would have to be used.
 - GM vegetables can be higher in nutrients, so could help to prevent malnutrition.
 - GM crops can be grown even in very poor-quality soil or in high moisture conditions where naturally occurring varieties wouldn't survive.
 - GM vegetables have a longer shelf life and are less prone to spoilage, so are less likely to lose their nutritional value, flavour or colour.

Disadvantages

- GM crops can lead to the development of resistant pests, which will cause the known pesticides will be able to fight them.
- GM plants lower species variety, as the modified seeds are usually more uniform than naturally occurring species to weather conditions.
- GM crops have unknown effects on human health.
- GM crops can lead to creating new, resistant species of bacteria and viruses.
- GM crops can increase antibiotic resistance in microorganisms.
- GM crops can increase the risk of allergies.

Or any other reasonable answer.

Root vegetables (Carrot, parsnip, celeriac and swede)

1. Students indicate five dishes which are made mostly from carrot. For example:
 - Carrot and coriander soup
 - Carrot salad with raisins
 - Carrot juice/smoothie
 - Roasted carrots
 - Carrot and parsnip purée
 - Carrot pancakes
 - Carrot cake
 - Or any other suitable dish

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2. The values below are approximate, calculated using the nutrition requirements publicised by the C

Nutritional value: typical value	RNI for boys aged 16	RNI for girls aged 16	Carrot 100 g	% RNI for boys	% RNI for girls	Parsnip 100 g
Energy	2,964 kcal	2,414 kcal	41 kcal	1.38	1.70	75 kcal
Macronutrients						
Fat	115 g	94 g	0.24 g	0.21	0.26	0.3 g
Carbohydrates	370 g	301.75 g	9.58 g	2.59	3.17	18 g
Starch (polysaccharides)	351.5 g	287 g	1.43 g	0.41	0.50	6.2 g
Sugars (mono- and disaccharides)	18.5 g	15 g	4.74 g	25.62	31.60	4.8 g
Fibre	25 g	25 g	2.8 g	11.20	11.20	4.9 g
Protein	111 g	90 g	0.93 g	0.84	1.03	1.2 g
Micronutrients						
Vitamin A	700 mcg	600 mcg	835 mcg	119.29	0.20	0
Vitamin D	10 mcg	10 mcg	0	0.00	0.00	0
Vitamin B1 (Thiamine)	1.1 mg	0.8 mg	0.066 mg	6.00	7.50	0.09 mg
Vitamin B2 (Riboflavin)	1.3 mg	1.1 mg	0.058 mg	4.46	4.06	0.05 mg
Vitamin B3 (Niacin)	18 mg	14 mg	0.99 mg	5.50	0.39	0.7 mg
Folate	200 mcg	200 mcg	19 mcg	9.50	0.05	67 mcg
Vitamin B12	1.5 mcg	1.5 mcg	0	0.00	0.00	0
Vitamin C (Ascorbic acid)	40 mg	40 mg	6 mg	15.00	0.38	17 mg
Calcium	1,000 mg	800 mg	33 mg	3.30	0.00	36 mg
Iron	11.3 mg	14.8 mg	0.3 mg	2.65	0.18	0.6 mg
Sodium (Salt)	1,600 mg	1,600 mg	69 mg	4.31	0.00	10 mg
Iodine	140 mcg	140 mcg	0 mg	0.00	0.00	0 mg
Phosphorus	775 mg	625 mg	35 mg	4.52	0.01	71 mg
Potassium	3,500 mg	3,500 mg	320 mg	9.14	9.14	375 mg
Magnesium	300 mg	300 mg	12 mg	4	4	29 mg

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Bell pepper / sweet pepper

- Students should indicate at least four differences between types: (the comparison is from the USDA database)

Red sweet pepper	Green sweet pepper
More vitamin C	Fewer calories, carbohydrates
More vitamin B2	Less fibre
More niacin	More calcium
More folate	More vitamin K
More vitamin A and beta carotene	Contains phytosterols
No phytosterols	Contains more antioxidants

- Students indicate at least three cuisines which use bell peppers: Hungarian, Spanish, Italian

Potato and sweet potato

- A staple food is a food product which is basic for a given diet/region/country and is consumed in large amounts.
- In the UK, staple foods include:
 - milk
 - meat (such as beef or ham)
 - fish (e.g. mackerel, salmon, pilchards)
 - fruit (such as apples)
 - vegetables (such as carrots and potatoes)
 - beans and lentils
 - cereals (e.g. wheat and oats)
 - tea and coffee
- Sweet potatoes are produced mainly in China (Asia), Nigeria and Uganda (Africa).
 - Since they aren't grown in the United Kingdom, they have to be imported.
 - Transport of vegetables for such long distance requires a lot of energy (e.g. by emitting greenhouse gases and exhaust gases (containing carbon dioxide)).
 - Because of this, fields alongside main roads are polluted with heavy metals (such as carbon dioxide) create a layer around Earth, trapping the warm temperature (contributing to global warming).
 - Additionally, potatoes need to be properly packaged for the duration of transport. The production also contributes to greenhouse gas emissions, deforestation (due to land use change) and pollution afterwards from waste.

Cruciferous vegetables (cabbage, cauliflower and broccoli)

- Calculated using data from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/611111/rni-11dec14.pdf
RNI of vitamin C for a 16-year-old is 40 mg (no difference between sexes). Data shows that you will be satisfied with 83 g of cauliflower, 45 g of broccoli or 110 g of cabbage.
- Heat transfer methods used are:
 - Convection (and conduction to preheat the water)
 - Radiation, convection and conduction
 - Conduction and convection

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3. Cooking will affect broccoli's:
 - texture (it will soften because fibre will break down)
 - colour (it will become bright green to begin with, but overcooked broccoli because pigments will break down and dissolve in water)
 - smell (it will be more pronounced due to evaporation of sulfur compounds)
4. Students should indicate at least two medical conditions in which cruciferous from:
 - Thyroid disorders – due to high amount of iodine, which may disrupt production
 - Irritable bowel syndrome (IBS) due to high amount of fibre and sulfur compounds in the bowel and cause painful bloating
 - Hypertension – because high amount of sodium, especially in sauerkraut
 - Cardiovascular disease – because people who take blood-thinning drugs need vitamin K
 - Kidney and gall bladder stones – because they are rich in purines, which can lead to formation of stones

Beetroot

1. Yes. Beetroot may be used in the dietary treatment of anaemia, because it provides iron necessary for proper red blood cell formation. Vitamin C in beetroot may also improve (bioavailability) of iron, also improving the blood condition.
2. Yes. Beetroot is a seasonal plant, usually harvested from late September (sugar beet) and eaten throughout winter.
3. Students show their knowledge and skill in using various tests and setting up assessment charts for the tasters, and properly prepare samples (bake, portion) for each category should not exceed 25 marks.

Green peas, sweetcorn and green beans

1. Green peas have the most fibre so are the most suitable of the three vegetables.
2. Blanching deactivates enzymes in vegetables, which helps to preserve their nutrients.
3.
 - For example, in the USA sweetcorn is boiled or steamed on the cob and served as a vegetable.
 - Also in the USA, dried kernels are roasted to obtain popcorn.
 - In Mexico, kernels are added to stews to add colour and texture, or are used to make tortillas. They are dried and ground to obtain cornflour from which tortillas are made.
 - In Great Britain mini sweetcorns or kernels are steamed and served as a vegetable.
 - Other suitable responses should be accepted.

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Leafy greens (spinach, lettuce, celery)

- Students indicate five dishes containing spinach, each from a different country
 - spinach and onion bhaji – Indian
 - spinach and ricotta ravioli – Italian
 - spinach quiche – French
 - spinach stir-fry – Chinese
 - spinach with peanut sauce – West African
- The salad will contain no vitamin D and no vitamin B12.
 - The salad provides 0% RNI for vitamin D and vitamin B12.
- Examples of such a vegetable are spinach and garden sorrel.
To prevent negative effects of oxalates, they should be accompanied with calcium, cream, cream cheese or cheese, but also sesame seeds or almonds.
- Any four suitable leafy greens, e.g. kale, collard greens, Swiss chard, Chinese

Olives and avocado

- Apples and bananas release ethylene – a gas which speeds up the ripening of fruit next to them if we want them to ripen, but not if we plan to store them for a long time.
- This is due to enzymic browning.
 - When we chop fruit or vegetables, their cells are broken down and enzymes and oxygen come into contact with air.
 - The enzymes are activated by the oxygen from the air and turn phenols in fruit and vegetables into brown melanin pigment.
 - This can be stopped by adding lemon or lime juice – which is one of the antioxidants.
- Olives are mostly produced in the Mediterranean region – Spain, Italy, Greece etc. Smaller quantities are grown in the USA, Mexico, Argentina and Chile. For the UK, olives are not considered local in these countries, but not in the United Kingdom.
- The RNI is based on:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/368412/rni-11dec14.pdf

	RNI for boys	RNI for girls	10 g olives	% RNI
Fats	115 g	94 g	1.53 g	
Carbohydrates	370 g	302 g	0.38 g	
Proteins	111 g	90 g	0.10 g	
Fibre	25 g	25 g	0.33 g	
Vitamin A	700 mcg	600 mcg	2 mcg	
Sodium	1,600 mg	1,600 mg	156 mg	

Students indicate that olives – in moderation – can be consumed as part of a healthy diet. Excessive consumption is not recommended due to high sodium content.

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