

Spring Unit Study

*Science, Geography, History,
Cultures, Games, and more!*

Gypsy Gameschooler

How To Use This Unit Study

This unit study is designed as a fun learning interlude for the whole family. Whether you live in the city or country, you and your kids can explore the signs of spring all around you.

Bold words are defined in the vocabulary section. Underlined words are links!

Dive into the science of why we have seasons, the signs of spring, gardening, baby animals, and holidays of spring, too! There are fun coloring sheets and activities, writing prompts and science experiments, games, and more. You probably won't get to everything, and that's okay. It just means you'll have more you can do next year!

Happy learning!

Thank you for respecting the hard work I put into this unit study and not sharing it with others. Feel free to print as many copies of this for your own use as you'd like.

For more resources and freebies, make sure you check out [my shop](#).

Check out my book, [Gameschooling on a Budget](#), for tips and games to play for less.

[Gypsy Gameschooler](#) has been a labor of love for me, but website hosting gets expensive. I would really appreciate it if you were to click one of my Amazon Affiliate links before doing your shopping on Amazon.

Amazon Affiliate links don't cost you anything, but Amazon pays me a small commission. The cookies are only good for 24 hours, but I get credit no matter what you purchase.

I'm an affiliate for a few other programs. Every penny helps! One day, I hope to help support my family with my blog, so thank you!

If you want to share this printable with someone else—thank you! Please just send them to [my website](#) so they can purchase it for themselves.

Thanks again!

Table of Contents

How To Use This Unit Study

The Science of the Seasons

Activity

Equinoxes and Solstices

Science of Spring

Spring Around the World

Spring Activities in Animals

Spring Activities in Plants

Science of Spring Activities

Science Experiments

Effect of Snow or Ice on Soil Temperature

Evolution and Adaptations

Parts of a Plant

What Plants Need to Survive

Types of Plants

Parts of a Flower

Flowers

Flower Puzzle

Spring Through the Ages

Spring Coloring Page

Spring Holidays

List of Spring Holidays

Spring Holidays Calendar

Suggested Reading

Recipes

Individual Holidays

Coloring Sheets

Writing Prompts

Crafts

Games

Vocabulary

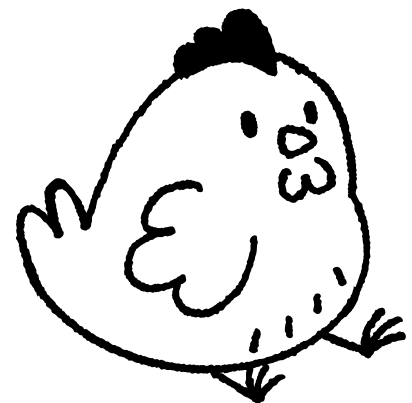
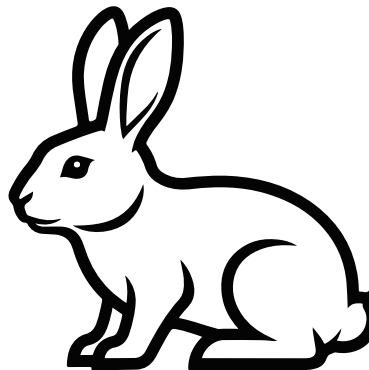
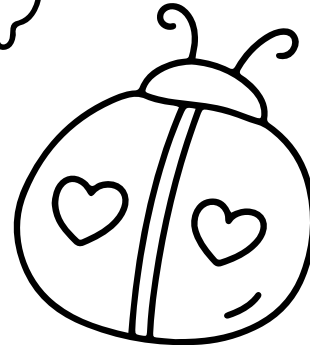
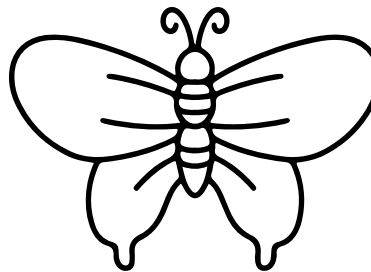
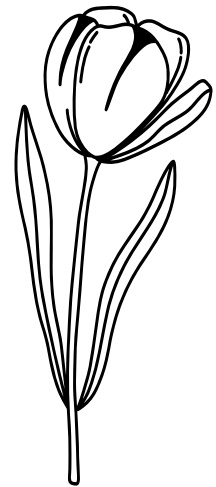
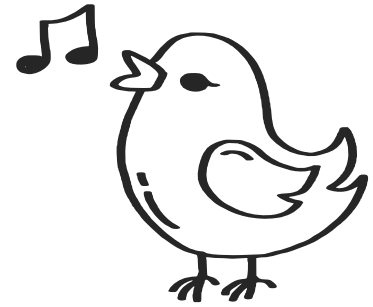
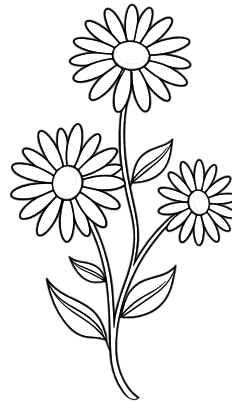
Science Experiment Pages

Writing Assignments Pages

Subjects Covered

Grading Rubrics

Answer Keys

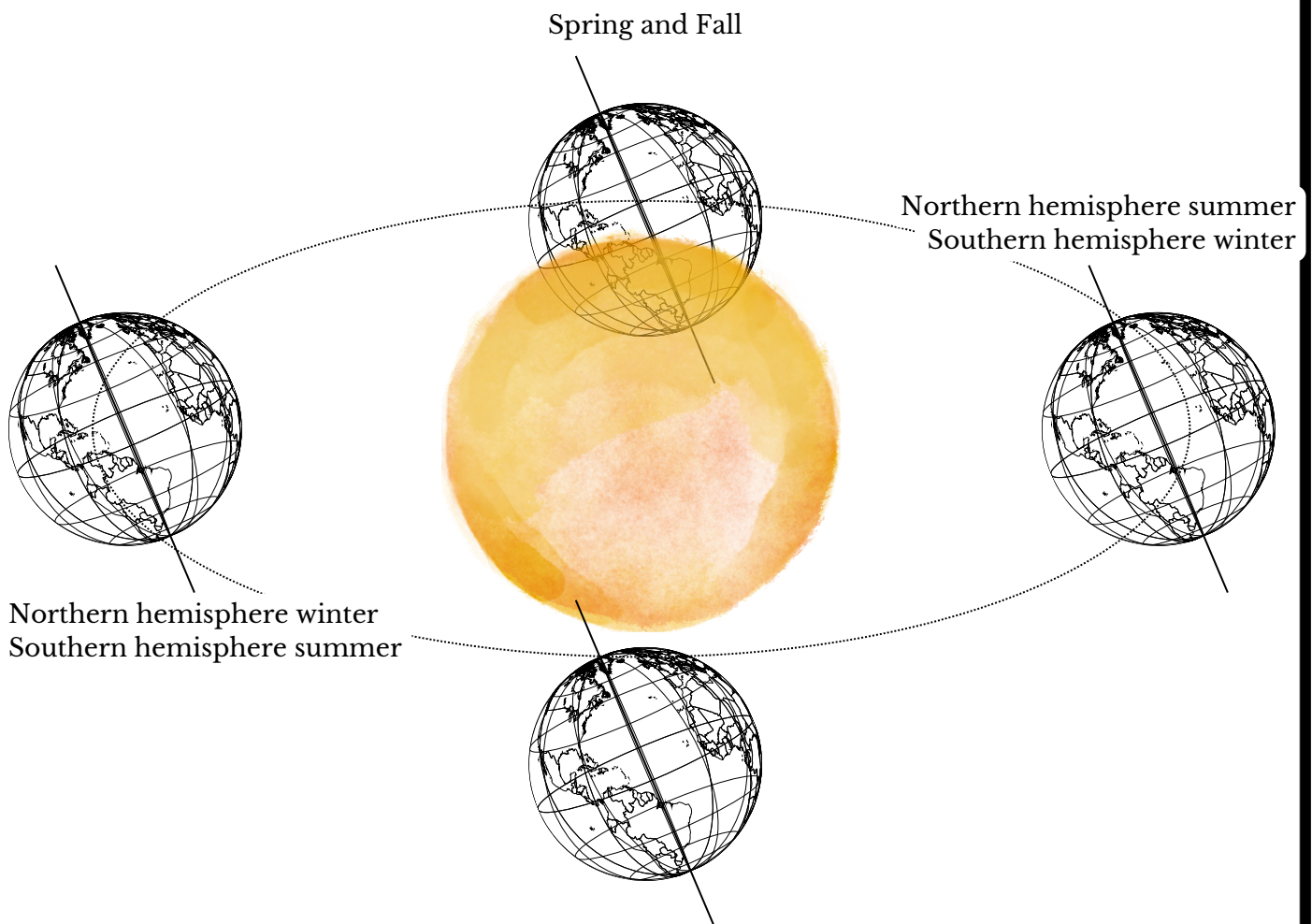


The Science of the Seasons

The seasons of the earth come down to the tilt on our axis. If the earth weren't tilted, we wouldn't have any seasons!

As the earth rotates around its axis, we get day and night. As it rotates around the sun, we get the seasons. However, summer and winter are actually when the earth is furthest from the sun! Our earth has an elliptical orbit (so not a perfect circle, but elongated) and spring and summer occur when the earth is closest to the sun. At this time, the earth's tilt is such that neither the northern nor the southern **hemisphere** gets more direct light. Summer and winter are when the earth is furthest from the sun and the tilt provides one hemisphere or another with more light.

The following diagram is not to scale, by any means. However, it does provide a good visual of the elliptical orbit and how we get seasons. You can also check out [this video](#) for a good visual.



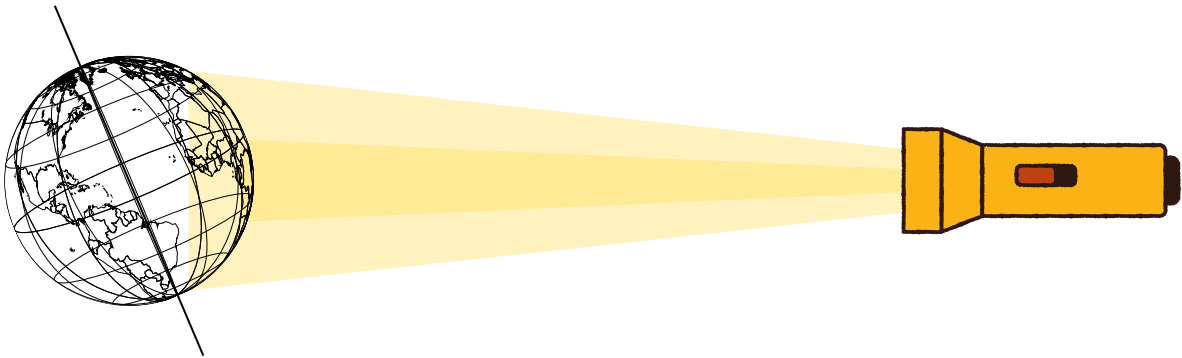
The Science of the Seasons: An Activity

Materials

- Globe
- Flashlight
- Darkened room

Most globes are set up with the proper tilt. You can still do this with something like a beachball globe, just make sure you set it up with a tilt similar to what's in the image on the previous page.

Turn off the lights in your room and turn on your flashlight. Keep your flashlight even with your globe, like in the image below.

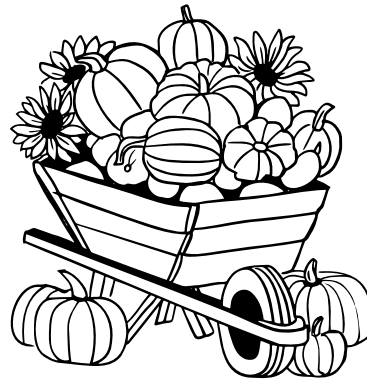
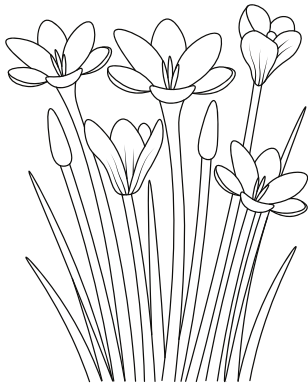


Do you notice how the light is more intense near the **equator** and biased toward the south? Places with a more direct angle of sunlight are warmer than places with a more indirect angle. So not only does the summer have longer days than the winter, but those longer days come with more direct, intense light.

Carefully rotate the globe to show how day and night happen, then try tilting the top of the globe away from the light and then toward it. Notice how the poles can either get lots of sunlight or almost none depending on which way the tilt is facing. This is why some places—especially far north or south—have very long days in summer and very long nights in winter.

This is tricky to do at home with only a flashlight and globe, but you can orbit the globe around the flashlight, making sure the flashlight stays focused on the globe. (It's easier to leave the globe stationary and move the flashlight around the globe, but that's less accurate.)

The tilt of the earth is called the **axial tilt**. Every planet has its own axial tilt; Earth's is about 23° . Without that tilt, we would still have day and night, but we wouldn't have seasons; every day would feel almost the same all year long.



Equinoxes and Solstices

The **equinoxes** and **solstices** relate to day length. On both equinoxes in both hemispheres, day and night are equal: both at 12 hours. (Think: equinox means equal; they share the same root of *equ*, which is Latin for “equal.”)

The following dates are approximate for each hemisphere (they vary):

Northern Hemisphere

- Winter Solstice: December 21st
- Spring Equinox: March 21st
- Summer Solstice: June 21st
- Fall Equinox: September 21st

Southern Hemisphere

- Winter Solstice: June 21st
- Spring Equinox: September 21st
- Summer Solstice: December 21st
- Fall Equinox: March 21st

The solstices are a little different. Winter solstice has the longest night and shortest day, while summer solstice has the longest day and shortest night.

As you can see in the dates above, when the northern hemisphere has its spring equinox, the southern hemisphere has its autumn equinox, and vice versa.

No matter where you are in the world, day and night are of equal length on the equinoxes. However, your **latitude** determines how much change in daylength you experience. For example, in Panama, the day length only changes by about an hour over the course of the whole year! (Conversely, the poles will have days of darkness in the winter and days of daylight in the summer.)

These changes in daylight are all caused by Earth’s tilt as it orbits the Sun. Because the planet leans to one side, different areas receive more or less direct sunlight at different times of year. Solstices happen when one hemisphere is leaning its farthest toward or away from the Sun. Equinoxes happen when the tilt is “sideways” to the Sun, so neither hemisphere is leaning toward or away from it. The springtime transition from winter to summer leads to unique behaviors in plants, animals, and people!

The Science of Spring

Spring is a season of transition, bridging the cold dormancy of winter with the warmth and abundance of summer. Unlike the sudden shift the calendar might suggest, spring unfolds gradually. Early in the season, days lengthen, but **temperatures** and weather conditions often lag behind, creating a mix of warmth, **frost**, and unpredictable patterns. These physical changes set the stage for the activity we see in plants and animals.

The primary cue that triggers biological responses in many species is increasing daylight. After the spring equinox, days grow noticeably longer, providing a reliable signal for plants and animals that the growing season is beginning. Day length is often a more consistent cue than temperature because weather can vary dramatically from year to year, while the change in sunlight is predictable and steady. This is why even a cool, wet spring can still prompt buds to swell, birds to **migrate**, and insects to emerge.

Temperature changes do play a role, but warming does not occur immediately with the equinox. Land, water, and air all absorb heat at different rates. Snow and frozen soil take time to thaw, and large bodies of water heat slowly, which delays the full arrival of warmth. This thermal lag explains why the warmer days of spring usually come weeks after the equinox and why frost can still occur well into the season.

Water availability is another critical factor. Melting snow, thawing soil, and spring rains replenish the water that plants and animals need to grow, **reproduce**, and thrive. Nutrients that were locked in frozen soil or settled in ponds and lakes begin to circulate again, fueling the first waves of plant growth and supporting the return of active ecosystems. At the same time, warming air holds more moisture, contributing to rain, humidity, and occasional storms that further influence the environment.

All of these physical changes—day length, temperature, and water availability—set the stage for energy flow in spring ecosystems. Increased sunlight allows plants to **photosynthesize** more efficiently, producing the food that sustains **herbivores** and the **predators** that feed on them. In this way, the science of spring explains not only the weather and environmental conditions but also why living things become more active, reproduce, and grow during this season.

Spring, then, is more than just a change in temperature or a new month on the calendar. It is the result of predictable **astronomical** patterns interacting with the slower responses of Earth's land, water, and **atmosphere**, creating the conditions that life has adapted to for generations.

Spring Around the World

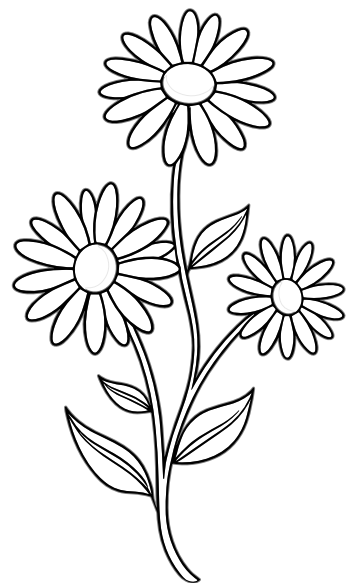
Spring is a season of **renewal**, but it does not look the same everywhere. The timing and characteristics of spring depend on latitude, hemisphere, **biome**, and local **climate**. In general, spring is marked by increasing daylight, warming temperatures, and **ecological** activity, but how these changes appear can vary widely across the globe.

Latitude plays a major role in shaping spring. Near the poles, seasonal changes are rapid and dramatic, with short, intense growing periods. **Temperate** regions experience a more gradual transition, with steadily lengthening days and warming temperatures. Near the equator, seasonal changes in temperature and daylight are minimal.

Continental location and proximity to water further influence how spring unfolds. In the northern hemisphere, spring occurs roughly from March to June, while in the southern hemisphere it spans September to December. Coastal regions often experience milder spring conditions because oceans heat up more slowly than land, delaying plant growth and animal activity, while inland areas warm more quickly. Mountains also affect timing: higher elevations remain cold longer, delaying snowmelt, plant growth, and animal migrations.

Biomes demonstrate the diversity of spring responses. In the tundra, plants and animals must act quickly during a short window of favorable conditions. Temperate forests show budding trees, flowering plants, and returning migratory animals. **Grasslands** and **savannas** rely on the timing of rainfall to trigger growth and insect emergence. **Deserts** experience a brief flowering period after rare rains, with animals becoming active for only a short time. **Tropical** rainforests, with relatively constant temperatures, experience seasonal pulses of rainfall that stimulate new growth and reproduction.

Despite these differences, spring universally represents a time of renewal. Whether it is a sudden burst of life in the Arctic, a gentle unfolding of leaves in Europe or North America, or a seasonal pulse of growth in tropical regions, organisms around the world have adapted their life cycles to take advantage of the changing conditions. Observing how spring appears in different places reveals both the variety of Earth's climates and the common rhythm of life that unites **ecosystems** worldwide.



Spring Activities in Animals

Spring brings clear changes in animal behavior as increasing daylight, warmer temperatures, and growing food supplies signal the end of winter. Rather than responding to the calendar, animals respond to **environmental** cues. These seasonal triggers shift animals from winter survival strategies to more active patterns of movement, feeding, and growth.

As spring begins, many animals return to higher levels of activity. Some species wake from **hibernation**, while others emerge from shorter periods of **torpor**. Longer days allow animals more time to feed, and many adjust their daily schedules to take advantage of increased daylight. This rise in activity is often one of the first signs of spring in the natural world.

Movement is another key feature of spring animal behavior. Many animals travel to areas with better access to food or suitable breeding conditions. Birds are especially well known for **migration**, ranging from long-distance journeys to shorter regional movements. Some animals migrate vertically instead of across long distances, moving down mountains to valleys during winter and returning upslope in spring. A small number of mammals also migrate, though migration is energy-intensive and less common among animals that move on foot.

Spring is closely linked to **reproduction** for many species. Animals often time breeding so that their young are born when food is plentiful and conditions are improving. Migrating animals must first reach their seasonal **habitats** before nesting or giving birth can begin. Not all animals reproduce in spring, however; some species give birth during winter or at other times of year, depending on their survival strategies.

As reproduction begins, many animals establish territories or build nests and dens. Birds may construct new nests, reuse old ones, or lay eggs without using a traditional nest at all. **Territorial** behavior often increases during this time as animals defend space, resources, or mates. These behaviors help ensure the survival of young but can also make animals appear more aggressive in spring.

Spring also brings noticeable physical and behavioral changes. Many animals shed thick winter coats or feathers and grow lighter summer coverings. Feeding and foraging increase to support growth and reproduction. Communication becomes more common as well, with birds singing, frogs calling, and insects producing sounds to attract mates or defend territory.

Overall, spring is a season of energy, movement, and transformation for animals. These behaviors are driven by changes in light, temperature, and food availability, reflecting the deep connection between animals and the natural rhythms of the Earth.

Plants in Spring

Spring brings noticeable changes in plants as increasing daylight, warming temperatures, and thawing soil signal the end of winter. Like animals, plants do not respond to dates on a calendar. Instead, they respond to environmental cues that tell them when conditions are right for growth. These seasonal changes allow plants to shift from winter survival to active growth and reproduction.

During winter, many plants enter a state called **dormancy**, in which growth slows or stops to conserve energy. As spring begins, plants break dormancy. Buds on trees and shrubs swell and open, and underground parts such as roots, bulbs, and **rhizomes** begin sending up new shoots. The energy that fuels this early growth often comes from food stored during the previous growing season.

Spring conditions are also ideal for seed **germination**. As soil warms and moisture becomes more available, many seeds begin to sprout. Seeds contain stored energy that supports the young plant until it can produce its own food through **photosynthesis**. Germinating in spring gives seedlings time to grow strong roots and leaves before the heat and dryness of summer arrive. Many annual plants rely on spring germination to complete their entire life cycle within a single growing season.

Once dormancy is broken and seeds have germinated, new growth accelerates. Leaves expand, stems lengthen, and plants begin photosynthesizing more efficiently as daylight increases. Early spring growth may be slow and cautious, especially in cooler climates, while late spring often brings rapid and visible changes. This burst of growth allows plants to capture sunlight and produce the energy needed for continued development.

Spring is also a major season for flowering and reproduction. Many plants produce flowers in spring, using color, scent, and shape to attract pollinators that are becoming active again. Flowers are reproductive structures, and successful **pollination** leads to seed formation later in the year. The timing of flowering is closely connected to the return of insects, birds, and other pollinators, showing how plant and animal life cycles are linked.

As plants grow and reproduce, they interact closely with the animals and environment around them. Fresh leaves, nectar, and seeds provide food for animals returning to activity after winter. In turn, animals help pollinate flowers and disperse seeds, continuing the cycle of growth.

Overall, spring is a time of renewal and rapid change for plants. Through breaking dormancy, germinating seeds, growing new tissues, and reproducing, plants respond to environmental rhythms that shape life across entire ecosystems.

Outdoor Activities

Head outside to learn about spring! Be sure to wear weather-appropriate gear and bring a notebook and pencil.

1. Observe and record first flowers, insect sightings, or birds returning.
2. Take a “microbiome walk” comparing sun, shade, moisture, and plant types.
3. Measure snow depth or frost remaining in early spring.
4. Identify different types of buds and leaves as they develop.
5. Make a wildlife feeding station to observe spring animal activity.
6. Photograph or sketch changes in a favorite tree or area each week.
7. Create a mini weather station: measure temperature, rain, wind, and daylight changes.
8. Collect soil samples to examine moisture and composition.
9. Observe animal behaviors such as nesting, mating, or foraging.
10. Plant bulbs or fast-growing seeds in containers to observe root and shoot growth outdoors.
11. If you are able to, start a vegetable garden.
12. Track temperature and daylight changes over a week and relate them to local plant or animal activity.

Indoor Activities

If you can't get outside yet, that's okay! There are many things you can do indoors to learn about spring.

1. Watch live-streamed bird nests or wildlife cameras.
2. Create a spring-themed bulletin board or wall display of biomes.
3. Build a small indoor terrarium to observe seed growth or moss.
4. Study insect life cycles with preserved specimens or videos.
5. Time-lapse observation of seeds sprouting under a grow light.
6. Make a daylight chart using a window to track sun angles and shadow changes.
7. Use a microscope to examine leaf or flower structures.
8. Sort collected seeds or leaves by type, color, or stage of growth.
9. Map global spring patterns using atlases or online tools.
10. Make a sun dial to track day length changes.
11. Observe seed germination using paper towels for easy indoor sprouting.
12. If you are able to, hatch chicks from eggs! Just make sure you have a plan for what to do with the chicks.

Science Experiments

Science Experiments are an excellent way to learn about the world around you. Use the science experiment pages toward the end of this unit study to help you design and implement one or more of the following experiments:

1. **Effect of salt on ice melting rate:** Place equal amounts of ice in water with and without salt, and measure how long it takes for the ice to melt.
2. **Impact of soil type on plant growth:** Plant identical seeds in sand, potting soil, and clay, and measure differences in growth or leaf number.
3. **Effect of sunlight exposure on plant growth:** Place identical plants in varying light conditions (full sun, partial shade, indoor light) and measure growth or leaf size.
4. **Influence of soil absorption on water retention:** Pour the same amount of water into different soils or sand types and measure how quickly the water is absorbed.
5. **Effect of liquid type on plant growth:** Water identical plants with different liquids (tap water, distilled water, sugar water, etc.) and measure growth, leaf number, or overall health.
6. **Effect of temperature on seed germination speed:** Plant identical seeds in different temperature environments (cool, room temperature, warm) and measure how quickly they sprout.
7. **Impact of soil pH on plant growth:** Use soil with varying acidity or alkalinity and track how the same plant species grows.
8. **Effect of different light colors on plant growth:** Place identical plants under red, blue, green, and white light and measure growth or leaf size.
9. **Influence of air circulation on plant health:** Grow plants in still air versus moving air (fan) and compare growth, leaf strength, or stem length.
10. **Effect of varying water amounts on plant growth:** Water identical plants with different volumes on the same schedule and measure height or leaf number.
11. **Effect of music or sound on plant growth:** Expose plants to different types of sounds (classical, pop, white noise, silence) and record growth differences.
12. **Rate of evaporation under different conditions:** Place equal amounts of water in the same size of open containers under sunlight, shade, and indoor light; measure how quickly the water level drops.
13. **Influence of fertilizer type on plant growth:** Water identical plants with different types of fertilizer (organic, chemical, none) and measure growth or leaf number.
14. **Impact of container color on soil temperature and plant growth:** Plant seeds in containers of different colors (black, white, clear) and track soil warmth and growth rate.

Science Experiment: Effect of Snow or Ice Cover on Soil Temperature

Here is one science experiment already written up. Use the science experiment pages to fill in the rest (hypothesis, data collection, results, and conclusion).

Background

Soil temperature influences plant growth, seed germination, and the activity of organisms living in the soil. In winter and early spring, snow and ice can act as natural **insulators**, slowing the warming of soil. Snow is made of many air pockets, which trap heat, while solid ice conducts heat more efficiently. Understanding how different types of winter cover affect soil temperature helps explain why plants and animals respond differently to the changing seasons.

Question

How does covering soil with snow, ice, or leaving it exposed affect the soil temperature over time?

Materials

- Three identical containers with the same soil, pre-chilled to the same temperature (place them outside or in the refrigerator)
- Thermometer (digital or soil thermometer)
- Snow
- Ice cubes or a sheet of ice
- Timer or clock

Methods

1. Fill three identical containers with equal amounts of chilled soil.
2. Label the containers or plots as Snow Cover, Ice Cover, and No Cover.
3. Cover one soil sample with a layer of snow, one with a layer of ice, and leave the third uncovered.
4. Move all three containers inside to the same location.
5. Insert the thermometer into the soil of each sample at the same depth.
6. Record the initial soil temperature for each sample and the room temperature.
7. Measure and record the soil temperature every hour until **equilibrium** with the room's temperature is reached.
8. Keep other conditions as consistent as possible by keeping all three containers near each other and out of direct sunlight.
9. Compare the temperature readings for each soil sample. Note how quickly the soil warms or cools and any differences between snow, ice, and no cover.
10. Analyze the results: Which type of cover kept the soil the coolest? Which warmed the fastest?

Evolution and Adaptations

Many people describe an **adaptation** as “to help an **organism** survive.” This is misleading, though, because that makes it seem like the organism chose its adaptations.

However, this is not the way **evolution** works. Evolution starts with random **mutations** in the gene pool. As an organism’s **genetic** material is replicated (DNA or RNA), mistakes are made. The wrong base is used, just occasionally. These copying errors are where we get random mutations from.

Mutation rates vary across genomes and across species, and estimates, even for the same portion of the genome for the same species, can vary pretty widely. However, all estimates are less than 1% (it can just vary a lot between 0.00001% and 0.001%).

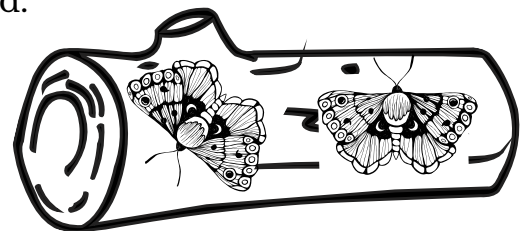
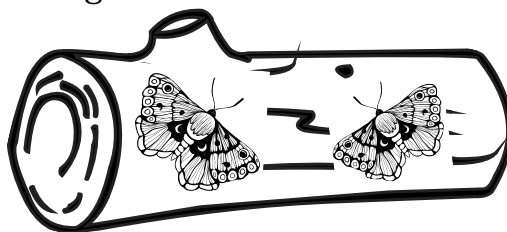
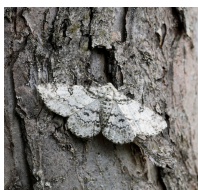
Most of these mutations have no noticeable difference. They may be in a portion of the genetic sequence that doesn’t code for anything, or the substitution might not change the resulting protein noticeably. But some of these random genetic mutations do result in different traits.

In any given, healthy **population**, there will be a range of traits, all results of many random genetic mutations. In any given population, some organisms survive to **reproduce**, and some do not. If a mutation is beneficial for survival, then organisms with that mutation are more likely to pass it on to the next generation. A mutation that is not beneficial for survival is less likely to be passed on.

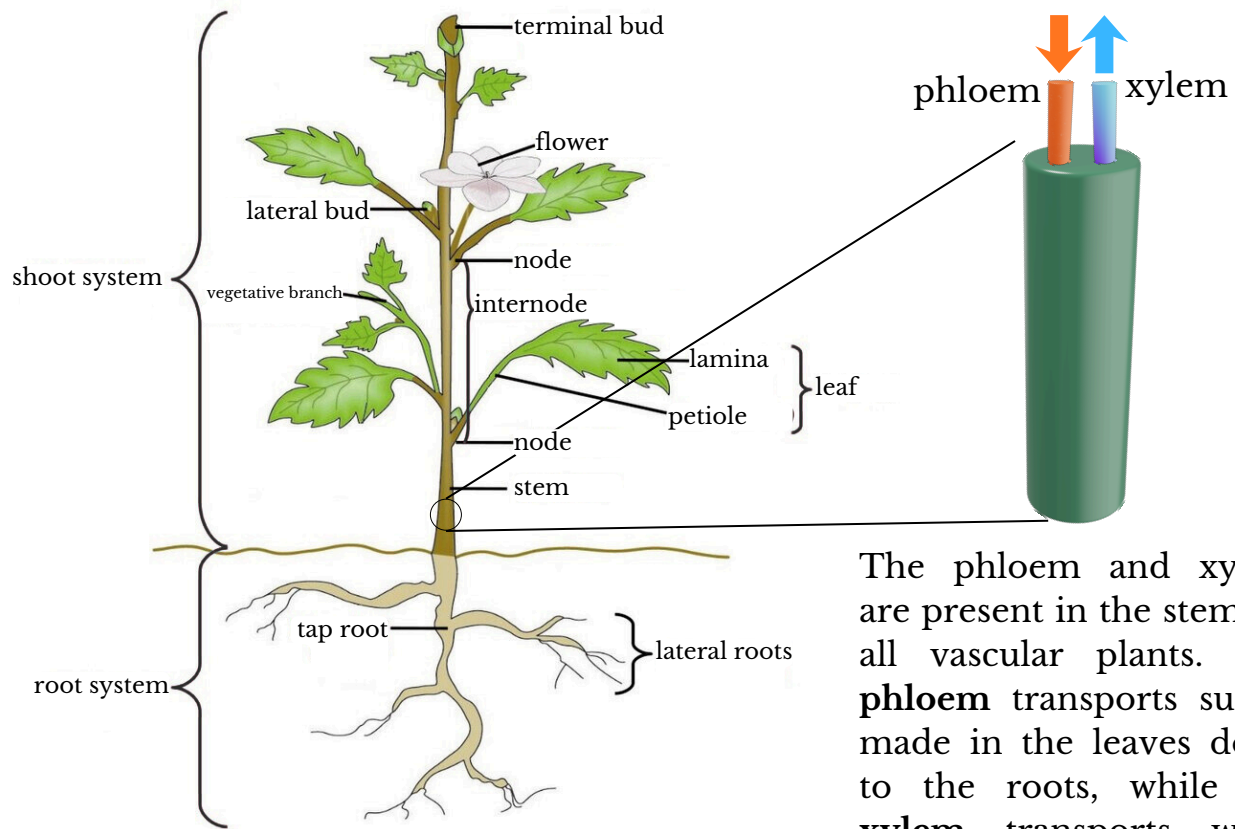
A famous example of evolution are the moths in London. The peppered moth, *Biston betularia*, is usually white with black speckles, and so are well-camouflaged against the lichen-covered tree trunks they rest on during the day. There are always some dark moths hatched (genetic mutation), but these are usually eaten by **predators** as they’re easy to see.

With the **industrial revolution** in the last half of the 1700s, pollution began to coat the trees with black soot. Within several decades, most of the moths were darker in coloration.

In the middle of the 1900s, environmental controls were enacted to limit pollution. The bark of the trees was soon cleaner, the lichen grew back, and frequency of the light-colored moths increased.



Parts of a Plant

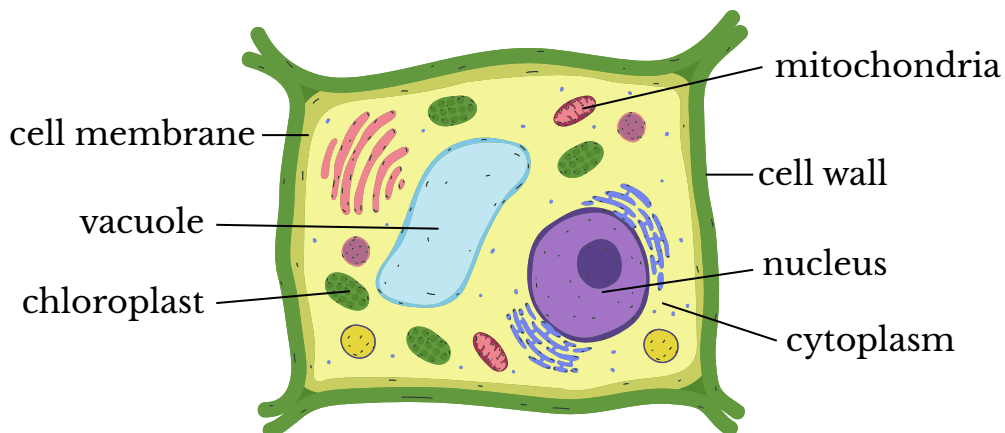


This image was created and shared by Arantza Aldezabal on https://commons.wikimedia.org/wiki/File:Landare_angiospermoaren_oinarrizko_atalak_ku.jpg with a CC license. I replaced the labels with English, but it is otherwise unaltered. You may share this page freely. Thank you!

The phloem and xylem are present in the stems of all vascular plants. The **phloem** transports sugars made in the leaves down to the roots, while the **xylem** transports water from the roots up to the leaves.

Not all plants will exhibit this exact same structure, but there are many similarities and you can use these terms to discuss many plants. We will also need them over the next several pages as we discuss plants.

Parts of a Plant Cell

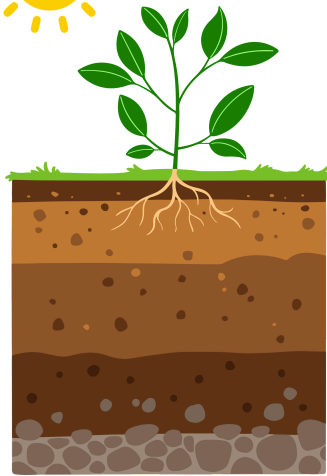


These aren't all the parts of a plant cell, but they're some of the more well-known parts.

What Plants Need to Survive



sunlight



carbon dioxide from the air

water and nutrients from the ground

appropriate drainage, salinity, and pH

Every plant's needs are a little different, but all plants need some basics. Plants might also meet their needs in different ways.

Every plant needs a way to get energy. Usually, that means it needs sunlight and carbon dioxide (CO_2). (An exception would be ghost pipes, which are a non-photosynthetic, parasitic plant that gets energy from its host plant!) Different plants need different amounts of sunlight, though, and too much can actually give a plant a sunburn!

Every plant needs water. Some, like cacti and other desert plants, don't need much water and they have some creative ways to get by with less. Too much or too little water for a plant could spell disaster!

Every plant needs nutrients. You may have seen **fertilizer** in a garden center with N-P-K ratios. This stands for Nitrogen, Phosphorous, and Potassium. These are the **macronutrients** plants need (the ones they need in larger amounts), but every plant needs slightly different amounts. They also need different levels of micronutrients.

Every plant can tolerate different temperature ranges. You might have heard of "hardiness zones." These indicate average annual minimum temperature, but don't take into account many other requirements plants may have. Still, they're a helpful tool.

Plants also have different tolerances for things like **humidity**, **salinity**, **drainage**, type of soil, and pH (how acidic their soil is).

Types of Plants

The first photosynthetic organisms to evolve were a type of cyanobacteria, around 3.4 billion years ago. About 2 billion years ago, a eukaryotic cell engulfed a cyanobacterium, but for some reason, it didn't digest it. Instead, the two continued living together and that cyanobacterium is now known as a chloroplast. This is called **endosymbiosis**.

By about a billion years ago, these early photosynthesizers evolved into red, brown, and eventually green algae, much like you might find today.

Almost half a billion years ago, some of these early aquatic plants started teaming up with fungi (who had already colonized the land) to begin moving out of the water. These earliest land plants were the liverworts and mosses. These plants are much the same still. They are non-vascular, meaning they don't have a phloem or xylem, so they rely on diffusion and osmosis. As a result, they are quite small and are generally limited to damp areas.



Next to evolve were the ferns. These plants are **vascular**, so they can grow larger (and used to grow quite large indeed!). However, they don't have seeds yet; they reproduce using **spores**. Spores lack the protective coating of seeds so need good growing conditions whenever and wherever they land. As a result, ferns also need damp locations.

Gymnosperms came next. These are woody plants (usually trees) who reproduce with a naked seed. Gymnosperms include cycads, ginkgo, and conifers. Almost all gymnosperms produce separate male and female cones which produce pollen (male) and seeds (female). Many are wind-pollinated, but some are pollinated by insects.



Types of Plants, cont.

The last group of plants to evolve were the **angiosperms**, or flowering plants. These are distinct from the gymnosperms because their seeds have a protective covering. In many of our favorite angiosperms, this protective covering is known as fruit. Angiosperms can be divided further into **monocots** and **dicots**. Before a seed begins growing, it already contains the first leaf or leaves of the new plant. These are called **cotyledons**. These leaves always look a bit different than the rest of the leaves a plant will produce (why it's always important to wait until a plant has at least 3-4 leaves before you attempt to identify it).



Monocots are plants that begin with one seed leaf. These include grasses, orchids, lilies, and bulbs. The flowers of monocots have petals and other flower parts in multiples of 3 (3, 6, 9, etc.) and long, narrow leaves with **parallel** veins. Monocots actually evolved after dicots. The grasses tend to be wind-pollinated, but many of the others are pollinated by insects or animals.

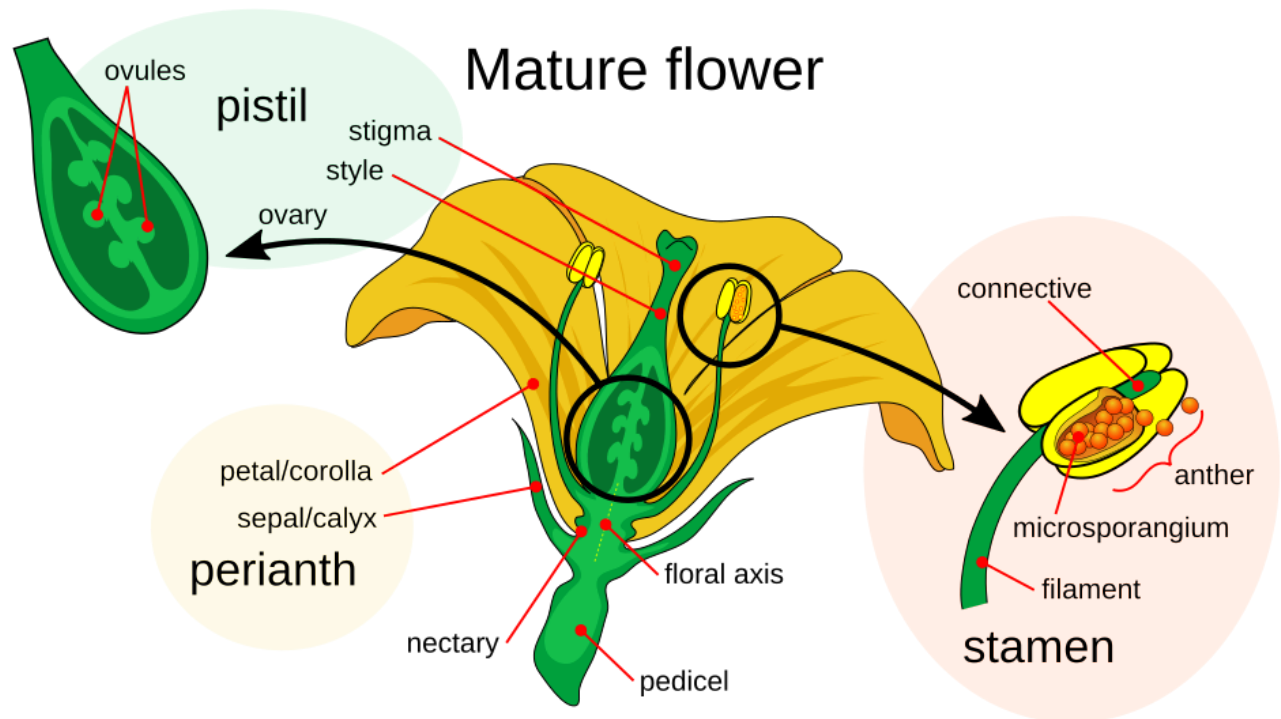
Dicots are angiosperms with two cotyledons and are actually several different groups. Their flower parts come in multiples of 4 or 5. Their leaves often have branching veins and can be in many different shapes.

A special type of dicot are the C4 and CAM plants. Most plants use C3 photosynthesis and need carbon dioxide coming in while they are photosynthesizing. Since angiosperms and gymnosperms have a waxy coating on the outside of their leaves, they have to have small holes in their leaves, called **stomata**, to let air in and out. At the same time, though, gaseous water molecules also move in and out of the stomata.

Plants that live in exceptionally hot and dry locations run into problems with this. If their stomata are open all the time, they lose too much water. If their stomata are closed during the day, C3 plants can't photosynthesize. So, plants in hot or dry environments evolved different ways of dealing with this: C4 and CAM photosynthesis. These plants separate out the two pathways of photosynthesis so they can keep their stomata closed while performing photosynthesis. These plants are the **succulents** and the cacti.



Parts of a Flower



This image is generously provided for restriction-free public domain use by LadyofHats. You can also use this page freely. Thank you!

Being familiar with these parts of flowers will assist in your plant identification efforts, make it easier to understand descriptions, and improve how you describe flowers to others.

Below what is pictured is often a special leaf-looking structure called a bract.

In some flowers, the petals and sepals are indistinguishable “tepals.”

The stigma, style, and ovary together make up the pistil. These are the “female” plant parts that will eventually make seeds.

The anther and the filament together make up the stamen. These are the “male” plant parts that make and disperse pollen.

Some plants are **dioecious**, which means they are male or female. Some plants have both male and female flowers on the same plant, but the pistil and stamen are separated into two separate flowers (squash are like this). Some flowers are self-fertile, meaning their pollen can fertilize their own seeds. Others need to be pollinated by another plant, or sometimes even another cultivar.

Plants can be pollinated by wind, insects, other animals, or even by a human wielding a paintbrush!

Flower Examples

True lilies are members of the genus *Lilium* and include about one hundred species and thousands of cultivated varieties. They are native to much of the Northern Hemisphere, including some North America and more in Asia and Europe. Plants have erect stems with large, often dramatic flowers made up of six petal-like segments called **tepals**. Their narrow leaves have parallel veins and flower colors vary widely. Plant the bulbs in spring or fall in well-drained soil for summer



blooms. They are among the oldest cultivated plants, and while rodents often eat the bulbs, the plants are notably toxic to cats but not to dogs.



Tulips consist of dozens of species and thousands of cultivars. They are native to Central Asia but are famously associated with cultivation in the Netherlands. The plants have upright stems, smooth leaves emerging from the base, and flowers with three petals and three petal-like **sepals** in many colors. Tulips are grown from bulbs planted in fall and bloom in spring. Some varieties are edible, but not all of them.

Daffodils, also known as narcissus, include dozens of species with many cultivated forms. They are native to Northern Europe. The plants have erect stems, parallel-veined leaves, and flowers with six tepals. They're most often yellow but sometimes are other colors. Daffodils grow from bulbs planted in fall. These spring flowers prefer full sun and well-drained soil. They can live for decades!



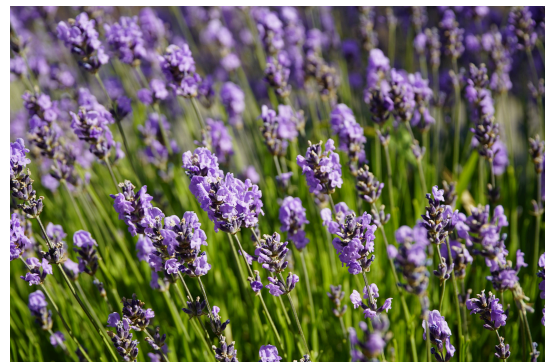
Their sap contains sharp crystals to deter animals from eating them. If you cut them for an arrangement in a vase, the latex in their stems can harm other flowers.

Flower Examples, cont



Roses include dozens of wild species and thousands of cultivated varieties in the same family as apple trees. Most species are native to Asia, with others from North America, Europe, and Northwest Africa. Plants may be bushy or vining, with woody stems bearing **prickles** (commonly called thorns), **alternate leaves**, and flowers ranging from five petals in wild species to many-petaled blooms in cultivars. Roses are **perennial** plants that bloom from late spring through summer and are often propagated by cuttings rather than seed. They are known for their fragrance. Their fruit, called hips, are rich in vitamin C and are sometimes edible.

Lavender includes only a few dozen species and relatively few cultivars compared to many garden plants. They are native to the Mediterranean region as well as parts of India and Southeast Asia. Lavender plants are small and shrubby with tiny, parallel-veined leaves. Their small, clustered flowers bloom from late spring through summer. They range from gray to blue to purple, in lighter and



darker shades, and only occasionally a yellowish color. They grow best in full sun with well-drained soil and good air circulation. Lavenders are often propagated by cuttings or root division. They are edible, highly fragrant, attract pollinators, and dry well.



Sunflowers include dozens of species in the aster family. They are native to North America. Plants have large, often yellow **composite flower** heads, along with broad, mostly alternate leaves. Sunflowers are generally grown from seed and thrive in sunny locations. Young flower buds track the sun, while mature flowers usually face east. The seeds are edible. Sunflowers are often summer-flowering **annuals**.

Flower Examples, cont.

Daisies are part of the aster family, which contains over 25,000 species, though only some are commonly called daisies. They are native to Europe and Asia but are widespread and naturalized across North America. Daisies have composite flower heads with disc flowers and surrounding ray flowers, on long, upright stems. They usually have yellow centers with white ray flowers, but other colors exist. They are typically grown from seed and bloom from spring through summer. Daisies are **heliotropic** (their flowerheads follow the sun), and close at night and open in the morning. Some are edible, but many are toxic to dogs and cats.



Marigolds are also in the aster family and include several species with numerous cultivated varieties. They are native to Mexico and other parts of Latin America. These plants have **opposite leaves** and bright, composite flower heads, most often yellow or orange. Marigolds are usually annuals, grown easily from seed, and require full sun. They grow quickly, repel

nematodes through their roots, and are generally avoided by deer and rabbits. While some are edible, others can be toxic to pets.

Lilacs include a few dozen species and several thousand cultivars. They are native to Eastern Europe and temperate regions of Asia. Lilacs are large, deciduous shrubs with opposite leaves and large clusters of four-petaled flowers in shades of purple, blue, pink, white, and occasionally pale yellow. They prefer full sun and well-drained soil and are considered heavy feeders.



Lilacs bloom in late spring to early summer and are especially valued for their strong fragrance.

Flower Puzzle

Keneilwe, Marius, Victor, Akiko, and Rosita each prefer a different one of the flowers covered on the previous pages. All needed information is contained within those paragraphs. Use the following clues to determine which flower each person prefers.

1. Victor and Akiko do not prefer bulbs.
2. Keneilwe and Marius prefer flowers with petals, sepals, and/or tepals in multiples of 3.
3. Akiko and Rosita enjoy smelling their favorite flowers.
4. Keneilwe's and Rosita's favorite flowers can natively be found in the Americas.
5. Victor, Marius, and Akiko's favorite flowers are native to Asia.
6. Victor's favorite has a composite head.
7. Akiko's favorite is a smaller flower on a smaller plant.

	Victor	Rosita	Keneilwe	Marius	Akiko
Lily					
Tulip					
Daffodil					
Rose					
Lavender					
Sunflower					
Daisy					
Marigold					
Lilac					

Spring Through the Ages

Spring has long been a season of opportunity for humans, signaling changes in the environment that require attention and action. Across time, people have responded to the increasing daylight, warming temperatures, and emerging resources in ways that supported survival, growth, and planning.

Prehistoric hunter-gatherers closely tracked seasonal patterns to follow food sources. As plants began to grow and fruits and seeds became available, they gathered what they could for immediate use. The return or emergence of animals in spring guided hunting and fishing activities. Survival depended on careful observation of the land, weather, and animal behavior, making spring a period of both opportunity and risk.

Early farmers, settling near rivers and floodplains with milder winters, utilized the annual flooding of their rivers to prepare their fields for planting seeds. Domestication of plants and animals began to align with seasonal cycles, as farmers selected species that could thrive in their local spring conditions. In these early societies, spring marked the start of the agricultural year and dictated much of daily life.

Later agricultural societies expanded on these practices, refining planting techniques, irrigation systems, and animal husbandry. Spring continued to guide the timing of field work, grazing, and resource management. Farmers adjusted strategies based on soil conditions, rainfall, and temperature patterns, developing crop rotations and planting schedules that maximized yield. Seasonal planning during spring was essential for sustaining communities and storing food for the coming months.

In modern times, humans continue to respond to spring through agriculture, gardening, and environmental management. Scientific observation of seasonal changes informs planting schedules, fisheries, conservation efforts, and ecological research. Even with technology and climate control, the cues of increasing daylight, warming temperatures, and water availability remain central to human planning and activity. Spring still dictates when many foods are planted, when animals are moved or bred, and when ecosystems are monitored for changes.

Across history, spring has been a critical period for human survival and development. From following emerging resources as hunter-gatherers, to planting and managing crops in early and later agricultural societies, to modern environmental and agricultural practices, humans have adapted their lives to the rhythms of the season. Spring is not just a change in weather—it is a signal that life is renewing and that preparation, observation, and action are essential.



Spring Holidays

Spring is a season of renewal, growth, and reflection, and cultures around the world mark this time with a variety of holidays and celebrations. Some holidays honor natural cycles, others commemorate historical events, and still others focus on family, community, or personal values. Spring holidays often overlap with the changes in daylight, warming temperatures, and the emergence of new life, connecting human culture to the rhythms of the natural world.

Many spring celebrations, like the vernal equinox and related festivals, focus on the balance of day and night, the start of the growing season, and the renewal of life. Other well-known holidays have religious or cultural roots, often emphasizing rebirth, purification, or community gatherings. Celebrations may include symbolic foods, seasonal decorations, rituals, and gatherings that reflect local customs and beliefs. Festivals can be observed at different times depending on the lunar or solar calendar, as well as regional practices.

Some holidays focus on human achievements, learning, or appreciation. Pi Day, celebrated on March 14th, highlights mathematics and curiosity. Star Wars Day, on May 4th, celebrates a beloved cultural phenomenon with a playful nod to words and dates. Earth Day, observed on April 22nd, encourages awareness of environmental protection and stewardship, while Arbor Day emphasizes tree planting and the care of natural resources. These holidays remind us that spring is not only a time of natural growth but also of human responsibility and creativity.

Spring is also a time to honor family and community. Mothers Day is celebrated in many countries during spring, though the dates vary: some countries mark it in May, while others observe it in March or April. Memorial Day, observed in the United States on the last Monday in May, provides an opportunity to remember and honor those who have died in military service. Both holidays reflect the values of care, remembrance, and connection, linking personal and civic life to the season.

Whether tied to nature, religion, science, or culture, spring holidays share a common theme: they recognize transitions, renewal, and growth. Observing these celebrations around the world offers a glimpse into how humans experience and honor the season, reinforcing the connections between the cycles of the Earth, our communities, and our lives. In exploring these holidays, we see that spring is not only a time for new life in nature but also a season for reflection, gratitude, and shared human experience.

List of Spring Holidays

April Fool's Day: April 1st

Arbor Day: April 25th

Ascension of Baha'u'llah: May 29th

Baba Marta Day: March 1st

Buddha's Birthday: varies based on location, year, and calendar used; usually in April or May

Cinco de Mayo, Lag BaOmer: May 5th

Declaration of the Bab: May 23rd

Earth Day: April 22nd

Easter: the first Sunday after the first full moon on or after the spring equinox

Eid al-Adha: 10th-13th days of Dhu al-Hijja, the twelfth month of the Islamic calendar (varies in the Gregorian calendar)

Eid al-Fitr: 1st-3rd days of Shawwal, the tenth month of the Islamic calendar

Eid al-Ghadir: the 18th day of Dhu Al-Hijjah of the Islamic calendar

Fallas (Valencia): March 15th-19th

Feast of Annunciation: March 25

Feast of Corpus Christi: June 4th

Freedom Day (South Africa): April 27th

Groundhog Day, Candlemas: February 2nd

Haru no Higan: from 3 days before the spring equinox to 3 days after

Hinamatsuri: March 3rd

Hola Mohalla: March 4th

Holi: the Full Moon (Purnima) in the Hindu month of Phalgun

Imbolc, Tu B'Shevat: February 1st

Khmer New Year, Angkor Wat Night Festival: April 13th or 14th

Lunar New Year, Têt: begins with the new moon between January 21st and February 20th; lasts several days (7-16, depending)

Magha Puja (Sangha) Day: the first full moon day of the Buddhist month Magh

Mahavir Jayanti: March 31st

Martyrdom of Guru Arjan Dev Sahib: June 16th

May Day, Beltaine, Vesak, Fête du Travail (Labor Day, France): May 1st

Memorial Day (USA): last Monday of May
Mother's Day: second Sunday in May (in the USA; other countries are different)

Parinirvana, Maha Shivaratri: February 15

Passover: the 15th-21st days of the Hebrew month of Nisan

Pi Day: March 14th

Purim: the 14th day of the Hebrew month Adar

Ramadan: the 9th month of the Islamic calendar

Ramakrishna Jayanti: the 2nd day of the waning moon phase of the Hindu month of Phalgun

Rama Navami: the 9th day of the Hindu month of Caitra

Ridván: begins on the 13th of Jalál of the Bahá'í calendar, lasts 12 days

Sechseläuten: the third Monday in April

Shavuot: the 6th and 7th of the Hebrew month of Sivan

Songkran: April 13th

Spring Equinox, Ostara, Nowruz, Shunbun no Hi: around March 21st

St. Patrick's Day: March 17

Star Wars Day: May 4th

Theravada New Year: the three days after the first full moon in April

Trujillo Spring Festival: end of September to beginning of October (spring in the southern hemisphere)

Vaisakhi: April 14th

Valborg: April 30th

Valentine's Day: February 14th

Vasant Panchami: February 23rd

Victoria Day (Canada): Second-to-last Monday in May

Walpurgis Night: April 30th-May 1st

Yom HaShoah: the 27th of the Hebrew month Nisan

Spring Holidays Calendar: 2026

February

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Imbolc Tu B'Shevat	2 Groundhog Day Candlemas	3	4	5	6	7
8	9	10	11	12	13	14 Valentine's Day
15 Parinirvana Maha Shivaratri	16	17 Lunar New Year Mardi Gras	18 Ramadan Lunar New Year Ash Wednesday Lent	19 Ramadan Lunar New Year Lent	20 Ramadan Lunar New Year Lent	21 Ramadan Lunar New Year Lent
22 Ramadan Lunar New Year Lent	23 Ramadan Lunar New Year Lent Vasant Panchami	24 Ramadan Lent	25 Ramadan Lent	26 Ramadan Lent	27 Ramadan Lent	28 Ramadan Lent

March

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Baba Marta Day Ramadan Lent	2 Ramadan Lent Purim	3 Holi Hinamatsuri Ramadan Lent Purim Magha Puja (Sangha) Day	4 Holi Ramadan Lent Hola Mohalla	5 Ramadan Lent	6 Ramadan Lent	7 Ramadan Lent
8 Ramadan Lent	9 Ramadan Lent	10 Ramadan Lent	11 Ramadan Lent	12 Ramadan Lent	13 Ramadan Lent	14 Pi Day Ramadan Lent
15 Ramadan Fallas Lent Ramakrishna Jayanti	16 Ramadan Fallas Lent	17 Ramadan St. Patrick's Fallas Lent Haru no Higan	18 Ramadan Fallas Lent Haru no Higan	19 Ramadan Fallas Lent Haru no Higan	20 Eid al-Fitr Spring Equinox Ramadan Lent Haru no Higan	21 Eid al- Fitr Lent Haru no Higan
22 Eid al- Fitr Lent Haru no Higan	23 Lent Haru no Higan	24 Lent	25 Lent Feast of Annuciation	26 Lent Rama Navami	27 Lent	28 Lent
29 Palm Sunday Lent	30 Semana Santa Lent	31 Semana Santa Lent Mahavir Jayanti				

Spring Holidays Calendar: 2026

April

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Passover April Fool's Semana Santa Lent	2 Passover Semana Santa Lent	3 Passover Semana Santa	4 Passover Semana Santa
5 Passover Easter	6 Passover	7 Passover	8 Passover	9	10	11
12	13 Khmer New Year Songkran Yom HaShoah	14 Khmer New Year Vaisakhi Yom HaShoah	15	16 Theravada New Year	17 Theravada New Year	18 Theravada New Year
19	20 Sechseläuten	21 Ridván	22 Earth Day Ridván	23 Ridván	24 Ridván	25 Arbor Day Ridván
26 Ridván	27 Freedom Day Ridván	28 Ridván	29 Ridván	30 Valborg Walpurgis Night Ridván		

May

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 May Day Vesak Ridván	2 Ridván
3	4 Star Wars Day	5 Cinco de Mayo Lag BaOmer	6	7	8	9
10 Mother's Day	11	12	13	14 Feast of the Ascension	15	16
17	18 Victoria Day	19	20	21	22 Shavuot	23 Declaration of the Bab Shavuot
24 Pentecost	25 Memorial Day	26 Eid al- Adha	27 Eid al- Adha	28	29 Ascension of Baha'u'llah	30

Spring Holidays Calendar

February

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

March

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Spring Holidays Calendar

April

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

May

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Suggested Reading

(All links on this page are affiliate links; I earn a small commission at no cost to you)

Picture Books and Coffee-Table Books: lots of pictures, fun for everyone

Title	Author	Genre
<u>Pop-Up Farm</u>	Lizzie Cope	Board Book
<u>Spring is Here: A Bear and Mole Story</u>	Will Hillenbrand	Fiction
<u>Worm Weather</u>	Jean Taft	Fiction
<u>When Weather Talks</u>	Muna Bright	Fiction
<u>My First Plant Book</u>	Nicole Apelian	Nonfiction
<u>Everything Spring</u>	Jill Esbaum	Nonfiction
<u>Goodbye Winter, Hello Spring</u>	Kenard Pak	Fiction
<u>Kid's Herb Book</u>	Lesley Tierra	Nonfiction
<u>Tell Me More About Ramadan</u>	Bachar Karroum	Fiction
<u>What is Têt?</u>	Wendy Pham	Nonfiction
<u>Celebrate Chinese New Year</u>	Carolyn Otto	Nonfiction
<u>Rupert's Tales</u>	Kyrja	Fiction
<u>Ostara</u>	Grani Hulda	Nonfiction
<u>Celebrate Passover</u>	Deborah Heiligman	Nonfiction
<u>Why Do We Celebrate HOLI</u>	Anitha Rathod	Nonfiction
<u>It's That Time of Year! Holi is Here!</u>	Vanessa Kapadia	Nonfiction
<u>Children's Intro to Beltane: An Illustrated Guide</u>	Liam Carew	Nonfiction
<u>Meet March</u>	April Martin	Fiction
<u>Meet April</u>	April Martin	Fiction
<u>Meet May</u>	April Martin	Fiction
<u>The Wall</u>	Eve Bunting	Fiction
<u>Celebrate Cinco de Mayo</u>	Carolyn Otto	Nonfiction
<u>More Than Enough</u>	April Halprin Wayland	Fiction
<u>The Gift of Ramadan</u>	Rabiah York Lumbard	Fiction
<u>All Things About Eid al-Adha</u>	Mohamed Al Chinak	Nonfiction

Suggested Reading

(All links on this page are affiliate links; I earn a small commission at no cost to you)

Early Reader Books

Title	Author	Genre
<u>Pete the Cat and the Easter Basket Bandit</u>	James Dean	Fiction
<u>Uni Brings Spring</u>	Amy Rosenthal	Fiction
<u>I Like Bugs</u>	Margaret Brown	Fiction
<u>Misty the Cloud: The Thing About Spring</u>	Dylan Dreyer	Fiction
<u>I Spy an Egg in a Nest</u>	Jean Marzollo	Nonfiction
<u>Spring is Here!: A Story About Seeds</u>	Joan Holub	Fiction
<u>Bradford Street Buddies: Springtime Blossoms</u>	Jerdine Nolan	Fiction

Chapter Books

Title	Author	Genre
<u>Orris and Timble: The Beginning</u>	Kate DiCamillo	Fiction
<u>The Princess and the Fox</u>	A.M. Luzzader	Fiction
<u>Enchanted Mist</u>	Linda Chapman	Fiction
<u>Eliza and the Flower Fairies</u>	Megan McDonald	Fiction
<u>Herb Fairies</u>	Kimberly Gallagher	Fiction
<u>Land of the Spring Dragon</u>	Tracey West	Fiction
<u>Chick-Napped!</u>	Carolyn Keene	Fiction
<u>Heartwood Hotel: Better Together</u>	Kallie George	Fiction
<u>Mouse Trax</u>	M.H. Dixon	Fiction
<u>The Chinese New Year Mystery</u>	Carolyn Keene	Fiction
<u>Bunny Double, We're in Trouble!</u>	Dan Gutman	Fiction
<u>Leprechaun in Late Winter</u>	Mary Pop Osborne	Fiction
<u>Emmaline and the Bunny</u>	Katherine Hannigan	Fiction
<u>The Secret Garden</u>	Frances Hodgson Burnett	Fiction

Recipes

Spring Equinox

- Bota mochi
- Samanu

May Day

- Bannocks
- Goat Cheese

Ramadan

- Lentil Soup
- Flatbread

Passover

- Matzah
- Tahini Potato Patties

Holi

- Gujiya
- Thandai

Lunar New Year

- Deep-Fried Mantou
- Longevity Noodles

Easter

- Tora Pascualina
- Baked Ham

Buddha's Birthday

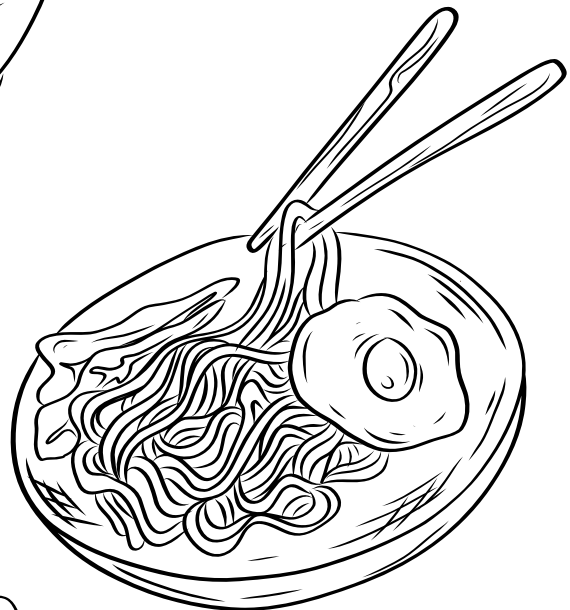
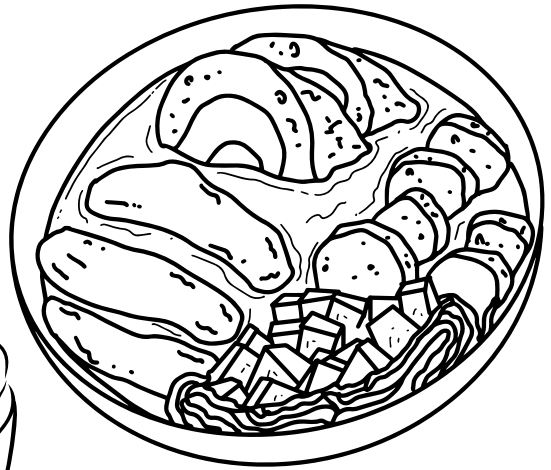
- Buddha's Feast
- Buddha's Delight

Cinco de Mayo

- Rajas Gorditas
- Enchiladas

Trujillo Spring Festival

- Garlic Shrimp
- Seco de Carne



Spring Equinox

Across cultures, the spring or vernal equinox has long been associated with balance, renewal, and the return of life after winter. As daylight increases and the natural world awakens, many societies have marked this moment with festivals, reflections, and celebrations tied to fertility, ancestors, and new beginnings.

In parts of Europe, the equinox is associated with Ostara or Eostara, a festival linked to Germanic traditions and later adopted by modern Pagan and Wiccan communities. Although historical records are limited, Ostara is often connected with themes of fertility, rebirth, and balance. Common symbols include eggs, flowers, seeds, and hares, all representing new life. Today, Ostara is celebrated primarily by modern Pagans through nature walks, seasonal altars, symbolic foods, and activities such as decorating eggs or planting seeds.

In Japan, the equinox is observed through two closely related traditions: Haru no Higan and Shunbun no Hi. Haru no Higan is a Buddhist observance that spans the seven-day period surrounding the vernal equinox—three days before, the day of the equinox, and three days after. During this time, families reflect on balance and impermanence and honor their ancestors by visiting graves, cleaning burial sites, and offering prayers. A traditional food associated with Haru no Higan is bota mochi, a sweet rice cake coated in red bean paste.

At the center of this week is Shunbun no Hi, the vernal equinox day itself, which is a national public holiday in Japan. Historically, Shunbun no Hi was a Shinto ceremony known as Shunki kōreisai, connected to imperial ancestor worship. After World War II, it was secularized and redefined as a day to appreciate nature and living things. Today, it is observed broadly by the Japanese population, often through quiet family activities, visits to graves, and enjoying seasonal foods, blending cultural tradition with modern life.

One of the most widespread equinox celebrations is Nowruz, the Persian New Year. With roots in ancient Zoroastrianism and Mithraism, Nowruz has been celebrated for more than 3,000 years. It marks both the new year and the arrival of spring and is observed in Iran, Central Asia, parts of the Middle East, and by diaspora communities worldwide. Preparations include thorough house cleaning, visiting family, and setting a Haft-Sin table displaying symbolic items. A traditional and widely eaten food during Nowruz is samanu, a sweet pudding made from wheat germ that represents abundance and renewal.

Together, these equinox traditions reflect how different cultures have used the turning of the year to express shared human themes: balance, remembrance, renewal, and hope. Though the practices vary, each celebration ties human life closely to the rhythms of the natural world and the promise of spring.

A banner with the word "NOWRUZ" in bold, outlined letters. The banner is flanked by stylized flowers and a rainbow arc at the bottom.



May Day

May Day, celebrated on May 1st, marks the height of spring and the transition toward summer in many parts of the Northern Hemisphere. Closely tied to seasonal cycles of growth, fertility, and warmth, May Day has been observed for centuries across Europe in both agricultural and cultural traditions. While modern celebrations vary widely, the core themes of abundance, renewal, and community remain central.

In much of Europe, May Day developed as a seasonal agricultural celebration welcoming longer days and the rapid growth of crops and pasture. As farming societies became more established, May 1st came to mark a turning point in the agricultural year, when livestock were moved to summer grazing lands and planting was well underway. One of the most enduring symbols of May Day is the maypole, around which people dance, weaving ribbons in patterns that symbolize cooperation, fertility, and the intertwining of life. Flower crowns, garlands, and decorations made from greenery are also common, reflecting the abundance of spring growth.

Foods associated with May Day traditionally highlight fresh dairy products and early seasonal ingredients. Milk, butter, cheese, and cream were widely enjoyed, especially as livestock moved to richer summer pastures. Breads, cakes, and pastries—often sweetened with honey—were common, along with fresh herbs and greens. In some regions, special May Day cakes or flower-decorated breads were prepared to mark the occasion.

Beltaine (also spelled Beltane) has its origins in ancient Celtic cultures, particularly in Ireland, Scotland, and parts of Britain. Celebrated on May 1st, Beltaine marked the beginning of summer in the Celtic calendar. It was a time associated with fertility, protection, and the strengthening of life forces in people, animals, and crops. One of the most important elements of Beltaine was fire. Large bonfires were lit, and people and livestock were believed to gain protection and good fortune by passing near or between the flames. Fire symbolized purification, warmth, and the growing power of the sun.

Traditional Beltaine foods reflected the pastoral lifestyle of Celtic societies. Dairy products played a major role, along with oats, butter, and simple grain-based dishes. Bannocks, oatcakes, and other flatbreads were commonly prepared. Seasonal herbs were often included, and shared meals reinforced community bonds at a time when cooperation was essential for summer farming and herding.

Today, May Day is celebrated in many countries as a cultural festival, labor holiday, or seasonal observance, while Beltaine is observed primarily by modern Pagan and Celtic-inspired communities. Despite changes over time, both celebrations continue to reflect humanity's long-standing connection to the rhythms of nature and the joy of spring reaching its fullest expression.



Ramadan

Ramadan is the ninth month of the Islamic lunar calendar and is observed by Muslims around the world as a time of fasting, reflection, and community. Because the Islamic calendar is lunar, Ramadan begins about 10–11 days earlier each year on the Gregorian calendar. The month starts with the sighting of the new crescent moon and lasts 29 or 30 days, depending on lunar observation. As a result, Ramadan can occur during any season over time, meaning fasting may take place during long summer days or short winter ones, depending on the year and location.

The origins of Ramadan lie in Islamic tradition, commemorating the period when the first verses of the Qur'an were revealed to the Prophet Muhammad. During Ramadan, adult Muslims who are able fast from dawn (fajr) until sunset (maghrib), abstaining from food, drink, and other physical needs during daylight hours. Fasting is one of the Five Pillars of Islam and is understood not only as physical restraint but as a practice of self-discipline, empathy for those in need, and spiritual growth. Children, the elderly, travelers, pregnant or nursing individuals, and those who are ill may be exempt or may fast in modified ways.

Daily life during Ramadan often shifts to accommodate the fast. The pre-dawn meal, called suhoor, is eaten early in the morning, while the fast is traditionally broken at sunset with iftar. Many Muslims break the fast with dates and water, following longstanding custom, before sharing a larger meal with family or community. Foods enjoyed at iftar vary widely by region and culture, including lentil soups, flatbreads, rice dishes, stews, sweets soaked in syrup, and fried pastries. Despite regional differences, hospitality and shared meals are central features of the month.

Ramadan concludes with Eid al-Fitr, the “Festival of the Breaking of the Fast.” Eid al-Fitr begins with communal prayers, often held outdoors or in large gathering spaces, followed by visits with family and friends. Special foods and sweets are prepared, gifts are exchanged (especially for children), and acts of charity are emphasized. A required charitable donation, known as zakat al-fitr, is given so that all members of the community can participate in the celebration.

Today, Ramadan and Eid al-Fitr are observed across the Middle East, Africa, Asia, Europe, and the Americas, reflecting the global presence and cultural diversity of Muslim communities worldwide.



Holi

Holi is a spring festival celebrated primarily in India and Nepal, as well as by Hindu communities around the world. Often called the “Festival of Colors,” Holi marks the arrival of spring, the end of winter, and a time of renewal, joy, and social harmony. Unlike holidays tied to a fixed calendar date, Holi is based on the Hindu lunisolar calendar and usually falls in late February or March, near the full moon.

The origins of Holi are rooted in Hindu tradition and mythology, though the festival likely predates many written texts. One of the most well-known stories associated with Holi is the legend of Prahlad and Holika, which symbolizes the triumph of good over evil. In this story, Prahlad’s devotion and righteousness protect him from harm, while Holika—who represents arrogance and misuse of power—is destroyed. Because of this legend, many Holi celebrations begin with a bonfire on Holika Dahan, the night before the main festival. The fire represents the burning away of negativity, pride, and harmful influences as communities prepare for a fresh start.

The most recognizable aspect of Holi is the throwing of colored powders, called gula, and colored water. On the main day of the festival, people gather outdoors to joyfully toss colors at one another, often accompanied by music, dancing, and laughter. During Holi, social boundaries are temporarily relaxed: people of different ages, backgrounds, and social roles celebrate together, emphasizing equality and shared humanity. Forgiveness and reconciliation are also important themes, and Holi is often seen as a time to mend relationships and let go of past conflicts.

Food plays a significant role in Holi celebrations. Many traditional sweets are prepared, including gujiya (a stuffed pastry), laddu, and jalebi. Savory snacks are also common, and in some regions a special drink called thandai—made with milk, spices, and nuts—is shared. These foods reflect the abundance and celebration associated with the coming growing season.

Today, Holi is celebrated not only in South Asia but also in communities across Europe, North America, Africa, and the Caribbean. In many places, public Holi events blend traditional practices with modern music and multicultural participation. Across time and place, Holi remains a vivid celebration of spring’s arrival, emphasizing renewal, joy, and the colorful connections between people and the natural world.



Passover

Passover, known in Hebrew as *Pesach*, is one of the most important festivals in Judaism. It commemorates the Exodus: the biblical story of the Israelites' liberation from slavery in ancient Egypt. According to Jewish tradition, God delivered the Israelites after a series of plagues, culminating in the final plague during which Israelite homes were "passed over," giving the holiday its name. Passover emphasizes themes of freedom, remembrance, gratitude, and responsibility.

The origins of Passover are found in the Hebrew Bible, particularly in the book of *Exodus*. The festival marks the moment when the Israelites, led by Moses, left Egypt in haste after the pharaoh finally agreed to free them. Because they departed so quickly, their bread did not have time to rise—an event remembered through the eating of matzah, an unleavened flatbread. Over time, Passover became both a historical remembrance and a ritual reenactment, connecting each generation to the experience of liberation.

Passover begins on the 15th day of the Hebrew month of Nisan, which usually falls in March or April. The holiday lasts seven or eight days.

The seder is a ceremonial meal held on the first night or two of Passover. During the seder, families and communities follow a structured order (*seder* means "order") outlined in a text called the Haggadah. The Haggadah guides participants through the retelling of the exodus story using symbolic foods, songs, questions, and discussions. A key feature is the involvement of children, who traditionally ask the Four Questions about why this night is different from all others.

Food plays a central role in Passover observance. Matzah is eaten throughout the holiday to remember the hurried departure from Egypt. During the seder, symbolic foods are placed on a seder plate, including bitter herbs (*maror*) to represent the bitterness of slavery, a sweet paste called *charoset* symbolizing mortar used by enslaved Israelites, and other items representing sacrifice, renewal, and mourning. Throughout Passover, foods containing leavened grains (*chametz*) are avoided, reinforcing the themes of simplicity and remembrance.

Passover is observed by Jewish communities worldwide, including in Israel, North America, Europe, North Africa, and the Middle East. Observance ranges from strictly traditional to more cultural or symbolic, depending on the family or community. Common customs include thoroughly cleaning the home to remove chametz, hosting or attending seders, reading the haggadah, and reflecting on themes of freedom and justice. Many people also connect Passover's story to modern struggles for freedom, making it a holiday with enduring relevance.



Lunar New Year

Lunar New Year is one of the most widely celebrated holidays in the world, observed by millions of people across East and Southeast Asia and in communities around the globe. Instead of being based on the Gregorian calendar, Lunar New Year follows the lunar calendar, meaning the date shifts each year but usually falls between late January and mid-February. The holiday marks the beginning of a new year and the arrival of spring, symbolizing fresh starts, good fortune, and time spent with family.

The holiday has deep roots dating back thousands of years in ancient China. One famous legend tells of Nian, a fearsome beast that would appear at the end of each year to attack villagers. To protect themselves, people used bright lights, loud noises, and the color red—traditions that continue today in the form of fireworks, lanterns, and red decorations. Over time, Lunar New Year became a celebration tied closely to agriculture, honoring ancestors and welcoming prosperity for the year ahead.

While often called Chinese New Year, the holiday is celebrated by many cultures, each with its own customs and names. In China, it is known as the Spring Festival. In Vietnam, it is Tết. In South Korea, it is Seollal. In Tibet, it is Losar. All share a focus on family gatherings, honoring elders, and wishing for health and good luck.

Lunar New Year celebrations usually last for 15 days, beginning with family reunions and ending with the Lantern Festival. One of the most important traditions is the reunion dinner on New Year's Eve, often featuring symbolic foods. Dumplings may represent wealth, rice cakes can symbolize growth, and long noodles stand for a long life. Homes are decorated with red banners, paper cuttings, and symbols of the Chinese zodiac animal for the new year. Children often receive red envelopes filled with money as blessings for the year ahead.

Parades and performances fill the streets with excitement. Dragon and lion dances, drums, and fireworks are believed to chase away bad spirits and bring joy to the community. Many people also visit temples to pray for good fortune.

Even far from Asia, Lunar New Year is celebrated in cities worldwide, including San Francisco, Toronto, Sydney, and London, where large festivals highlight cultural traditions. Whether people celebrate with a huge parade or a quiet meal at home, Lunar New Year is a joyful time that honors heritage, strengthens community, and looks forward with hope to the year to come.



Easter

Easter is the central festival of the Christian calendar, commemorating the resurrection of Jesus following his crucifixion. Rather than being a single day, Easter is part of a long springtime season of observances that trace events from repentance and preparation through death, resurrection, and the growth of the early Christian community. The timing of Easter is based on a lunar calendar: it is celebrated on the first Sunday after the first full moon following the spring equinox, which is why its date changes each year.

The season begins with Ash Wednesday, which marks the start of Lent, a 40-day period of reflection, fasting, and spiritual preparation (not counting Sundays). Ashes placed on the forehead symbolize mortality and repentance. During Lent, many Christians practice abstinence or give up certain foods or habits, while others add charitable acts or additional prayers. Lent reflects ancient practices of preparing new converts for baptism and encouraging spiritual renewal.

As Easter approaches, Palm Sunday commemorates Jesus's entry into Jerusalem, traditionally marked by palm branches and processions. The following week is known as Holy Week. In many parts of the world—especially in Spain and Latin America—this period is observed as Semana Santa, featuring elaborate public processions, music, and religious art. Holy Thursday recalls the Last Supper, emphasizing themes of service and community. Good Friday marks the crucifixion and is often observed with fasting, solemn services, and reenactments of the Passion.

Easter Sunday celebrates the resurrection and is associated with joyful worship, music, and communal meals. Traditional foods vary widely but often include eggs, lamb, sweet breads, and festive desserts. Eggs, long a symbol of new life, became associated with Easter partly because they were forbidden during Lent and then reintroduced. Many of these symbols came from earlier pagan practices and later influenced secular Easter traditions, such as egg decorating, egg hunts, candy, and the Easter Bunny, which emphasize springtime renewal rather than religious meaning.

Several important observances follow Easter. The Feast of the Annunciation, often celebrated in late March, commemorates the announcement of Jesus's birth to Mary and reinforces themes of new beginnings. The Feast of the Ascension, observed 40 days after Easter, marks Jesus's ascent into heaven. Pentecost, celebrated 50 days after Easter, commemorates the descent of the Holy Spirit and is often described as the "birthday of the Church." The season concludes with Trinity Sunday, which focuses on core Christian theology.

Today, Easter and its related observances are celebrated by Christian communities worldwide, with practices shaped by local culture, history, and tradition, blending religious meaning with seasonal celebration.



Buddha's Birthday

Buddha's Birthday, also known as Vesak, Visakha Bucha, or Buddha Purnima, celebrates the birth of Siddhartha Gautama, who later became the Buddha. In many Buddhist traditions, this festival also commemorates the Buddha's enlightenment and death, bringing key moments of his life together into a single observance centered on reflection, compassion, and renewal. Because Buddhism spread across many regions over centuries, Buddha's Birthday is celebrated in a wide variety of ways around the world.

The origins of the holiday lie in early Buddhist communities of ancient India, where the Buddha is believed to have been born in the 5th century BCE in what is now Nepal. His teachings emphasized the reduction of suffering through ethical living, meditation, and wisdom. Over time, as Buddhism spread across Asia, local cultures shaped how his birthday was remembered and celebrated, blending shared religious values with regional customs.

The timing of Buddha's Birthday depends on the lunar calendar and therefore varies by country and tradition. It generally falls in April, May, or early June, often on the full moon. In many East and Southeast Asian countries, it is observed on the full moon of the lunar month known as Vesak. Because lunar calendars differ slightly, the exact date may vary even between neighboring countries.

Common practices during Buddha's Birthday focus on mindfulness, generosity, and respect for life. Many Buddhists visit temples to meditate, chant, and listen to teachings. A widespread custom is bathing the Buddha, in which water is gently poured over a statue of the infant Buddha, symbolizing purification and the washing away of harmful thoughts. Acts of kindness, such as giving to the poor, freeing captive animals, or volunteering, are also emphasized. In some places, people decorate temples with lanterns and flowers, symbolizing enlightenment and impermanence.

Foods enjoyed during Buddha's Birthday are often simple and vegetarian, reflecting Buddhist values of non-harm. Rice dishes, vegetables, fruit, sweets made from rice or beans, and tea are common offerings. In some cultures, food is prepared for monks or shared communally, reinforcing generosity and gratitude. While specific dishes vary by region, moderation and mindfulness are key themes.

Today, Buddha's Birthday is celebrated in Sri Lanka, Thailand, Myanmar, Cambodia, Laos, China, Korea, Japan, Vietnam, Nepal, and India, as well as by Buddhist communities worldwide. In some countries, such as Sri Lanka and South Korea, it is a public holiday marked by festivals and lantern displays. Elsewhere, it is observed quietly in temples and homes. Across cultures, the celebration reflects Buddhism's core teachings while also highlighting how springtime renewal connects spiritual reflection with the natural world.

BUDDHA'S BIRTHDAY



Cinco de Mayo

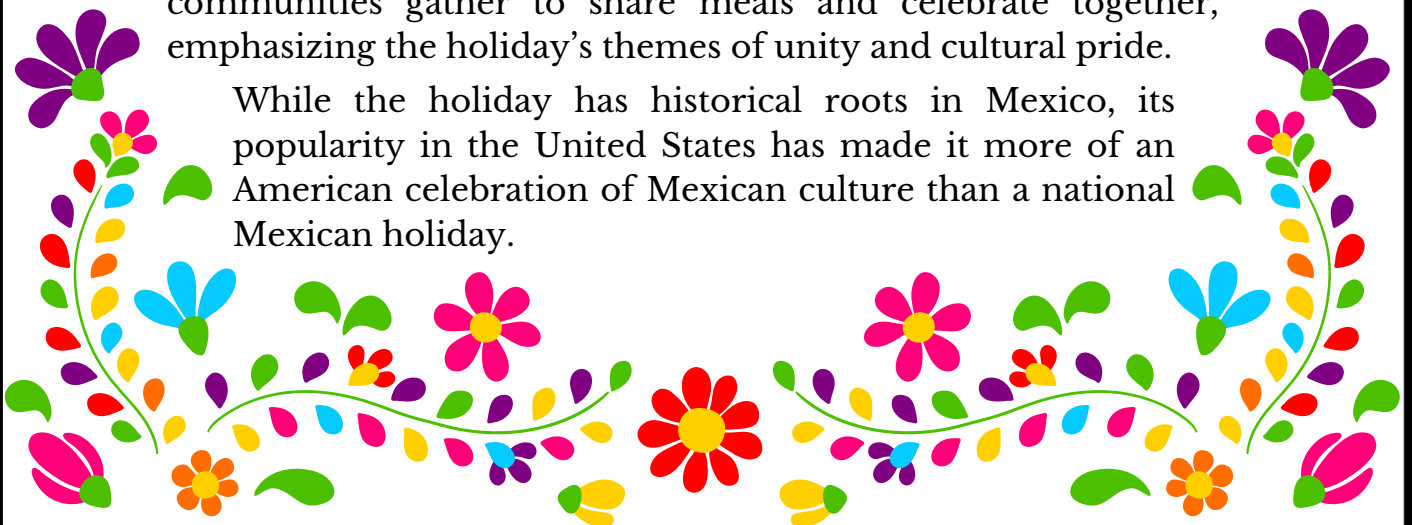
Cinco de Mayo, which means “Fifth of May” in Spanish, is a holiday that commemorates a specific moment in Mexican history. It marks the Mexican army’s surprising victory over the French forces at the Battle of Puebla on May 5, 1862. Although Mexico had fewer soldiers and less equipment, the Mexican forces, led by General Ignacio Zaragoza, defeated the better-equipped French army. This victory became a symbol of courage and resistance against foreign domination. It is important to note that Cinco de Mayo is not Mexico’s Independence Day; that holiday is celebrated on September 16 and marks the start of the fight for independence from Spain.

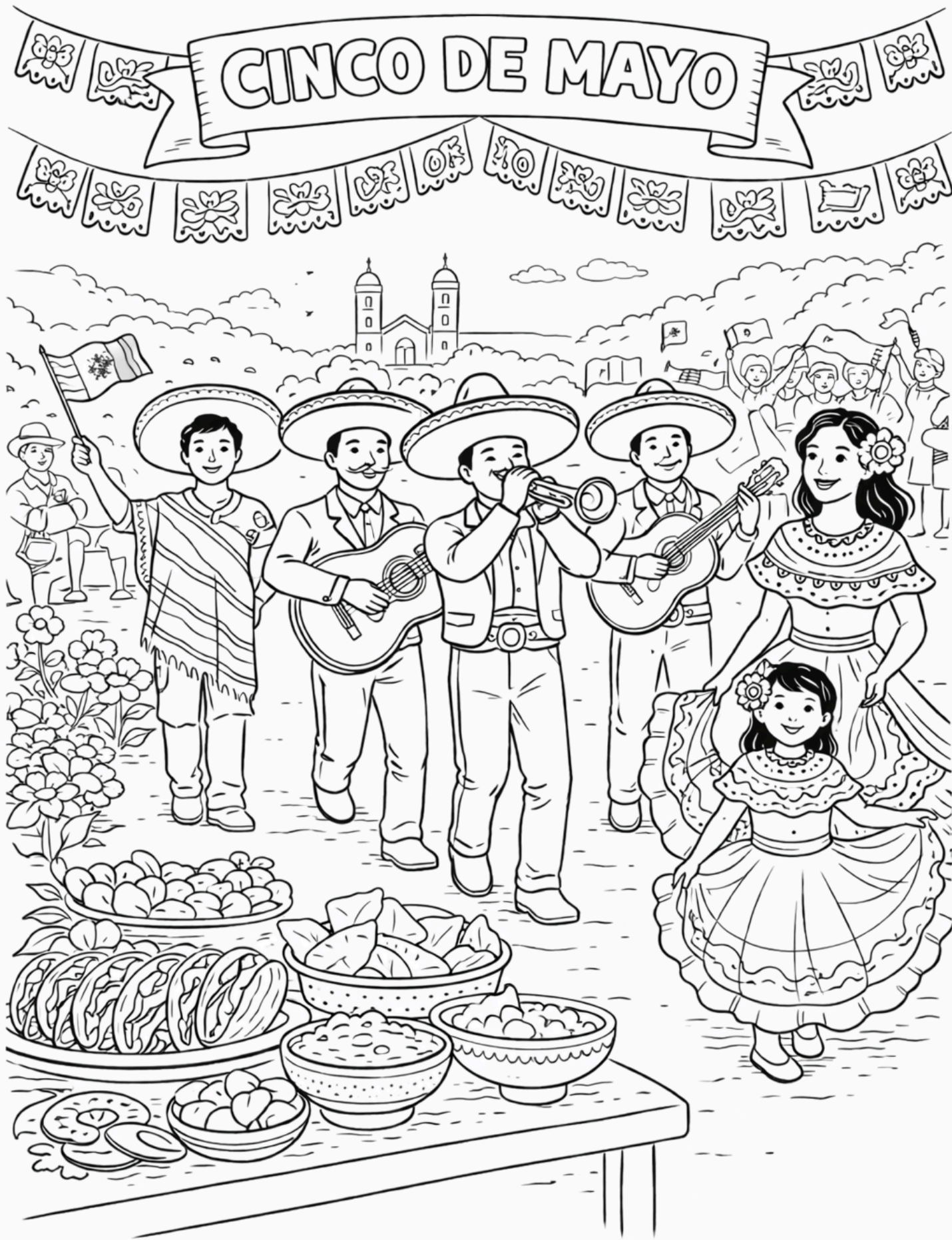
The ways people celebrate Cinco de Mayo have evolved over time. In Mexico, the holiday is observed most enthusiastically in the state of Puebla, where the battle took place. Festivities often include reenactments of the battle, parades, and speeches honoring Mexican heritage. Music and dance are also important parts of the celebration, with traditional mariachi bands and folk dances adding color and energy to the day. Outside of Puebla, however, Cinco de Mayo is generally not widely observed in Mexico and is considered a relatively minor holiday.

In the United States, Cinco de Mayo has become a popular celebration of Mexican culture and heritage, especially in areas with large Mexican-American communities. Schools, cities, and organizations often host parades, festivals, and cultural events. People enjoy traditional foods, listen to Mexican music, and sometimes wear costumes or decorations featuring the colors of the Mexican flag: green, white, and red.

Food plays a central role in Cinco de Mayo celebrations. Common dishes include tacos, enchiladas, tamales, guacamole, and chiles rellenos. Sweet treats such as churros and tres leches cake are also enjoyed. Families and communities gather to share meals and celebrate together, emphasizing the holiday’s themes of unity and cultural pride.

While the holiday has historical roots in Mexico, its popularity in the United States has made it more of an American celebration of Mexican culture than a national Mexican holiday.





St. Patrick's Day

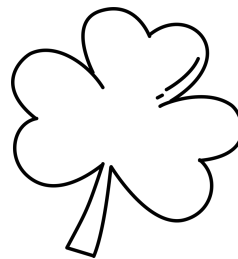
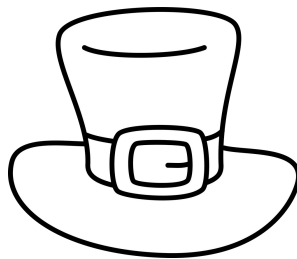
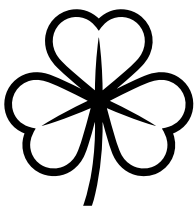
St. Patrick's Day is celebrated on March 17 each year to honor Saint Patrick, the patron saint of Ireland. Patrick was a Christian missionary who lived in the fifth century. According to historical accounts and legend, he worked to convert Ireland to Christianity. This often involved forcefully removing or persecuting the existing pagan population, whom the stories later symbolically describe as "snakes." While the literal snakes were never real, the term represented the pagan people and their religious practices. This complex history shows that the holiday has roots in both religious devotion and conflict.

Over time, St. Patrick's Day evolved into a celebration of Irish culture as well as a remembrance of Patrick himself. Traditional practices in Ireland originally included religious services, prayers, and reflections on Patrick's work. As centuries passed, the holiday became associated with parades, music, dancing, and festivals, particularly in the 18th and 19th centuries, when Irish communities began emphasizing their national identity.

Today, St. Patrick's Day is celebrated around the world, especially in countries with large Irish communities. People commonly wear green clothing and accessories, and children are often told they will get pinched if they forget, which has become a playful tradition. Shamrocks, which Patrick used to explain the Christian Trinity, are widely displayed, and leprechauns—a type of mischievous fairy from Irish folklore—have become symbols of the holiday. Cities like Dublin, New York, Boston, and Chicago hold parades, music festivals, and cultural events. In some places, rivers and fountains are even dyed green to mark the celebration.

Food is an important part of St. Patrick's Day, with traditional dishes including corned beef and cabbage, Irish stew, shepherd's pie, and soda bread. Sweet treats, like green-colored desserts or raisin soda bread, are also common. Drinks such as tea, cider, or stout, including Guinness, are enjoyed by adults.

Today, St. Patrick's Day blends history, religion, and folklore. It honors Saint Patrick's life and work, acknowledges Ireland's past, and celebrates Irish culture worldwide. From parades and music to shamrocks, leprechauns, and green attire, the holiday continues to be a lively and colorful way to explore Ireland's history and traditions.



Happy St. Patrick's Day!



Trujillo Spring Festival

The Trujillo Spring Festival (Festival Internacional de la Primavera) is an annual celebration held in Trujillo, Peru, a city known as “La Ciudad de la Eterna Primavera” (the City of Eternal Spring) because of its mild and beautiful spring-like climate. The festival honors this season of renewal and community spirit with weeks of events, parades, and cultural activities.

The origins of the festival date back to 1950, when the Lions Club of Trujillo organized the first celebration to showcase the city’s springtime beauty and bring people together in joy and color. Since then, it has been held every year, growing into one of Peru’s most representative cultural festivals and earning Trujillo the formal title of “Capital of Spring” by government decree.

The timing of the festival takes advantage of the Southern Hemisphere’s spring season: it generally runs from late September through early October each year, with the main events often taking place during the last week of September.

One of the festival’s most famous customs is the Gran Corso Primavera (Grand Spring Parade), a colorful procession through Trujillo’s streets featuring carros alegóricos (floats), music, dance groups, and beauty queens from Peru and other countries. International bastoneras (baton twirlers), marching bands, and cultural troupes add energy and visual spectacle to the parade.

Another key custom is the coronation of the Queen of Spring, who represents the festival’s spirit of beauty and community pride. Throughout the celebration, there are competitions, performances, and cultural showcases, including traditional dances and presentations highlighting Peru’s rich heritage.

Food is also an important part of the Trujillo Spring Festival experience. The city’s northern Peruvian cuisine shines during the festival, with favorites like ceviche (fresh fish marinated in citrus), shambar (a hearty bean and wheat soup), cabrito (slow-cooked young goat), and regional desserts such as alfajores and frejol colado available from local markets, restaurants, and street vendors.

Today, the festival continues as a major cultural and tourist event that brings residents and visitors together in celebration of spring, tradition, and community. It includes not just parades and music, but also cultural exhibitions, sports events, and charitable activities that reflect Trujillo’s vibrant identity and festive spirit.





Writing Prompts

Use the writing pages toward the back of this unit study to help you plan and write your response to one or more of these writing prompts. Be sure to check out the grading rubrics, too!

1. Compare spring in your region to spring in the Arctic, the desert, or a rainforest—what would life be like for plants, animals, or people there?
2. Write a “day in the life” story of an animal emerging from winter dormancy.
3. Describe how a seed grows into a plant in spring, from the seed’s perspective.
4. Research and write about how humans historically adapted to spring.
5. Write a short story from the perspective of a hunter-gatherer or early farmer.
6. Predict and write about what spring will look like in your backyard in 30 days.
7. Write a short poem inspired by the sights, sounds, or smells of spring.
8. Create a diary entry as if you are the Nile river in Egypt, flooding and receding to signal planting season.
9. Write as if you are an explorer in a distant biome (tundra, savanna, or rainforest) during spring—what do you see, hear, and smell?
10. Compare spring and winter in terms of changes in daylight, temperature, and animal activity.
11. Write a persuasive essay about why spring is better or worse than other seasons, or why spring is better in a particular location than elsewhere.
12. Research and write about your favorite spring holiday, festival, or ritual.
13. Create a new spring holiday, festival, or ritual and write about it. Where, when, and why did it begin? What are common foods, music, clothes, music, and activities?
14. Write a persuasive essay on why spring is the best season for observing nature, using examples from plants, animals, and weather.
15. Write a short story from the perspective of a migratory bird returning to its summer home—describe the landscape, other animals, and challenges it encounters.
16. Persuade a local community group to plant more flowers, trees, or native plants in spring to support wildlife.
17. Write a persuasive essay to convince a friend that studying spring in your region can teach important lessons about ecology and climate.
18. Create a “spring dialogue” between two organisms about the changes happening around them.

Crafts

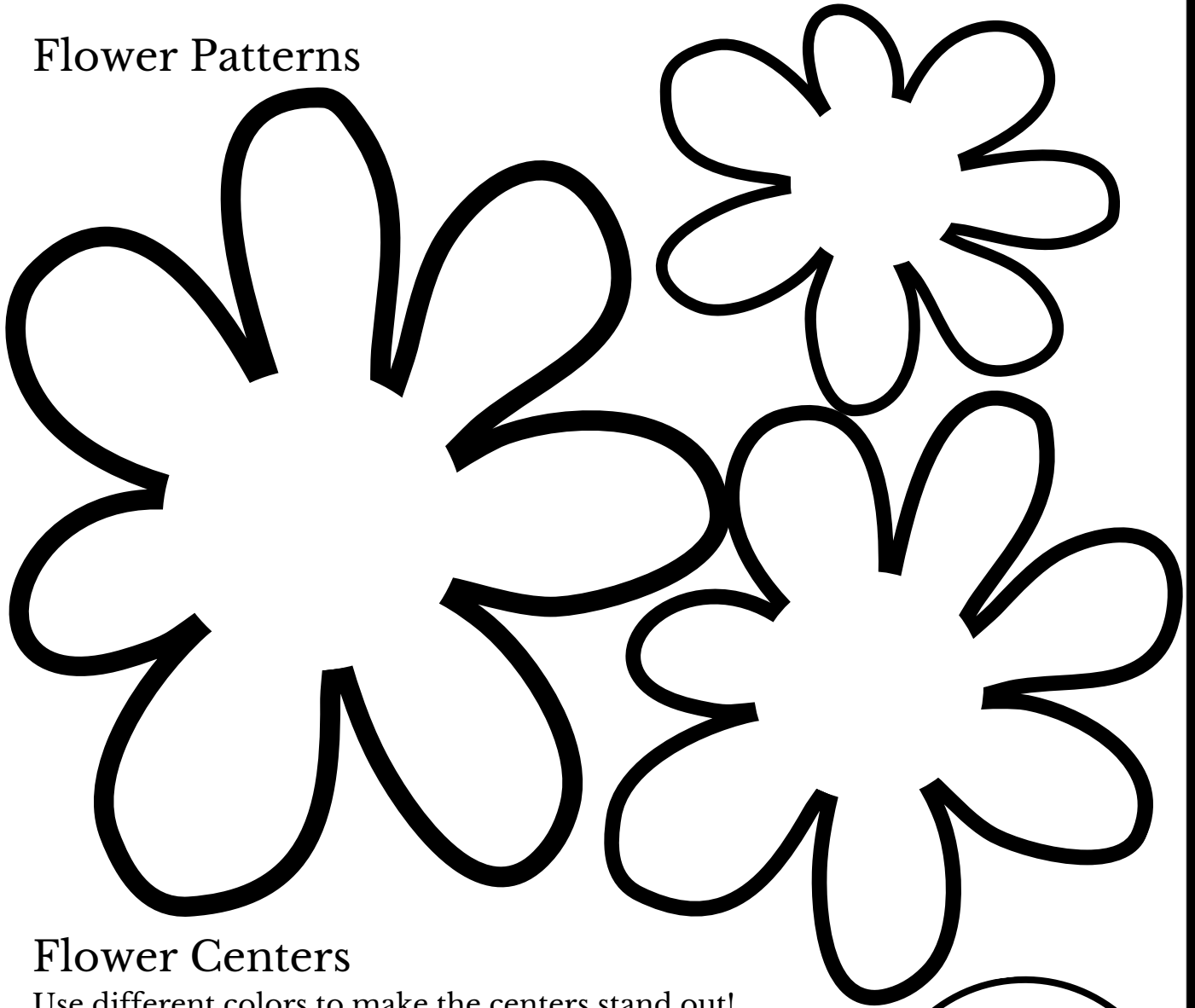
Choose one or more of the following crafts to further explore the spring season:

1. **Leaf rubbings or bark prints from trees that are budding.** Place a blank sheet of paper on the bark of a tree or on a leaf (on a table). Rub the side of a peeled crayon to capture the different textures.
2. **Make paper flowers or 3D blooms to illustrate plant growth cycles.** Using paper, cardstock, or recycled materials, create flowers that show stages from bud to bloom, labeling or explaining which parts appear first and why.
3. **Create a migration map with cutouts of birds or animals.** Research a migratory species and map its seasonal movement, noting where it winters, breeds, and stops along the way, and how spring conditions trigger migration.
4. **Build clay or pipe-cleaner models of eggs, seeds, or bulbs.** Using different colors to indicate different parts, visualize how life is protected and stored over winter and how spring conditions allow growth to begin.
5. **Make a water cycle mobile showing how snowmelt and rain feed ecosystems in spring.** Construct a hanging model that shows evaporation, condensation, precipitation, and runoff, with a focus on how spring meltwater supports plants and animals.
6. **Craft a “spring journal” cover with drawings of plants and animals.** Design a personalized cover for a nature or observation journal, incorporating species or environments studied during the unit.
7. **Paint or collage scenes of different spring biomes around the world.** Using paint, magazine cutouts, or mixed media, depict how spring looks different in places like deserts, rainforests, grasslands, and temperate forests.
8. **Design simple dioramas showing tundra, desert, rainforest, and temperate spring landscapes.** Use a small shoebox or tabletop diorama to show climate, plants, and animals interacting during spring in different environments.
9. **Make a “seasonal wheel” showing how sunlight and daylight change over the year.** Create a rotating wheel that visually represents solstices, equinoxes, and changing day length, helping connect spring to Earth’s movement.
10. **Decorate jars as mini-greenhouses for seed sprouts or moss gardens.** Design and observe a closed or semi-closed ecosystem, watching how moisture, light, and warmth support growth.

May Day Basket

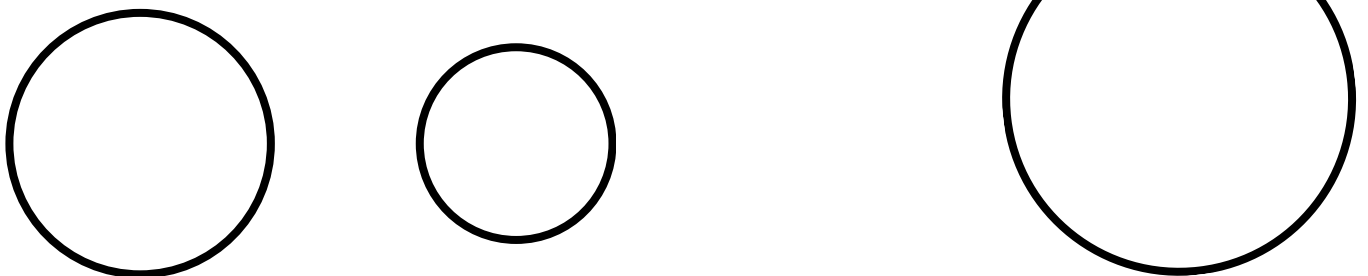
Print the patterns out on colorful construction paper to make a paper basket and flowers. Alternatively, you can print the flowers out on white paper and then color them before you cut them out. Or, use a (affiliate link) [basket-making kit](#) to make an actual basket and fill it with cut flowers from your garden. Deliver to a neighbor or friend to brighten their day!

Flower Patterns



Flower Centers

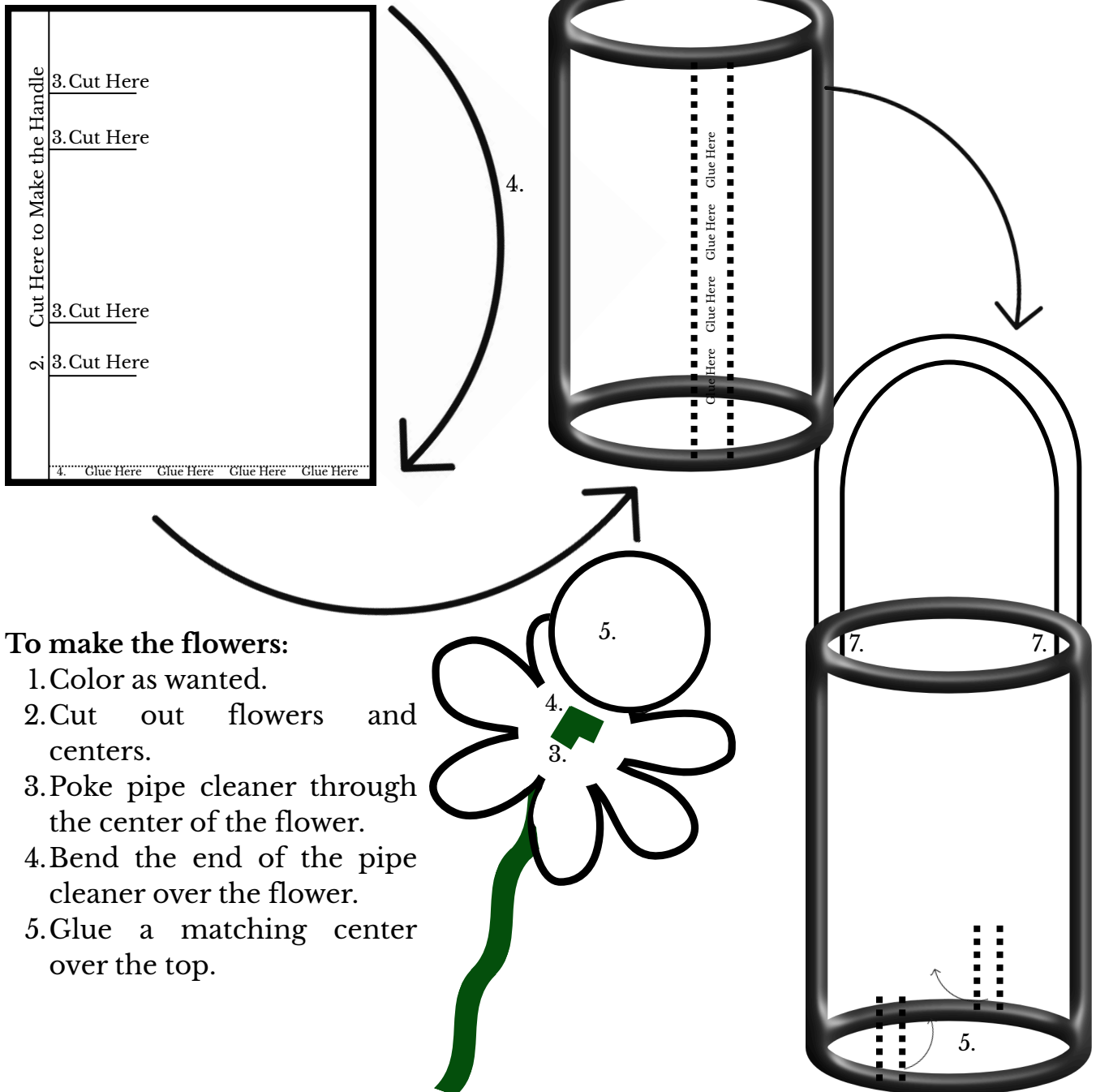
Use different colors to make the centers stand out!





May Day Basket

1. Color as wanted.
2. Cut along a long edge, 1" from the edge, to make the handle. Set this strip aside.
3. Cut in at each of the shorter lines, 2" slits.
4. Bring the two shorter sides together and glue, to make a tube. Let dry.
5. Fold in the two narrower tabs.
6. Fold in the wider tab with the glue line, then the last tab.
7. Glue the handle onto the basket.



To make the flowers:

1. Color as wanted.
2. Cut out flowers and centers.
3. Poke pipe cleaner through the center of the flower.
4. Bend the end of the pipe cleaner over the flower.
5. Glue a matching center over the top.

Games

Access your copies of my spring-themed mysteries and games:

- [The Case of the Silent Spring](#)
- [The Dormant Garden](#)
- [The Missing Carrots](#)
- [Spring Garden Game](#)

[Wildcraft](#) is an excellent introduction to herbalism.

[Habitat](#) is a great look at ecosystems and food chains.

To explore birds and nesting, play [Wingspan](#)!



Vocabulary

Cut out the vocabulary words on this page and glue them next to the definitions on the next four pages (each column is on a separate page).

Adaptation	Endosymbiosis	Industrial revolution	Renew
Alternate leaves	Environment	Insulation	Reproduce
Angiosperm	Equator	Latitude	Rhizome
Annual	Equinox	Macronutrients	Salinity
Astronomical	Equilibrium	Migration	Savanna
Atmosphere	Evolution	Monocot	Sepal
Axial tilt	Fertilizer	Mutation	Solstice
Biome	Frost	Nematode	Spore
Climate	Genetic	Opposite leaves	Stomata
Composite flower	Germination	Organism	Succulent
Cotyledon	Grassland	Parallel	Temperate
Desert	Gymnosperm	Perennial	Temperature
Dicot	Habitat	Phloem	Tepal
Dioecious	Heliotropism	Photosynthesis	Territory
Dormant	Hemisphere	Pollination	Torpor
Drainage	Herbivore	Population	Tropical
Ecology	Hibernation	Predator	Vascular
Ecosystem	Humidity	Prickle	Xylem

the average course or condition of the weather at a place usually over a period of years as exhibited by temperature, wind velocity, and precipitation

completing the life cycle in one growing season or single year

defining seasons according to the movement of the earth around the sun as opposed to according to weather

the rate and extent of water movement in the soil

the totality or pattern of relations between organisms and their environment

a flower head made up of many smaller flowers (florets); disc flowers surrounded by petal-looking ray flowers

the whole mass of air surrounding the earth

the first leaf or one of the first pair or whorl of leaves developed by the embryo of a seed plant

not actively growing but protected from the environment

modification of an organism or its parts that makes it more fit for existence under the conditions of its environment

the complex of a community of organisms and its environment functioning as a unit

the angle between the planet's rotational axis and its orbital axis

a major ecological community type (such as tropical rainforest, grassland, or desert)

having male reproductive organs in one individual and female in another

any of a class of vascular plants that have male and female reproductive structures enclosed in a flower, that have seeds which arise from ovules contained in the ovaries, and that produce dry or fleshy fruits after double fertilization

an area of land receiving less than 25 cm of precipitation annually

leaves connecting to the stem one at a time

an angiospermous plant (such as a deciduous tree or broad-leaved herb) having an embryo with two cotyledons, leaves with typically reticulate venation, and floral organs usually arranged in multiples of four or five

circle of the earth or a celestial body that is everywhere equally distant from the two poles and divides the surface into the northern and southern hemispheres

passing the winter in a torpid state, in which body temperature, metabolism, heartbeat, and respiration are lowered to nearly imperceptible levels

day and night are equal in length everywhere on earth

any of a class of vascular plants that produce seeds not enclosed in an ovary, possess separate male and female reproductive parts, and include the conifers, cycadophytes, gnetophytes, and ginkgo

in which one organism dwells within another, benefitting both organisms

a covering of minute ice crystals on a cold surface

an ecological community in which the characteristic plants are grasses

an animal evolved to eat only plants

a substance (such as manure or a chemical mixture) used to increase the nutrients present in soil

half of a spherical or roughly spherical body (such as a planet)

the amount of water vapor in the air

when conditions are uniform and constant

the beginning of growth or development

the diurnal or seasonal motion of plant parts in response to the direction of the sun

the place or environment where a plant or animal naturally or normally lives and grows

the factors and influences that affect the growth, health, progress, functioning, etc., of something

inherited from one's parents through DNA or RNA

cumulative inherited change in a population of organisms through time leading to the appearance of new forms

- _____ material used to prevent transfer of heat
- _____ a sharp, pointed emergence arising from the epidermis or cortex of a plant
- _____ angular distance north or south from the earth's equator measured through 90 degrees
- _____ the total of individuals occupying an area or making up a whole
- _____ a relatively permanent change in hereditary material that involves either a change in chromosome structure or number
- _____ persisting for several years, usually with new herbaceous growth
- _____ passing, usually periodically, from one region or climate to another for feeding or breeding
- _____ an animal that survives by eating other animals
- _____ a rapid major change in an economy (as in England in the late 18th century) marked by the general introduction of power-driven machinery
- _____ a living being
- _____ any of a phylum of elongated cylindrical worms parasitic in animals or plants or free-living in soil or water
- _____ a chemical element or substance (such as potassium or protein) that is essential in relatively large amounts to the growth and health of a living organism
- _____ the transfer of pollen from an anther to the stigma in angiosperms or from the microsporangium to the micropyle in gymnosperms
- _____ leaves appear across one another at the same node
- _____ a chiefly herbaceous angiospermous plant (such as a grass, lily, or palm) having an embryo with a single cotyledon, usually parallel-veined leaves, and floral organs arranged in multiples of three
- _____ formation of carbohydrates from carbon dioxide and a source of hydrogen in the chlorophyll-containing cells exposed to light
- _____ extending in the same direction, everywhere equidistant, and not meeting
- _____ part of the vascular system of plants which moves sugar from the leaves to the roots

_____ a state of decreased physiological activity in an animal, usually marked by a reduced body temperature and metabolic rate

_____ one of the modified leaves comprising a calyx

_____ degree of hotness or coldness measured on a definite scale

_____ a somewhat elongated, usually horizontal, subterranean plant stem that is often thickened by deposits of reserve food material, produces shoots above and roots below, and is distinguished from a true root in possessing buds, nodes, and usually scalelike leaves

_____ either of the two points on the ecliptic at which its distance from the celestial equator is greatest and which is reached by the sun each year about June 21 and December 21

_____ to make like new; restore to freshness, vigor, or perfection

_____ a primitive usually unicellular often environmentally resistant dormant or reproductive body produced by plants, fungi, and some microorganisms and capable of development into a new individual either directly or after fusion with another spore

_____ part of the vascular system of plants which moves water from the roots up to the leaves

_____ having fleshy tissues that conserve moisture

_____ used for sepals and petals of similar forms and not easily differentiated

_____ to produce new individuals of the same kind by a sexual or asexual process

_____ vessels for distributing liquid throughout an organism

_____ one of the minute openings in the epidermis of a plant organ (such as a leaf) through which gaseous interchange takes place

_____ an area often including a nesting or denning site and a variable foraging range that is occupied and defended by an animal or group of animals

_____ a mixed woodland-grassland biome and ecosystem characterized by the trees being sufficiently widely spaced

_____ a region or climate that is frost-free with temperatures high enough to support year-round plant growth given sufficient moisture

_____ how much salt is present (in air, water, or another substance)

_____ having a moderate climate which especially lacks extremes in temperature

Science Experiments

There are three important parts of any science experiment. Controlling variables, multiple trials, and recording results.

A variable is anything that can be different. Temperature, pressure, humidity, sun or light, the presence of different bacteria, viruses, or fungi, sound, moisture, and mineral and nutrient content are all different variables that could impact an experiment. Some variables are difficult for most people to control for (I don't know about you, but I don't have an environment in which I can control temperature, pressure, or humidity).

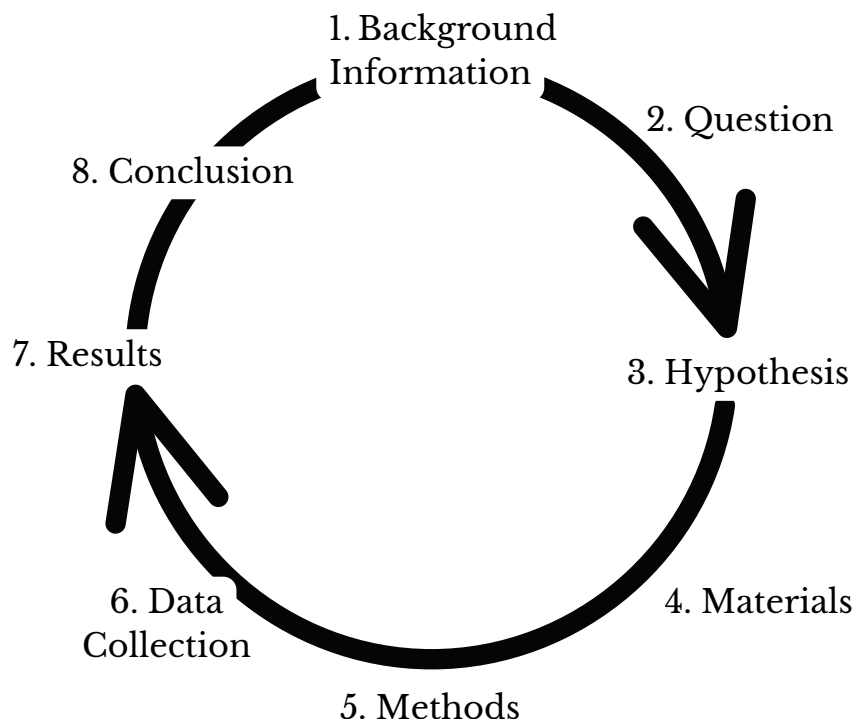
As you conduct your experiments, make sure as many variables as possible are kept constant, except for one. The variable you are changing is what you are testing.

This is where multiple trials come in. They can help to mitigate variations in your environment and human error. One way to have multiple trials is to have a larger sample size. A big experiment conducted by a scientist in a lab might have several thousand samples. That's beyond the scope of what we can do, but we can have at least a few samples.

Finally, recording your results makes it so you can share the information with others and they can reproduce your work (which adds to the multiple trials aspect).

Use the following pages to help you record your experiment, processes, data, and results. You can use extra sheets if needed.

The Scientific Method is a process that repeats over and over again, with the conclusion of one experiment leading to the background information of the next experiment.



Experiment Title: _____

Background Information: _____

Question: _____

Hypothesis: _____

Materials (specifics): _____

Methods (specifics): _____

[illegible][illegible]

Writing Assignments

Use one or more of the writing prompts or pick any holiday, culture, spring event, related historical event, or anything else related and write about it. You can write an informative paper about your chosen topic, a short story, or maybe a persuasive paper expressing an opinion.

Creative Writing Brainstorming

The next page is for brainstorming and developing elements of a story. Use it to help get your ideas organized and fleshed out before writing your story.

Writing an Outline

Use an outline to help you organize your thoughts before writing an informative or persuasive essay.

1. Pick a topic
2. Choose your three main points.
3. These three main points go under the Introduction a., b., and c. and under the Conclusion a., b., and c.
4. Also write these three main points at 2., 3., and 4.
5. Find three supporting points for each of your main points, and place them at a., b., and c. under 2., 3., and 4.

Using Your Outline

Each of your main number points (1., 2., 3., 4., and 5.) is a separate paragraph. Each of your subpoints (a., b., and c.) should be one sentence. When you are finished fleshing out your outline into your full essay, each paragraph will be 3-5 sentences long.

Creative Writing Brainstorming

Character Descriptions: _____

Setting Description: _____

Challenge or Problem: _____

Resolution: _____

Essay Topic: _____

1. Introduction

a. _____

b. _____

c. _____

2. _____

a. _____

b. _____

c. _____

3. _____

a. _____

b. _____

c. _____

4. _____

a. _____

b. _____

c. _____

5. Conclusion

a. _____

b. _____

c. _____

Subjects Covered

Throughout this unit study, your student has covered:

Math: Cooking, Time, Puzzles, Games

Science: Physics, Ecology, Evolution, Experiments, Vocabulary,
Botany

Reading: Subject-Matter in Science, History, and Cultures,
Suggested Reading

Writing: Suggested Activities, Writing Prompts, Writing
Assignments

History: Spring Through the Ages, History of Holidays

Geography: Holidays

Art: Coloring Pages, Crafts

P.E.: Science of Spring Activities

Grading Rubrics

What your child produces will depend on their capabilities. Use this as a rough guide, but don't be afraid to modify it to meet your child's needs.

Early Elementary

- Very basic; write 1-2 sentences OR
- Dictate a more complicated story/essay to parents that you, the parent, write down
- Correct mechanics with your child.

Mechanics: spelling, punctuation, and grammar

Late Elementary				
	Length	Organization	Mechanics	Content
4 points	3+ paragraphs; 4-5 sentences/ paragraph	There is an introduction, body, and conclusion	Up to 2 mechanical errors	The topic is clearly defined and there are 3 or more supporting points
3 points	3 paragraphs, 3 sentences/ paragraph	There is a clear beginning, middle, and end	3-5 mechanical errors	The topic is defined and there are 2-3 supporting points
2 points	2 paragraphs, 2-3 sentences/ paragraph	There is some organization of supporting points	6-10 mechanical errors	The topic is loosely defined and there are 1-2 supporting points
1 point	1 paragraph, 3 sentences/ paragraph	There is little organization	More than 10 mechanical errors	The topic is barely defined with little or no supporting points

Grading Rubric

What your child produces will depend on their capabilities. Use this as a rough guide, but don't be afraid to modify it to meet your child's needs.

Mechanics: spelling, punctuation, and grammar

Middle School					
	Length	Organization	Mechanics	Content	Style
4	5 paragraphs; 5 sentences/ paragraph	There is an introduction, 3 body paragraphs, and conclusion	Up to 2 mechanical errors	The topic is clearly defined and there are 3 or more supporting points	Clear voice and style, consistent throughout
3	4 paragraphs, 4 sentences/ paragraph	There is a clear beginning, middle, and end	3-5 mechanical errors	The topic is defined and there are 2-3 supporting points	Voice and style is mostly consistent
2	3 paragraphs, 3 sentences/ paragraph	There is some organization of supporting points	6-10 mechanical errors	The topic is loosely defined and there are 1-2 supporting points	Voice or style is somewhat present
1	2 paragraphs, 3 sentences/ paragraph	There is little organization	More than 10 mechanical errors	The topic is barely defined with little or no supporting points	Voice and style are not developed

Grading Rubric

What your child produces will depend on their capabilities. Use this as a rough guide, but don't be afraid to modify it to meet your child's needs.

Mechanics: spelling, punctuation, and grammar

High School					
	Length	Organization	Mechanics	Content	Style
4	1-3 pages, 7+ paragraphs	There is an introduction, 5+ body paragraphs, and conclusion	Up to 2 mechanical errors	The topic is clearly defined and there are 5 or more main supporting points	Clear voice and style, consistent throughout
3	5 paragraphs, 5 sentences/paragraph	There is a clear beginning, middle, and end	3-5 mechanical errors	The topic is defined and there are 4 supporting points	Voice and style is mostly consistent
2	4 paragraphs, 4 sentences/paragraph	Supporting points are mostly organized into paragraphs	6-10 mechanical errors	The topic is loosely defined and there are 3 supporting points	Voice or style is somewhat consistent
1	3 paragraphs, 3 sentences/paragraph	There is some organization of supporting points	More than 10 mechanical errors	The topic is loosely defined and there are 1-2 supporting points	Voice or style is somewhat present

Flower Puzzle Answers

Keneilwe, Marius, Victor, Akiko, and Rosita each prefer a different one of the flowers covered on the previous pages. All needed information is contained within those paragraphs. Use the following clues to determine which flower each person prefers.

1. Victor and Akiko do not prefer bulbs.
2. Keneilwe and Marius prefer flowers with petals, sepals, and/or tepals in multiples of 3.
3. Akiko and Rosita enjoy smelling their favorite flowers.
4. Keneilwe's and Rosita's favorite flowers can natively be found in the Americas.
5. Victor, Marius, and Akiko's favorite flowers are native to Asia.
6. Victor's favorite has a composite head.
7. Akiko's favorite is a smaller flower on a smaller plant.

	Victor	Rosita	Keneilwe	Marius	Akiko
Lily	x	x	yes	x	x
Tulip	x	x	x	yes	x
Daffodil	x	x	x	x	x
Rose	x	yes	x	x	x
Lavender	x	x	x	x	yes
Sunflower	x	x	x	x	x
Daisy	yes	x	x	x	x
Marigold	x	x	x	x	x
Lilac	x	x	x	x	x

Vocabulary: Answers

(No need to print these pages)

Adaptation: modification of an organism or its parts that makes it more fit for existence under the conditions of its environment

Alternate leaves: leaves connecting to the stem one at a time

Angiosperm: any of a class of vascular plants that have male and female reproductive structures enclosed in a flower, that have seeds which arise from ovules contained in the ovaries, and that produce dry or fleshy fruits after double fertilization

Annual: completing the life cycle in one growing season or single year

Astronomical: defining seasons according to the movement of the earth around the sun as opposed to according to weather

Atmosphere: the whole mass of air surrounding the earth

Axial tilt: the angle between the planet's rotational axis and its orbital axis

Biome: a major ecological community type (such as tropical rainforest, grassland, or desert)

Climate: the average course or condition of the weather at a place usually over a period of years as exhibited by temperature, wind velocity, and precipitation

Composite flower: a flower head made up of many smaller flowers (florets); disc flowers surrounded by petal-looking ray flowers

Cotyledon: the first leaf or one of the first pair or whorl of leaves developed by the embryo of a seed plant

Desert: an area of land receiving less than 25 cm of precipitation annually

Dicot: dicotyledon, an angiospermous plant (such as a deciduous tree or broad-leaved herb) having an embryo with two cotyledons, leaves with typically reticulate venation, and floral organs usually arranged in multiples of four or five

Dioecious: having male reproductive organs in one individual and female in another

Dormant: not actively growing but protected from the environment

Drainage: the rate and extent of water movement in the soil

Ecology: the totality or pattern of relations between organisms and their environment

Ecosystem: the complex of a community of organisms and its environment functioning as a unit

Endosymbiosis: in which one organism dwells within another, benefitting both organisms

Environment: the factors and influences that affect the growth, health, progress, functioning, etc., of something

Equator: circle of the earth or a celestial body that is everywhere equally distant from the two poles and divides the surface into the northern and southern hemispheres

Equinox: day and night are equal in length everywhere on earth

Equilibrium: when conditions are uniform and constant

Evolution: cumulative inherited change in a population of organisms through time leading to the appearance of new forms

Fertilizer: a substance (such as manure or a chemical mixture) used to increase the nutrients present in soil

Frost: a covering of minute ice crystals on a cold surface

Genetic: inherited from one's parents through DNA or RNA

Germination: the beginning of growth or development

Grassland: an ecological community in which the characteristic plants are grasses

Gymnosperm: any of a class of vascular plants that produce seeds not enclosed in an ovary, possess separate male and female reproductive parts, and include the conifers, cycadophytes, gnetophytes, and ginkgo

Habitat: the place or environment where a plant or animal naturally or normally lives and grows

Heliotropism: the diurnal or seasonal motion of plant parts in response to the direction of the sun

Hemisphere: half of a spherical or roughly spherical body (such as a planet)

Herbivore: an animal evolved to eat only plants

Hibernation: passing the winter in a torpid state, in which body temperature, metabolism, heartbeat, and respiration are lowered to nearly imperceptible levels

Humidity: the amount of water vapor in the air

Industrial revolution: a rapid major change in an economy (as in England in the late 18th century) marked by the general introduction of power-driven machinery

Insulation: a material used to prevent transfer of heat

Latitude: angular distance north or south from the earth's equator measured through 90 degrees

Macronutrients: a chemical element or substance (such as potassium or protein) that is essential in relatively large amounts to the growth and health of a living organism

Migration: passing, usually periodically, from one region or climate to another for feeding or breeding

Monocot: monocotyledon, a chiefly herbaceous angiospermous plant (such as a grass, lily, or palm) having an embryo with a single cotyledon, usually parallel-veined leaves, and floral organs arranged in multiples of three

Mutation: a relatively permanent change in hereditary material that involves either a change in chromosome structure or number

Nematode: any of a phylum (Nematoda or Nemata) of elongated cylindrical worms parasitic in animals or plants or free-living in soil or water

Opposite leaves: leaves appear across one another at the same node

Organism: a living being

Parallel: extending in the same direction, everywhere equidistant, and not meeting

Perennial: persisting for several years, usually with new herbaceous growth

Phloem: part of the vascular system of plants which moves sugar from the leaves to the roots

Photosynthesis: formation of carbohydrates from carbon dioxide and a source of hydrogen in the chlorophyll-containing cells exposed to light

Pollination: the transfer of pollen from an anther to the stigma in angiosperms or from the microsporangium to the micropyle in gymnosperms

Population: the total of individuals occupying an area or making up a whole

Predator: an animal that survives by eating other animals

Prickle: a sharp, pointed emergence arising from the epidermis or cortex of a plant

Renew: to make like new; restore to freshness, vigor, or perfection

Reproduce: to produce new individuals of the same kind by a sexual or asexual process

Rhizome: a somewhat elongated, usually horizontal, subterranean plant stem that is often thickened by deposits of reserve food material, produces shoots above and roots below, and is distinguished from a true root in possessing buds, nodes, and usually scalelike leaves

Salinity: how much salt is present (in air, water, or another substance)

Savanna: a mixed woodland-grassland biome and ecosystem characterized by the trees being sufficiently widely spaced

Sepal: one of the modified leaves comprising a calyx

Solstice: either of the two points on the ecliptic at which its distance from the celestial equator is greatest and which is reached by the sun each year about June 21 and December 21

Spore: a primitive usually unicellular often environmentally resistant dormant or reproductive body produced by plants, fungi, and some microorganisms and capable of development into a new individual either directly or after fusion with another spore

Stomata: one of the minute openings in the epidermis of a plant organ (such as a leaf) through which gaseous interchange takes place

Succulent: having fleshy tissues that conserve moisture

Temperate: having a moderate climate which especially lacks extremes in temperature

Temperature: degree of hotness or coldness measured on a definite scale

Tepal: used for sepals and petals of similar forms and not easily differentiated

Territory: an area often including a nesting or denning site and a variable foraging range that is occupied and defended by an animal or group of animals

Torpor: a state of decreased physiological activity in an animal, usually marked by a reduced body temperature and metabolic rate

Tropical: a region or climate that is frost-free with temperatures high enough to support year-round plant growth given sufficient moisture

Vascular: vessels for distributing liquid throughout an organism

Xylem: part of the vascular system of plants which moves water from the roots up to the leaves