Fort Hayes Metropolitan Education Center

SUMMER ASSIGNMENT

Hello Fort Hayes Student,

Hope you are enjoying your summer vacation. Every in-coming student will have the responsibility of completing the summer assignments below, **due by the first day of school**.

These assignments will also be posted on the school's website. Failure to complete the summer assignments for any class, or in its entirety, could result in a failing grade for the first grading period. Below are homework help days, in which you can attend if you are having difficulty with any of the assignments.

Please begin work on the assignments as soon as possible, do not wait until the last minute. We look forward to the beginning of a wonderful school year.

Homework Help Days (Building 110 Café):
August 9th & 11th between 8 am – 12 pm.

Columbus City Schools

2022-2023

Fort Hayes Metropolitan Education Center

World Language Summer Assignment 2022-2023

This assignment will act as an introduction to our first quarter discussions about developing language proficiency. Fort Hayes Arts & Academic HS language students are expected to make progress in their language proficiency as they move through our program.

All Levels of French, Italian, Japanese & Spanish

LIVE YOUR LANGUAGE:

1. Read this article about 32 fun ways to learn a language.

2. Complete the LIVE YOUR LANGUAGE Notes page.

3. Bring your Notes pages to your language class the first day of school. Be prepared to discuss and share your thoughts on the article and your own language learning experiences.

Fort Hayes Summer Work - LIVE YOUR LANGUAGE

Your Name: _____

Which activities do you think you would be able to incorporate in your life? Why?

***Language proficiency** is the ability to use a language in real world situations during spontaneous interactions or in a non-rehearsed context in a way that is appropriate and acceptable for native speakers of the language.*

How/Why do you think these activities might be able to help you develop your language proficiency?

Fort Hayes English (9-12)
Summer Reading Assignment 2022-23

Why should I read in the summer?

At Fort Hayes, we believe in the power of a well-chosen book. This summer, we want you to find a great book to read not only because pleasure reading in the summer can make you smarter, but because it is good for your mental and emotional health as well. We know your lives are busy, but studies show that 20 minutes of pleasure reading each day can do our minds and bodies a lot of good.

Where can I find good books?

We have the best public library system in the world right here in Columbus, Ohio. We hope you will find time to visit your local branch, set up your library card, and check out some great books. If that isn't an option, we have several apps for you to use. Scan this QR code for all the links you need to read on your phone or with your ears.

What do I do while I'm reading?

At Fort Hayes, when we read, we write. Readers comprehend better when they jot down their thoughts as they read. It doesn't have to slow you down or be too detailed, but a simple note when you notice something important in your book can help you remember and make sense of what you read.

How can show my learning?

We want to see your most important takeaways from the book on a single sheet of paper. We call them ONE-PAGERS. While one-pagers can and should be creative, we are looking more for your critical thinking and interpretation of your book than your skills as an artist. Visit the Fort Hayes Library Google site for one-pager examples and more instructions.

https://tinyurl.com/fthayeslib

FORT HAYES
• LIBRARY •

Choosing a good book

Access to a book that you love is the most important step in this summer reading assignment. Here are some options for finding a good book.

1. **Visit**
   a Columbus Metropolitan Library Branch near you

2. **Download**
   free apps Sora, Libby, Hoopla

3. **Read**
   one of the free books you received from CCS

4. **Check out**
   a book from the Fort Hayes Library

5. **Re-read**
   a favorite book you already own

Fort Hayes Arts & Academic High School

2022 Summer Assignment for Science

This assignment has three components:

- Making Observations
- Reporting Results
- Analysis & Conclusions

The intention is to afford students the opportunity to reconnect with nature through the lens of a conscientious, scientific perspective. Students are to spend two hours outside over the summer, making observations about both the biotic (living plants and animals) and the abiotic (nonliving weather and terrain) factors of ecosystems. This time can be arranged in any way the students and their families see fit: one afternoon at a park or many short walks through their neighborhood. A trip to the Columbus Zoo or Franklin Park Conservatory is acceptable, as well as sitting in your own backyard. For more ideas, follow this link: https://raog.ca/10-ways-to-reconnect-with-nature/

Students are to record their observations in an organized table, although multiple tables are acceptable, whichever is best suited to the style of activity. For example, one student might take her dog for a walk each day at 4:00 pm and create a separate table for each day. Another student might take a picnic to a park and produce one large table for the entire afternoon. Students are to pay close attention to detail and be quantitative (use numbers) as well as qualitative (use words) in their responses. Every table should be labeled with the date/s and time/s the observations were made. For a thorough explanation of how to make observations of nature (an example table is on page 24) follow this link: https://www.fishwildlife.org/application/files/8515/1373/1089/ConEd-Fostering-Outdoor-Observation-Skills.pdf

Nothing digital will be accepted. This assignment is to be done in your own handwriting on notebook or graph paper. Extra credit is available for detailed sketches or drawings.

When you are done making your observations this summer, write a paragraph analyzing your results. Which were direct observations you made with one or more of your senses, which were subjective inferences? Identify the *controlled variables* that were kept constant and list all the *experimental variables* that changed.

For more information about the benefits of reconnecting with nature, see:

https://news.climate.columbia.edu/2011/05/26/why-we-must-reconnect-with-nature/#:~:text=Studies%20reveal%20that%20children%20are,stress%20and%20improves%20physical%20health.

Name: _____ Social Studies Teacher: _____

Fort Hayes Arts & Academic High School
Social Studies Department
Summer Assignment

Welcome to the 2022-2023 school year at Fort Hayes Arts & Academic High School. Read the attached articles ("Our School Mascot: The Fort Hayes Red Tails," "The Story of the Tuskegee Airmen, a.k.a. the 'Red Tails'" and "The Red-Tailed Hawk") and answer the questions below. *This assignment will be DUE the first week of school.*

1. In what year was Fort Hayes Alternative Arts High School founded?

2. What was the school founders' "unique vision" for the school?

3. What three schools make up the Fort Hayes Metropolitan Education Center?

4. Who were the Tuskegee Airmen?

5. Why were they called the "Red Tails?"

6. What was Fort Hayes' *original* mascot?

7. What reasons are given for changing our mascot to the Red Tails?

8. List three interesting or extraordinary facts from the Tuskegee Airmen article:

    1)

    2)

    3)

9. List three interesting or extraordinary facts from the “Red Tailed Hawk” article:

    1)

    2)

    3)

10. How does knowing some of the important history of Fort Hayes affect your feelings about coming here?

11. Have there been any members of your family who came here, either as a soldier or a student?

12. As a Fort Hayes student, list 3 goals you have for yourself:

    1)

    2)

    3)

Fort Hayes Social Studies Department
Summer Assignment Readings

Our School Mascot: Fort Hayes Red Tails

In 1988, the Fort Hayes Alternative Arts High School welcomed its first group of students on surplus grounds of a Civil War-era U.S. Army post. The school's founders had a unique vision for the time: *Create a school where the arts, academics and career programs would be blended, where challenging and collaborative learning would occur and where diversity in all students would be embraced*. By the time our first cohort of students graduated, the Fort Hayes Alternative Arts High School had a little over 200 students enrolled and was just establishing itself as a small but vibrant program tucked away among the derelict buildings of an old, nearly-forgotten army post.

Over the years, our school has grown into the Fort Hayes Metropolitan Education Center, encompassing a career center, an arts-focused middle school and a world-class college preparatory high school. Students come here, study and specialize in the visual and performing arts, prepare for college and grow into promising young scholars, the whole time immersed in these grounds' long and consequential history.

The Tuskegee Airmen were soldiers assigned to a segregated Army Air Corps program set up to train African American soldiers to fly and maintain combat aircraft in World War II. Air Corps officials built a facility at Tuskegee Army Air Field in Alabama and flight training took place at the Tuskegee Institute. When the pilots painted the tails of their fighter planes red, the distinctive look earned them the nickname "Red Tails."

When Fort Hayes Arts & Academic High School was founded we were given, perhaps appropriately, the "Eagles" as a mascot. But, given our unique history as an historical military post, our long history of service to the African American community, and the fact that we currently have at least one family of red-tailed hawks that call our grounds home, we felt a perhaps more appropriate mascot would be the "Red Tails".

In the Fall of 2019, we commemorated our new mascot by inviting a living member of the Tuskegee Airmen to attend a school-wide ceremony. Corporal Don Elder and his wife, along with members of the Tuskegee Airmen Memorial Chapter (Central Ohio) and a number of other distinguished veterans graciously attended the ceremony.

In the weeks and months to come, keep an eye out for Fort Hayes Red Tails insignia, for this as well as our school crest represent a distinguished history as well as a promising future.

FORT HAYES
METROPOLITAN EDUCATION CENTER

The Story of the Tuskegee Airmen, a.k.a. the “Red Tails”

Prior to World War II, the situation for African-American aviators was even more grim than soldiers and sailors in the other branches of the armed forces. The Army Air Corps had completely barred blacks from their ranks while the other branches limited roles assigned to black servicemen to cooks and supply. The basis for this decision was an Army War College report called “The Use of Negro Manpower in War,” which stated that blacks were unfit for combat duty.

Civil rights organizations and the black press, combined with congressional legislation, successfully fought this policy, resulting in the formation of the 99th Air Pursuit Squadron based at the Tuskegee Institute, Alabama, in June 1941. History would know this squadron as the Tuskegee Airmen.

The first class of pilots to go through flight school had 12 cadets and one officer, Capt. Benjamin O. Davis Jr. They earned their wings in March of 1942 at the segregated Tuskegee Army Air Field, becoming the nation’s first black military pilots. Despite this, the unit had to wait to receive combat orders.

During its training, the 99th Squadron was commanded by white officers, and maintained a policy of racial segregation; a policy the airmen resented. Later that year, they petitioned Washington to allow the Tuskegee Airmen to serve in combat.

In response, a hearing was convened before the House Armed Services Committee to determine whether the Tuskegee Airmen "experiment" should be allowed to continue. The committee accused the Airmen of being incompetent based on the fact that they had not seen any combat. The majority of the Committee decided in the Airmen's favor, and the 99th Pursuit Squadron soon joined two new squadrons out of Tuskegee to form the all-black 332nd Fighter Group

After months of delays by the War Department, Tuskegee Airmen were sent to Europe to fight, where, under Davis' command, they flew 1,578 combat and bomber escort missions, destroyed or damaged 400 enemy aircraft, sank an enemy destroyer and destroyed numerous enemy installations.

American bomber crews nicknamed the Airmen the "Red Tails" after the red markings painted on the rear of the unit's fighter planes.

One of their more famous missions occurred on March 24, 1945. Escorting a group of B-17 bombers on a 1,600-mile mission to attack a tank assembly plant near Berlin, Germany. In addition to protecting the bombers, the Red Tails shot down three brand new German jet fighters and provided Army Intelligence with valuable tactical information on the aircraft. As a result, the Red Tail Squadron was awarded a Distinguished Unit Citation.

By 1945, 992 pilots had trained at Tuskegee Airfield; 335 would be deployed, 66 were killed in action and 32 were shot down and became prisoners of war. They received numerous awards, including 96 Distinguished Flying Crosses, several Silver Stars, eight Purple Hearts, 14 Bronze Stars, 744 Air Medals, the Croix de Guerre and the Red Star of Yugoslavia. The Red Tails received two Distinguished Unit Citations. Davis, who in 1936 was the first African American to graduate from West Point Military Academy, would later retire as an Air Force lieutenant general and the nation's second African American general officer.

Far from failing as originally expected, the personal drive of those who flew for the Red Tails had resulted in some of the best pilots in the U.S. Army Air Corps. Nevertheless, the Tuskegee Airmen continued face racism. Their combat record did much to quiet those directly involved with the group (notably bomber crews who often requested them for escort), but other units continued to dismiss the Red Tails.

All of these events appear to have simply stiffened the Airmen's resolve to prove themselves. After the war, the Tuskegee Airmen once again found themselves isolated. In 1949, the 332nd entered the yearly gunnery competition and won. After segregation in the military was ended in 1948 by President Harry S. Truman with Executive Order 9981, the Tuskegee Airmen found themselves in high demand throughout the newly formed United States Air Force.

On March 29th 2007, the Tuskegee Airmen were collectively awarded a Congressional Gold Medal at a ceremony in the U.S. Capitol rotunda. The medal is currently on display at the Smithsonian Institution.

The airfield where the airmen trained is now the Tuskegee Airmen National Historic Site.

The Red-Tailed Hawk

Buteo jamaicensis

Type: Bird of Prey/Raptor

Diet: Carnivore

Average life span in the wild: 21 years

Size: Body, 18 to 26 in (45 to 65 cm); wingspan, 38 to 43 in (1.1 to 1.3 m)

Weight: 24.3 to 51.5 oz. (690 to 1,460 g)

This is the most widespread and familiar large hawk in North America. Red-tailed hawks are bulky and broad-winged and designed for effortless soaring. Wide variations in color and pattern can be found in different regions of North and Central America, but all adult red-tailed hawks have the copper-colored tail that gives them their common name. From nearly white to black, these raptors range from Alaska to Panama and from California to the West Indies.

Red-tailed hawks tend to keep the same territory their whole life; it can be as large as 9.6 square miles (25 square kilometers). The birds defend their area with aerial displays of steep dives and climbs, the mated pair gliding together.

Keen-eyed and efficient hunters, these birds are very adaptable and have widely embraced human habitats. They are commonly seen perched on light poles or circling slowly over open fields, looking for prey such as mice, ground squirrels or rabbits.

Red-tailed hawks, like all raptors, have excellent vision. They can see colors, like most humans can, as well as those in the ultraviolet range. This means that the hawks can perceive colors that humans cannot see. Red-tailed hawks are diurnal hunters but see black and white well enough to also hunt at dusk, the time when nocturnal wildlife, especially rodents, begin to awaken and move around.

They often soar in high circles and have a distinctive shrill cry. Their nesting sites are variable, usually in tall trees, on cliff ledges, or on towers or ledges on buildings. Their nests usually consist of a bulky bowl of sticks, lined with finer materials.

Juvenile red-tailed hawks, no matter where they live, do not have red tails. In fact, the youngsters are a much lighter color than their parents, but their feathers change color gradually over several molts.

The Red-tailed Hawk has a thrilling, raspy scream that sounds exactly like a raptor should. At least, that’s what Hollywood directors seem to think. Whenever a hawk or eagle appears onscreen, no matter what species, the shrill cry on the soundtrack is almost always a Red-tailed Hawk.

Administration Assignment:

Participate in the Duplicate Challenge.

The Duplicate Challenge was an amusing form of entertainment and way of experiencing famous works of art during the 2020 quarantine. People recreated artworks using photography, painting, drawing, and collage.

Complete your own version of the Duplicate Challenge. Google “Famous Works of Art all Ethnicities”, then click “Images” and pick one to duplicate (must be school appropriate and in color). The top submissions will be displayed in the student gallery. Below are examples!

Fort Hayes Metropolitan Education Center

Math

01 Zero

At a young age we make an unsteady entrance into numberland. We learn that 1 is first in the 'number alphabet', and that it introduces the counting numbers 1, 2, 3, 4, 5, ... Counting numbers are just that: they count real things – apples, oranges, bananas, pears. It is only later that we can count the number of apples in a box when there are none.

Even the early Greeks, who advanced science and mathematics by quantum leaps, and the Romans, renowned for their feats of engineering, lacked an effective way of dealing with the number of apples in an empty box. They failed to give 'nothing' a name. The Romans had their ways of combining I, V, X, L, C, D and M but where was 0? They did not count 'nothing'.

How did zero become accepted? The use of a symbol designating 'nothingness' is thought to have originated thousands of years ago. The Maya civilization in what is now Mexico used zero in various forms. A little later, the astronomer Claudius Ptolemy, influenced by the Babylonians, used a symbol akin to our modern 0 as a placeholder in his number system. As a placeholder, zero could be used to distinguish between examples (in modern notation) such as 75 and 705, instead of relying on context as the Babylonians had done. This might be compared with the introduction of the 'comma' into language – both help with *reading* the right meaning. But, just as the comma comes with a set of rules for its use – there have to be rules for using zero.

The seventh-century Indian mathematician Brahmagupta treated zero as a 'number', not merely as a placeholder, and set out rules for dealing with it. These included 'the sum of a positive number and zero is positive' and 'the sum of zero and zero is zero'. In thinking of zero as a number rather than a placeholder, he was quite advanced. The Hindu-Arabic numbering system which included zero in this way was promulgated in the West by Leonardo of Pisa – Fibonacci – in his *Liber Abaci* (*The Book of Counting*) first published in 1202. Brought up in North Africa and schooled in the Hindu-Arabian

arithmetic, he recognized the power of using the extra sign 0 combined with the Hindu symbols 1, 2, 3, 4, 5, 6, 7, 8 and 9.

The launch of zero into the number system posed a problem which Brahmagupta had briefly addressed: how was this 'interloper' to be treated? He had made a start but his nostrums were vague. How could zero be integrated into the existing system of arithmetic in a more precise way? Some adjustments were straightforward. When it came to addition and multiplication, 0 fitted in neatly, but the operations of subtraction and division did not sit easily with the 'foreigner'. Meanings were needed to ensure that 0 harmonized with the rest of accepted arithmetic.

How does zero work? Adding and multiplying with zero is straightforward and uncontentious – you can add 0 to 10 to get a hundred – but we shall mean 'add' in the less imaginative way of the numerical operation. Adding 0 to a number leaves that number unchanged while multiplying 0 by any number always gives 0 as the answer. For example, we have $7 + 0 = 7$ and $7 \times 0 = 0$. Subtraction is a simple operation but can lead to negatives, $7 - 0 = 7$ and $0 - 7 = -7$, while division involving zero raises difficulties.

Let's imagine a length to be measured with a measuring rod. Suppose the measuring rod is actually 7 units in length. We are interested in how many measuring rods we can lie along our given length. If the length to be measured is actually 28 units the answer is 28 divided by 7 or in symbols $28 \div 7 = 4$. A better notation to express this division is

$$\frac{28}{7} = 4$$

and then we can 'cross-multiply' to write this in terms of multiplication, as $28 = 7 \times 4$. What now can be made of 0 divided by 7? To help suggest an answer in this case let us call the answer a so that

$$\frac{0}{7} = a$$

By cross-multiplication this is equivalent to $0 = 7 \times a$. If this is the case, the

only possible value for a is 0 itself because if the multiplication of two numbers gives 0, one of them must be 0. Clearly it is not 7 so a must be a zero.

This is *not* the main difficulty with zero. The danger point is division *by* 0. If we attempt to treat $\frac{7}{0}$ in the same way as we did with $\frac{0}{7}$, we would have the equation

$$\frac{7}{0} = b$$

By cross-multiplication, $0 \times b = 7$ and we wind up with the nonsense that $0 = 7$. By admitting the possibility of $\frac{7}{0}$ being a number we have the potential for numerical mayhem on a grand scale. The way out of this is to say that $\frac{7}{0}$ is undefined. It is not permissible to get any sense from the operation of dividing 7 (or any other nonzero number) by 0 and so we simply do not allow this operation to take place. In a similar way it is not permissible to place a comma in the mid,dle of a word without descending into nonsense.

The 12th-century Indian mathematician Bhaskara, following in the footsteps of Brahmagupta, considered division by 0 and suggested that a number divided by 0 was infinite. This is reasonable because if we divide a number by a very small number the answer is very large. For example, 7 divided by a tenth is 70, and by a hundredth is 700. By making the denominator number smaller and smaller the answer we get is larger and larger. In the ultimate smallness, 0 itself, the answer should be infinity. By adopting this form of reasoning, we are put in the position of explaining an even more bizarre concept – that is, infinity. Wrestling with infinity does not help; infinity (with its standard notation ∞) does not conform to the usual rules of arithmetic and is not a number in the usual sense.

If $\frac{7}{0}$ presented a problem, what can be done with the even more bizarre $\frac{0}{0}$? If $\frac{0}{0} = c$, by cross-multiplication, we arrive at the equation $0 = 0 \times c$ and the fact that $0 = 0$. This is not particularly illuminating but it is not nonsense either. In fact, c can be *any number* and we do not arrive at an impossibility. We reach the conclusion that $\frac{0}{0}$ can be anything; in polite mathematical circles it is called 'indeterminate'.

All in all, when we consider dividing by zero we arrive at the conclusion that it is best to exclude the operation from the way we do calculations. Arithmetic can be conducted quite happily without it.

What use is zero? We simply could not do without 0. The progress of science has depended on it. We talk about zero degrees longitude, zero degrees

on the temperature scale, and likewise zero energy, and zero gravity. It has entered the non-scientific language with such ideas as the zero-hour and zero-tolerance.

Greater use could be made of it though. If you step off the 5th Ave sidewalk in New York City and into the Empire State Building, you are in the magnificent entrance lobby on Floor Number 1. This makes use of the ability of numbers to order, 1 for 'first', 2 for 'second' and so on, up to 102 for 'a hundred and second.' In Europe they do have a Floor 0 but there is a reluctance to call it that.

Mathematics could not function without zero. It is in the kernel of mathematical concepts which make the number system, algebra, and geometry go round. On the number line 0 is the number that separates the positive numbers from the negatives and thus occupies a privileged position. In the decimal system, zero serves as a place holder which enables us to use both huge numbers and microscopic figures.

All about nothing

The sum of zero and a positive number is positive

The sum of zero and a negative number is negative

The sum of a positive and a negative is their difference; or, if they are equal, zero

Zero divided by a negative or positive number is either zero or is expressed as a fraction with zero as numerator and the finite quantity as denominator

Brahmagupta, AD628

Over the course of hundreds of years zero has become accepted and utilized, becoming one of the greatest inventions of man. The 19th-century American mathematician G.B. Halsted adapted Shakespeare's *Midsummer Night's Dream* to write of it as the engine of progress that gives 'to airy nothing, not merely a local habitation and a name, a picture, a symbol, but helpful power, is the characteristic of the Hindu race from whence it sprang'.

When 0 was introduced it must have been thought odd, but mathematicians have a habit of fastening onto strange concepts which are proved useful much later. The modern day equivalent occurs in set theory where the concept of a *set* is a collection of elements. In this theory ϕ designates the set without any elements at all, the so-called 'empty set'. Now that is an odd idea, but like 0 it is indispensible.

the condensed idea
Nothing is quite something

Answer the following questions on a separate sheet of paper. Answer each question in complete sentences.

Zero

1) How did the Mayan use for zero differ from the Babylonian use for zero?

2) Why was the seventh century mathematician Brahmagupta more advanced than the Mayans or Babylonians in his thinking of zero?

3) Why was addition and multiplication with zero easier than subtraction and division?

4) Differentiate the results of 5 – 0 and 0 – 5.

5) Differentiate the results of $\frac{12}{0}$ *and* $\frac{0}{12}$.

6) Why is not permissible to divide by zero?

7) Why was it reasonable for the twelfth century mathematician Bhaskara to conclude that a number divided by zero is infinity?

8) Do you think he world would be different without the number zero? Explain your reasoning.