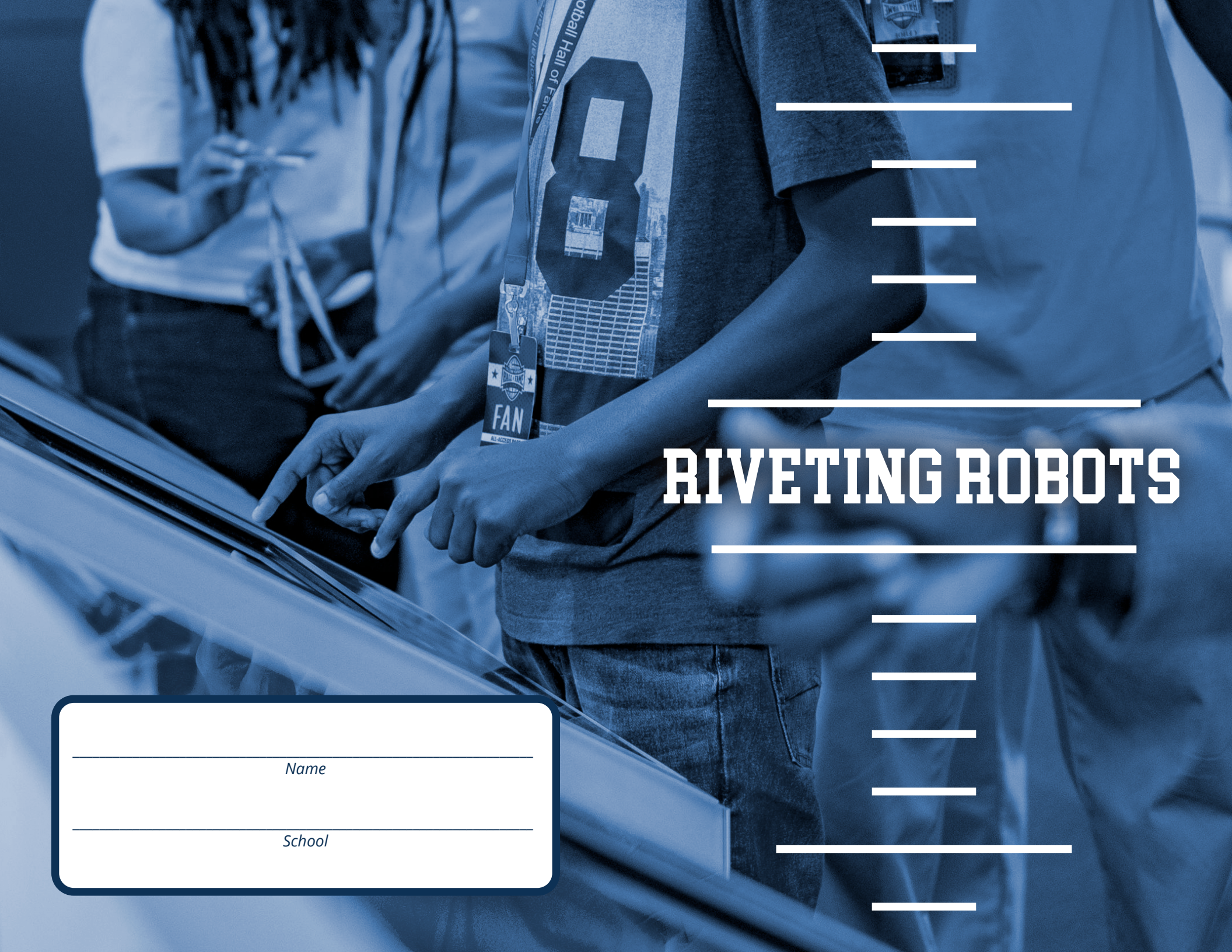
Chick-fil-A COLLEGE FOOTBALL HALL OF FAME ATLANTA™

6th - 8th Grade

STUDENT PLAYBOOK



RIVETING ROBOTS

_____
Name

_____
School

KICKOFF

- What are some characteristics or abilities that robots have that might make them superior to humans?
- **Did you know?** In 1954, George Devol built the Unimate. It was the first commercial, digital and programmable robot. General Motors purchased and used the Unimate to lift pieces of hot metal that have been molded into parts to build automobiles.

FIRST & 10

- When you enter the College Football Hall of Fame, you receive and register your All Access Pass. This allows the building to know who you are. The technology that allows this to happen is an RFID enabled badge. RFID stands for Radio Frequency Identification.
- As you walk through the College Football Hall of Fame, watch for your name to appear on screens. Make notes about how your experience would be different if there was a human there instead of the RFID reader.

Machine (RFID reader)	Human

- How would this change your experience?

_____

_____

- Discuss your answers with a classmate. What are your similarities and differences?

_____

_____

- In what situation is a human better?

_____

_____

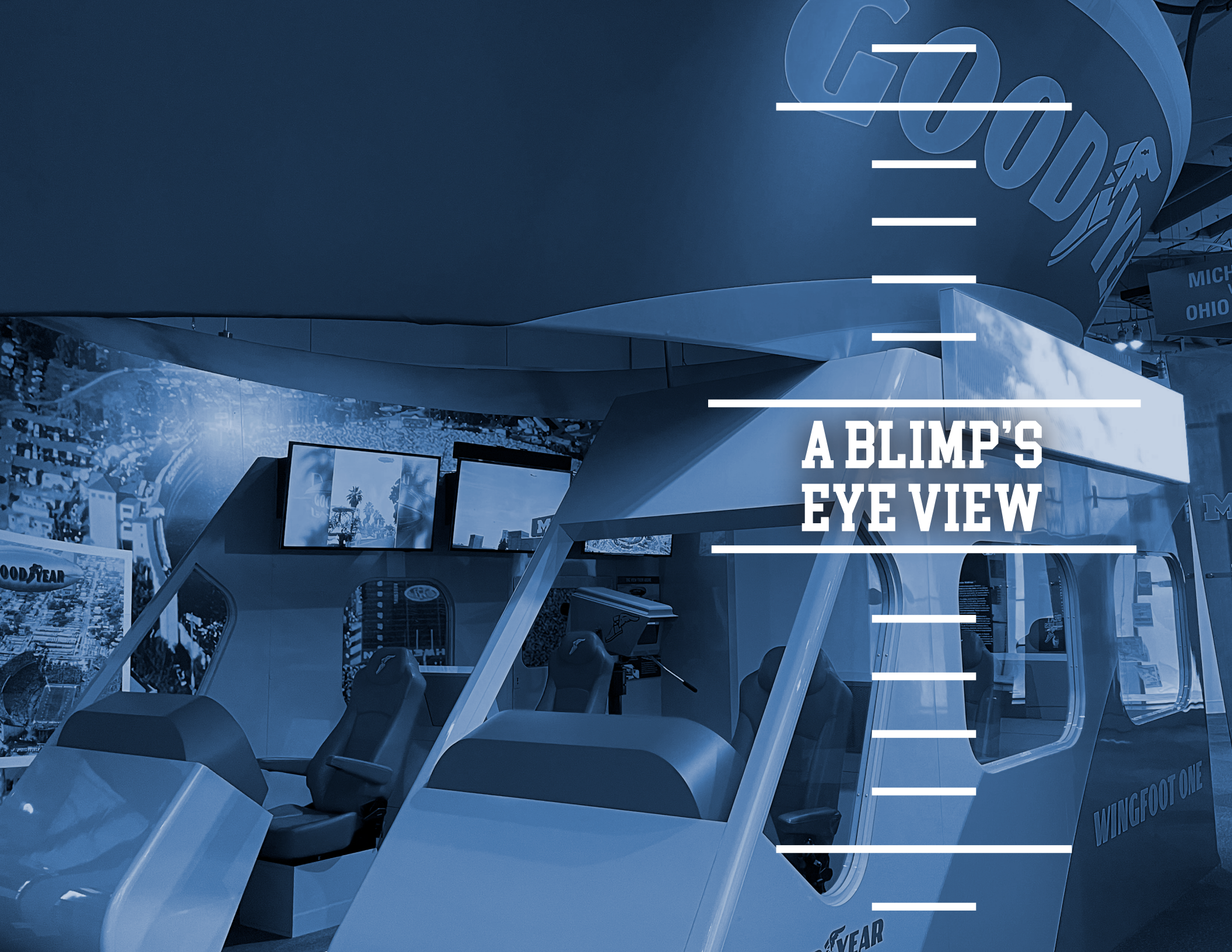
- In what situation is a machine better?

_____

_____

POST-GAME - KEEP EXPLORING!

- Robots are programmed to complete many tasks. How could a robot programmed just for you impact your life?
- Think of something you do every day. An example might be making a meal or getting ready in the morning.
- On a separate piece of paper, create an algorithm, flowchart and design a program for this. Make sure to include decisions.



A BLIMP'S EYE VIEW

KICKOFF

- How does looking at a familiar object from a new perspective change the way we experience or think about it?
- **Did you know?** There are more astronauts in the world than Blimp pilots.

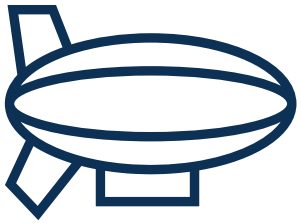
FIRST & 10

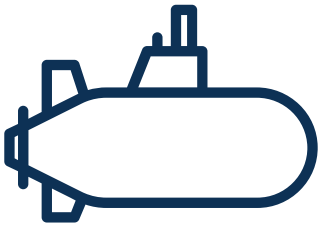
- Make your way to the Goodyear Blimp Experience located on the 2nd floor of the Hall.
- Take a moment to look around the airship. What do you notice? What is different from the inside of this exhibit and your car? A plane? A train?
- Next, sit in a seat and choose one of your favorite teams to view a video of the Goodyear Blimp flyover of their stadium. As you watch the flyover, think about the following questions:
  - ☐ What do you notice about the stadium from this perspective?
  - ☐ How is this perspective different than from inside the stadium? Can you see more or less? How does it change your experience or understanding of the field or the stadium?
  - ☐ What do you notice about the shape of the stadium?
- The perspective that the blimp is filming from is often referred to as a "bird's eye view". As the name indicates, it refers to the way that a bird would see things as it flies over.
- Architects take many things into consideration when designing stadiums, including what it will look like from this view. Anyone who watches a football game on TV will likely see the stadium from the bird's eye view because blimps are a common sighting at sporting events. This wasn't always the case, however. Check out some highlights from the history of the blimp below:
  - ☐ The first balloon, or blimp, was created in 1912.
  - ☐ In the 1920's, Goodyear blimps began appearing across America, making it a recognizable presence. However, they were not being created solely for people to enjoy looking at – they were being groomed as military vehicles for the Navy.
  - ☐ From 1930-1940, Goodyear blimps began carrying lighted signs to display messages as well as loudspeakers to "blimpcast' live greetings to the public below.
  - ☐ During World War II, blimps were an important part of the Navy's convoy due to their ability to stay airborne for long periods of time and monitor the seas.
  - ☐ After the war, however, their focus was lighting the skies with flying signage.
  - ☐ From 1955 to the present, Goodyear blimps have evolved in their ability to display signage from large bulbs only capable of one color to screens that can display a variety of images, colors and logos.
  - ☐ Blimps are now very familiar sights at most sporting events – especially football games – and are known for their dedication to advertising for nonprofits and helping raise money for various charities.
  - ☐ Blimps can provide a unique bird's eye view of events and stadiums. This perspective allows viewers to take in the stadium and event all at once and allows for a better visual understanding of the architecture of each of the structures they are viewing.

- Next, take a moment to look at more stadium flyovers, and pay attention to their architecture. Each stadium is unique in its design, and some are even famous for their fun shapes and colors. For example:
  - ☐ Harvard Stadium in Boston has a unique horseshoe shape and a colosseum design on one end.
  - ☐ Boise State Bronco Stadium is nicknamed "The Blue" for its blue "Smurf Turf", making it one of the most recognizable stadiums from the view of the blimp.
  - ☐ The University of Utah's Rice-Eccles Stadium sits at the base of a beautiful mountain range.
  - ☐ Faurot Field in Missouri also has a horseshoe design and includes a giant "M" on one end made of painted rocks.
- Each of these stadiums has something that makes it unique in its design and very recognizable from a bird's eye view.
- After looking at stadiums from the perspective of the blimp, take time to think about how you would design a stadium that would be unique and easily recognizable from a bird's eye view. Think about what drew your attention as you viewed stadiums through the exhibit. What elements would you include to create a completely new stadium design?
- Use the next page to sketch out your football stadium design. You are the architect, so you have full creative freedom to do anything you want. Be sure to think about things such as shape, line, color and contrast. What would pop out when viewing from a blimp? What would viewers notice first about your stadium?
- When you have finished with your design, give your stadium a catchy name.

POST-GAME - KEEP EXPLORING!

- Whether soaring through the air or plunging to great ocean depths, blimp pilots and submarine pilots have a lot to keep up with on the job. Steering either vehicle requires special training and licensing.





- What do blimps and submarines have in common?

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- In what ways are they different?

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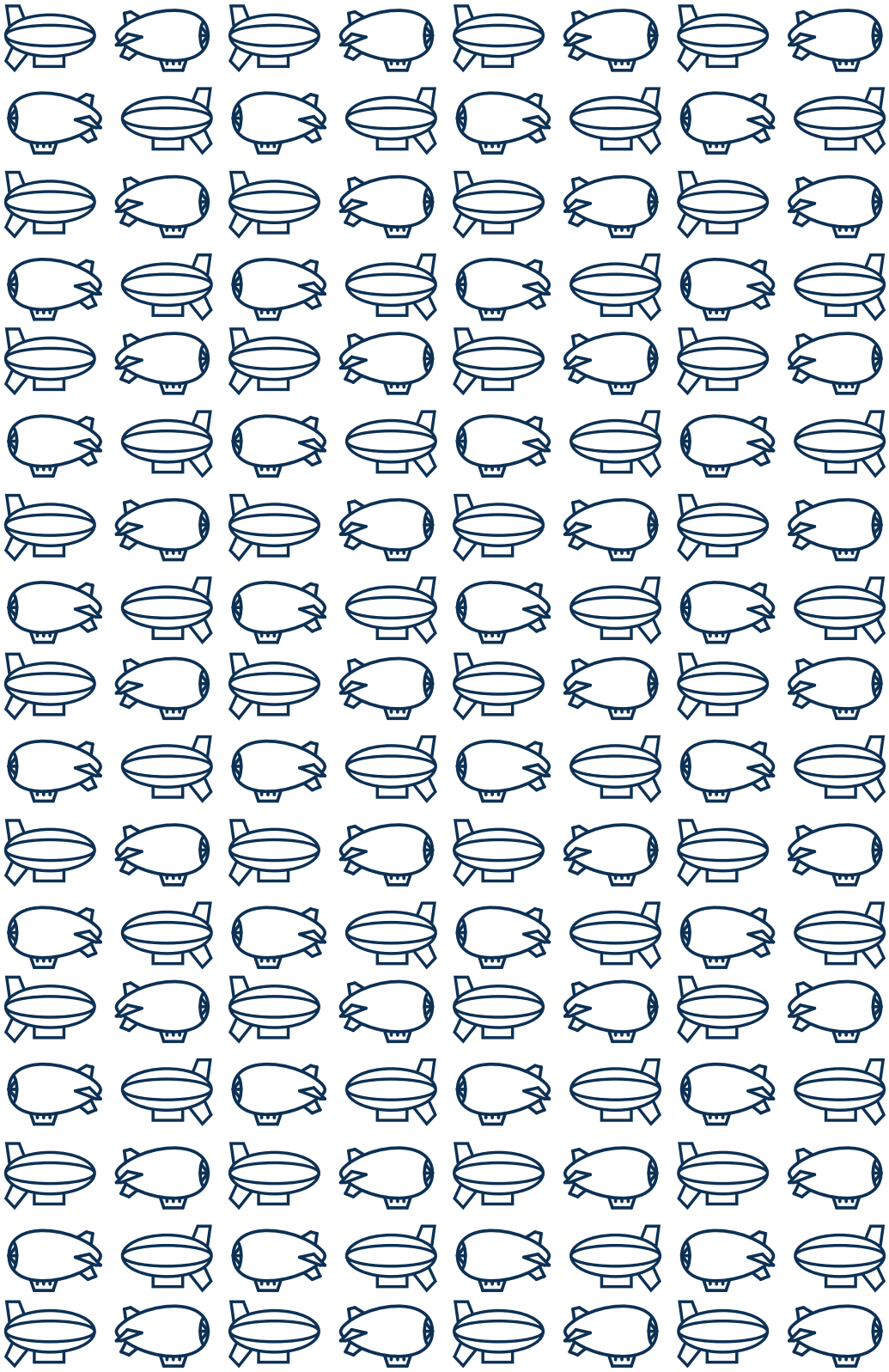

PUT A LID ON IT

The Science of Helmet Design

KICKOFF

- What is the purpose of wearing a helmet?
- What design features make a helmet effective?
- How does a helmet mimic structures found in nature?

FIRST & 10

- Proceed to The Evolution of Equipment on the 2nd floor.

HEADFIRST

- **Did you know?** Brains are like the computers of the body, so it's important that they stay safe. Fortunately, our brains are protected by bones that are collectively called the skull. In football, players wear helmets to protect their skull.
- What protection can a helmet offer that a skull cannot?

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_____

MAKING AN IMPACT

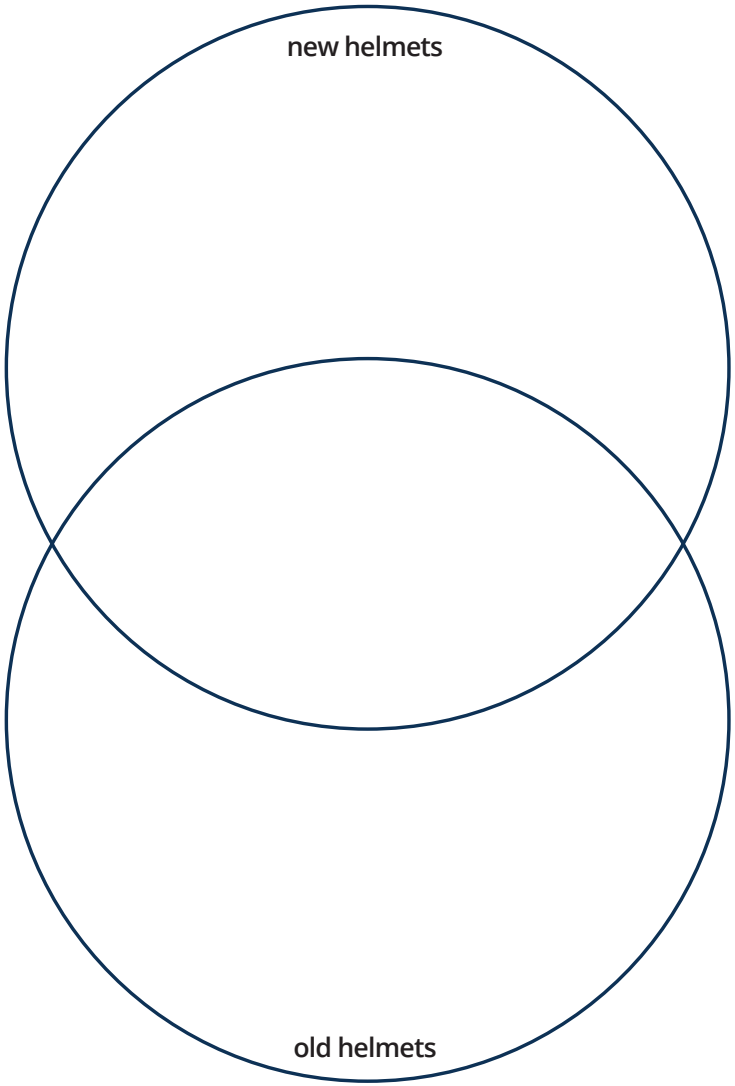
- **Did you know?** Force is all around us - and we're not talking about the Star Wars kind. Forces (the push or pull of an object) are either balanced or unbalanced. Balanced forces occur when two objects apply equal amounts of power or pressure on each other, so they do not move. Unbalanced forces occur when one object moves the other object because it applies more power or pressure.

Draw a football player that looks just like the one you see, but pushing against him in the opposite direction. If they use equal pressure on each other, is it a balanced or unbalanced force?

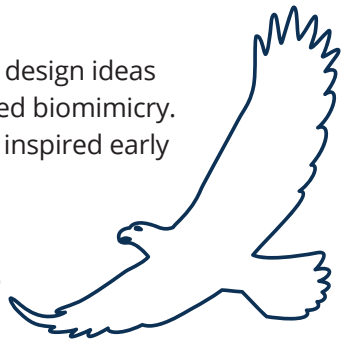
THE EVOLUTION OF FOOTBALL HELMETS

- **Did you know?** Helmets have radically evolved since the late 1880s. Designers, medical professionals, and physicists continue to explore how to improve upon even the most modern versions.

Take a look at the helmets in the display case. Find the oldest helmet. Now find the newest helmet. What are 2 things they have in common? What are 2 things that make them different from each other?



LET'S GET WILD!



- **Did you know?** Humans gain a lot of design ideas from organisms in nature. This is called biomimicry. For example, turtle shells might have inspired early helmet designs.
- What machines and technologies have humans created that may have been inspired by eagles?

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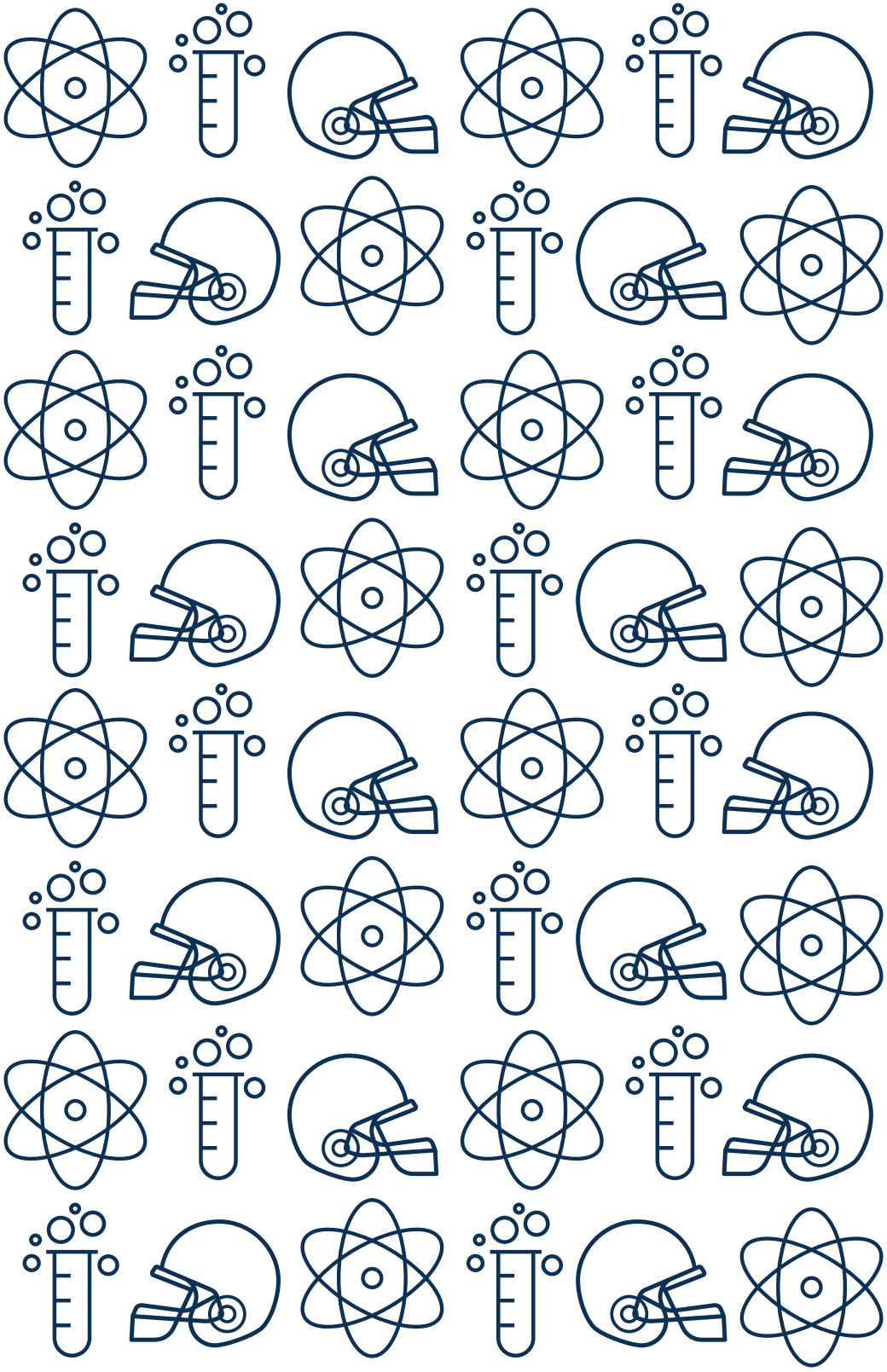
POST-GAME - KEEP EXPLORING!

Football players will sometimes have stickers or decals on their helmets that they wear during games. Those stickers aren't just for decoration – they usually have a special meaning. For some players, the stickers represent individual or team accomplishments. Other times, they represent a cause the player feels strongly about. Without knowing the player, viewers are able to understand something about them through the stickers.

If you were going to be in front of hundreds of viewers, what would you want them to know about you by looking at the stickers on your helmet? Draw a helmet complete with the images you would want on it while playing on the field. Ask your friends or family to do the same and compare what each of you chose to add to your helmets. And, the next time that you watch a football game, look to see if any of the players have stickers on their helmets and try to guess what they might represent!

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AIR RAID
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The U.S. Air Force presents an immersive, fully responsive QB simulator that puts you in the middle of the game to see if you have what it takes to get the ball to your wide receiver before you get sacked!
RIGHTIES VS. LEFTIES

KICKOFF

- Are there differences between right handed and left handed people?
- **Did you know?** Only 12% of the world population is left handed.

FIRST & 10

- Make your way to the Air Force Air Raid on the 2nd floor of the College Football Hall of Fame. This is an AI (Artificial Intelligence) system that is used by college teams, so you will experience how some players prepare for games.
- Sign up to participate in the Air Force Air Raid Experience.
- While you are waiting your turn, watch others play and make tally marks for each player in the following table.
  - ☐ If the ball is thrown near the center, it would be close to a right angle.
  - ☐ If the ball is thrown to the left, it would be an acute angle.
  - ☐ If the ball is thrown to the right, it would be an obtuse angle.

Right handed	
Left handed	
Right angle (center)	
Acute angle (to the left)	
Obtuse angle (to the right)	

Graph the data using a histogram.

- **Add the right handed and left handed people together to get the total number of people.**

_____

- **Use that and the tally marks from your table to find the following:**
- **Find the ratio of people that were right handed.**

_____

- **Find the ratio of people that were left handed.**

_____

- **Were there more right handed or left handed people?**

_____

- **What percentage of this population is left handed?**

_____

- How does that compare to the world population of 12%?

_____

- In which direction was the ball thrown most?

_____

- What are the patterns you notice?

_____

_____

- What can you infer about left and right handed people from the data you collected?

_____

_____

- What hypothesis can you make from the data you collected?

_____

_____

_____

- Explain your findings using a ratio relationship.

_____

_____

POST-GAME - KEEP EXPLORING!

- Have you ever tried to do a task with your non-dominant hand? On a piece of paper, draw an object with your dominant hand. Then, draw the same object with your non-dominant hand. Work up to larger drawings. Although it is much harder with your non-dominant hand, sometimes you can unintentionally create some very interesting lines and shapes.


PERFORMANCE CHALLENG
PERFORMANCE CHALLENGE
DO YOU HAVE WHAT IT TAKES?
VERTICAL JUMP
ARE YOU READY TO JUMP?
STEP ON THE FLOOR MAT
RUN. JUMP. PLAY
GIVE IT EVERYTHING

KICKOFF

- How do various types of exercise impact your body's systems?

FIRST & 10

WARM UP

- Find the Kia Performance Challenge on the 2nd floor.
- **Did you know?** Athletes "warm up" their bodies before extreme exercise by slowly contracting and releasing their muscles and carefully rotating their bone joints. By doing so, they are less likely to rip, tear or twist their muscles or severely injure joints once they begin exercising.
- List three warm-up activities that a football player might do before a big game:

_____

_____

_____

SPRING AHEAD

- **Did you know?** If you take apart a retractable (click) pen, you'll probably find a mechanical spring inside. When the spring is in a tight coil (pushed together), it stores potential energy, waiting to be released. When it is let loose -- Boing! -- the spring releases kinetic energy.

- How are your legs like a mechanical spring when you perform the Vertical Jump?

_____

PUMP UP THE VOLUME

- **Did you know?** Your heart, which is part of the cardiovascular system, pumps 5 liters of blood throughout the body every minute. That's more than enough to fill two giant soda bottles! This blood travels on a circuit, leaving from and returning to the heart in 45 seconds when you are at rest (that is, not moving around much).

- When you perform the 40-Yard Dash, does your heart rate increase, decrease, or stay the same? How many seconds do you think it takes your blood to circulate from and back to your heart?

_____

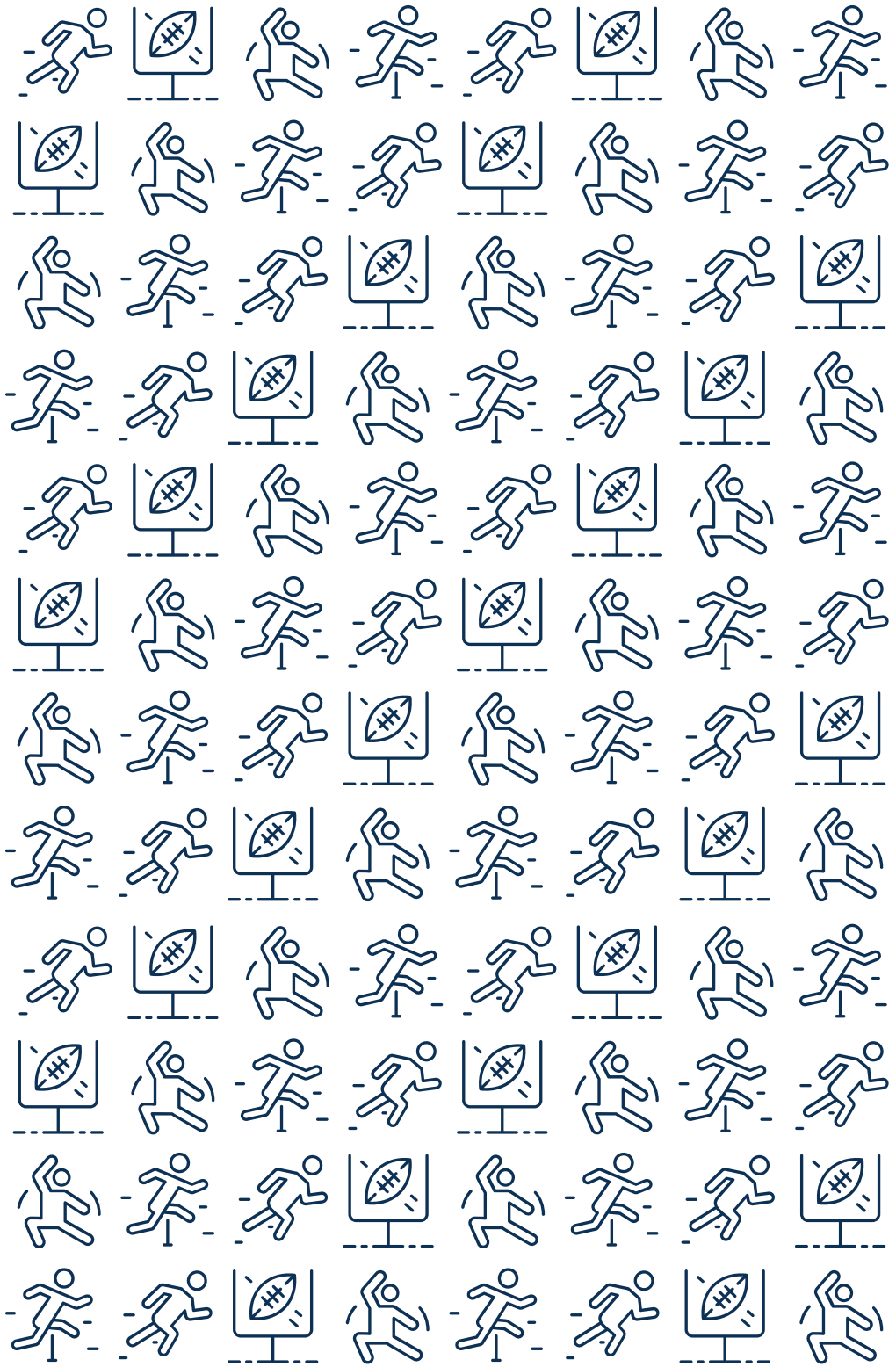
NO SWEAT

- **Did you know?** Humans decrease their internal temperatures by sweating. That's when your skin pushes out heat in liquid form through microscopic holes called pores. This liquid, also called perspiration, is made up almost entirely of water but also of chemical compounds like ammonia, sugar and salt.
- Why should you be concerned if you are exercising very hard, but your body is not producing sweat?

_____

POST-GAME - KEEP EXPLORING!

- A shoe engineer is a person whose job is to design the optimum athletic shoe.
- If you were to design an athletic shoe, what would be the most important things to consider?
- What types of materials would you use?



THE ULTIMATE FOOTBALL PLAYER

KICKOFF

- What characteristics and strengths would it take to create the ultimate football player – one who could qualify for the College Football Hall of Fame with stats from multiple positions?
- **Did you know?** Only 0.02% of college football players and coaches can claim the honor of being inducted into the College Football Hall of Fame.

FIRST & 10

- Make your way to the 3rd Floor of the Hall. There you will find the name of every player and coach that has been inducted into the Hall of Fame. Additionally, there are twelve touchscreen stations where you can look up all of the Hall of Fame players and coaches to find in depth stories, videos and stats.
- Take a moment to glance through the names on the wall. These are the best of the best – the elite few that have been chosen from millions of players to represent the top tier. What do you think it takes to be inducted into such an elite group of athletes?
- Those that are chosen to be inducted into the College Football Hall of Fame must meet specific guidelines before even being considered. They include:

    1. A player must have received First Team All-America recognition by a selector organization that is recognized by the NCAA and utilized to comprise their consensus All-America teams.
    2. A player becomes eligible for consideration after their final year of intercollegiate football.
    3. **While each nominee's football achievements in college are of prime consideration, their post football record as a citizen is also weighed.** They must have proven themselves worthy as a citizen, carrying the ideals of football forward into their relations with their community. Consideration may also be given for academic honors and whether the candidate earned a college degree.
    4. Players must have played their last year of intercollegiate football within the last 50 years. In addition, players and coaches who are participating on the professional level are not eligible until after they retire.
    5. A coach becomes eligible three years after retirement, or immediately following retirement provided they are at least 70 years of age. Active coaches become eligible at 75 years of age. They must have been a head coach for a minimum of 10 years and coached at least 100 games with a .600 winning percentage.

- Now that you know the qualifications, take time to look through some of the players' information on the touch screens. Choose your favorite team and find the inductees from that team. What positions did they play? What do they have in common? How are they different?
- On the following pages, you will create the "ultimate" football player. This player will have all the strengths and characteristics that it takes to play the following positions at a level that would meet the standards for the Hall of Fame.

Quarterback: As the leader of the team, the quarterback decides what plays will be called and signals the plays to the other players. After receiving the ball from the center, they either hand off the ball to the running back, throw it to a receiver or run with the ball. Important attributes for a quarterback include the ability to throw the ball far and accurately, as well as think on their feet and react quickly when a play doesn't go as planned.

Running Back: This player's job is to run with the football toward the end zone to score a touchdown. Running backs are also referred to as tailbacks, halfbacks and rushers. A running back needs to be able to run fast and maneuver quickly to dodge tackles.

Wide Receiver: The successful wide receiver moves quickly past defenders to catch the football and run as far as possible toward the end zone. Wide receivers must have good hands to catch the passes thrown to them by the quarterback and speed to elude defenders.

Defensive Lineman: The main job of the defensive lineman is to keep the other team from scoring. Depending on their position in the line, they work to overcome offensive blocking, pressure the opposing team's quarterback, disrupt the offense's backfield formation, and stop running plays by tacking the ball carrier or pushing them out-of-bounds. Linemen need to be big, strong and powerful.

Linebacker: Linebackers can have a wide range of duties as they defend against both running and passing plays. They are required to be all-around athletes with strength and speed so they can stop ball carriers, chase down the opponent's quarterback, and cover fast-running wide receivers.

Secondary: Players in the secondary defense such as the safety and cornerback provide the last line of defense against the opposing team's end zone. Positioned deep and wide on the field, defensive backs must be fast, tough and outstanding tacklers.

On the next page, draw your "ultimate" football player who could dominate the six positions above. What physical qualities would they need to have? What about characteristics that you can't see, but should possess?

Once you have drawn your player, write out the characteristics and qualities that your player has. Then, write 1-2 sentences explaining how those qualities would come together to create the ultimate football player. Don't forget to describe the type of person that they are, because in order to be in the Hall of Fame, players must also have a proven record of being a good citizen both on and off the field.

POST-GAME - KEEP EXPLORING!

- Nutrition and exercise are extremely important for all of us, and especially for professional athletes. Imagine putting soda in the tank of a car instead of gasoline: the automobile won't work very well, will it?
- What kind of food should an "ultimate player" eat? What type of exercise should they do regularly and with what frequency?

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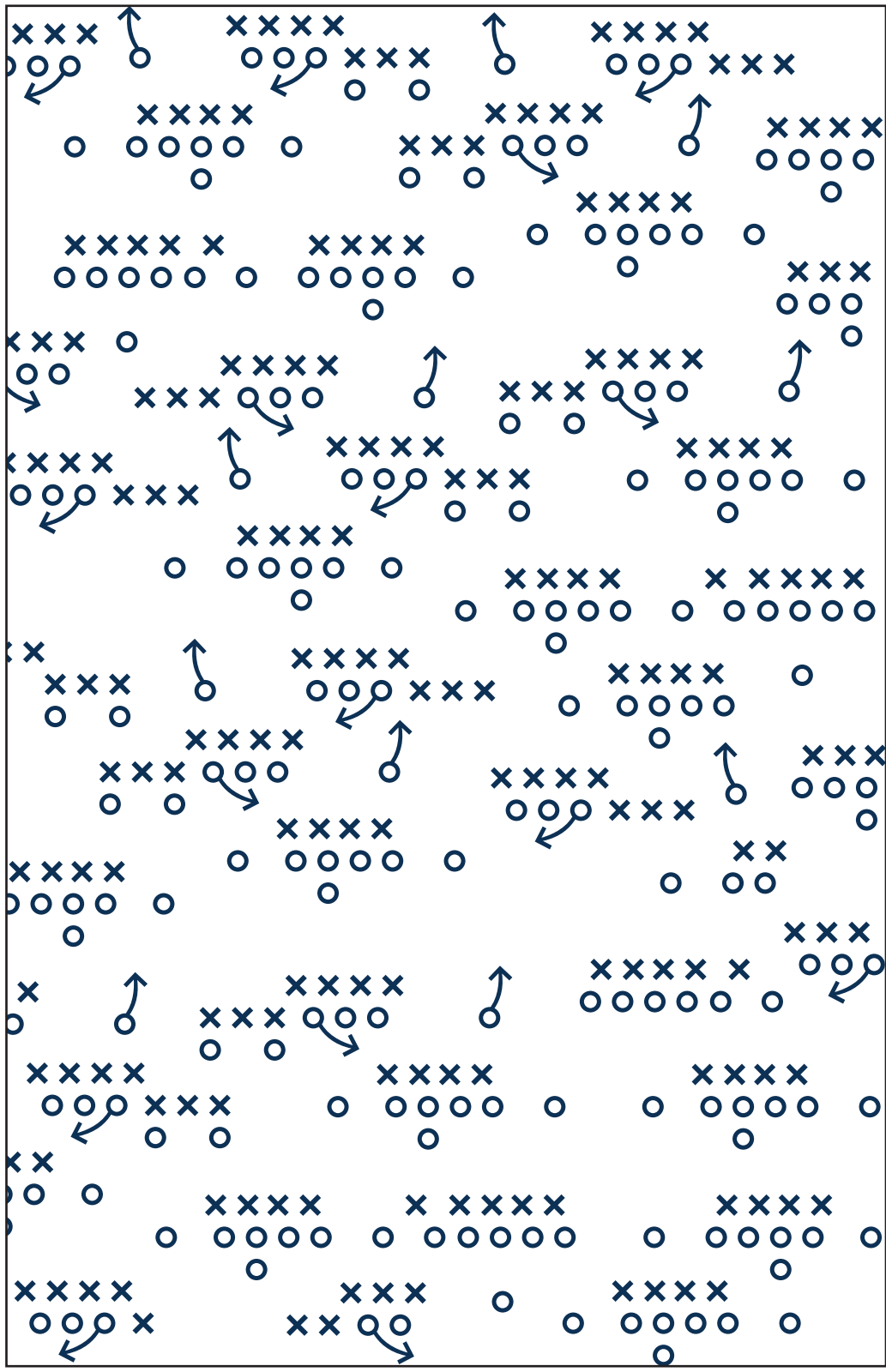

NOTES, THOUGHTS & SKETCHES

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