

0			ST IDENT	UDENT IFICATION
	0000		THIS PLANN	ER BELONGS TO:
		0	ADDRESS: CITY/TOWN: STATE: SCHOOL NAME: PHONE: EMAIL: HOMEROOM:	
		0	In Case of Edu CONTACT NAME: CONTACT NUMBER: CONTACT NUMBER: C	mergency Notify: Copyright © 2024–25 Success by Design, Inc. • MSTEM All rights reserved. No part of this book may be reproduced in any form or by any means, including photocopying, without written permission of the publisher.



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.

ADVANCE YOUR POSSIBILITIES THROUGH

Most of the time we take for granted all we have because of STEM—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, smartphones, medicines to make you feel better when you are sick, or even numbers!

The many features of our STEM Student Planners are meant to enhance your understanding of the growing importance of science, technology, engineering, and math not only in our world but in your own life, too. Today it's more necessary than ever to increase your knowledge about these four subjects. In doing so, you will open doors that advance what is possible for your future.

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



In addition to making you more knowledgeable about science, technology, engineering, and math, your STEM Student PlannerTM will be a valuable tool in keeping you organized and on track to unlock your full potential. Whether you're a student or working professional, efficient time management is vital to achieving both today's goals and lifelong success. Start by recording your daily, intermediate, and long-term tasks. Segment major projects, and prioritize each step. Be sure to tackle the most challenging task first. These two pages have been designed as a guide to the intended use of your STEM Student Planner.

NOVATION: DNA PHENOTYPING

G 0

0

C.

C,

6

C

6

C,

Band Practice

Shop for Jenna's birthday gift

◆ Transfer unfinished tasks, ✓ Did I accomplish my priorities?

will be at the after-school meeting

¢.

stal pictur

ce the in-

also be

0

0

0

0

With new advances in DNA technology and research niman trait probabilities based on a single DNA specimen found at a crime scene After computing probable traits based on reading the DNA within the found evifence, the trait information can be combined to generate a police sketch of a person

	16 THURSDAY	17 FRIDAY	
		4	Ca -
LANGUAGE ARTS	Pay closer attention and take better notes in class	Identify and write in any daily goals.	
Ċ	Do all Problems on Pages 20 & 21 should take 20 min.		Job Description
20000		4	collecting an min roles of Technicsup scene investi erime vene a sketch crime attend autop Laboratory r
ocial structs	Science Fair project due	5	analysis, rece with toxicole and discover and crimes. To Learn Men Technician, via bigg, navis ine
6		6	JUST THE FAI • Entry-Level 1
			 Median Anni Number of F (2022): 18,5 Estimated Jo
(Interla	Comments	Comme	18
Contract of	Specer	Spece	2 pm birtha
AN	INTERESTING NOTE	(he jeg 22 fe (j) fan selet rijenae)	19
C	m "CSI effect" was coined in the early 20 own hit the airwaves. The quick and unrea , analyze the findings, and solve the crime ha	00s when an influx of crime-subring proposition distic ability of these shows to collect to the sub- sphere blamed for giving juries in the sub-	5 pm - at Br

esented throughout this planner was current and accurate at the time of publicat

Eat better. Exercise more.

nments for each of your classes

mate how long they will take to

ich assianment when finished.

Make sure an adult at home signs your

communicate with vour teacher.

It's important to set

JANUARY 2

weekly goals for yourself.

planner every night and uses this section to

Write your daily as

n these sections. Es

mplete. Check

ve working on

WHILE UTILIZING YOUR PLANNER.

you will notice it 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 careers pertaining to the featured topic:



OUESTION OF THE WEEK

Science, technology, engineering, and math are key to unraveling many of life's mysteries. In this section, you will find an answer to a question related to the STEM innovation and a career being featured each week.

INNOVATION 2

Nearly every innovation throughout the course of history owes itself to science, technology, engineering, or math-or, more likely, a combination of the four. In this section, we describe an innovation that has already had a significant impact on society or is likely to do so in the future.

STEM DESIGNATION(S)

Here we list for you the STEM subjectsscience, technology, engineering, and maththat are most closely related to the question, innovation, and career of the week. While this may sometimes be just one of the four, in many cases you will find they overlap. In such cases, several are listed.



CAREER / JOB DESCRIPTION

Careers in STEM are vital to our future. Each week we focus on one you might find interesting and perhaps even one day want to pursue.



(7

TO LEARN MORE ABOUT

BECOMING A ..., VISIT

Here you are given a website you may visit to learn more about the career of the week. All sites were active when your planner was printed.

6 **JUST THE FACTS:**

This section provides statistical information on the featured career.

AN INTERESTING NOTE

This intriguing and sometimes surprising fact relates to the featured career. A QR code quickly takes readers to the source of the Interesting Note. These sources contain images, graphics, charts, activities, and other interactive features.



ANUARY

DRENSIC SCIENCE

CAREER

s, and write extensive notes. hs classify evidence through struct crime scenes, consult or other specialized experts. lationships between suspects

out Becoming a Ferrinic Science

cation Typically Required: Salary (2022): \$63,740 nsic Science Technicians in U.S.

rowth (2022-32): 13%



AUG



Art is all around us! The way we experience objects, locations, products, and services is rooted in art. The chairs on which we sit, the smartphones in our hands, and the buildings we spend time inside would not exist without the art-influenced creativity of designers. Art is in the talents of songwriters and musicians who craft songs we enjoy; it's in the direction 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.

AR1

Many STEM careers revolve around art. Jewelers create wearable works of art for people in the form of necklaces, rings, and bracelets. Medical illustrators create visual representations of how the body functions to better educate the public and assist in court proceedings. Recreational therapists use arts and crafts to help those coping with mental, emotional, and physical problems express themselves and heal.

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 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.

				100051		TYPE AF
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		MONTHLY GOALS & LO	NG-TERM ASSIGNMENTS			5

Copyright © 2024–25 Success by Design, Inc. • MSTEM

4

UST

HOW CAN 3D MODELING ASSIST IN BUILDING PLANNING AND CREATION?

By using 3D modeling software, a construction project can be created to show a more realistic rendition of what the real building will look like. This allows clients, project managers, architects, engineers, etc., to quickly detect any differences in vision, spot potential problems, and clear up misconceptions virtually before breaking any "real" ground.

22 MONDAY	23 <u>TUESDAY</u>	24 WEDNESDAY	
JULY	¥		¥
Commenter	Commenter	Commission	
Comments:	Comments:	Comments:	
Signature:	Signature:	Signature:	
JULY 2024	WEEKLY GOALS		
<u>SMTWTFS</u>			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 10 10 23			
14 15 16 1/ 18 19 20 21 22 23 24 25 26 27			
28 29 30 31			

INNOVATION: 3D PRINTER

-

9

1 0

0

0

0 10 0

0

0

0

0

0

6

0

0

0

0

0

0

0

0

0 0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

6 0

9 0

1 0

0

0

0

0

0

0

0

0

0

0

0

0

0

0 6

0

0

0

3D printers create tangible objects from a digital file. Once a 3D model is created digitally using modeling software, the file is prepared for the 3D printer using a technology called slicing. Slicing is sectioning the 3D model into hundreds or thousands of layers. Once the file has been sliced, the 3D printer works by printing the object layer by layer with the material of your choice.

		25	THU	RSDAY			26		FRII
					 	≯			
	ARTS				 				
	UAGE				 				
	LANG				 				
	TICS				 				
	HEMA'				 				
	MAT				 				
	SCIENCI				 				
)									
	DIES				 				
Ξ	NL STU				 				
	SOCIJ				 				
/ Lesig					 				
cess D					 				
one c7-					 				
4707					 	• • • • •			
/LIBIT		_							
, do	TION	Comments:					Comments	:	
	UNICA								
	COMM	Simatura					Signature		
		Signature.					Signature:		

AN INTERESTING NOTE...

Many sites of historical and cultural significance face the threat of human or environmental destruction. Some sites may also be impractical to see in person. However, 3D modeling has made it possible to tour these wonderful locations from home! Scan the QR code to visit a multitude of amazing sites.





Job Description: A 3D Modeler is a multimedia computer artist or animator who brings one-dimensional representations of people, places, and things to life using specialized software. This brings real world imagery into the digital realm. 3D Modelers work in a variety of careers, including but not limited to, the television/motion picture industry, video game design, and science and medical fields.

To Learn More About Becoming a 3D Modeler, visit: everfi.com/insights/blog/steam-jobs-list-10-careersthat-combine-art-and-math/

theartcareerproject.com/careers/3d-modeling/

bls.gov, search: special effects artists and animators

JUST THE FACTS

- Entry-Level Education Typically Required: bachelor's degree
- Median Annual Salary (2022): \$98,950
- Number of Special Effects Artists (including 3D Modelers) in U.S. (2022): 89,300
- Estimated Job Growth (2022–32): 8%

27 SATURDAY

(See page 122 for QR Code website references.)





28 SUNDAY

DEVELOPMENT

\di-ve-ləp-ment, de-\, noun

1. the state of being developed: 2. the act or process of growing, progressing, or developing: 3. developed tract of land



The degree to which a country has been developed significantly impacts its people. In a nation with a sturdy economy and advanced infrastructure, residents can lead longer and healthier lives, be educated, access resources needed for a decent standard of living, and participate fully in their communities.

STEM-related careers play a critical role in economy and infrastructure. From welders who help keep metal structures intact, to railroad workers who ensure train passengers and freight move smoothly from destination to destination, the progress of a town, city, or nation cannot occur without professionals from various fields of study working together and utilizing the latest technologies.

Progress enables fully developed nations like the United States, Canada, Greece, and the United Kingdom to handle 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 originated in Canada. It stemmed from 1870s labor disputes in Toronto. A parade was held in 1872 in support of 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.

		<u></u> 1		2			-00	
	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						
r t ł ł	SOURCES: merriam-webster.com thefreedictionary.com huffingtonpost.com hdr.undp.org/en/ energy.gov bls.gov		0000000	MONTHLY GOALS & LO	ONG-TERM ASSIGNMENTS			19

SEPTEMBER

HOW DO ELEVATORS WORK IN TALL BUILDINGS?

Buildings that are taller than 4 stories generally use traction elevators. This is a system where a motor at the top of the elevator shaft turns a sheave (a pulley with grooves made to accommodate cables) that uses cables to raise and lower an elevator "cab" and its counterweight.

2 MONDAY	3	TUESDAY	4	WEDNESDAY	
	×				¥
omments:	Comm	ents:	Comments	:	
ignature:	Signati	ıre:	Signature:		
SEPTEMBER	2024 WEE	KLY GOALS			
<u>SMTWT</u> 1 2 3 4 5	<u>F</u> <u>S</u> 6 7				
8 9 10 11 12 15 16 17 18 19	2 13 14 9 20 21				
22 23 24 25 20 29 30	6 27 28				
		 Transfer unfinished tas 	ks. 🗸 Did I	accomplish my priorities?	

INNOVATION: DIGITAL ANALYTICS

6

C,

C.

0

0

C

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0 0

0

e

0

0

0

0

0

6

0

9

6

0

C

6

0

0 0

0

0

0

0

0

0

۲

0

0

0

0

0

0

0

0

0

Using digital technology, analytics providers can unveil convenient maintenance information and energy-saving tips to building owners and elevator mechanics. For instance, an analytics app can notify the owner or mechanic when routine elevator maintenance is due to ensure elevator safety and efficiency.

		THURSDAY		6	FRIC
			*		
	IS				
	AR ⁻				
	4GE				
	GU/				
	LAN				
	S				
	IATI				
	HEN				
	IATI				
	\geq				
					-
	ш				
	SCIENC				
				••••••	
	IES				
	<u>I</u>		4		
Σ	L S		• • • •		
ST	CIA				
Σ	S				
Ľ.					
ign,					
Des					
by					
cess					
Suc					
-25					
024					
© 2					
ight					
pyr	_	Comments:		Comments:	
ŭ	lov				
	CA.				
	N				
	MM				
	8	Signature:		Signature:	

AN INTERESTING NOTE...

The world's second tallest building, the Shanghai Tower, has the world's fastest elevator. It travels 46 miles an hour! Scan the QR code to watch the world's fastest elevators in this interactive graphic (scroll to mid-page).

SEPTEMBER

CAREER: ELEVATOR MECHANIC TECHNOLOGY, ENGINEERING & MATH







Job Description: Elevator Mechanics install and/or maintain and repair elevators, escalators, moving walkways, and more! This industry requires mechanics to have knowledge in electronics, hydraulics, and electrical systems, as well as sharp troubleshooting skills. Many new elevators have computerized control systems, so knowledge of computers is more important now than in previous years.

To Learn More About Becoming an Elevator Mechanic, visit:

bls.gov, search: elevator installers and repairers

JUST THE FACTS

- Entry-Level Education Typically Required: apprenticeship
- Median Annual Salary (2022): \$99,000
- Number of Elevator Mechanics in U.S. (2022): 25,100
- Estimated Job Growth (2022–32): 1%

SATURDAY

(See page 122 for QR Code website references.)



SUNDAY

ENERGY \'e−nər−jë\, noun

1. fundamental entity of nature that is transferred between parts of a system in the production of physical change within the system and usually regarded as the capacity for doing work: 2. usable power (as heat or electricity); also: the resources for producing such power



6

13

20

27

bls.gov

Today, energy is critical to every aspect of our lives, and that isn't going to change. The U.S. Energy Information Administration predicts that from 2015 to 2040 world energy consumption will increase by 28 percent. In America alone, energy use is doubling every 20 years. All of this means that we must learn to use energy more wisely and continue exploring clean and renewable options to reduce our dependency on nonrenewable fossil fuels such as coal, oil, and natural gas, which will one day be depleted. Renewable sources include the sun, wind, and water.

STEM professionals, such as energy engineers, electrical line workers, and fuel cell specialists, for example, are vital to the management and conservation of our current energy sources and the development of better, more diverse ones. It takes numerous people working in concert to ensure the energy sector remains strong.

"No single solution can meet our society's future energy needs," states the Union of Concerned Scientists. "The solution instead will come from a family of diverse energy technologies that share a common thread—they do not deplete our natural resources or destroy our environment."

DID YOU KNOW?

Compared to most people elsewhere, Americans use a lot of energy. The United States, with less than 5% of the global population, uses about a quarter of the world's fossil fuel resources—burning up nearly 25% of the coal, 26% of the oil, and 27% of the world's natural gas. Schools instructing kindergarteners through twelfth graders alone spend over \$6 billion on energy use each year. October is National Energy Action Month—a time set aside to urge us to strive toward greater energy security and a healthier environment.

SUNDAY **TUESDAY** WEDNESDAY 2 3 1 8 9 10 14 15 16 17 24 21 23 22 28 29 30 31 **SOURCES: MONTHLY GOALS & LONG-TERM ASSIGNMENTS** merriam-webster.com eia.gov whitehouse.gov aceee.org scientificamerican.com needtoknow.nas.edu ecology.com ucsusa.org 0

SDAY	FRIDAY	SATURDAY
	4	5
	11	12
	18	19
	25	26
		29



WHAT TYPES OF PRODUCTS ARE INVENTED BY MATERIALS SCIENTISTS?

Materials Scientists are always exploring ways to make products better and more useful by way of new material inventions. Some recent new materials that have been invented do things like absorb oil from water, coat windows to block out sunlight, and be stronger than steel yet be biodegradable as well!

30 MONDAY	TUESDAY	2 WEDNESDAY	
SEPTEMBER	↓ OCTOBER	×	¥
	·····		
Comments:	Comments:	Comments:	
Signature:	Signature:	Signature:	
SEPT-OCT 202	24. WEEKLY GOALS		
<u>SMTWTF</u>	<u>S</u>		
30 1 2 3 4 6 7 8 9 10 11	5 12		
13 14 15 16 17 18 20 21 22 23 24 25 25 27 28 20 21 20 21 24 25 24	26		
27 28 29 30 31			• 、
L	- I ransfer unfin	sneu tasks. 🕐 Did i accomplish my priorit	les:

INNOVATION: ATOM THICK

0

0

0

0

0

0

0

0

0

0

0

C

C 0

0

9

0

0

C

0

0

0

0

6

0

0

0

0

0

0

0

0

0

0

e

0

0

0 0

0

0

0

0

0

0

C

0

6

Researchers were able to create a material by reducing layers of an object until it was left with a single-atom layer. Now that technologies have advanced, these atom-thick sheets are now called graphene. This material boasts versatility because it is light, strong, and can be bent into any shape. Its honeycomb lattice structure of carbon to carbon bonds allows it to hold a charge without oxidizing.

		3 THURSDAY		4	FRI
			∻		
	RTS				
	IGE AI				
	NGUA				
	LA				
			• • • • •		
	ATICS				
	THEM		• • • •		
	MAT		• • • •		
			• • • •		
	ENCE				
	SCI				
	10		• • • •		
	UDIE:				
LEM	IAL ST				
• WS	20C				
șn, Inc.					
, Desig					
cess b)					
5 Succ					
024-2			• • • •		
ht © 2					
opyrig	N	Comments:		Comments:	
0	CATI0				
	MUNI				
	COM	Signature:		Signature:	

AN INTERESTING NOTE...

Researchers have noted that the ancient Egyptians experimented in Chemistry to create many things—including medicines and makeup. The heavy, black eyeliner that's infamously seen on artwork depicting Egyptian royals may have been the combination of increasing beauty while also doubling as an eye infection fighter. Scan the QR code to read more about ancient chemistry.

SEPT -OC1

CAREER: MATERIALS SCIENTIST



Job Description: Materials scientists study and analyze the structure and chemical properties of different natural and manmade materials. They analyze the ways substances interact with each other in order to strengthen existing materials and create brand new ones with certain properties and characteristics. They will experiment with various materials and chemicals to determine how new materials may best serve and improve humanity (careerexplorer.com).

To Learn More About Becoming a Materials Scientist, visit: bls.gov, search: materials scientists

careerexplorer.com/careers/materials-scientist/

JUST THE FACTS

- Entry-Level Education Typically Required: bachelor's degree
- Median Annual Salary (2022): \$81,810
- Number of Materials Scientists in U.S. (2022): 95,000
- Estimated Job Growth (2022–23): 6%

(See page 122 for QR Code website references.)



SATURDAY

SUNDAY

6

31

SOURCES

WEBSITE REFERENCES

cvark

Architect

Plumber

Abbreviated references for each month may be found on the monthly spreads. References for each career may be found on the weekly spread, in the section To Learn More About Becoming a ..., Visit: (website references). For a full list of references for the weekly content, please see the MSTEM product page on our website, www.successbydesign.com.

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

"AN INTERESTING NOTE" QR CODE WEBSITE REFERENCES*

3D Modeler QR Code: https://artsandculture.google.com/project/ solar-field/ Landscape Architect QR Code: https://www.greenroofs.com/projects/ford motor-companys-river-rouge-truck-plant/ Front End Web Developer OR Code: http://info.cern.ch/hvpertext/WWW TheProject.html Actuary Art Conservator OR Code: https://www.livescience.com/46099-hiddenbeached-whale-revealed-painting.html QR Code: https://architectureau.com/articles/whenarchitecture-was-an-olympic-sport/ Medical Illustrator QR Code: https://www.ami.org/medical-illustration/ learn-about-medical-illustration **Elevator Mechanic** OR Code: https://www.cnn.com/style/article/shorthistory-of-the-elevator/index html Construction Manager OR Code: https://www.icehotel.com/icehotel-origina QR Code: https://www.washingtonpost.com/ news/retropolis/wp/2017/05/06/discovered philadelphias-high-tech-totally-naturalplumbing-of-1812/ HVACR Technician OR Code: https://www.white sehistory.org/keeping cool-in-the-white-house Materials Scientist QR Code: https://www.sciencemag.org/news/2010/01/ egyptian-eveliner-may-have-warded-disease **Petroleum Enginee** QR Code: https://www.coga.org/factsheets/everyday products-uses timeline/ Solar Photovoltaic Installe OR Code: https://inhabitat.com/brazils-mineirao-i the-first-world-cup-stadium-completely-powered hv-the-sun/

RECOMMENDED WEBSITES FOR

History Channel (www.history.com) - Provides a link to the History

Math.com (www.math.com) - Offers free math lessons and home-

National Geographic Kids (www.kids.nationalgeographic.com) -

Enables you to tour the natural world (flora, fauna, people, and

HOMEWORK HELP, ETC.

Channel home page.

work help for all grade levels.

places) from your computer.

Solar Site Assessor QR Code: https://time.com/china-massive-floating **Electrical Line Worker** QR Code: https://www.dkfindout.com/us/science electricity/moving-electricity Intelligence Analyst OR Code: https://vault.fbi.gov QR Code: https://www.britannica.com/topic/insurance/ Historical-development-of-insurance Political Scientist QR Code: https://www.youtube.com/ watch?v=QazmVHA00os Supply Chain Manager QR Code: https://www.youtube.com/watch?time continue=1&v= SnAHPXNhAwk&feature=voutu he **Computer and Information Research Scientis** OR Code: http://howoldistheinter.net **Computer Support Specialist** OR Code: https://www.smithsonianmag com/arts-culture/fact-of-fiction-thelegend-of-the-gwerty-keyboard-49863249/?utm_campaign=20130503&utm_ medium=socialmedia&utm_source=twitter com&utm content= designdecodedkeyboard1 Software Developer QR Code: https://www.nationalgeographic.org/thisd sep9/worlds-first-computer-bug/ Cryptographer OR Code: https://academy.binance.com/en/articles/ history-of-cryptography **Biomedical Engineer** QR Code: https://syncardia.com/total-artificial-heart Epidemiologis QR Code: https://www.history.com/topics/middle-ages/ black-death#section 9

t	5*		
	 Forensic Science Technician QR Code: https://www.pbssocal.org/shows/reactions/ episodes/tv-forensics-what-do-csis-actually-do- qhyipu Genetic Counselor QR Code: https://www.poutube.com/ watch?w=eW1T52tCFDE Anthropologist QR Code: https://www.nbcnews.com/science/science- news/na-links-kennews/ic-man-skeleton-native- american-tribes-n377291 Mariae Engineer QR Code: https://www.royalcaribbeanpresscenter.com/ fact-sheet/35/icon-of-the-seas/ Millwright QR Code: https://www.toyalcaribbeanpresscenter.com/ fact-sheet/35/icon-of-the-seas/ Millwright QR Code: https://www.thestar.com/life/food-and-drink/ oreo-cookie-turns-100-and-opens-its-montreal- factory-for-first-time/article_691c348e-16bc-5789- a56b-cb78cb9fa648.html Wind Turbine Technician QR Code: https://www.history.com/news/rosie-the- riveter-inspiration Pediatric Nutritionst QR Code: https://www.chostory.com/news/rosie-the- riveter-inspiration Pediatric Nutritionst QR Code: https://www.countyliving.com/uk/homes- interiors/gardens/a20120884/most-cost-effective- vegetables-grow-home-garden/ Mode: https://www.accessdata.fda.gov/scripts/ InteractiveNutritionFactsLabel/default.cfm Fod Labeling Specializi QR Code: https://www.act.ost.ack/~oesis/micro/ Environmental Scientist QR Code: https://www.act.ost.ack/~oesis/micro/ Environmental Scientist QR Code: https://www.rent.ox.ac.uk/~oesis/micro/ Environmental Scientist QR Code: https://gispub.epa.gov/ airnow/?showgreencontours=false 	Hydrologist QR Code: https://climatekids.nasa.gov/water-cycle/ Conservation Scientist QR Code: https://www.arborday.org/trees/stormwater. cfm Zoologist QR Code: https://www.worldatlas.com/articles/10- famous-zoologists-and-their-contributions.html Pediatrician QR Code: https://www.youtube.com/ watch?v=1nHwQKT_muc Nurse Practitioner QR Code: https://www.ushistory.org/birch/plates/ plate26.htm Prosthetist QR Code: https://www.pbs.org/newshour/show/3-d- printers-put-limb-prosthetics-for-kids-in-reach Dentist QR Code: https://www.colgate.com/en-us/oral-health/ basics/mouth-and-teeth-anatomy/four-different- types-of-teeth-plus-mere-0115 Broadcast & Sound Engineer QR Code: https://www.pbs.org/viki/The_Horse_ in_Motion#/media/File:Muybridge_race_horse_ animated.gif Speech-Language Pathologist QR Code: https://www.ps.org/pr-timeline	Copyright © 2024–25 Success by
	Kid Info (www.kidinfo.com) – Createc offers numerous informational links (l by a retired teacher, this site to subjects covered in most	Design, Inc. • MSTEM

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.

U.S. schools.

THE EIGHT PARTS OF SPEECH

NOUNS

G 0

9

6

0

9

6

6

0

0

0

0

0

0

0

0

0

C

0

6

6

0

6

0

0

C

0

0

0

6 0

0

0

0

0

C

0

6

6

6

6

0

C

0

0

6 0

9

1 0

6

6

6

9

C

0

0 -

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

MSTEM

Ы

- Common nouns refer to any person, place, thing, or idea. Examples: boy, school, vegetable, city, government, gloom
- Proper nouns are capitalized and refer to specific persons, places, objects, or ideas.

Examples: Amber, Niagara Falls, England, Saturday PRONOUNS

- A pronoun can take the place of a noun. Example: Bob saw his sister as she walked down the hall.
- There are three kinds of pronouns:

Subjective pronouns such as he, she, and it.

- Objective pronouns such as him, her, or them.
- Possessive pronouns such as mine, his, hers, and theirs. Example: He (subjective) is looking at it (objective)
 - through his (possessive) camera.

VERBS

• A verb shows action or state of being and indicates the time of that action or state.

> Examples: We watched the parade. (past) We are watching the parade. (present) We will watch the parade. (future)

PUNCTUATION

- Place a period at the end of a sentence. Example: Andy and his friends visited the museum.
- Use a period at the end of an imperative sentence that does not express strong emotion.
- Example: Please pick up that piece of paper.
- Use a question mark after all interrogative sentences.
 - Example: Would you like to go to the movies?
- Use an exclamation mark after sentences that express surprise or deep feeling.

Example: I can't believe I ran into you today!

THE WRITING PROCESS

Writing involves a number of processes, each of which builds on the step before it. Here are the seven steps of the writing process. There are specific strategies to be implemented at each step.

- 1. Pre-Writing: Writers need a background of material from which to draw words, thoughts, and ideas before they can write. Prewriting is a brainstorming stage that can be activated through strategies such as semantic webs, word banks, and brainstorming. First Draft Writing: Writers determine a purpose and style of writing to give them a direction for their work. One should write freely without undue concern for spelling or grammatical errors at this stage. The focus should be on writing ideas in a logical manner. 3. Response: During this step, the writer is given both verbal and non-
- verbal feedback to his/her writing from a partner, small group,

ENGLISH

ADJECTIVES

• Adjectives are words that describe nouns and specify size, color, number, and so on. This is called modifying; adjectives are modifiers. Example: A large, black dog ran into the old, red barn.

ADVERBS

• Adverbs are words that describe verbs, adjectives, or other adverbs. They specify in what manner, when, where, and how much. Example: The boy laughed cheerfully as he flew the kite. He was extremely happy.

PREPOSITIONS

• Prepositions show how a noun or pronoun is related to another word in the sentence.

> Examples: He walked around the corner. She stood **near** the building.

CONJUNCTIONS

• Conjunctions join words, phrases, or clauses. Examples: Neither he nor she was allowed to go to the game. We yelled at him, but he could not hear us.

INTERJECTIONS

- Interjections are also known as exclamations and are indicated by the use of the exclamation mark (!).
 - Example: Hey! Look out for that truck!
- Use a comma to separate words and phrases in a list. Example: We bought some socks, two shirts, and a pair of jeans.
- Use a semi-colon when a conjunction is omitted; it indicates a greater degree of separation than a comma would.
 - Example: The water was very rough; our boat rocked back and forth.
- Double quotation marks are used around a direct quotation. Example: "It's nice to meet you," Walter said.
- Use a colon to start a list or to formally introduce a statement. Example: Rebecca has three pets: a dog, cat, and fish.
- Use an apostrophe for a contraction, as in hasn't (for has not), or to show possession, as in Mary's game.

teacher, or parent. Response provides the writer with information to help him/her clarify ideas and allows for the recognition of strengths in his/her writing.

- Revision: Writers make their work better through revision by adding detail, descriptive words or phrases, and possibly changing sentence order for variety or clarification.
- 5. Editing and Rewriting: In this stage, mechanical errors are corrected. Written works are first edited by the writer, before rewriting begins. Grammar skills development can be incorporated within this step.
- Evaluation: This step gives the reader a chance to provide feedback to the writer. To make it a maximum growth process, vary the evaluators and the criteria.
- 7. Publishing: Publishing is a way to showcase the author's completed work. Making class books or displaying writing are just two of many publishing activities.

SCIENCE AND MATH

MATHEMATICS

THE PERIODIC TABLE OF ELEMENTS



La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Тb	Dy	Ho	Er	Tm	Yb	Lu
LANTHANUM 138.90547	CERIUM 140.116	PRASEODYMIUM 140.90765	NEODYMIUM 144.242	PROMETHIUM (145)	SAMARIUM 150.36	EUROPIUM 151.964	GADOLINIUM 157.25	TERBIUM 158.92535	DYSPROSIUM 162.5	HOLMIUM 164.93032	ERBIUM 167.259	THULIUM 168.93421	YTTERBIUM 173.054	LUTETIUM 174.9668
89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr
ACTINIUM (227)	THORIUM 232.03806	PROTACTINIUM 231.03588	URANIUM 238.02891	NEPTUNIUM (237)	PLUTONIUM (244)	AMERICIUM (243)	CURIUM (247)	BERKELIUM (247)	CALIFORNIUM (251)	EINSTEINIUM (252)	FERMIUM (257)	MENDELEVIUM (258)	NOBELIUM (259)	LAWRENCIUM (262)

MATHEMATICAL SYMBOLS

Listed below are commonly encountered symbols.

Angle:	\angle	Not equal:	¥
Arc:	\cap	Parallel:	II
Greater than:	>	Perpendicular:	Ţ
Greater than/equal to:	≥	Pi:	π
Less than:	<	Ray:	\rightarrow
Less than/equal to:	\leq	Right angle:	Ь
Line segment:	_	Set:	{]

NUMBER LINE

MULTIPLICATION CHART

													- c
	1	2	3	4	5	6	7	8	9	10	11	12	
1	1	2	3	4	5	6	7	8	9	10	11	12	
2	2	4	6	8	10	12	14	16	18	20	22	24	0
3	3	6	9	12	15	18	21	24	27	30	33	36	2
4	4	8	12	16	20	24	28	32	36	40	44	48	
5	5	10	15	20	25	30	35	40	45	50	55	60	
6	6	12	18	24	30	36	42	48	54	60	66	72	
7	7	14	21	28	35	42	49	56	63	70	77	84	
8	8	16	24	32	40	48	56	64	72	80	88	96	
9	9	18	27	36	45	54	63	72	81	90	99	108	
10	10	20	30	40	50	60	70	80	90	100	110	120	
11	11	22	33	44	55	66	77	88	99	110	121	132	
12	12	24	36	48	60	72	84	96	108	120	132	144	

~	- 0	
6		
0		
0	20	
2	0	
2	0	
0		
0		
0	20	
	-0	
2	-0	
0	1.5	
0		
0	20	
2	0	
2	0	
0		
0		
0	20	
6	-0	
2	-0	
-	10	
0	16	
0		
	50	
2	0	
1	10	
0	1.5	
0		
C	20	
2	0	
2	-0	
9		
0	16	
0	20	Σ
0	20	Ę
2	-0	Σ
2	-0	4
6	1.5	
0		Č
0	20	्रेत
2	-0	5000
2	-0	
	10	4
0	1.5	
0		0
0	20	triat.
2	0	ź.
Ĭ.	-0	Ċ
9	1.	
C		
¢.		
è	0	
2	0	
-		
0	10	
0		
e	20	
2	0	
2		
0	10	
0		

/ AREA AN	D VOLUME			FRA	CTIONS	
Right Triangle	Isosceles Triang	le Pyramid	≜ .	Numerat Denomin	or (Top Number) = $\frac{5}{8}$ mator (Bottom Number) = $\frac{5}{8}$	Division: multiply the first fraction reciprocal of the second fraction
a c b b Area = ab Pythagorean	A A A A A A A A A A A A A A A A A A A	$\frac{1}{b}$ B $\frac{1}{b}$ $Area = Ba$	Volume = $\frac{\text{Are base x heigh}}{3}$	Addition	/ Subtraction: non denominators	$\frac{1}{5} \div \frac{3}{4} = \frac{1}{5} \times \frac{4}{3} = \frac{4}{15}$
$\frac{1}{2} = a^2 + b^2 + c^2$ Square	Cube	Rectangle	2 Rectangular Solid	1 (x2) 5 (x2)	$=\frac{2}{10}$	Changing Fractions to Decimal change the denominator to a pow
s		w		$\frac{1}{+2}$ (x2)	$\frac{1}{1} = \frac{5}{10}$	$4 (x^2) = 8 5 (x^2) = 10 = .8$
Area = s ²	Volume = s ³	L Area = LW	Surface Area = $2(WL + Lh + W)$	Vh)	10	Or divide by the denominator:
Perimeter = 4s	d = (1.732)s	Perimeter = 2L + 2W	Volume = L x W x h		ation: multiply straight across $= 1 \times 4 = 4$	$\frac{4}{5} = 4 \div 5 = .8$
	spnere			$\frac{1}{5} \times \frac{1}{4} =$	$=\overline{5 \times 3} = \overline{15}$	
Area = πr^2	Area = $4\pi r^2$	Are	$a = \pi r^2 h$	FRA	CTIONS & PER	CENTAGES
Perimeter = $2\pi r$	Volume = $\frac{4/11^2}{3}$	Tot	al Surface Area = $2\pi rh + 2\pi r^2$	- 1 =	1.0 = 100%	¹ / ₆ = .167 = 16.7%
	c l h d			$\frac{3}{4} = \frac{2}{3} = \frac{1}{4}$.75 = 75% .667 = 66.7%	$\frac{1}{12}$ = .143 = 14.3% $\frac{1}{12}$ = .125 = 12.5%
		∠ d		$\frac{1}{2} = \frac{1}{3} = \frac{1}{3}$.5 = 50% .333 = 33.3%	$\frac{1}{10} = .111 = 11.1\%$ $\frac{1}{10} = .1 = 10\%$
Area = bh Perimeter = 2a + 2b	Area = $\frac{h(a + b)}{2}$ Perimeter = a + b + c + d	Area = $\frac{Dd}{2}$ Perimeter = 4c	Volume = $\frac{\pi r^2 h}{3}$ Surface Area = $\pi^2 + \pi rs$	$\frac{1}{4} = \frac{1}{5} = \frac{1}{5}$.25 = 25% .2 = 20%	
MFASIIR	FMFNTS					
			ітс		INITS (Cont.)	FOLIATIONS
			115			
TIME	1 minuto	1 foot (ft)	12 inches	1 dram (dr)	— 1/16 oz	centimeters \times 3937= inches
60 minutes =	= 1 minute = 1 hour	1 vard (vd.) =	36 inches	1 ounce (oz)	$= 16 \mathrm{dr}$	inches $\times 2.54$ = cm
24 hours =	= 1 day	1 yard (yd.) =	3 feet	1 pound (lb)	= 16 oz	meters × 3.2808 = feet
7 days =	= 1 week	1 rod =	16 ½ feet	1 stone	= 14 lb	feet \times .3048 = meters
30 days =	= 1 month	1 furlong =	660 feet	1 quarter (qtr)	= 2 stones, 28 lb	kilometers $\times .6214 = miles$
12 months =	= 1 year	1 mile (mi.) = 1 mile (mi.)	320 rods	1 quintal	= 100 lb	$miles \times 1.609 = kilometers$
365 days =	= 1 year	1 mile (ml.) =	5,280 leet	1 tonne (long ton)	= 2,000 ID = 2,240 Ib	AREA
100 years =	- 1 contury	AREA		I tollile (long toll)	- 2,240 ID	$m^2 \times 10.76 = ft.^2$
	- I century	1 sq. foot (ft. ²) =	= 144 in. ²		IC	$ft.^2 \times .0929 = m^2$
LINEAR MEASURE		1 sq. yard (yd. ²) =	9 ft. ²	CONVERSION	13	$km^{2} \times .3861 = mi^{2}$
1 millimeter (mm) =	= .001 m	1 sq. rod (rod) =	30.25 yd.	LINEAR MEASURI	E	$mi \times 2.59 = km$
1 centimeter (cm) =	= 10 mm	1 acre =	43,560 TT.	1 inch	= 25.4 mm	WEIGHT
1 decimeter (cm) =	= .UIM - 1m	1 acre =	4,040 yu. 60 rods ²	1 inch	= 2.54 cm	grams \times .0353 = ounces
1 meter (m) =	1111 - 100 cm	1 sa. mile =	640 acres	1 foot	= 30.48 cm	ounces \times 28.35 = grams
1 decameter (dkm) =	= 10 m	VOLUME		l yard	= 91.44 cm	kilograms $\times 2.2$ = pounds
1 hectometer (hm) =	= 100 m		1 720 : 3	1 yalu 1 mile	$= 1609 \mathrm{m}$	$pounds \times .4536 = kilograms$
1 kilometer (km) =	= 1,000 m	CUDIC FOOT (FT.) =	: 1,/28 IN.	1 mile	$= 1.609 \mathrm{km}$	CAPACITY
CAPACITY		i cubic yaru (yu.) =	27 II.			milliliters \times .0338 = fl ounces
1 liter (l) =	- 1 000 ml	CAPACITY - DRY ME	ASURE		2000 2	flounces \times 29.575 = ml
1 milliliter (ml) =	= .001 l	1 quart (qt.) =	2 pints (pt.)	1 sq. foot (ft.)	$= .0929 \mathrm{m}$	liters \times .2642 = gallons
1 centiliter (cl) =	= .011	1 peck (pk.) =	8 quarts	1 sq. yaru (yu.)	= .8301 III $= .25.20 \text{ m}^2$	$gallons \times 3.785 = liters$
1 deciliter (dl) =	: .11	1 bushel (bu.) =	4 pecks	1 sq. tou (tou) 1 acre	$= 23.29 \text{ m}^2$ = 4.046 72 m ²	TEMPERATURE
1 decaliter (dkl) =	= 101	$128 \text{ cu. } \pi.$ =	i cord	1 sa. mile	$= 2.59 \text{ km}^2$	$^{\circ}C \times 1.8 + 32 = ^{\circ}F$
1 hectoliter (hl) =	= 1001	CAPACITY - LIQUID I	MEASURE	VOLUME		(°F - 32) × .555 = ℃
1 kiloliter (kl) =	= 1,000 l	1 tablespoon (T) =	3 teaspoons (t)	VULUME	aca 1 ³	
WEIGHT		1 cup (c) =	16 tablespoons	1 cubic cm (cm [*])	$= .061 \text{ in.}^3$	
1 gram (g) =	= 1,000 mg	1 pint (pt) =	2 cups	1 CUDIC INCN (IN.)	= 10.39 Cm $= 0.0283 \text{ m}^3$	
1 milligram (mg) =	.001 g	1 pint =	4 gills (gi.)	1 cubic root (II.) 1 cubic meter (m^3)	$= 1308 \text{ yd}^3$	
1 centigram (cg) =	= .01 g	i quart (qt.) =	2 pints	1 cubic vard (vd ³)	$= .7646 \mathrm{m}^3$	
1 decigram (dg) =	= .1g	r garion (gal.) =	4 quarts	, case juid (jui)		
1 decagram (dkg) =	= 10 g	harrel (hhl) –	31 ½ gallons			
1 hectogram (hg) =	= 100 g	1 U.S. oil	51 /2 guil0115			
i kilogram (kg) =	= 1,000 g	barrel (bbl.) =	42 gallons			
		1 hogshead (hhd.) =	2 barrels			





u co		011	ueni
1	(x2)	=	2
5	(x2)	=	10
1	(x2)	=	5
+ 2	(x2)	=	10
			7
			10

on by the

$$\frac{1}{5} \div \frac{3}{4} = \frac{1}{5} \times \frac{4}{3} = \frac{4}{15}$$

ls:

ver of 10

$$\frac{4}{5} = 4 \div 5 = .8$$

