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Use the big calendar beforo each montht to help
yourememberspecial days at school or home Read
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``` about She STEM-Eelated topic of fthe month. Doing sowili introduce you to the types of questions tha
will beanswered for you throughout the month, along with the STEMazing facts with which you will bepresented.
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ADVANCE YOUR POSSIBILITIES THROUGH STEM Most of the time we take for granted all we have because of STEM - science, technolog ngineering, and math. As a matter of fact, ou might find it surprising where we would be without them! Just imagine a world with o computers, smartphones, medicines to make you feel better when you are sick, or even numbers!
The many features of our STEM Student lanners are meant to enhance your nderstanding of the growing importance e th not only in our world but in your own ife, 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 Planner ${ }^{\mathrm{TM}}$ will be a valuable ool in keeping you organized and on track to unlock your full potential. nent is vital to achieving both toda's goals and lifelong success. Start by recording your daily, intermediate, and long-term tasks. Segment major

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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 car pertaining to the featured topic:
(1)
question of the week Science, ecehnology, enginecering and mati eece to unaveling many of lites mystr ies. In this section, you will find an answe to question related to the STEM innovaz tion and a cureer b bing faturucd each weck.
(2) NNOVATION
Nearly every inovation throughourt the
 technology, enginecring or math or, this section, we describe an innovation that has already had a significant impact on society or is likely to do so in the future.
(3) STEM DESIGNATION(S)
Here we list for you the STEM subjectsHere we list for you the STEM subjectsthat are most closely related to the question, innvation, 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.
(4)

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.
(5)
tearn 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 careet
(7) an interesting note This intriguing and sometimes surprising fact relates to the featured career. A QR ode quiney takes readers to the sorce of he mes graphics, These activites and other interactive features.
\ärt\\, noun
something that is created with imagination and skill and that is beautiful or that expresses important ideas or feelings


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.

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.


3D printers create tangible objects from a digital file．Once a 3D model is created
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 tech－
nology called slicing．Slicing is sectioning the 3D model into hundreds or thousands of nology called sicing． layers．Once the file has been sliced，the 3D printer works by printing the object layer
$\qquad$

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25 THURSDAY
3D MODELER


Job Description：A 3D Modeler is a multimedia computer artist or animator who brings one－dimensiona epresentations of people，places，and things to life using specialized software This brings real world imagery into the digital realm．3D Modelers work in variety of careers，including but not imited to，the television／motion picture industry，video game design，and science and medical fields．
To Learn More About Becoming a 3D Modeler，visit verfi．com／insights／blog／steam－jobs－list－10－career everft．com／insightss $/ \mathrm{log} /$ ste
that－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
stimated Job Growth（2022－32）： 8

Many sites of historical and cultural significance face the threat of human or environmental destruction．Some sites may also be impactical to see in perso 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．

## DEVELOPMMENT

\di-ve-lәр-ment, dē-<br>, 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.


## ENERGY

\’e-nər-jë<br>, 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

| SUNDAY |
| :--- | :--- | :--- |



Today, energy is critical to every aspect of our lives, and that isn't going to Today, energy is critical to every aspect of our lives, and that isn t going to 2015 to 2040 world energy consumption will increase by 28 percent. In 2015 to 2040 world energy consumption will increase by 28 percent. I 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.

## TUESDAY

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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 thing ike absorb oil from water, coat windows to block out sunlight, and be stronger than steelyet be biodegradable as well!


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Researchers were able to create a material by reducing layers of an object until it was 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, 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 $)^{\text {carb }}$

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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 ey infection fighter. Scan the $Q R$ code to read more about ancient chemistry.
areer: MATERIALS
SCIENTIST
ob 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 Materia Scientist, visit:
Is.gov, search: materials scientists
Carerexplorer.com/careers/materials-scientist

## IUST 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\%

5 SATURDAY

## WEBSITE REFERENCES

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 Learr 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*



## THE EIGHT PARTS OF SPEECH

 NOUNSCommon 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, place Examples 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.
ossessive 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 no
express strong emotion.
Example: Please pick up that piece of paper.
Use a question mark after all interrogative sentences.
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
ADECTIVES
Adjectives are words that describe nouns and specify size, color, mber, and so on. This is called modifying; adjectives are modifie Example: A large, black dog ran into the old, red barn.

## ADVERBS

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

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

Examples: He walked around the corne.
She stood near the building
CONJUNCTIONS
Examples: Nords, phrases, or clauses. Examples: Neither he nor she was allowed to go to the gan
We yelled at him, but he could not hear us.

## INTERJECTIONS

Interjections are also known as exclamations and are indicated by
e 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.
deep feeling.
Example: I can't believe I ran into you today
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 hasnt (for has not),
or to show possession, as in Mary's game.
teacher, or parent. Response provides the writer with informatio help him/her clarify ideas and allows for the recognition of

## 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.
. Pre-Writing: Writers need a background of material from which to draw words, thoughts, and ideas before they can write. Pre writing 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. Response: During this step, the writer is given both verbal and no verbal feedback to his/her writing from a partner, small group,
strengths in his/her writing.
4. Revision: Writers make their work better through revision by adding detail, descriptive words or phrases, and possibly changing sentence order for variety or clarification.
.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.
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.

THE PERIODIC TABLE OF ELEMENTS




