

STEM planner



STUDENT NAME:

STUDENT IDENTIFICATION

This Planner Belongs To:

Address: _____

City/Town: _____

State: _____ Zip Code: _____

School Name: _____

Phone: _____

Email: _____

Homeroom: _____

In Case of Emergency Notify:

Contact Name: _____

Contact Number: _____



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HOW TO USE YOUR PLANNER

To Keep Yourself on Track

Use the big calendar before each month to help you remember special days at school or home. Read about the STEM-related topic of the month. Doing so will introduce you to the types of questions that will be answered for you throughout the month, along with the STEMazing facts with which you will be presented.

Note to Parents/Guardians ...

We encourage you to assist your child in utilizing this STEM Student Planner to keep track of his or her daily assignments and activities. Cultivating good organizational skills is vital to a student's academic success. Be certain to initial the planner in the space provided on each right-hand page each evening after ensuring all daily tasks have been completed, and use this space to communicate with your child's teachers.

To help your child better understand the importance of science, technology, engineering, and math in both today's world and their own lives, routinely review each week's question and STEMazing fact. More information on all STEM-related topics featured throughout this planner can be found by visiting the website on each weekly layout.

Find help with subjects like math and English on the extra resource pages found in the back of your planner!

AUGUST 2024

A STEMazing fact!

In 1838, the first stereoscope was invented. A stereoscope is a headset that uses mirrors to combine two separate 2D images into one 3D image. This is the first example of virtual reality. The stereoscope led to the creation of a toy called the View-Master in 1939.

SCIENCE TECHNOLOGY ENGINEERING MATH

What is virtual reality?

Have you ever wanted to fly like a bird, or take steps inside your favorite video game? Thanks to virtual reality (VR), you can! VR is a way to create imaginary adventures using digital technology. Computer and gaming engineers and designers create fake 3D environments for people to use with a special headset. VR can be used in schools, science, video games, and more!

Words of the Week

1. am	11. sad
2. an	12. sap
3. as	13. gap
4. at	14. bag
5. rat	15. gag
6. sat	16. sag
7. cat	17. lag
8. bad	18. tag
9. mad	19. ban
10. pad	20. can

Guardian/Teacher Comments: GI = GUARDIAN'S INITIALS

GI: _____

T.S. GI: _____

I will see you at our parent-teacher conference!

Make sure an adult at home initials your planner every night to confirm your homework has been completed.

Note your spelling or vocabulary words here.

To View This Week's References, Visit: fi.edu/virtual-reality/history-of-virtual-reality

AUGUST 2024

Sunday 4

Monday 5 ❤️ **Do math worksheet.**

Tuesday 6 ★ *** Worksheet Due**

Wednesday 7

Thursday 8 *** Spelling Test!**

Friday 9 ▲

Saturday 10 **Soccer Game!**

Write down your homework, tests, and long-term projects on the day they are assigned by your teacher, and record the day they are due.

Circle the icon that most closely matches the day's weather.

In addition to teaching you about science, technology, engineering, and math, your **STEM Student Planner™** will help you be smart with your time. See how on these two pages!

Learn About Our STEMazing World!

Most of the time we take for granted all we owe to science, technology, engineering, and math. As a matter of fact, you might find it surprising where we would be without them! Just imagine a world with no computers, smart phones, medicines to make you feel better when you are sick, or even numbers!

Your STEM Student Planner is meant to help you learn more about these four subjects. Each one – science, technology, engineering, and math – is becoming more and more important not only to our world but to your own life too! It is wise to learn all you can about them.

You will notice your planner focuses on a different STEM-related topic each month. During each week of the month, the various sections listed below will teach you more about the featured topic:

- 1 Question of the Week**
Science, technology, engineering, and math are key to unlocking many of life's mysteries. In this section, you will find an answer to a question that pertains to the topic of the month.
- 2 STEM Designation(s)**
Here we list for you the STEM subjects—science, technology, engineering, and math—that are most closely related to the question of the week and the STEMazing fact that accompanies it. While this may sometimes be just one of the four, in many cases you will find they overlap. In such cases, several are listed.
- 3 STEMazing Fact**
This interesting and sometimes surprising fact ties in with the weekly question to provide you with yet more information relating to the topic of the month.
- 4 Weekly References**
Here you are provided with a website you may visit to learn more about the weekly question and fact. A QR code quickly takes readers to the source of the weekly question and fact. All sites were active when your planner was printed.

STEM and... art, \ärt\, noun

1. something that is created with imagination and skill that is beautiful or that expresses important ideas or feelings

AUGUST

2024



Art is all around us, and not just in the form of paintings, drawings, and sculptures. The way we experience objects, locations, products, and services is rooted in art. The chairs on which we sit, the smart phones in our hands, and the buildings we spend time inside would not exist without the art-influenced creativity of artistic designers. Art is in the talents of songwriters and musicians who craft songs we enjoy; it's in the directing and acting that brings movies and TV shows to life; and it's evident in every leap and turn of a ballet dancer's routine.

Many STEM careers revolve around the arts. Curators preserve and display beautiful historical and contemporary works of art for all to enjoy; medical illustrators create detailed images to help explain complex medical processes to the general public; and recreational therapists use music, crafts, and dance to help patients cope with mental, emotional, and physical problems.

Are you an artistic person? Do you enjoy being creative? Do you like coming up with new ideas to fulfill everyday needs? Maybe a STEM career focusing on art is in your future!

Did you know?

August is American Artist Appreciation Month. Regardless of the medium they use, artists enrich our lives through their creative design talents in many different ways. The work they create evokes emotion, enhances daily life, entertains, or fulfills practical needs. Take time to look around and appreciate how much of what you see was crafted by the mind of an artist.

⊗ Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	⊗
				1	2	3	
4	5	6	7	8	9	10	
11	12	13	14	15	16	17	
18	19	20	21	22	23	24	
25	26	27	28	29	30	31	

SOURCES:

merriam-webster.com
 innovationtoolbox.com.au
 searchsoa.techtarget.com
 businessdictionary.com
 creativityatwork.com

JULY
2024



A STEMazing fact!

The paint color ultramarine blue used to be made using a natural gem called Lapis Lazuli! In the late 1820s, France and Germany started making the pigment artificially by mixing china clay, sulfur, and sodium carbonate.

SCIENCE
MATH

GUARDIAN/TEACHER COMMENTS:
GI = GUARDIAN'S INITIALS

School Home

GI



School Home

GI



School Home

GI



School Home

GI



School Home

GI



What is paint made of?



Paint is made of three main things: pigment, binder, and solvent. The pigment gives paint its color. The binder holds the pigment together. The solvent gives paint its thin, liquid texture. Pigments are made out of materials that can be found in nature, or created by humans. Different pigments can be mixed together to create many colors!

Words of the Week

- | | |
|-----|-----|
| 1. | 11. |
| 2. | 12. |
| 3. | 13. |
| 4. | 14. |
| 5. | 15. |
| 6. | 16. |
| 7. | 17. |
| 8. | 18. |
| 9. | 19. |
| 10. | 20. |

Sunday 21

Monday 22

Tuesday 23

Wednesday 24

Thursday 25

Friday 26

Saturday 27



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To View This Week's References, Visit:
britannica.com/technology/ultramarine-pigment



STEM and... construction, \kən- strək-shən\, noun

1. the act or process of constructing; 2. the art, trade, or work of building



SEPTEMBER

2024



Construction is critical to the progress of a country and greatly impacts its people. Workers in this field put up buildings, demolish structures, dig trenches, perform excavations, and build and repair roads.

The construction industry makes it possible for the public to thrive. Business owners need offices from which they and their staff can work, people need homes in which to live, and children need schools to attend. We can also thank workers in the construction field for our water supply and sewage treatment systems. Try to imagine what your town would be like if none of that existed!

From the early stages when a project is first designed, to the moments the last brick is laid or the grounds are landscaped, there is cooperation involving many people to make it all happen. Professionals such as carpenters, electricians, contractors, civil engineers, and plumbers all have a hand in the different aspects of construction and work together, using the latest technologies to get the job done.

Such cooperation enables fully developed nations like the United States, Canada, Greece, and the United Kingdom to handle their ever-growing populations, and it also aids lesser developed areas such as Bangladesh, Ethiopia, and Haiti in raising their standards of living.

Did you know?

Labor Day began in Canada in 1872 when a parade was held to support a strike against the then 58-hour workweek. The first Labor Day celebration in the U.S. took place in 1882 in New York City's Union Square. It was held to gain support for reducing the average 12-hour workday to 8 hours. Ten thousand workers marched from City Hall to 42nd Street and then met their families for a picnic, concert, and speeches.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

SOURCES:

merriam-webster.com
thefreedictionary.com
ehow.com
huffingtonpost.com

hdr.undp.org/en/
dosomething.org

SEPTEMBER
2024



A STEMazing fact!

Did you know that skyscrapers sway? The tops of these buildings can move back and forth in small amounts. They can even move several feet in either direction, without causing damage! This is so skyscrapers can stand against the force of winds.

SCIENCE
TECHNOLOGY
ENGINEERING
MATH

GUARDIAN/TEACHER COMMENTS:
GI = GUARDIAN'S INITIALS

School Home

GI



School Home

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School Home

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School Home

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School Home

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Sunday 1

Monday 

2

Tuesday 

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Wednesday 

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Thursday 

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Friday 

6

Saturday ?



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What is a skyscraper?



If you have been to a city, you may have seen a skyscraper! A skyscraper is a tall building with many floors, or stories. The world's first skyscraper was built in Chicago in 1885. It was named the Home Insurance Building. This skyscraper was 10 stories or 138 feet tall. When it was being built, people feared the building would topple over. Builders had to take a break to make sure everyone was safe during construction. Now, some skyscrapers have more than 100 stories!

Words of the Week

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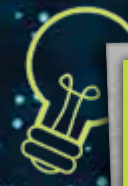
To View This Week's References, Visit:

science.howstuffworks.com/engineering/structural/skyscraper4.htm



STEM and... energy, \ e-nər-jē\, noun

usable power (as heat or electricity); also: the resources for producing such power



OCTOBER

2024



We use a lot of energy. It lights our homes. It powers equipment in our office buildings. We put it to work when we drive our vehicles, haul goods from place to place, and manufacture the products we buy. Energy is needed in every part of our lives!

The U.S. Energy Information Administration predicts that by the year 2040, the amount of energy people around the world use will increase by 56 percent. In America alone, energy use is doubling every 20 years. These are some big numbers!

All of this means we must use energy more wisely. We also need to keep exploring alternative or other, clean, renewable energy options. Renewable energy sources include the sun, wind, and water. They are plentiful and ongoing, and help us depend less on nonrenewable fossil fuels such as coal, oil, and natural gas. One day, these nonrenewable sources will be gone.

We are working now to prepare for this day. Science, technology, engineering, and math will help us develop sources that can provide us with the energy we need over and over, but we must do all we can to use less of it in the first place.

Did you know?

Americans use more energy than people who live in most other nations. The United States is home to only about five percent of the people who live on Earth. Yet its residents use some 23 percent—or almost one-quarter—of the world's energy. Schools teaching students in kindergarten through grade 12 spend over \$6 billion on energy use each year! October is National Energy Action Month. It is a time for us to start using energy in smarter ways.

⊗ Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	⊗
		1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31			

SOURCES:

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 encyclopedia.kids.net.au
 whitehouse.gov
 scientificamerican.com
 needtoknow.nas.edu

ecology.com
 eia.gov
 electricchoice.com



A STEMazing fact!

The tallest roller coaster in the world is Kingda Ka. It is located at Six Flags Great Adventure in New Jersey. Its tallest point reaches 456 feet high. It has a top speed of 128mph! Would you be brave enough to ride it?

**SCIENCE
TECHNOLOGY
ENGINEERING
MATH**

GUARDIAN/TEACHER COMMENTS:
GI = GUARDIAN'S INITIALS

School Home

GI



School Home

GI



School Home

GI



School Home

GI



School Home

GI



Sunday 29 SEPTEMBER

Monday



30



Tuesday 1 OCTOBER



1



Wednesday 2



2



Thursday 3



3



Friday 4



4



Saturday 5

How do roller coasters work?



A roller coaster is mainly powered by the force of gravity! True roller coasters are usually led to the top of the first and biggest hill of the coaster by a mechanical chain. Led by the chain, the roller coaster slowly clicks to the top of the hill. The roller coaster has the highest amount of energy stored at the top of the hill, because it will soon soar down. This is called potential energy. As the coaster speeds down the hill, it is driven by both gravity and moving energy, called kinetic energy.

Words of the Week

- 1. _____ 11. _____
- 2. _____ 12. _____
- 3. _____ 13. _____
- 4. _____ 14. _____
- 5. _____ 15. _____
- 6. _____ 16. _____
- 7. _____ 17. _____
- 8. _____ 18. _____
- 9. _____ 19. _____
- 10. _____ 20. _____

To View This Week's References, Visit:
<https://www.sixflags.com/greatadventure/attractions/kingda-ka>



Website references

These references were verified at the time of production, but changes or redirections may occur.

WEEK OF JULY 22ND

<https://www.britannica.com/technology/ultramarine-pigment>
<https://www.explainthatstuff.com/howpaintworks.html>

WEEK OF JULY 29TH

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WEEK OF AUG. 5TH

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WEEK OF AUG. 12TH

<https://kids.kiddle.co/Synesthesia>
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WEEK OF AUG. 19TH

<https://www.cmuse.org/most-unusual-music-instruments/>
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WEEK OF AUG. 26TH

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WEEK OF SEPT. 2ND

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WEEK OF SEPT. 9TH

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WEEK OF SEPT. 16TH

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WEEK OF SEPT. 23RD

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WEEK OF SEPT. 30TH

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WEEK OF OCT. 7TH

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WEEK OF OCT. 14TH

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WEEK OF OCT. 21ST

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WEEK OF OCT. 28TH

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WEEK OF NOV. 4TH

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WEEK OF NOV. 11TH

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WEEK OF NOV. 18TH

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WEEK OF DEC. 2ND

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WEEK OF DEC. 9TH

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WEEK OF DEC. 16TH

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WEEK OF DEC. 23RD

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WEEK OF DEC. 30TH

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WEEK OF JAN. 6TH

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WEEK OF JAN. 13TH

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WEEK OF JAN. 20TH

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WEEK OF JAN. 27TH

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WEEK OF FEB. 3RD

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WEEK OF FEB. 10TH

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WEEK OF FEB. 17TH

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WEEK OF MARCH 3RD

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WEEK OF MARCH 31ST

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WEEK OF APRIL 7TH

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WEEK OF APRIL 21ST

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WEEK OF APRIL 28TH

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WEEK OF MAY 5TH

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WEEK OF MAY 12TH

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WEEK OF MAY 19TH

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WEEK OF MAY 26TH

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WEEK OF JUNE 2ND

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WEEK OF JUNE 9TH

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WEEK OF JUNE 16TH

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PHOTO SOURCES

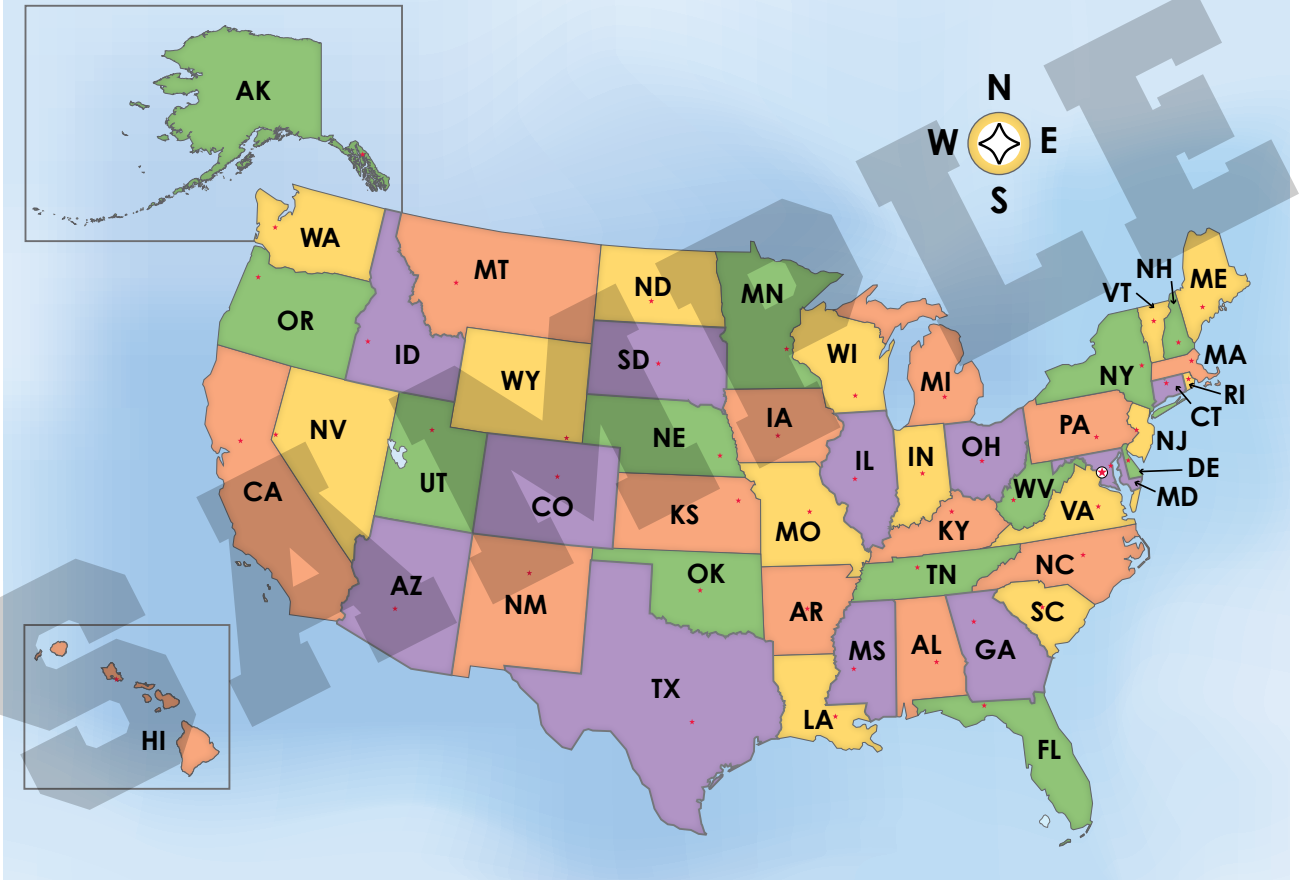
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DE Delaware—Dover	MA Massachusetts—Boston	NH New Hampshire—Concord	SD South Dakota—Pierre	
FL Florida—Tallahassee	ME Maine—Augusta	NJ New Jersey—Trenton	TN Tennessee—Nashville	
GA Georgia—Atlanta	MD Maryland—Annapolis	NM New Mexico—Santa Fe	TX Texas—Austin	



RECOMMENDED WEBSITES FOR HOMEWORK HELP

History Channel (www.history.com) – Provides a link to the History Channel home page.

Math.com (www.math.com) – Offers free math lessons and homework help for all grade levels.


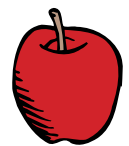
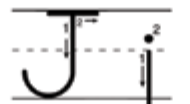
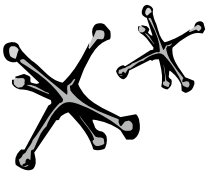


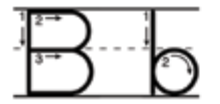



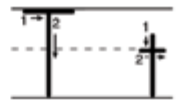

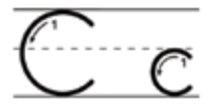


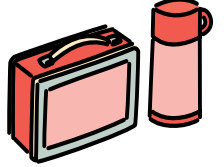
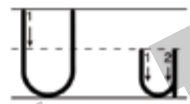









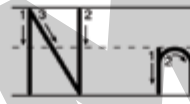





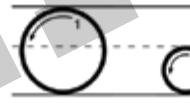

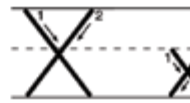
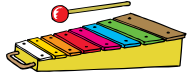




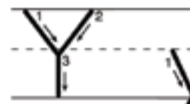



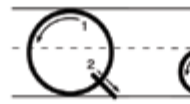

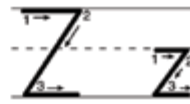




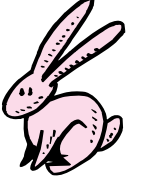
National Geographic Kids (www.kids.nationalgeographic.com) – Enables you to tour the natural world (flora, fauna, people, and places) from your computer.

Kid Info (www.kidinfo.com) – Created by a retired teacher, this site offers numerous informational links to subjects covered in most U.S. schools.

Khan Academy (www.khanacademy.org) – Online learning source that provides students with articles, practice questions, and videos to help them further their education in a variety of subjects.

InfoPlease.com (www.infoplease.com) – Lets you conduct searches for specific topics.

Please Note: These websites were active at time of publication.

 apple 	 jack 	 scissors 
 ball 	 kite 	 teddy bear 
 chicken 	 lunch 	 umbrella 
 drum 	 moon 	 volcano 
 eye 	 nurse 	 wagon 
 frog 	 octopus 	 xylophone 
 gift 	 pencil 	 yo-yo 
 house 	 quilt 	 zebra 
 island 	 rabbit 	

Many words in our language can be grouped into word chunks. These word chunks share common sets of letters and are useful in simplifying the spelling process. This list includes one-syllable words, but these chunks may also be helpful in the spelling of larger words.

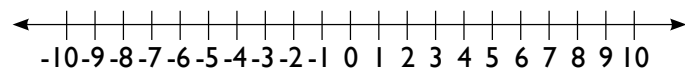
- | | | |
|--|---|---|
| -ab
blab, cab, crab, flab, grab, lab, scab, slab, stab | -eed
bleed, feed, freed, greed, need, seed, speed, weed | -ob
blob, knob, mob, rob, slob, snob |
| -ack
back, black, crack, pack, quack, rack, shack, snack, stack, track | -ell
bell, fell, sell, shell, smell, spell, swell, well, yell | -ock
block, clock, dock, frock, knock, lock, rock, shock, sock, stock |
| -ag
bag, brag, flag, rag, tag | -est
best, chest, crest, guest, nest, pest, rest, test, vest, west | -op
chop, cop, crop, drop, flop, hop, mop, plop, pop, shop, stop, top |
| -ail
fail, jail, mail, nail, pail, rail, sail, snail, tail, trail | -ew
blew, chew, dew, few, knew | -ore
bore, chore, more, score, shore, snore, sore, store, tore, wore |
| -ain
brain, chain, drain, grain, main, pain, plain, rain, sprain, stain, train | -ick
brick, chick, click, kick, lick, pick, quick, sick, stick, thick, trick | -ot
dot, got, hot, knot, lot, not, plot, shot, spot |
| -ake
bake, brake, cake, fake, flake, lake, make, quake, rake, shake, snake, take, wake | -ight
bright, flight, fright, knight, light, might, night, right, sight, slight, tight | -out
grout, scout, shout, spout, sprout |
| -am
clam, ham, slam, swam | -ill
chill, drill, fill, grill, hill, pill, skill, spill, thrill, will | -ow
brow, chow, cow, how, now, plow |
| -an
bran, can, fan, man, pan, plan, ran, tan, than, van | -in
bin, chin, fin, grin, pin, shin, sin, skin, spin, thin, twin, win | -uck
buck, cluck, duck, luck, stuck, truck |
| -ank
bank, blank, crank, drank, sank, thank, yank | -ine
fine, line, mine, nine, pine, shine, vine, whine, wine | -um
drum, gum, hum, plum, sum |
| -ap
cap, clap, flap, lap, map, nap, rap, scrap, slap, snap, strap, tap, trap, wrap | -ing
bring, cling, king, ring, sing, spring, sting, string, swing, thing, wing | -unk
chunk, junk, shrunk, trunk |
| -at
bat, brat, cat, chat, fat, flat, hat, mat, rat, sat, spat, that | -ink
blink, drink, link, pink, sink, shrink, stink, think, wink | -y
by, cry, dry, fly, fry, my, shy, sky, spy, try, why |
| -ay
clay, day, may, pay, play, say, spray, stay, tray | -ip
chip, clip, dip, drip, flip, grip, hip, lip, rip, ship, sip, skip, strip, tip, trip | |

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Ten	10
One Hundred	100
One Thousand	1,000
One Million	1,000,000
One Billion	1,000,000,000

Number Line



Roman Numerals

I	V	X	L	C	D	M
1	5	10	50	100	500	1000

Money



Dollar = 100 cents = 100¢ = \$1.00



Penny = 1 cent = 1¢ = \$0.01	Nickel = 5 cents = 5¢ = \$0.05	Dime = 10 cents = 10¢ = \$0.10	Quarter = 25 cents = 25¢ = \$0.25
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Fractions



1/4 = one-quarter
1/4 = one part of four

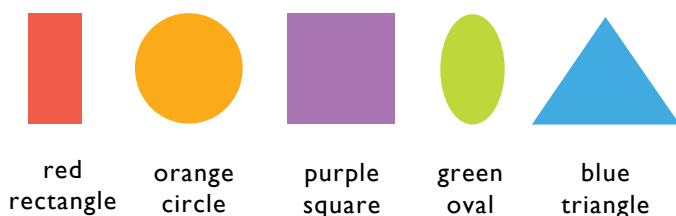
1/2 = one-half
1/4 + 1/4 = 1/2
1/2 = two parts of four



1/3 = one-third
1/3 = one part of three

2/3 = two-thirds
1/3 + 1/3 = 2/3
2/3 = two parts of three

Shapes and Colors



Monthly Reminder

Thirty days hath September,
April, June, and November.
All the rest have thirty-one,
except for poor February, all alone,
to which twenty-eight days we assign
'til leap year brings it 29.

1 one one shark

2 two two dogs

3 three three cats

4 four four giraffes

5 five five worms

6 six six clams

7 seven seven hippos

8 eight eight turtles

9 nine nine elephants

10 ten ten seagulls

Addition Facts

1 + 1 = 2	2 + 1 = 3	3 + 1 = 4
1 + 2 = 3	2 + 2 = 4	3 + 2 = 5
1 + 3 = 4	2 + 3 = 5	3 + 3 = 6
1 + 4 = 5	2 + 4 = 6	3 + 4 = 7
1 + 5 = 6	2 + 5 = 7	3 + 5 = 8
1 + 6 = 7	2 + 6 = 8	3 + 6 = 9
1 + 7 = 8	2 + 7 = 9	3 + 7 = 10
1 + 8 = 9	2 + 8 = 10	3 + 8 = 11
1 + 9 = 10	2 + 9 = 11	3 + 9 = 12
1 + 10 = 11	2 + 10 = 12	
1 + 11 = 12		

4 + 1 = 5	5 + 1 = 6	6 + 1 = 7
4 + 2 = 6	5 + 2 = 7	6 + 2 = 8
4 + 3 = 7	5 + 3 = 8	6 + 3 = 9
4 + 4 = 8	5 + 4 = 9	6 + 4 = 10
4 + 5 = 9	5 + 5 = 10	6 + 5 = 11
4 + 6 = 10	5 + 6 = 11	6 + 6 = 12
4 + 7 = 11	5 + 7 = 12	
4 + 8 = 12		

7 + 1 = 8	8 + 1 = 9	9 + 1 = 10
7 + 2 = 9	8 + 2 = 10	9 + 2 = 11
7 + 3 = 10	8 + 3 = 11	9 + 3 = 12
7 + 4 = 11	8 + 4 = 12	
7 + 5 = 12		
	10 + 1 = 11	
	10 + 2 = 12	

Subtraction Facts

12 - 1 = 11	11 - 1 = 10	10 - 1 = 9
12 - 2 = 10	11 - 2 = 9	10 - 2 = 8
12 - 3 = 9	11 - 3 = 8	10 - 3 = 7
12 - 4 = 8	11 - 4 = 7	10 - 4 = 6
12 - 5 = 7	11 - 5 = 6	10 - 5 = 5
12 - 6 = 6	11 - 6 = 5	10 - 6 = 4
12 - 7 = 5	11 - 7 = 4	10 - 7 = 3
12 - 8 = 4	11 - 8 = 3	10 - 8 = 2
12 - 9 = 3	11 - 9 = 2	10 - 9 = 1
12 - 10 = 2	11 - 10 = 1	10 - 10 = 0
12 - 11 = 1	11 - 11 = 0	

9 - 1 = 8	8 - 1 = 7	7 - 1 = 6
9 - 2 = 7	8 - 2 = 6	7 - 2 = 5
9 - 3 = 6	8 - 3 = 5	7 - 3 = 4
9 - 4 = 5	8 - 4 = 4	7 - 4 = 3
9 - 5 = 4	8 - 5 = 3	7 - 5 = 2
9 - 6 = 3	8 - 6 = 2	7 - 6 = 1
9 - 7 = 2	8 - 7 = 1	7 - 7 = 0
9 - 8 = 1	8 - 8 = 0	

6 - 1 = 5	5 - 1 = 4	4 - 1 = 3
6 - 2 = 4	5 - 2 = 3	4 - 2 = 2
6 - 3 = 3	5 - 3 = 2	4 - 3 = 1
6 - 4 = 2	5 - 4 = 1	
6 - 5 = 1	5 - 5 = 0	
	3 - 1 = 2	
	3 - 2 = 1	