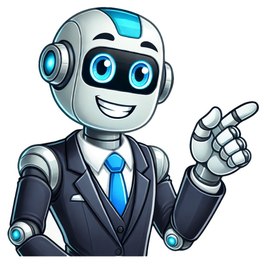
I'm not a robot



Health Standard 7 Demonstrate observable health and safety practices. 7.2.1   Demonstrate age and developmentally appropriate observable health and safety practices. Science (SCIENCE) K-ESS3 Earth and Human Activity K-ESS3-1   Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. K-LS1 From Molecules to Organisms: Structures and Processes K-LS1-1   Use observations to describe patterns of what plants and animals (including humans) need to survive. 1-LS1 From Molecules to Organisms: Structures and Processes 1-LS1-1   Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. If you spend a lot of time with kids, at some point they're likely to ask, "Are tomatoes a fruit or a vegetable?" Kids love to categorize everything around them, and initially tomatoes go firmly in the vegetable category. But then they hear that tomatoes are a fruit, and these neat and tidy categories get jumbled. How is that possible? What makes a fruit a fruit? Some plant parts you might find at the grocery store. Illustration by SAm Tomasello. (Originally published in Gardening With Children.) Plants aren't just tasty treats for us; they have fascinating lives of their own. Exploring the question of which plant parts we're eating can help us learn how plants grow. Next time you're at the grocery store or sharing a meal with a young person, you can lead them down a rabbit hole of discovery. Let's explore the six parts of a flowering plant: roots, stems, leaves, flowers, fruits, and seeds. Each of these parts serves a unique and fascinating purpose in the lives of plants. Roots Beets, seen here, are roots. Photo by Alvina Lai. Carrots, parsnips, rutabaga, turnips, and beets are all roots. Before they were harvested and landed on your plate, they were doing what roots do: storing energy, absorbing water and nutrients from the soil, and anchoring the plant. Here's where it gets a little weird: Not all underground parts of the plant are true roots. Many of the edible plants we consider roots are actually stems. Stems and Leaves Kohlrabi (Brassica oleracea) is often harvested for its chunky, funky-looking stem. Photo by Michael Stewart. Stems and leaves provide structure, conduct water and nutrients, and make food for plants (and for us) by capturing the sun's energy through photosynthesis. Celery, kohlrabi, and rhubarb are examples of stems. Some stems grow underground, like onions (which are bulbs) and potatoes (which are tubers). These modified underground stems are used to store food reserves. Lettuce, spinach, cabbage, collard greens, and bok choy are all leaves. Some common kitchen herbs are also leaves, such as rosemary, parsley, basil, sage, and dill. Flowers Capers are the pickled, unopened flower buds of the caper bush (Capparis spinosa). Photo by Michael Stewart. Did you know that some of your favorite vegetables are really flowers? Broccoli florets, cauliflower florets, artichokes, and capers are all flower buds. Flowers aren't just pretty to look at—they're also the reproductive parts of plants. They produce pollen, make seeds, and develop into fruit. Broccoli florets are unopened flower buds, too. If we didn't harvest broccoli, the small green buds would open to reveal bright yellow flowers that attract bees and other pollinators. (When its flowers open, the flavor of the broccoli becomes bitter.) Unharvested artichokes grow into feathery purple flowers that resemble giant purple paintbrushes. And unharvested cilantro eventually produces aromatic seeds known as coriander, a popular spice. Artichoke flowers blooming. Photo by Michael Stewart. Sometimes we eat fully opened flowers like squash blossoms, borage, violets, and rose petals. Many popular drinks are made from flowers: Sorrel is made with hibiscus flowers, and chamomile tea is made from chamomile flowers. Fruits and Seeds Seeds for sale in BBG's Children's Garden. Photo by Sarah Schmidt. Fruits are the mature ovaries of flowers. Their purpose is to disperse seeds, whose purpose is to make more plants. Lots of seeds make nutritious snacks, including pumpkin seeds, sunflower seeds, flax seeds, and chia seeds. Meanwhile, many foods that we think of as vegetables are technically fruits, including peppers, cucumbers, eggplant, peapods, pumpkin, zucchini, avocado, olives, and tomatoes. In the eyes of a botanist, peppers are a fruit. Photo by Julie Markes. If you are eating something that has a seed or pit, it is a fruit. That said, many modern fruits have been bred to be seedless. Seedless fruits include bananas, pineapples, and seedless watermelons. Peas, beans, and peanuts are all legumes, which are fruits specific to the bean or legume family. Nuts are a kind of fruit as well. And we often think of corn as a vegetable, but it is actually a grain, which means it's a kind of fruit! Corn? Also a fruit! Photo by Blanca Begert. Now that we've learned about the different plant parts and what they do, let's return to the humble tomato. In the kitchen they're considered vegetables, but in the botanical world, they are fruits. Categorizing the plants we eat may not always be straightforward, but that's what makes it a delicious adventure. Or as famous Brooklynite Walt Whitman might say (if he were a foodie): Plants are large. They contain multitudes. Identify and compare a healthy variety of fruits and vegetables, and how they can improve their own eating habits. Identify and compare the parts of plants that we eat, and the roles that they play in a mature plant. Explain the needs of plants by observing the effect of capillary action. Explain how plants use seeds to reproduce and how seeds are dispersed. Identify plants' adaptations to their environment. Materials see individual activities for materials. Background Plants play a big part in keeping us healthy. Canada's Food Guide recommends that we eat several different kinds of fruits and vegetables five times a day so that we get a variety of vitamins and minerals. Food Rainbow No one food or food group provides all the nutrients our bodies need, so eating a variety of foods is important. Brightly coloured fruits and vegetables generally have more nutrients, and eating at least one fruit or vegetable from each colour group (red, orange/yellow, green, blue/purple and white) gives our bodies the range of healthy vitamins, minerals and phytochemicals that make and keep our bodies healthy. Plant Parts We get energy from plants in two ways: by eating the seeds or by eating parts of the mature plant. Most plants have roots, stems, leaves, flowers, fruits and seeds. These plant parts all have a role in keeping a mature plant healthy and helping it reproduce. Roots help provide support by anchoring the plant and absorbing the water and minerals plants need to create their nutrients. Roots can also store sugars and carbohydrates that the plant uses to carry out other functions. Plants can have a taproot system, like a carrot, or a fibrous root system, like lettuce. Stems carry water and minerals from the roots to the leaves, and carry the food produced by the leaves to other parts of the plant. These require two types of tubes made up of different kinds of cells: xylem cells move water and phloem cells move food. Stems also provide support for the plant and can move the leaves toward the sunlight that is needed to produce food. Most plants can be divided into one of two general categories, based on their stems: herbaceous (short, soft plants) or woody (tall, stiff plants). Leaves come in many different shapes and sizes, but they all have one job: to make food for the rest of the plant. Flowers help the plant reproduce so that more plants can be made. Fruit can be thought of as a swollen flower. Apples, oranges, and even tomatoes, cucumbers and beans, are types of fruit because they have seeds inside them. Fruit is meant to be eaten so that its seeds are dispersed by the animal that eats it. Seeds can also be left behind, but with material that will help them grow into new plants. Seeds contain everything needed for it to become a mature plant: a tiny plant (embryo) with leaves, stems, root parts and the food it needs to begin growing. This is all wrapped up in a seed coat, which protects the embryo from microbes and other invaders, and prevents the inside from drying out. How Plants Grow Seeds are the beginning of the plant life cycle. After the seed is dispersed, it gets buried in the ground. It then takes in water and minerals from the soil to germinate. The seed grows small roots and shoots that push through the surface of the soil. Once the shoot has used up all the energy in the seed, it begins to produce its own energy from sunlight, water and carbon dioxide (photosynthesis) and develops to become a seedling. Seedlings and mature plants take in water and dissolved minerals through a process called capillary action. Water is drawn up through millions of tiny tubes called xylem, which then carry minerals to various parts of the plant. In the leaves, the plant uses energy from the sun, carbon dioxide from the air, and water from the ground to produce sugars that help the plant to develop all of its parts – including the seeds that begin the life cycle again! Vocabulary capillary action: The ability of an object, like a plant, to draw liquid inside it. The process is also called wicking. germinate: To sprout from a seed into a seedling. plant embryo: A "baby plant", contained in a seed, waiting for the right conditions to grow. seed coat: The protective layer on the outside of a seed. phytochemicals: Literally "plant chemicals"; compounds found in plants that, while they aren't essential nutrients like fats, proteins and carbohydrates, are thought to still be beneficial to our health when we eat these plants. surface tension: The tendency of water to be attracted to itself, while repelling from other materials; caused by hydrogen bonding. transpiration: The loss of water vapour from plant parts, usually leaves; similar to sweating and evaporation. A part of the water cycle. xylem: Long, woody tubes in a plant's stem that transport water from the roots to the leaves. Other Resources Tomatosphere | Parts of a Plant Internet Archive | Community Video | BBC2's The Private Life of Plants City of Vancouver | People and Programs | Community Gardens UBC Botanical Garden & Centre for Plant Research | School Groups BC Agriculture in the Classroom Foundation Centre for Sustainable Food Systems at UBC Farm | FarmWonders Children's Programs VanDusen Botanical Garden | School Programs Plants have many parts that we can eat! These parts include leaves, stems, roots, flowers, and seeds. Different parts of a plant can taste yummy and are good for our health. Example: We eat lettuce leaves in salads, carrots come from the roots, and broccoli is the flower part of the plant. Fun Fact: Did you know that some plants have tasty seeds that we can munch on, like sunflower seeds? They make great snacks! Multiple Choice Questions: 1. Which part of a plant do we eat when we have a salad? a) Roots b) Leaves c) Stems d) Flowers Answer: b) Leaves Explanation: We usually eat leaves, like lettuce, in salads! 2. What part of a plant do we usually eat when we eat carrots? a) Stems b) Roots c) Leaves d) Flowers Answer: b) Roots Explanation: Carrots grow underground and are the roots of the plant that we eat! 3. Which part of broccoli do we eat? a) Leaves b) Roots c) Stems d) Flowers Answer: d) Flowers Explanation: We eat the flower part of the broccoli plant! 4. What are sunflower seeds? a) The leaves of the sunflower plant b) The roots of the sunflower plant c) The seeds of the sunflower plant d) The flowers of the sunflower plant Answer: c) The seeds of the sunflower plant Explanation: Sunflower seeds are the tasty seeds we can eat as snacks! 5. Which part of a plant is often used for seasoning food? a) Flowers b) Roots c) Leaves d) Stems Answer: c) Leaves Explanation: Many leaves, like basil or mint, are used to make our food taste better! Discover the different types of flower, with pictures and examples. An easy to understand botany lesson on one page!Types Of Flower With Pictures And ExamplesWith around 300,000 species, flowering plants (also known as angiosperms) make up the majority of all living plant species.On this page we take a look at the different types of flower produced by angiosperms. We also find out how multiple flowers grow in clusters known as inflorescences, and the different types of inflorescence that are found in the plant kingdom.Read on to find out more about flowers (and how to describe them using the correct botanical terms)...Page IndexFurther Reading on Active WildIntroduction To FlowersFlowers are a plant's reproductive organs. Many, such as the echinacea above, rely on insect pollinators.Flowers come in all shapes and sizes, yet all are designed to perform the same basic function; flowers are the plant's reproductive organs.Produced inside flowers are the male and female cells that give rise to a plant's offspring. Fertilization of the egg takes places inside a flower, as does the development of the plant's seeds prior to dispersal. Part of the flower itself will become the fruit that protects the seed on its journey. (Flowering plants are the only type of plant to produce fruit.)Many flowers also play an additional, vital role: attracting pollinators. Pollinators are animals that carry pollen from the flower's male parts to the female parts of another plant of the same species (or, sometimes, to the female parts of the same plant).In return for this service the pollinator is rewarded with pollen and/or nectar.The coevolution of insects and flowering plants has been highly beneficial for both groups. However, not all flowers rely on animal pollinators; many species are wind-pollinated.Flowers that rely on pollinators are often brightly-colored or strongly-scented (or both). Those that are wind-pollinated tend to be smaller and less conspicuous.Monocots And DicotsThis blackberry lily is a monocot.There are two main types of flowering plant: monocots (monocotyledons) and dicots (dicotyledons). The differences between the two become apparent early in the development of the plant.Cotyledons, also known as 'seed leaves', are the first leaves to form in a plant embryo.Monocots have a single cotyledon; whereas dicots have two cotyledons.The differences between monocots and dicots are also apparent in adult flowers.The parts of a monocot flower (i.e. its petals, etc.) are usually grouped in multiples of three, and its leaves are narrow with parallel veins.The parts of a dicot flower are usually arranged in multiples of four or five, and the leaves are broad with net-like veins.This candyflower is a dicot. It has five petals (its five anthers are also clearly visible).Additionally, with the exception of palms, monocot plants are non-woody.Examples of monocots: grasses (e.g. rice, wheat, maize); palms, lilies, tulips, irises, amarylis, orchids, daffodilsExamples of dicots: magnolias, nutmeg, laurels, roses, gorse, evening primrose, fuschia, gardenia, coffeaRegular And Irregular FlowersThe marsh marigold is a regular flower.Most types of flower have petals that are all the same shape and spaced at the same distance from each other around a single, central point; they are radially symmetrical. Flowers such as these are said to be regular, or actinomorphic.Irregular, or zygomorphic, flowers have at least one petal or sepal* of a different shape or size to the others.* A sepal is one of the outer ring of petal-like leaves that surround a flower's petals. They sometimes look like petals themselves.Instead of being radially symmetrical, irregular flowers are bilaterally symmetrical (i.e. one side is a mirror image of the other). Often a petal at the front is enlarged to form a lip.This eastern prairie fringed orchid is an irregular flower.Examples of regular flowers include: roses, marsh marigold, wood anemoneExamples of irregular flowers include: plants in the pea family, orchids, most violets.Superior And Inferior OvaryIf the various parts of the flower (i.e. the sepals, petals, stamens, etc.) are attached to the receptacle below the ovary, then the ovary is said to be superior. Flowers with superior ovaries are said to be hypogynous.(The receptacle is the base of the flower to which the other parts of the flower are attached. The point at which the parts of the flower are attached is known as the insertion point.)Members of the gentian family Gentianaceae, such as this Andrew's gentian, have superior ovaries.If, however, the various parts of the flower are attached above the ovary, then the ovary is said to be inferior. Flowers with ovaries that are inferior are said to be epigynous.This pale bellflower, Campanula scouleri, has inferior ovaries.Some flowers have half-inferior ovaries. Here, the ovary is surrounded by the receptacle that bears the parts of the flower. Such flowers are said to be perigynous or half-epigynous.The position of the ovary can often be seen by viewing the flower from the side.Examples of flowers with superior ovaries include members of the family Fabaceae (the bean / legume family), members of the gentian family GentianaceaeExamples of flowers with inferior ovaries include fuschias, orchids, members of the bellflower family CampanulaceaeMale And Female FlowersThe flower of the common primrose is hermaphroditic: it has both male and female parts.A Hermaphrodite plant has flowers that contain both male and female parts. Flowers such as these are said to be 'bisexual'.Examples of hermaphrodite flowers include: hibiscus, roses, tulips, liliesA Monoecious plant has male flowers and female flowers, both of which are found on the same plant.Examples of monoecious plants include: pumpkins, walnuts, birchesA Dioecious plant has male flowers and female flowers, with only flowers of the same sex being found on any individual plant.Examples of dioecious plants include: holly, willows, cashew, ginkgo bilobaSome hermaphrodite plants have adaptations to prevent self-pollination. Self-pollination occurs when a plant is pollinated by its own pollen.An example of a flower adapted to prevent self-pollination is the common primrose, Primula vulgaris. Although its flowers contain both male and female parts, every flower of an individual plant has either extended male parts, or extended female parts.This lessens the likelihood of the plant being self-pollinated, as an insect carrying pollen from a male flower would be unlikely to deposit it on the smaller female parts of a flower of the same plant. It would have to fly to a plant with extended female parts for pollination to occur.Complete And Incomplete FlowersThe wild rose flower, Rosa nootkana, has sepals, petals, stamens and a pistil, therefore is a complete flower.A flower is typically comprised of four parts: the sepals, petals, stamens and carpels (or pistil). Flowers in which all of these parts are present are said to be 'complete'.Flowers in which one or more of these parts are missing are said to be 'incomplete'.Perfect And Imperfect FlowersIf a flower has male and female parts (i.e. it is bisexual) then it is said to be perfect, even if it is missing either sepals or petals.A unisexual flower (i.e. one found on either a monoecious or a dioecious plant, see above) which lacks either male or female parts is said to be imperfect. Male flowers (i.e. those that only have male parts) are known as staminate flowers. Female flowers (i.e. those that only have female parts) are known as pistillate flowers.Therefore, all complete flowers are also perfect, but not all incomplete flowers are imperfect (because as long as both the male and female parts are present, a flower is perfect, even if other parts are missing).Types Of Flower StructureSolitary Flower Vs InflorescenceFlowers are either solitary or grouped in clusters known as inflorescences. There are several types of inflorescence. Some inflorescences (e.g. heads, see below) resemble solitary flowers despite being comprised of many small flowers.Both solitary flowers and inflorescences grow at the end of a stalk known as peduncle.Solitary FlowersThe flower of the white trillium is a solitary terminal.A solitary flower that grows at the tip of a main stem or branch is known as a solitary terminal. One that grows at an axil (the point at which a leaf grows from a stem) is known as a solitary axillary.Types Of Flower InflorescenceCatkinCatkins - the flowers of the Hooker's willow, Salix hookerianaA catkin is a drooping, cylindrical cluster of many small flowers which often lack petals.Examples of plants with catkins: birches, willows, oaksFlower head of the seaside fleabane, a member of the daisy family, Asteraceae.A flower head is a cluster of small flowers that together resemble a single flower. A single head can contain over a thousand small flowers, all of which grow from the same receptacle.What appear to be the petals of a head are actually whole flowers called ray flowers. The densely-packed flowers in the center of the head are known as disk flowers.Other names for a head include composite flower, capitulum and pseudanthium (from the Greek for 'false flower').Examples of plants with heads include sunflowers, dahlias, chrysanthemum, teasels and daisies.RacemeFireweed racemes.A raceme is an inflorescence in which individual flowers grow on pedicels (short stalks), which themselves grow from a main stem known as a rachis. (The rachis itself is supported by a peduncle.)The flowers on pedicels at the base of the rachis bloom first, with younger flowers being produced as the shoot grows.Examples of plants with racemes include: foxgloves, mustard plants, fireweed (known in the UK as rosebay willowherb) and lupins.Panicle / Compound RacemeGrasses such as this big bluestem grass, Andropogon gerardi, produce flowers in panicles.The inflorescences of some plants consist of multiple racemes branching from a main stem. This type of many-branched inflorescence is known as a panicle, or compound raceme.Examples of plants with panicles include lilacs and many species of grassesCorymbCommon yarrow, Achillea millefolium, corymbA corymb is a raceme in which, despite the individual pedicels growing from different points of the rachis, has flowers at the same level (due to the pedicels being of different lengths).Examples of plants with corymbs include plants of genus Achillea, including the common yarrow.UmbelThe umbel of the wild carrot, Daucus carota. Photo: Alvesgaspar (cropped / resized by ActiveWild.com) / CC BY-SAAn unbel is an inflorescence in which multiple flower-holding stems branch out from the same point of a central stem. Umbels resemble umbrellas, and the word umbel comes from the same Latin word umbella, as umbrella.Umbels can either be simple, with a single umbel; or compound, with multiple umbels growing from the same point.Examples of plants with umbels include: cow parsley, wild carrot and hogweed.SpikePickerelweed flowers. Photo: Cephas / CC BY-SAA spike is a raceme in which the flowers grow directly from the rachis, rather than from pedicles.Examples of plants with spikes include: plants of genus Verbascum (e.g. common mullein), lavender and the hoary plantain.SpadixThe spadix and spathe of an arum lily.A spadix is a type of spike in which small flowers grow from a cylindrical, fleshy stem. The spadix is usually surrounded by a bract called a spathe.Examples of plants with spadices include members of the arum family Araceae, including the peace lily, cuckoo-pint, and the titan arum.Types Of Flower: Conclusion & Further ReadingOn this page we have taken a look at the various tasks a flower performs; the various different parts and structures of a single flower; and the way in which multiple flowers are arranged as inflorescences.Using this knowledge, you will now be able to compare different types of flowers using the language used by botanists.You can find out more about plants and the plant kingdom on the following pages: Discover the different types of seal with this complete list of seal species, with pictures and facts.Read more The brown fur seal, also known as the Afro-Australian Fur Seal, is a marine mammal found along the coasts of southern Africa and Australia. It is the largest and most robust fur seal species.Brown fur seals have a thick layer of brown fur and a strong, streamlined body adapted for swimming. They feed primarily on fish, squid, and crustaceans, diving deep to hunt.These marine mammals live in large colonies and are known for their loud, social behavior. Despite past threats from hunting, their populations have largely recovered due to protection.Read on to discover more about the brown fur seal…Read more Discover incredible facts about the universe, stars, galaxies and the Solar System.The music video below introduces some key points that we explore further in the article! Read more Christmas animals – a list of animals associated with Christmas, with pictures and facts.Download the FREE printable Christmas Animals Quiz to test your knowledge!Read more On this page is a list of common squirrel species found in North America.Read more Wild horses are members of the horse family Equidae that have not been domesticated. The term is also used to describe feral horses – animals that live in the wild, but which are descended from domestic horses.On this page is a list of all living wild horses, including asses and zebras. The list also includes domestic species such as the domestic horse and donkey.Read more A list of the world's scariest animals! On this page, you'll find pictures and information on creepy creatures from around the world, including mammals that drink blood, reptiles with venomous saliva, birds with terrifying calls, lizards that squirt blood from their eyes, and arachnids with freakishly large mouthparts!Read more A list of ten halloween animals with fascinating facts on each. Scroll down to view the animals, or watch the video below! Read more The Galápagos Islands are located in the Pacific Ocean, about 600 miles (970 kilometers) west of mainland Ecuador.Due to their remote location, the Galapagos Islands are home to a large number of endemic animals; animals that are found nowhere else on Earth.During his visit to the Galápagos Islands in 1835, naturalist Charles Darwin studied the islands' unique animals, which provided inspiration for his groundbreaking theory of natural selection.Today, the islands' wildlife attracts a large number of visitors. Income from ecotourism is an important part of the local economy.On this page, we explore some of the Galápagos Islands' most iconic species. All of the animals featured on this page are endemic to the islands unless specified.Watch the video below to see some of the amazing endemic species of the Galápagos Islands: Read more List of cool dinosaurs with pictures and facts. Discover the coolest dinosaurs of the Mesozoic Era!Watch the video below to meet the world's coolest dinosaurs! Read more Many different types of dinosaurs have been discovered, but only a relatively small number of these have become household names. On this page, we provide a list of the most popular dinosaurs.Watch the video below to find out about some of the dinosaurs on the list: Read more By the end of this lesson you will be able to: Summarize the various above- and below-ground plant parts that contribute to your diet. Use the correct language of biology when identifying parts of plants. Appreciate the diversity of edible plant parts. Above-ground plant parts we eat In this image of an iceberg lettuce cut in half, you can see how the leaf blades are packed and folded together tightly in the lettuce head. Lettuce is an example of a plant shoot with very short internodes on the stem. This results in a compact but leafy plant. Iceberg lettuce is a type of heading lettuce where older leaves envelop newer leaves forming a solid or semi-solid ball or head of lettuce leaves. "Iceberg Lettuce" by Кулинарно, CC BY-NC-SA 2.0 Romaine and leaf lettuces exhibit a more open architecture, with the leaves forming a looser head with upright leaves. Romaine lettuce has elongated leaves. There may be some tendency of older leaves to enclose newer leaves, but it is much less pronounced than in iceberg lettuce, and may be absent altogether in some of the garden types. Leaf lettuce lacks the tendency to form heads. Image by Peter Drache. Pixabay license Lettuce leaves generally lack a petiole. The blade narrows a bit, but attaches directly to the node. A leaf lacking a petiole is called a "sessile" leaf. The point of attachment of the leaf to the stem is at a node. If you tear the leaves from a lettuce plant you are left with a short stem made up of many nodes and short internodes. You can see in the romaine lettuce that its morphology is similar to that of the iceberg lettuce and that it has some tendency to wrap newer leaves within older. However, the nodes are a bit longer than what you see in iceberg lettuce, and that makes the node locations more apparent. A few examples of leaf parts we eat Watch this video on edible leaves and petioles: Modified petioles Celery is an example of a leaf with a petiole. The parts that you eat are the petioles, while the leaf blades are often not present in the bunch of celery you purchase. If you buy a bunch of celery and pull off the large, outside petioles, inside you will find shorter petioles with the leaf blades still attached. Celery is a geophyte (covered in a later lesson). Some of the celery petiole — the pale part at the bottom where it attaches to a node on the stem — grows underground. This part is pale because it lacks chlorophyll; the petioles were not exposed to sunlight and chlorophyll failed to develop. Intentionally covering the petioles to discourage chlorophyll and encourage white, tender stems is called blanching. Blanched celery is more attractive to some cooks and consumers, although it may not be as nutritious. Edible stems The photo below shows an asparagus shoot. You can tell it is a shoot by the regular node/internode construction of the stem. Most of the shoot is stem tissue. The triangular growth at each node is colloquially called a "bract" by asparagus growers, but it is actually a very small, scale-like leaf. If the shoots are left unharvested, branches grow from the nodes and then repeatedly branch into soft, feathery green foliage, as shown in the next photo. Image by Mark's Postcards from Beloit, CC BY-NC-ND 2.0. Asparagus shoots that are not harvested grow taller and produce branches and feathery foliage. Photo by Rasbak. CC BY-SA 3.0. Edible inflorescences Broccoli and cauliflower are eaten as immature inflorescences. The dark green exterior of the broccoli inflorescence is made up of tight flower (or floret) buds that have not yet opened. The term "floret" is often used for the name of a flower born on a complex inflorescence. Photo by Fir0002/Flagstaffotos, CC BY-NC. Inside the inflorescence, the flower buds are supported by short, thin pedicels. The pedicel is attached to a series of increasingly thick internal stalks which make up the rachis structure of the inflorescence. The rachi all connect to the main stem of the inflorescence, which is the peduncle, and which then attaches to a node on the stem. The peduncle is the bit of the stalk that extends from the node where the inflorescence is attached to where the first rachis branches off. Above that, the central axis of the inflorescence is also called the rachis. An inflorescence can contain many rachi. These plant parts may look similar, but they're in different positions in the inflorescence. The terminology is important for distinguishing between parts, making observations, and describing different aspects of the plant, especially for data collection in experiments. Nasturtium flowers and leaves are edible. Photo by henna lion. CC BY-NC 2.0. Nasturtiums, shown above, are also an inflorescence. They can be used as a colorful addition to a salad, and have a pleasant spicy flavor. In this case we are eating a single open flower, instead of a mass of immature rachi, pedicels, and florets as we are with broccoli. It's important to remember that not all flowers are edible, and some are even poisonous. If you're interested in edible flowers, you must learn which species are safe to eat and how to identify and prepare them. Cauliflower has very tight flower clusters, but otherwise has a very similar morphology to broccoli. Can you identify the pedicel, rachis, peduncle, and florets? Cauliflower. alsen. Pixabay license This Chinese cabbage has a morphology similar to that of romaine lettuce. Can you identify the stem, nodes, and leaf blades? Chinese cabbage. misskursovie2013. Pixabay license Fruits "Apple half" EverydayTrish. CC BY-NC 2.0 We will deal with fruits in detail later in the course. Just a bit of introductory information: a fruit is a mature ovary that was part of a flower Sometimes the botanical and culinary definitions conflict with one another. Botanically speaking, for instance, a nut is a fruit, as are a corn kernel, a pumpkin, a tomato, and an orange. As we'll discuss, you could make a botanical argument that an apple isn't a true fruit because the juicy part we eat isn't ovary tissue; the ovary tissue is the core that we throw in the compost. Below-ground plant parts we eat: Geophytes Geophytes are plants with underground organs where the plant stores energy or water. Geophytes are often called bulbs, but they are far more diverse than that. Many of these plants protect buds using structures other than bulbs, such as rhizomes or enlarged roots. These modified parts include: Bulbs Tubers Rhizomes Roots, including storage and enlarged tap roots Underground shoots Bulb – onion Half of a purple onion, close-up, by Marco Verch. CC BY 2.0. A bulb is a specialized, underground organ with a short, fleshy basal stem enclosed by thick, fleshy scales modified for storage. A true bulb consists of both leaf and stem tissue. The compressed stem, or basal plate, has attached to it a set of modified leaves called scales. These scales serve as the primary storage tissue for carbohydrates, nutrients, and water. The main stem and apical meristem are protected by the layers of leaves. Axillary buds are born at the junction of the scale and basal plate (leaf and stem). Bulbs with a papery outer covering, like onions, are called tunicated. Plants that produce bulbs without this covering, like lilies, are non-tunicated. Underground stems Tuber – potato Russet potato cultivar with sprouts. ZooFari. Public domain A tuber is a thickened, enlarged underground stem typically produced from a swelling of a stolon or rhizome. The stem tissue serves as the primary storage tissue for carbohydrates, nutrients, and water. The potato tuber is a typical example. Potato tubers are born on stolons that emerge from nodes near the soil surface. It is common garden and agricultural practice to "hill" potatoes (mound loose soil around the base of the main stem of the plant) so the stolon grows into the mound of soil, where the tip swells into a tuber. Unlike a corm, which is also stem tissue, a tuber has no basal plate, but rather is fleshy throughout. The "eyes" of the potato are the meristems or buds from which new, above-ground growth initiates when conditions are favorable. These eyes are found at nodes on the tuber, which indicates that the tuber is shoot tissue rather than root. Rhizome – ginger Organic ginger root, by artizone. CC BY-NC-ND 2.0 Rhizomes are horizontal-growing underground stems that arise from nodes at or below the soil surface. In plants with fleshy rhizomes, these underground stems store nutrients and swell a bit. The stems are not usually as enlarged as a potato tuber, and the node/internode structure typical of stems is usually more obvious than on a potato. The stem tissue itself is the primary storage tissue, and it grows horizontally in the soil. Ginger "root" (shown at right) isn't really a root; it's a rhizome (modified stem). The nodes and internodes, — found on stems, but not roots — are clearly visible. Modified roots Storage roots – sweet potato Storage roots are enlarged fleshy portions of root tissue, and are are the primary storage tissue. There may be a bit of stem — the crown — attached to these roots, where you will find the buds from which new above-ground growth will initiate. Photo by HarvestPlus, CC BY-NC 2.0. In plants with storage and fleshy roots, including dahlias and daylilies, it is important to protect the buds on the crown of the root because new shoots originate from there. Roots of some plants can produce shoots directly from the root tissue, Sweet potatoes are propagated this way; roots are cut, new shoots emerge from the cut roots, and these shoots are transplanted into the sweet potato field. Not all plants can produce new shoots from roots. Tap root – radish, carrot, parsnip, beet, turnip "Parsnip, Farmers Market" by See-ming Lee (SML), CC BY-SA 2.0 The swollen primary root is the storage organ. New growth initiates from buds at the crown, which is a small area of stem tissue sitting atop the tap root. Hypocotyl – radish The below-ground organ of the Raphinus sativa (radish) is not a root or shoot, but the continued growth of the hypocotyl — the part of the embryo arising from the cotyledonary node (where the cotyledons attach to the beginning of the root), and evident when a seed germinates. Image credit: Matt Clark Compare and contrast a tuber and a storage root. Which one is actually stem tissue? If ginger isn't a root, what is it and how can you tell? What part of rhubarb and celery do we eat? definitionBroad portion of a leaf and does not include the petiole. Stem region between nodes in plants. Supporting and conducting organ usually developed initially from the epicotyl and growing upward and consists of nodes and internodes. A usually green, flattened, lateral structure attached to a stem and functioning as a principal organ of photosynthesis and transpiration in most plants. Stalk by which most leaves are attached to a stem; it is part of the leaf structure, not the stem. Stem region of a plant where one or more leaves attach and is the location of lateral buds. New growth begins underground and the function of the underground growth is storage of food, nutrients, and water during adverse environmental conditions. A modified leaf or scale, usually small, with a flower or flower cluster in its axil. Complete flower structure of a plant and includes the flower, pedicle, rachis, and peduncle. Short stalk that holds up the flower. Stalk of a flower that is situated between the peduncle and the pedicel. Large, central stalk that attaches the rachi to the stem of the plant. Ripened ovary together with the seeds within the ovary. Horizontal stem growing just below the soil surface. There are over 400,000 flowering plant species across the world, producing a variety of types of flowers in a range of colors and shades and in all different shapes and sizes. No matter your taste or style, you're sure to find a flower that suits you and your loved ones best. If you're considering giving the gift of blooms to a friend or family member, look no further than our Fresh Celebrations FruitFlowers®. This delightful set combines a beautiful bouquet of yellow, purple, and white chrysanthemums with a box of chocolate covered strawberries with your choice of toppings. If you want to mix things up with your own choice of fresh blooms, there are endless varieties to pick from. Here are 50 of the most popular types of flowers that are renowned by gardeners and florists alike. 1. Alstroemeria The alstroemeria, also called the Peruvian lily, features streaked or speckled blossoms in a range of colors, including white, yellow, orange, pink, and red. With their trumpet-like appearance, they resemble lilies and grow to one to three feet tall. 2. Calla Lily Calla lilies come in a variety of different colors, from snow white to bright pink. They feature a beautiful trumpet shape with smooth, sword-like foliage. 3. Daisy Daisies are a bright and fun flower. The petals come in a variety of colors, including white, blue, and lavender. Daisies feature a yellow central disc with a long stem. 4. Gardenia Notable for their wax-like appearance and oval-shaped leaves, gardenia flowers range from pale yellow to creamy white. Gardenias are also known for their sweet scent. 5. Carnation A double layer of petals with crinkly edges are the chief characteristics of carnations. They come in a wide variety of colors and can be dyed to practically any color and shade on earth. 6. Gerbera Daisy Gerbera daisies are daisy-like flowers that come in bright colors, including pink, red, yellow, orange, and salmon. They have a long vase life and are one of the most used cut flowers in the world. 7. Orchid Orchid flowers include several notable features, including three petals, three sepals, and a single lip that extends, which is known as a labellum. Orchids also have a waxy tube-like structure in the center of the flower called a column. 8. Tulip Tulips have ruffled petals with streaks of colors and are available in a variety of colors including pink, red, yellow, orange, purple, and white. There are a wide variety of types of tulips, and they are often cultivated to achieve different characteristics. 9. Peony Peonies have large, wonderfully fragrant flowers, in colors including everything from purple and pink to darker shades of red. They have a short blooming season, which only lasts about a week or so. 10. Dahlia In a rainbow of colors, dahlia flowers range from two-inch blooms to giant blossoms that measure up to 15 inches. Most types grow four to five feet tall. 11. Marigold Most marigold flowers are yellow to deep orange. They typically feature a cluster of petals closely bunched together that resembles a pompom with dark green foliage. 12. Aster Blooming in late summer and early fall, asters come with a bright yellow center and a variety of petal hues, including blue, purple, pink, and white. They attract bees and butterflies and are an important source of late-season nectar. 13. Azalea The leaves, size, and shape of azaleas vary greatly by variety, and they range in color from pink to red to salmon. Azaleas are flowering shrubs in the rhododendron family, but not all rhododendrons are azaleas. 14. Buttercup Buttercups feature single or loosely clustered flowers with yellow petals and green foliage. Buttercups usually flower in the spring, but you can sometimes find flowers throughout the summer. 15. Chrysanthemum Chrysanthemums are staples in fall gardens. They are best known for their bright flowers in every color of the rainbow and a full, dramatic display of blooms in a round semi-circle above the foliage. 16. Geranium A classic garden plant, geranium flowers have five petals in white, pink, purple, or blue. They're relatively easy to grow, so they're a favorite of gardeners to plant in flower beds, along borders, and in containers. 17. Delphinium Delphiniums are known for their large spikes of colorful flowers in bright shades of blue, pink, white, and purple. They're more challenging to grow than other types of flowers because they don't like hot, dry weather. 18. Lavender Lavender is known for its fragrance, medicinal properties, and beautiful bluish-purple color. it blooms in the summer months and is a favorite of bees and butterflies. 19. Snapdragon Snapdragons can range from six inches to three feet depending on the variety. Flowers grow on tall, narrow spikes above the foliage and come in all colors of the rainbow from pastel tones to bold, saturated colors. 20. Zinnia Zinnia blooms are multi-colored in shades of yellow, orange, white, red, pink, purple, and more. They also come in a wide variety of appearances, including a single row of petals and a luscious dome shape. They range in size from about a foot to over three feet tall. 21. Iris Iris flowers have an unusual, but beautiful appearance. The petals resemble a fleur-de-lis, with some petals standing straight up while others slope down atop long, erect stems. 22. Rose Roses are perhaps the most popular cut flower for floral displays. They feature a tight coil of petals that range in color from white to tones of yellow, pink, and dark crimson and have a delightful fragrance. 23. Sunflower With brilliant yellow petals and a brown to black central disc, sunflowers are practically unmistakable. Their bright and happy appearance resembles the sun, making them a crowd favorite in the summer months. 24. Poppy Bright red in color with big, showy flowers and feathery green foliage, poppies are a beautiful flower. Poppies are also commonly often worn on Memorial Day to honor fallen soldiers. 25. Periwinkle Periwinkle is often used by gardeners as an evergreen ground cover due to its dark green foliage. Its flowers are purple, blue, or white, depending on the variety. 26. Crocus Crocuses bloom bright and early in the spring (sometimes they even poke through the snow) and lead the way for other springtime flowers to emerge. They come in purple, blue, yellow, pink, and white and grow low to the ground. 27. Black-eyed Susan Black-eyed Susans are known for their bright yellow petals and brownish-black, dome-shaped center. They bloom in late summer and grow on long stems that can reach four feet in height. 28. Daffodil Bright and fragrant flowers, daffodils bloom early in the spring. The blossoms feature six petals and a trumpet in the middle and are typically a combination of bright yellow and white. 29. Petunia In all shades from bright white to deep purple or red, Petunias bloom profusely from early summer until frost. They're one of the easiest flowers to grow, making them perfect for containers, flower beds, borders, and so much more. 30. Ranunculus Ranunculus come in all shades of warm colors, from yellow and red to purple and pink. Their blooms burst open to feature rows upon rows of petals with a beautiful and striking appearance. 31. Violet Violets typically have heart-shaped leaves and asymmetrical flowers that vary in color among the different varieties. Many are violet as their name suggests, but some are also blue, white, or yellow. 32. Dusty Miller With its distinctive silver and lacy foliage, the Dusty Miller is a favorite of gardeners. Its blooms are bright yellow and stand out in a striking way against the backdrop of silver. 33. Hyacinth Hyacinth is a hardy perennial with distinctive flowers that rise on an erect stalk. It features a pleasant fragrance and is a favorite for Easter displays due to its early spring blooms. 34. Begonia Begonias come in several varieties and range in size from as small as six inches to nearly three feet tall. Typically, begonias have white, pink, or red flowers, but cultivators have created a more diverse spectrum of colors, including yellow and orange. 35. Camellia Camellia flowers are large and showy with a rose-like appearance in colors ranging from white to pink, red, and yellow. Camellias are known to symbolize love, affection, and admiration. 36. Clematis The clematis vine features a spectacular show of white, blue, violet, or purple flowers. It can grow up to 12 feet tall if provided the opportunity to climb on a trellis, arbor, fence, or wall. 37. Coneflower Coneflower has large flowers with spiny, dome-shaped, orange or brown centers that grow on sturdy stalks reaching up to five feet in height. They come in a variety of colors, including purple, orange, red, and white. 38. Evening Primrose Evening Primrose is a tall wildflower that blooms at sunset. The flower is yellow on the outside and whitish within and quickly fades in bright sunlight. 39. Forget Me Not Forget me nots are always recognizable by their deep blue petals contrasted with a bright yellow center. They have bright green foliage, which contrasts nicely with their blue blooms. 40. Forsythia Forsythias are shrubs that can grow up to ten feet tall and twelve feet across. They bloom from early to mid-April and feature four-petaled flowers in shades ranging from light yellow to bright golden yellow. 41. Freesia Freesia flowers are funnel-shaped flowers that form a one-sided spike on top of the plant. Freesia blooms can range from yellow to orange or pink to red, and they emit a sweet, citrusy scent. 42. Gladiolus Gladiolus features a tall, striking stalk of blooms with a fragrant scent. Named after gladiators' swords, gladiolus is typically known to symbolize remembrance, faithfulness, and loyalty. 43. Hellebore Hellebore features exquisite bowl-shaped flowers in white, pinks, yellows, and reds. They feature sturdy stems that are serrated like a knife along the edges. 44. Hibiscus Hibiscus features trumpet-shaped flowers that come in a range of colors like red, pink, and white and can grow as large as a paper plate, reaching six inches in diameter. They typically grow in tropical climates and don't fare well in cooler temperatures. 45. Hydrangea Hydrangeas are popular with gardeners and florists due to their large, round flower heads comprised of tiny, individual flowers. They come in a wide variety of colors, including blue, purple, and white. 46. Jasmine Jasmine grows as a bushy shrub or climbing vine and produces tubular, waxy-white flowers and oval, shiny leaves. The flowers emit a rich, sweet, and sensual fragrance that's used in perfumes across the globe. 47. Lilac Lilacs are easily recognized by their long, cone-shaped blooms covered in tiny, tubular flowers. They're best known for their lilac-colored blooms but also come in white, blue, pink, and yellow. 48. Poinsettia Poinsettias are the classic Christmas flower because of their bright red appearance. The bright petals aren't actually flowers, but instead are the upper leaves of the plant. 49. Queen Anne's Lace Queen Anne's Lace is most identifiable by its white, lacy flowers, and oftentimes the flower has a solitary purple dot in the center. In fact, the plant earned its name from a legend that Queen Anne of England pricked her finger and a drop of blood landed on the white lace she was sewing. 50. Rhododendron Rhododendrons have large, bell-shaped flowers that grow in clusters in a wide variety of colors, including purple, red, orange, white, pink, and yellow. They grow best in shaded areas and feature evergreen foliage in greenish-blue or green. From roses to orchids and everything in between, this list is your go-to guide on all of the most popular blooms around. With such a wide variety of blooms, you're sure to find one that suits you best. Frequently Ask Questions About The Various Types of Flowers In addition to the many different types of flowers, many people have other questions. To help, please find some common questions and answers about flowers. What are the 4 types of flowers? There are hundreds of different flowers. They can be categorized into one of four main types: Annuals: These flowers go through an entire lifecycle each season, with every part of the plant dying, including the roots, going back to seed. The seeds are dormant during the winter, and the flower begins to grow from the seed in spring. Perennials: Perennials last for many seasons. In winter, the upper part of the plant dies. The roots remain, and for some perennials, the leaves also remain. They grow and flower from the same root again in the spring. Biennials: Biennials go through an entire lifecycle in two years, rather than one like annuals and perennials, and they flower in full every other year. Hybrids: Hybrids can act as either an annual or perennial, depending on the climate in which it's grown. What are the 20 most popular flowers? Twenty of the most popular flowers (in alphabetical order) include: Calla Lilies Carnations Chrysanthemums Daisies Daffodils Freesia Gardenias Gerbera Daisies Hyacinths Irises Jasmine Lilacs Liles Magnolias Orchids Peonies Roses Snapdragons Sunflowers Tulips Which is the prettiest flower? The prettiest flower is the flower that your recipient finds the most beautiful. The truth is that all flowers are beautiful, and anyone you're buying flowers for will be touched to receive them. Some of the prettiest flowers are: Cherry Blossom Daffodil Dhalia Gerbera Daisy Iris Lotus Magnolia Orchid Plumeria Rose Sweet Pea Stargazer Lily How many types of flowers are there? There are 400,000 types of flowering plant species around the world. Some are much more common than others, and some grow only in certain climates. Some types of flowers are most commonly planted in gardens, while others are popular additions to gorgeous flower bouquets. What is the most common flower in bouquets? Roses are the most common type of flower used in bouquets. They're used alone — in a bouquet of long-stemmed red roses, for example — or along with other types of flowers to create a stunning bouquet.