

THE TIDE

THE TIDE RETURNS!

From the Tide Staff

Welcome or welcome back to LBHS! After a very long summer, it's nice to return to school, and while we still have to wear masks and follow social distancing

guidelines, it's nice to have some normalcy after over a year of chaos and uncertainty. Many in-person clubs are returning, and full classrooms are back. Now, we have to stay strong and be resilient as we continue to fight the pandemic. If you would like to con-

tribute to the Tide, send your work to rioareng23@lbeachg.org or jorcolli23@lbeachg.org. If you want to join the Tide, join our google classroom and attend our meetings every other Tuesday in room 221.

FIELD HOCKEY TEAM'S FIRST YEAR

ANA RAMIREZ ANGULO and EMILY FEIL
STAFF WRITERS

This year was the first season of the Long Beach High School girls' field hockey team! They kicked off their debut with impressive statistics, team-building skills, and hard work. To find out more about how the team was assembled and how it's worked so far, we asked team captain Sarah Munier, team member Alyssa Haberlack, and coach Ms. Graham a few questions.

Q. How many games did the team win this season?

A: (Sarah) We played ten games this season, with eight wins and two losses.

Q. What was the process of the school accepting the team?

A: (Ms. Graham) Last year a group of juniors formed a petition to add the team and looked for stu-

dents to sign. Once they got some signatures they reached out to the school director and superintendent. Mr. Epstein, the athletic director, made it possible to secure funds and provide them with all their needs.

Q. Was it hard to find other schools to compete with?

A: (Ms. Graham) No, it definitely wasn't. There are eighteen other schools in Nassau County that have field hockey, so they were happy to have us added. They wanted us to become a varsity team as well!

Q. Where do you practice? (The middle school or campus and why?)

A: (Ms. Graham) We practice at the middle school since they have goalie lines, but next year we are hoping to move to the high school.

CONTINUED ON PAGE 2

FIELD HOCKEY TEAM'S FIRST YEAR

(cont'd.)

Q. Are you planning on branching off into a varsity team next year?

A: (Ms. Graham) Yes, we are hoping to branch off next year.

Q. What's your responsibility at each practice as the captain?

A: (Sarah) It's mainly to guide the warmup, make sure everyone is prepared to start and help avoid laziness at practice!

Q. How do you motivate the team?

A: (Sarah) We use music to get in the zone and talk while stretching to be more productive. But we all share the responsibility to motivate ourselves during practices and games.

Q. How did the team choose you as captain

A1: (Sarah) There was a team vote during a summer practice leading up to the season, and I guess they thought I would do a good job which was nice.

A2: (Alyssa) I voted for whoever was nicest to me in the last season!

Q. What is your favorite part about being captain?

A: (Sarah) I don't really have a favorite part, but I definitely enjoy that I was chosen by the team because they thought I would make a good captain--and I like playing field hockey in general.

Q. Do you have any chants or cheers?

A: (Sarah) We use the same cheer as the other long beach teams, "Beach on 3, 1, 2, 3 -- beach!"

Q. What are some workouts the team does during practice?

A1: (Sarah) We do lap warm-ups, some stretches, shuttles, and dribble-style drills.

A2: (Alyssa) We do some dribbles back and forth, like speed control and passing. There is one where we pass leading up to the goal, in kind of a criss-cross move.

Q. What do you feel is the most important thing to remember during games?

A: (Sarah) To keep the spirit, because there have definitely been some games where we've been challenged by arguing from other players. We just have to not let them get to us and stick with the team.

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Have any ideas for articles you would like to see in The Tide? Email us at

rioareng23@lbeachg.org or jorcolli23@lbeachg.org.

THEATRICAL DRAMA AT LBHS

JORDAN COLLISON
EDITOR-IN-CHIEF

This past November, the LBHS Theatre put on a production of Rick Elice's *Peter and the Starcatcher*. The play is based on a novel intended as a prequel to the well-known *Peter Pan*, providing a backstory for several of the characters.

Peter and the Starcatcher follows the journey of a nameless orphan boy who is sold into slavery. He is discovered by Molly Aster, the daughter of a starcatcher. The job of a starcatcher is to keep the world safe from a substance that makes wishes come true: starstuff. Molly decides she must protect the boy and his friends, joining their party. As they search for treasure, the crew gets involved in a ship chase, eventually leading them to a mysterious island populated by mermaids, natives, and other unfamiliar creatures.

The theatre's productions highlight the dedication and talents of all involved. With all of the interconnected responsibilities

and challenges that the cast faced, "It really is a lot like sailing a ship," describes Mr. Hue, advisor of the school's plays. "It's a show with a robust ensemble and a diverse range of talents. Everyone is coming together and working as one," he states. Each student who contributed to the show required true commitment and enthusiasm, attending long rehearsals each day, especially in the week preceding the performance, known as "tech. week", in which practice tends to run much later. With the hard work put in by the actors, ensemble, and tech. crew, the outcome can be truly rewarding. "Being able to work on something for months and see the end result is a beautiful thing in my opinion, and every time we do, it only gets more amazing to see," Samantha Fales, the female lead, Molly, states.

With regard to the coronavirus, the crew has had to adapt how they run their practices and showings. Actors wear masks while performing and remain socially distanced while on

stage. Furthermore, the shows have been professionally recorded, allowing audience members to watch from the safety of their homes if they choose.

The lack of live performances in the previous year was challenging, as Fales describes: "When performing, there's a certain energy that actors need to have in order to put on a good show. Since the pandemic hit, we couldn't perform for a live audience for a while." The LBHS theatre was able to give three in-person performances of *Peter and the Starcatcher*, making this production that much more exciting for the drama community and the audience.

All are welcome to get involved in the school's theatre in the future! Announcements regarding auditions for the plays and musicals are typically given on the Morning Wave. For further information, students are encouraged to reach out to Mr. Hue at jhue@lbeachg.org.



PICTURES COURTESY OF THE LONG BEACH HIGH SCHOOL THEATRE COMPANY

ADVICE TO FRESHMEN FROM UPPERCLASSMEN

(This article has been translated into Spanish on pages 5 and 6)

ANA RAMIREZ ANGULO
STAFF WRITER

With a year flooded with diverse changes, we've all required guidance to help us adapt. The Tide staff has gathered frequently-asked questions from freshmen students as well as collected answers provided by seniors, in the hope to supply underclassmen with the best possible advice.

Disclaimer: Questions and answers have been lightly edited for better understanding

General Advice

How do I make friends as someone new to the school?

Clubs and sports! Joining will make you meet with people that have similar interests you have, as well. There is an extended list of clubs that are available and are always welcoming new students throughout the year.

How do I deal with problems between my peers in high school?

Remember that this is a time in which you're building yourself and changes may always occur. It is normal to have inconveniences with your friends, and it's important to keep this in mind when

it does happen. Being respectful is critical, and if it is necessary the high school has an amazing support network that is willing to help you — such as our deans, counselors, teachers, security guards, etc.

What's one major thing you learned throughout high school that you wish someone would have told you as a freshman?

Your relationship with your teachers is more important than you may think — they're here to help you succeed and you'll need this in the future if you need recommendations from them. In addition, staying on top of your work is the major key to succeeding in your classes. Despite the fact that you may not get the best grades on each one of your tests, you will be rewarded by all the homework and projects you did on time!

Classes and Academics

What courses should I take?

It depends on you! The electives and classes you may want to take depend on what you're interested in doing for now and the future. If you are looking for college credits, you may want to take AP classes. If you want to challenge yourself, you can look forward to doing the IB diploma program. The same goes for electives; if you're

interested in cooking, business, art, etc., there will always be an elective for you to join! You are able to discuss this in detail with your counselor as well.

What should I do to adjust to more work and studying harder topics?

Making a schedule is the most important thing that you may want to do in order to start adjusting. Staying organized and avoiding procrastination will help you build a base of discipline that will stick with you and will highly aid you as you continue high school.

What tests should I begin preparing for?

First, measure yourself when it comes to exams, and be aware of the fact that you might be an excellent test taker or not a perfect one. This is crucial to know since it will tell you what your next steps are for preparation. Second, it will help you find what kind of learner you are (visual, auditory, kinesthetic, or reading/writing). Based on this you can focus on studying methods that suit you specifically. Last, it is important to start a habit of making summaries for the big tests that include lots of topics. The tests that you will want to focus the most on are the regents and SAT/ACT.

CONTINUED ON PAGE 5

ADVICE TO FRESHMEN FROM UPPERCLASSMEN ***(cont'd.)***

Extracurriculars and Sports*consuming?**How can I get involved in clubs and sports at LBHS?*

Try to get as informed as possible about the sports or clubs you would want to be involved in. This includes getting the google classroom code, listening to the school news, reading the flyers around the school, or simply asking a trusted adult at the high school.

No! Our extracurricular activities have been mentioned to be very time-worthy. First, the vast majority of clubs in the school only last thirty flying minutes after school. Second, sports have practice until five p.m. Not only would they help you establish a better schedule, but the sports and clubs would automatically help you maintain a stable balance for both your social and academic life.

The clubs you may want to join also depend a lot on your personal preferences and what you are exactly interested in. There are multiple drama related clubs (such as the Theater club), art clubs that you can always join, cultural clubs that have a welcoming community for everyone, and last but not least, class clubs, which are to connect even more with the peers in your grade and participate in the high school community.

*Are clubs and sports too time-**What clubs should I join?*

regents and SAT/ACT.

CONESJOS PARA NOVENO DE PARTE DE DUODÉCIMOS

Con un año con cambios tan diversos, todos merecemos orientación para este nuevo momento de adaptación. El periodico de la escuela ha podido dar una idea de esto al recopilar algunas de las preguntas que recolectamos de nuestros estudiantes de primer año. Nuestros estudiantes del último año respondieron con orgullo a todas sus preguntas para brindarles a todos los mejores consejos posibles.

Descargo de responsabilidad: las preguntas y respuestas se han editado ligeramente para una mejor comprensión

Asesoramiento general*¿Cómo me sugieres hacer amigos como alguien nuevo?*

¡Clubes y deportes! Unirte te hará conocer a personas que tienen intereses similares a los tuyos. Hay una lista extensa de clubes que están disponibles y siempre dan la bienvenida a nuevos miembros durante todo el año.

¿Cómo debería de enfrentar los problemas entre mis amigos y compañeros en la escuela?

Recordar que este es un momento

en el que te estás construyendo y que siempre pueden ocurrir cambios es importante. Es normal tener inconvenientes con tus amigos y es importante tener esto en cuenta cuando suceda. Ser respetuoso es fundamental y, si es necesario, la escuela secundaria tiene una red de apoyo increíble que está dispuesta a ayudarte, como nuestros decanos, consejeros, maestros, guardias de seguridad, etc.

¿Qué es una cosa importante que debo de tener en mente como estudiante de primer año?

CONTINÚA EN LA PÁGINA SEIS

CONESJOS PARA NOVENO DE PARTE DE DUODÉCIMOS (cont'd)

Cuida tu comportamiento diario. Tu relación con tus profesores es más importante de lo que piensas; están aquí para ayudarte a tener éxito y los necesitarás en el futuro cuando ocupes recomendaciones de ellos para aplicar a cursos u organizaciones. Además, mantenerse al tanto de tu trabajo es la clave principal para tener éxito en tus clases. A pesar de que es posible que no obtengas las mejores calificaciones en cada una de sus pruebas, ¡será recompensado con todas las tareas y proyectos que hayas hecho a tiempo!

Clases y Académicas

¿Qué cursos debería de tomar?

¡Depende de ti! Las clases optativas que deseas tomar dependen de lo que te interese hacer ahora y en el futuro. Si estás buscando créditos universitarios, es posible que deseas tomar clases AP, si deseas desafiarte a ti mismo, puedes esperar hacer el programa de diploma IB. Lo mismo ocurre con las optativas, si estás interesado en la cocina, los negocios, el arte, etc. ¡Siempre habrá una clase para que te unas! También puedes discutir esto en detalle con tu consejero.

¿Cómo me debería de adaptar a más trabajo y estudiar materias más pesadas?

Hacer un horario es lo más importante que puedes querer hacer para comenzar a adaptarte. Man-

tenerte organizado y evitar la postergación te ayudará a construir una base de disciplina que te acompañará y te ayudará mucho a medida que continúes la escuela secundaria.

¿Para qué pruebas debería de comenzar a prepararme?

Primero, mídete a ti mismo cuando se trata de exámenes y ten en cuenta el hecho de que podrías ser un excelente tomador de exámenes o uno no tan perfecto. Es crucial saber esto, ya que te dirá cuáles son tus próximos pasos para la preparación. En segundo lugar, te ayudará a encontrar qué tipo de aprendizaje te ayuda más (ya sea visual, auditivo, cinestésico o de lectura), en función de esto, puedes concentrarte en encontrar métodos que se adapten específicamente a ti. Por último, es importante tener el hábito de hacer resúmenes para las grandes pruebas que incluyen muchos temas. Las pruebas en las que querás enfocarte más son las regentes y SAT / ACT.

Actividades Extracurriculares y Deportivas

¿Cómo puedo participar en clubes y deportes?

Trate de estar lo más informado posible sobre los deportes o clubes en los que le gustaría participar. Esto incluye obtener el código de google classroom, escuchar las

noticias de la escuela, leer los folletos o simplemente preguntarle a un adulto de confianza en la escuela secundaria.

¿Los clubes y los deportes consumen demasiado tiempo?

¡No! Se ha mencionado que nuestras actividades extracurriculares son muy valiosas. Primero, la gran mayoría de los clubes de la escuela solo duran treinta minutos después de clases. En segundo lugar, los deportes tienen práctica hasta las cinco de la tarde. No solo te ayudarían a establecer un mejor horario, sino que los deportes y los clubes te ayudarían automáticamente a mantener un equilibrio estable tanto para tu vida social como académica.

¿En qué club me debería de involucrar?

Los clubes a los que puedes querer unirte también dependen en gran medida de tus preferencias personales y de lo que te interesa exactamente. Hay varios clubes relacionados con el teatro (como el club de teatro), clubes de arte a los que siempre puedes unirte, clubes culturales que tienen un comunidad acogedora para todos y, por último, pero no menos importante, clubes de clase, en los cuales puedes conectarte aún más con los compañeros de tu grado y participar en la comunidad de la escuela secundaria.

STUDENTS COMMENDED FOR ACADEMIC EXCELLENCE

RIO ARENGO
EDITOR-IN-CHIEF

In the fall of 2020, every junior at LBHS took the national PSAT test - a three hour exam that tests the English comprehension, grammar, and mathematical skills of students. About 1.5 millions students took the test throughout America, with as few as 34,000 test-takers with the highest scores being commended for their performance. At LBHS, Gwendolyn Posner, Victoria Lugo, Benjamin Armus, and Robert Adler were among these nationally commended students.

for scoring well on standardized tests, Ben advises that you take advantage of every source of help possible. “With the SAT, what I did is to take practice tests, then categorize the ques-

tions I got wrong and study those categories”. In addition, he credits those close to him in helping him with his success. “Primarily, I thank my family and teachers, of course, for supporting me. In addition, the countless excellent online educators and resources that I believe everyone should seek out...Don’t ignore the resources the school gives you! Take advantage of all the programs LBHS offers.”



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Overall, this is a very outstanding accomplishment by these students at LBHS, and we wish them the best on their future academic endeavors.

When asked about tips

MUSICIANS QUALIFY FOR ALL-STATE

JORDAN COLLINSON
EDITOR-IN-CHIEF

Throughout the 2020-2021 school year, music students across the nation spent countless hours preparing a level VI solo to audition for NYSSMA (New York State School Music Association) All-State. All-State is a very selective music festival composed of the top student instrumentalists and vocalists in each state. With over 6,500 sophomores and juniors competing last year, more than 2,400 received a score of 98 or higher, qualifying them to be selected. Obtaining a grade of 100 on one’s solo performance guarantees them a spot as an alternate but does not secure them a spot

in the ensemble, conveying just how selective the process is and that being chosen is a prodigious distinction. “The musical and technical demands are extremely advanced, and the judges are looking at their performance with much more scrutiny. It is intensely competitive,” Nicole Albani, an orchestra teacher at the high school, states. All musicians are encouraged to further their journeys by taking on this challenge as auditioning in itself is highly commendable.

This was a record-setting year for Long Beach’s music department. Seven students from LBHS were accepted, two of them being selected and five earning recognition as alternates. Junior Jacob LoCascio was se-

lected for the All-State Vocal Jazz ensemble, and senior Cameron Moses was accepted into the All-State Symphonic Band for clarinet. The students who received alternate status include vocalist Kenneth Bailing (senior), violinist Brianna Banvard (senior), cellist Shayna Barkan (senior), flutist Kira Centenni (senior), and violist Isadora Turbeck (senior).

The event takes place in Rochester each year, typically in late November or early December. Congratulations to all who were selected and all who auditioned, and good luck to those participating in the upcoming festival!

SPORTS

HOMECOMING SUCCESS FOR MARINES

MARYSOL ALVARADO
STAFF WRITER

Long Beach High School's homecoming carnival and football game were held on Friday, October 15th. During the school day, all periods were cut short, making way for the pep rally in the latter half. The carnival began almost directly after school, succeeded by the game at 7:00!

Carnival:

LBHS' homecoming is an event that brings the entire community together, as all are invited to attend. Many parents and siblings come to support the team and show Long Beach pride. Not only does the carnival draw people together, but it also gives school clubs an opportunity to promote themselves to potential members, as well as raise money to fund them throughout the year.

Before the event began, a booth was set up for each club, prepared for and run by its members. At the booths, clubs sold carnival food, games, and prizes. Listed below is a selection of some of the clubs that participated in the carnival and what they sold:

- Youth Wellness Council, advised by Ms. Bloom and Ms. Ford - tarot card reading
- Fashion Club, advised by Mrs. Harvey - jewelry making station
- Gender Sexuality Acceptance (GSA), advised by Ms. Ankudovych and Ms. Silverman - rock painting
- Key Club, advised by Ms. Wolfen - paw tattoos
- Anime-Manga Club, advised by Mr. Lainez - Super Smash Bros
- The Tide, advised by Ms. Tyd - Freeze Pops and Face the Cookie
- Tri-M Music Honor Society, advised by Dr. Capobianco - homemade chocolate chip cookies and karaoke
- World Language Honor Society, advised by Mrs. Jimenez - juice boxes and face painting

The Game:

SPOILER ALERT: The Marines won their homecoming game! With an exciting score of 28-

14, the home team secured their victory over Glen Cove. Ms. DeVivio, the game's MC, provided us with a play-by-play:

"The Long Beach Marines football team hosted the Glen Cove Big Red on Friday, October 15th under the lights at Veterans Field. The Marines jumped out to a 7 point lead with a 27-yard touchdown pass, from Jeffrey Conway to Christian Tarsia, in the first quarter. Glen Cove subsequently answered with a touchdown and opted for the 2 point conversion, which gave them an 8-7 lead midway through the 2nd quarter. The Long Beach Marines went back to work on offense and scored their second touchdown of the game on a 15-yard rushing touchdown by Conway, making the score 14-8 at halftime.

"The first play of the second half was a true highlight moment as Tarsia ran back the kickoff for a 60-yard touchdown, giving the Marines a commanding 21-8 lead. The Marines continued to build on the lead with yet another Conway touchdown, late in the 3rd quarter, extending the Marine lead to 28-8.

"Glen Cove answered back in the 4th quarter with a 13-yard touchdown pass. However, their 2 point attempt after the touchdown was unsuccessful as a result of an interception by Jack Miller. The score at that point was 28-14, which ultimately remained the final score of the game.

"Overall, the Marines led a well-balanced attack on both offense and defense. Defensively, Jack Skarren had a huge game, recording 14 tackles, and the Marines' defense overall was solid."

Another huge part of the homecoming game was the Long Beach cheerleaders' halftime dance. Varsity cheerleader Nikki Kane, who is planning on doing Competition Cheer this winter, performed during this dance. "It was nerve-wracking at first, but once the crowd got excited, especially during halftime, it was so much fun," she states. Kane loved being a part of the varsity cheer team, and the crowd loved their show!

It is safe to say that this year's homecoming was a huge success. With a very busy carnival, a win for the Marines, and an excellent halftime show from the cheerleaders, everyone had a great time. Be sure to join us next October!

MOVIE REVIEWS: BLOCKBUSTER DELAYS

EMILY FEIL
STAFF WRITER

Many movies released this season were originally intended to air in 2020 but were postponed due to Covid-19. Despite being released late, these films were a huge success.

The science-fiction movie *Dune* hit theaters in the United States on October 22nd. Its original release date was November 20th, 2020, and was first pushed back to December 18th, that same year. The Coronavirus outbreak caused its release to be further delayed to late 2021. The movie follows the story of Paul Atreides and his family, as they fight a war for control of the desert planet Arrakis.

This film was a remake of the original *Dune*, released in 1984, both being based on Frank Herbert's novel, *Dune*. The director of the most recent version, Denis Villeneuve, aspired to make his film closer to the contents of the book. The novel was considered one of the hardest pieces of fiction to adapt because

of its intricate plot lines, complex fictional inventions, and wide range of interpretations from audiences. However, with 83% on Rotten Tomatoes, and 300 million dollars made worldwide, it's clear that Villeneuve's adaptation was a commercial hit.

Eternals is the 26th movie in the Marvel franchise. It was released on November 5th, 2021, although it was originally intended to air almost a year earlier, on November 6th, 2020. *Eternals* is based on the world in Jack Kirby's comics. The Eternals are immortal beings created by the Celestials, who experimented with human evolution in the early eons of the Marvel universe. Its reviews have been very mixed with 47% on Rotten Tomatoes and a 52 on Metacritic.

On November 10th, 2021, *Clifford the Big Red Dog*, was released in theaters. Similar to the other films, this date was rescheduled on account of the Coronavirus. When Emily Elizabeth goes to a magical pet store,

she falls in love with a little red dog, who she names Clifford. The shop owner claimed that the more she loved him, the bigger he would grow. This film follows Emily's adventures with her huge puppy around New York City. As of now, it has a 55 on Metacritic and a 52% on Rotten Tomatoes.

The Batman is one of the most widely anticipated movies this year, set to release on March 4th, 2022. Matt Reeves, the film's director, wanted to focus on the origins of DC Comics' famous character without directly following the plotlines of DC's cinematic universe. This movie is the tenth film in the Batman franchise, featuring Robert Pattinson as Batman, Zoe Kravitz as Catwoman, Paul Dano as The Riddler, and Colin Farrel as The Penguin. In this movie, the Riddler plays a game of cat and mouse with Batman and Commissioner Gordon all around Gotham City.!



IMAGES COURTESY OF IMDB.COM

LBHS

GETTING TO KNOW

THE VALEDICTORIANS AND SALUDITORIANS

JORDAN COLLINSON
EDITOR-IN-CHIEF

Long Beach High School recently announced its co-valedictorians and co-salutatorians for the Class of 2022. Earning these titles, four students were recognized for achieving the top GPAs in their class. Congratulations to co-valedictorians Samantha Addeo and Joseph Sukonik and co-salutatorians Victoria Lugo and Freddy Ramon! Each of these students is highly accomplished, being International Baccalaureate Diploma candidates and members of the National Honor Society, as well as holding multiple other positions in our community.

Attaining this recognition stands as a tribute to the diligence and dedication each of these individuals has put in during their experience at Long Beach. "Being a valedictorian means a great deal to me as it

had been something I had strived for since taking my first Honors classes, and it was really satisfying to finally be rewarded after these three years of high school. I don't see the award as a measure of intelligence, rather the work that I put in over the years, and I see this recognition as the fruit of my labor," Sukonik stated when asked what this title means to him. Furthermore, the other recipients each said that they were honored to see their perseverance throughout high school pay off, explaining that this recognition is a symbol of what they have accomplished.

As a concluding statement, the valedictorians and salutatorians were asked to provide current Long Beach students with a final piece of advice:

Addeo - "My last piece of advice to LBHS students is to push yourself even during the bad days because it will eventually pay off."

Sukonik - "One thing that has

really helped me as a student throughout my time at LBHS is the idea of maintaining a work-life balance, or as I like to call it, not working at the expense of one's health and happiness. One should always prioritize time to do something which alleviates them from the stress of daily life, but they shouldn't neglect their academics; I would describe it as being diligent in both work and play."

Ramon - "Enjoy your time here. Life moves by fast, so try to truly cherish some of the best moments of your childhood rather than ruin them. As we transition into adulthood, this place will become just a memory. As I move onto the next chapter of my life, there are definitely times I wish I could've taken advantage of in my time at this school. So do your best to leave without any regrets and have fun."



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THE DARK SIDE TO A NEW FAD IN NFTs

FREDDY RAMON
GUEST WRITER

People love to feel the sense of uniqueness that comes with a one-of-a-kind item. Maybe it's a rare Barbie doll or Pokémon trading card. That's what drives up the price. The same principle holds true even with virtual collectibles. They are called NFTs, or non fungible tokens, which have risen greatly in price over the last year. Purchase is only available through a certain cryptocurrency called Ethereum, and, with the backing of celebrities and growing interest, it has skyrocketed in value. This has led to some NFTs being bought for tens of millions of dollars, including Beeple who sold a collage of photos called "Everydays - The First 5000 Days" for roughly \$70 million at an auction. With cryptocurrency in the spotlight, NFTs have become a staple purchase because they can be purchased directly with Ethereum. The rush to acquire more crypto to meet demand comes at a price: mining for it can be quite damaging to the environment.

Mining centers are located across the world. Most miners come from China, but all share a common goal in mind: generate the computer code required to produce the cryptocurrency. There are an estimated 70,000 crypto mines that operate across the world. Each one consists of thousands of computers working autonomously to verify a block of cryptocurrency through solving complex crypto-

graphic puzzles.

It becomes a guessing game, whereby chance one of these computers will be able to generate the correct code and be awarded a block of the cryptocurrency. This operation resembles a data center, and it requires massive amounts of energy. For crypto entrepreneurs, investing in more computers would increase the chances of them getting the right code. You can think of it as a gold rush of some sort. The more miners and machines you have, the better chance you have of striking rich.

Due to the competitive nature of mining, companies have already started to make large-scale mining a reality. Enigma, the world's largest Ethereum cryptocurrency mining farm in the world, was built by Genesis Mining. The mine is a data center with state-of-the-art GPU miners and has been constantly expanding Ethereum mining rigs and hardware to keep up with growing demand. The CEO Marco Streng stated, "We believe it's headed to the moon and we're building a rocket ship to make sure our customers do not miss out." Their website claims that this mine alone has a whopping 200,000 customers. Once the customers put it to use, Ethereum can be used to buy NFTs. According to Fortune, "a single Ethereum transaction consumes as much electricity as an average U.S. household uses in a workweek--and has a carbon footprint equivalent to 140,893

Visa credit card transactions or 10,595 hours of watching YouTube." The magnitude of energy consumption crypto mining is alarming, and it's only getting started.

Alex de Vries founded Digiconimist, a website that's dedicated to exposing the unintended consequences of digital trends, and has created energy consumption indexes that quantify the impact of both Bitcoin and Ethereum networks. For Ethereum, the index showcases its unsustainability. The network consumes more electricity than a number of countries such as Greece and Romania. A lot of this has to do with the lack of efficiency in its model.

NFTs specifically run on Ethereum, a cryptocurrency similar to Bitcoin that is based on a proof of work system and uses the same type of algorithm. This system is flawed and anything built on a network like Ethereum will always produce a substantial carbon footprint. It's extremely inefficient because you can have unlimited energy consumption since it's linked to price and there's no limit to price. To showcase its inefficiency Alex recently conducted a comparison between making a real T-shirt vs. an NFT dress. He found that a T-shirt has a carbon footprint of 10 kg. The NFT dress in comparison, after just being minted with little transaction, had a carbon footprint of 600 kg..

CONTINUED ON PAGE 12

THE DARK SIDE TO A NEW FAD IN NFTs (cont'd.)

While others have suggested the use of renewable energy to combat this energy expenditure, Alex refutes it by saying, “The question is where are you going to get all the renewable energy from... China is the world’s largest energy market and they also have the world’s biggest renewable capacity but that’s now completely inaccessible for miners.” He also mentions a study done at Cambridge recently that showcases a mining map. It showed locations outside of China with a lot of renewable energy. Norway was 0.6% of the network and Iceland was 0.26% , which is negligible, so there just isn’t enough renewable energy for miners to use. Instead, the focus should be on

changing the proof of work system to a proof of stake mechanism. Alex believes it would be beneficial because “There is no incentive to use energy because it would be harder. It’s a completely different system and it doesn’t depend on computational power, it actually depends on wealth rather than computational power which could potentially reduce the energy consumption of the entire system by 99.5%.” Ethereum has promised for years to make this change. They recently claimed to make the switch by the end of this year, but are now postponing it for early next year. The key in making NFTs sustainable is by reworking the inefficient system it’s been running on for years.

The problem doesn’t just end there. What happens to the specialized computers solely made for mining? Down the line, it will leave a big pile of electronic waste. This can come in the form of heavy metal leaching, and air and water pollution. It has also impacted the semiconductor supply chain as the demand for graphic cards for mining has completely destroyed the market. If you wanted a graphic card, you would have to probably pay 5 times the original price on the secondary market. The overall impact of NFTs goes beyond energy consumption, but a proof of stake model would be a step in the right direction.



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