



# MUSEUM

PRESENTED BY SONY

**GRADES K-8 STANDARDS-ALIGNED  
EDUCATION PROGRAMS**

*Creating Moments of Inspiration*

Presented by



## INTRODUCTION

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Dear Esteemed Educators,

As the mentors of our children, teachers are an important key to the success of our future. Thank you for the vital role you play in shaping the youth of our community. As our team continues its commitment to education and innovation, we are pleased to welcome you to the 49ers Museum presented by Sony.

With more than 20,000 square feet of galleries, the 49ers Museum will provide learning platforms that connect, inspire, and engage students in grades K-8. Our education program, located inside the Denise DeBartolo York Education Center, will use football as a platform for teaching content-rich lessons in STEM (Science, Technology, Engineering, and Mathematics). The program will also encourage physical activity, while ingraining important life skills through the values of teamwork.

We hope your virtual experience at [LeviStadium.com/49ersMuseum](https://LeviStadium.com/49ersMuseum) will help introduce you to the 49ers Museum, its various education programs and venues, as well as assist in planning your field trip. We look forward to welcoming you and your students to Levi's® Stadium, and providing impactful moments that will last a lifetime.

For more information regarding the 49ers Museum and its educational programming, please email [museum@49ers.com](mailto:museum@49ers.com).

Respectfully,



Jed York  
Chief Executive Officer  
San Francisco 49ers

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# MUSEUM EDUCATION PROGRAM OVERVIEW

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The 49ers Museum presented by Sony is a two-level, 20,000 square foot space dedicated to showcasing the past, present, and future of the 49ers organization and its commitment to education and innovation.

We create moments of inspiration by providing learning platforms that connect, inspire and engage students grades K-8 through relevant content, interactive explorations, peer collaboration, application of skills learned and student reflection. The 49ers Museum Education Program uses football as a platform for:

- Teaching content-rich lessons in STEM (Science, Technology, Engineering, and Mathematics) where students engage in finding real solutions to real-world problems
- Ingraining invaluable life skills
- Encouraging physical activity

## The 49ers Museum Education Program Curricula

- Is aligned to California Common Core and Next Generation Science Standards
- Engages students in a variety of technologically-rich learning experiences that are student-centered and can be adapted to various development levels and learning audiences
- Integrates STEM learning through project-based activities that transfer student knowledge and skills to real-world problems
- Is aligned to 21<sup>ST</sup> Century Learning Skills (Critical Thinking, Problem-Solving, Communication, Collaboration and Creativity)
- Increases student motivation for learning and enhances student understanding of STEM concepts

## Create Your Own Experience

- Customizable curriculum options: Educators will choose from an array of engaging lesson options
- Tours of Levi's® Stadium: Students will tour and learn how the stadium is a showcase for technology innovation and environmental sustainability
- Guided museum exploration: Students will experience the 49ers history and the game of football through an interactive experience built on innovative technology

## Field Trip Rationale

The 49ers Museum field trip meets the needs of the teacher and the student in the following ways:

1. The 49ers Museum provides a content-filled venue for learning
2. Our lessons challenge students in various ways by motivating them towards the construction of knowledge and discovery, and encourage a healthy and active lifestyle
3. We develop valuable life-skills including independence, teamwork, confidence, and creativity, that can be directly related back to the game of football
4. Through project-based classroom learning experiences and through examining all facets of the game, students will go through an extended process of inquiry in response to a complex question, problem, or challenge. This helps students learn key academic content and practice 21<sup>ST</sup> Century Skills (such as collaboration, communication & critical thinking)

# MUSEUM EDUCATION PROGRAM OVERVIEW

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## Logistics & Daily Schedule:

Programs occur between 10AM-2PM daily

Visiting student groups will be led by museum instructors throughout the day's activities and all guests will wear clearly visible education program lanyards to designate field trip participants from the general public. Our programs can accommodate up to 180 students daily, with 90 students participating per program. Our chaperone to student ratio is:

- Grades K-2: one (1) adult per five (5) students
- Grades 3- 8: one (1) adult per ten (10) students

School Groups Arrival Time: 9:30 AM-10:00 AM: Whole group welcome, intro and kickoff assembly

- Session #1: 10:00 AM - 11:00 AM
- Session #2: 11:00 AM - 12:00 PM
- Lunch: 12:00 PM - 12:30 PM: In the stadium
- Session #3: 12:30 PM - 1:30 PM
- 1:30 PM - 2:00 PM: Free exploration/departure

The schedule includes both indoor and outdoor experiences, provides for large, small group and individual activities, and is responsive to a student's need to rest or be active. Times may fluctuate as necessary.



# PLANNING YOUR VISIT

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## Create Your Experience!

Planning a successful field trip is like planning for a big game! Use our field trip checklist below to ensure you are well prepared for your visit to the 49ers Museum. If you would like to make a reservation, please call 408.562.4956 or email [museum@49ers.com](mailto:museum@49ers.com).

## 49ers Museum Hours and Operations:

- Open seven days a week: 10:00 AM – 5:00 PM
- Education programs run Monday-Friday during the school year

## Reserving your field trip

- Establish education goals for your field trip before you begin planning
- Complete necessary school paperwork (student permission slips, field trip application, etc.)
- Determine the total number of students and chaperones who will be visiting
- Select three potential field trip dates
- Select a focus for the field trip. This program guide allows teachers to explore the museum's STEM-themed education program options
- Complete the online field trip application at [levisstadium.com/49ers-museum/education](http://levisstadium.com/49ers-museum/education)
- Consult with a museum educator: Need assistance planning or designing a field trip? Our 49ers Museum educators are available to assist you with updated exhibit information. We also offer a variety of ways to connect with 49ers Museum educators:
  - Email questions to [museum@49ers.com](mailto:museum@49ers.com) or call 408.562.4956
  - Schedule an appointment with the education program manager or museum education specialist. Appointments for field trip planning sessions are available afternoons, Monday-Friday

## One week prior to visit

- Prepare chaperones (See page 8)
- Create chaperone groups. Remember to follow our chaperone-student ratio
- Prepare itineraries for chaperones and gather materials for students
- Complete pre-field trip lesson activities in the classroom

## On the day of your field trip

- Please provide identification for your group members. Use nametags, stickers, or matching shirts with your school's name and contact information
- Distribute maps and itineraries to chaperones. Highlight important meeting times and locations
- Organize lunches in labeled boxes or bags to speed up the check-in process. Your lunches will be picked up by museum staff from the bus and stored when you arrive. Please leave any student bags on bus or at school
- All learning supplies will be provided by the 49ers Museum

## After the field trip

- Complete post-field trip lesson activities in the classroom. Encourage students to synthesize the content given and reflect upon their field trip learning
- Complete program evaluation/survey

# FIELD TRIP RESERVATION INFORMATION

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## Field Trip Application Guidelines

To qualify for a field trip, schools must:

1. Serve students in the K-8 grades in California. We highly encourage schools located in the greater Bay Area to apply
2. Submit the 49ers Museum Field Trip Application
3. After being accepted to attend a field trip, have each student complete a media consent form. The media consent form will be sent four weeks prior to your visit
4. As outcome measurements are vital to fund this program, in order for schools, programs, and organizations to receive this field trip opportunity, they must agree to participate in the following:
  - Completion of pre and post visit lessons
  - Completion of teacher survey after visit

Please note that field trip experiences are limited, and availability is not guaranteed. Please submit your field trip application at least six weeks prior to your anticipated visit.

If your class is not provided an opportunity to visit, you will have a choice of one of the following options:

1. Your class may be placed as “high priority” on our 2014/15 waiting list (in case of cancellations)
2. Your class may be placed on the 49ers Museum field trip schedule for the following calendar year
3. Your class may be provided other additional options to visit the 49ers Museum and Levi’s® Stadium

## Accessibility

The 49ers Museum is a place where everyone can participate equally in the exploration of 49ers history and learn about the exciting game of football. Please contact [museum@49ers.com](mailto:museum@49ers.com) with questions about further accessibility needs and we will be happy to assist you.

## Group Size

All school groups must make advance reservations. Reservations are booked in the order in which they are received. Your field trip application isn’t complete until you receive a confirmation email with the time and date of your scheduled visit. The 49ers Museum requests that your class size be at least 20 or more students to receive an education program option.

## Lunches

We reserve a 30 minute time slot for lunch within our daily field trip schedule. As a reminder, the 49ers Museum does not provide lunch to visiting school groups. We request that students bring a sack lunch to deter the chances of leaving personal items behind.

The 49ers Museum has an accessible student lunch area within the stadium for your convenience. Clearly label lunch storage containers with your school name. Lunches will be taken off the bus and stored, depending on your tour arrangements. The 49ers Museum provides bins for storing sack lunches, but we are unable to store backpacks and other personal belongings.

## Arrival

Upon arrival, a museum instructor will meet your class in the bus loop to review your itinerary and guide your group to a programming space for general program introduction and program directions.

## Late Arrivals

We appreciate your efforts to arrive on time. Classes that arrive late may receive a condensed lesson because of scheduling limitations. Groups scheduled for a guided program arriving more than 30 minutes late will convert to the self-guided museum program.

# FIELD TRIP RESERVATION INFORMATION

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## Cancellations and Rescheduling

If you need to cancel, please call 408.562.4956 or email [museum@49ers.com](mailto:museum@49ers.com) as soon as possible. All museum field trips are subject to change. In the event of a field trip cancellation, the 49ers Museum will work diligently with your establishment to reschedule an opportunity to visit.

## Chaperones

Chaperones are 49ers Museum partners working with us to assist in the students' experience to provide the most productive and educational museum visit possible. Below is our chaperone to student ratio:

- Grades K-2: one (1) adult per five (5) students maximum
- Grades 3-8: one (1) adult per ten (10) students maximum

Chaperones and teachers are responsible for the safety of students throughout the museum and its grounds. Students must be accompanied by a chaperone at all times and must stay with their group. Chaperones must be at least 21 years old.

## 49ers Team Store

A time for students to browse and purchase items will be included for groups. Teachers and chaperones must supervise students in the store and those waiting to enter. The 49ers Museum and 49ers Team Store are not responsible for storage of items purchased and if any items become lost, damaged or stolen.

## Guidelines for Student Visits

Educators, students and chaperones are expected to:

- Stay with pre-assigned chaperone-sized groups at all times, regardless of the students' ages
- Adhere to the code of conduct established by your school and the 49ers Museum
- No gum, food, or drinks are allowed in the museum
- Photography is allowed and encouraged
- No touching of any artifacts/memorabilia
- Please remember to use inside voices and walk at all times
- Please leave all backpacks, and jackets on the bus. All bags subject to search upon entry and exit of the 49ers Museum
- Most of all, have fun!





# GRADES K-3 EDUCATION PROGRAMS

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## Experience Synopsis

These instructor-guided programs were created to ensure a developmentally appropriate STEM-based curriculum program for all grade levels. This option was designed to serve the “on the go” class that would enjoy a guided Levi’s® Stadium tour and museum STEM hands-on activity outlined by the learning playbook. The playbook incorporates STEM content elements by development level and guides students through the museum experience. Each STEM activity occurs on the museum floor, is directly related to an exhibit or artifact, and is geared to spark student interests in STEM-related concepts.

## Program Components:

1. Pre-lesson Experience: (At school site—content introduction and STEM support)
2. At the 49ers Museum:
  - Guided Education Tour 49ers Heritage: Student engagement is channeled through celebrated stories of 49ers: One (1) hour
  - Standards-based STEM Activity : One (1) hour
  - Levi’s® Stadium Tour: One (1) hour
3. Post-lesson Experience: At school site—follow up materials/evaluation of programs

## 49ers Literacy Club

This literacy-based activity is designed for students to experience the joy of reading in an exciting way through active engagement and by encompassing the exciting game of football. Each hour-long program features a story presented in an animated fashion that is sure to expand students’ minds and imagination, and is accompanied with a hands-on project.

## Gearing Up for the Big Game

In this STEM exploration exercise, students will actively learn and identify the various parts of a football uniform and equipment. Instructors will have a 49ers uniform and equipment for students to understand what is involved to gear up before the big game. Students will be able to touch and feel the various parts of the equipment and come up with their own innovative design for either a team logo or equipment during a guided and collaborative discussion.

## Football—A Game of Numbers

Numbers are ever-present in the game of football. There are numbers on jerseys, numbers on scoreboards, painted numbers on the field, numbers on the game clock, and more. In this learning activity, students will explore exactly how important numbers are in the game of football (and in life) through interactive discussion and hands-on activities. From this experience, students will be enthused about math and its real world applications.

## Exploring the Game

Students will get a firsthand opportunity to learn more about the game of football and how this dynamic sport has impacted the country today. Students will participate in a real-life simulation and learn about the basic rules and processes of the game of football. This activity highlights working together as a team and elaborates on basic math and physical fitness involved in the game, while students kinesthetically participate in activities that support understanding of positions involved, how the game is played and the overall goals of a team.

## Fit for Football

Museum instructors will lead students in a fun fitness routine designed to help kids get fit though the game of football. By combining music, football drills and teamwork, students are inspired to live an active and healthy lifestyle through basic fitness exercises and by applying motor skills to various elements of the game.

## GRADES K-3 EDUCATION PROGRAMS

### The Art of Football Workshop

Join us in the exploration of art and football! This workshop is designed to spark a desire to explore art in a whole new and exciting way by providing creative avenues for young artists to express themselves artistically while working in teams. Students will explore movement and art through creative play and unique materials, while discovering the different elements of art in Levi's® Stadium. Students will make artistic prints with unique objects found in the game of football to create an experience filled with discovery, imagination, and fun.

### Forces behind Football Flight

Students will explore the variety of forces that affect the football on the field. After learning these concepts through hands-on demonstrations and student engagement, students will participate in explorative activities and simulations that model such forces and reflect in multiple ways how these forces dramatically impact the game.



# GRADES 4-6 EDUCATION PROGRAMS

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## Experience Synopsis

Education is a primary goal of the 49ers Museum and the Denise DeBartolo York Education Center is its centerpiece. As part of a comprehensive visit to the Levi's® Stadium, grades 4-6 school groups engage with the education center's classroom experience. Teachers may select from thirteen lessons to explore with their class; each lesson falls under one of four STEM themes: Science, Technology, Engineering, Math. Each lesson follows a prescribed structure aligned with state standards that leverages leading-edge technology in immersive and meaningful ways. Students of all learning styles are engaged through different activities, from tactile object-recognition based exploration of concepts to group project challenges that promote creativity and artistic expression. Students will be engaged in a hands-on project surrounding STEM concepts, and will apply what they learn in an upbeat, focused and engaging manner.

## Program Components

1. Pre-lesson Experience: At school site—content introduction and STEM support
2. At Museum:
  - Guided Education Tour—49ers Heritage: Student engagement is channeled through celebrated stories of 49ers history: One (1) hour
  - Denise DeBartolo York Education Center : One (1) hour
  - Levi's® Stadium Tour: One (1) hour
3. Post-lesson Experience: At school site—follow up materials/evaluation of programs

## Science: Environmental Sustainability & Physics

### Tackling Solar Energy

In this activity students will learn about conservation and forms of energy, renewable energy sources and how energy is harnessed and used in real life applications at Levi's® Stadium. Through hands-on exploration, students will be measuring the efficiency of a solar cell and will be introduced to basic concepts of voltage and current.

### Field Friendly Water Irrigation

Students will learn how the civil engineering team behind the construction of Levi's® Stadium solved the challenge of moving water within the stadium. Students will explore how stadium irrigation systems are designed to utilize water for field care and fan use in the most efficient way. Students will work in teams to design and build their own irrigation system out of various materials provided, test their constructed irrigation systems, evaluate their results, and present findings.

### Football Physics

Students will investigate the physical science present in the sport of football by successful completion of hands-on experiments, written observational records, and oral discussion/reflection. By investigating in depth the physics of football, students will learn about the various laws of motion, energy distribution within the game, and then apply important physical science concepts. Students will track and report data from the outcome of such experiments and collectively share with their classmates.

## Technology: Real World Applications Surrounding the Game of Football

### The Wireless World at Levi's® Stadium

Students will explore the possibilities of wireless technology after learning about the wireless world at Levi's® Stadium. Students will engage in hands-on activities, research real-world examples that trace the history of wireless communication, gauge the impact that mobile devices have had on society, and examine how wireless innovations have influenced the game of football. This activity encourages students to explore the potential of today's technologies and envision how future innovations could change how we interact in society.

## GRADES 4-6 EDUCATION PROGRAMS

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### **From Then to Now: Technological Advances in the Game of Football**

Technology has changed nearly every aspect of the game of professional football. Its impact has been felt in play calling, communication, drafting and in medical treatment. From TV timeouts to auto-syncing iPad playbooks, technology is a driving force in the evolution of the NFL. Students will experience the vast changes that have taken place since the advent of the NFL. Based on what they learn from the past to the present, students will participate in design activities that will allow them to invent or create what the game may look like in the near future and beyond.

### **Engineering & Design Theory**

#### **Engineering of a Football Design Challenge**

This cross-curricular STEM lesson focuses on football design and the science/engineering behind a football's construction. Students are introduced to basic principles of engineering to learn how the engineering design process helps engineers create safe and effective sporting equipment. In this activity, student teams will design, construct, and test their own NFL football prototype utilizing leading-edge technology to determine whether their football can be accurately thrown or kicked.

#### **Engineer Your Gear**

Students will learn that 49ers players have to be properly and safely equipped. Students will learn that engineers play a pivotal role in the design of sporting equipment and many scientific principles are involved. Students will dissect a football cleat to analyze what was involved in the design and construction of the cleat and compare findings with peers.

#### **Stadium Structural Design Challenge**

This course introduces students to the fundamental principles of structural engineering. Students learn about areas of specialization within engineering and engineering design, and apply tools and procedures to complete instructional activities. Students are equipped to build a small-scale load-bearing structure (similar to the outer structure of Levi's® Stadium) that utilizes the strength of geometric shapes to define its success. The goal is to simulate the design aspects of a structural/civil engineer and to test students' skills to see if they can design and construct a cost effective structure that meets specified criteria.

### **Applied Mathematics: Football, a Game of Numbers**

#### **Super Bowl Statistics**

This fun-filled math activity will introduce students to the topic of statistics and football using a hands-on approach. Students will examine why statistics play a vital role in all areas of the game, and acknowledge the significant role it plays in other areas of life through active participation in an engaging physical activity. Teams will participate in football drills utilizing real-life simulations, each providing them with a measurable statistic to log and teams will discuss statistical similarities/variances and summarize the overall experience.

#### **Angular Attack & Game Geometry**

Angles and geometry play a pivotal role in the game of football. Students will learn these concepts are present throughout the game, from the shape of the football to how a pass is thrown. Using gaming technology, students will be able to identify and classify angles and geometric shapes in the game of football. Students will understand how geometry relates to the real world and how to use the subject in an enjoyable, authentic way.

### **Health & Fitness**

#### **The Anatomy of a Field Goal**

Football games frequently are decided upon a last second field goal. Students will study the science involved in kicking a field goal; from the long snapper's snap to the place holder, the foot angle, the plant foot, and the kick may lead to winning or losing a game. Students will participate in a simulation where they can place their kicker, manipulate their body/angles, and test various field goal attempts. Once they have designed their strategy, students will individually practice kicking using official NFL game footballs.

## GRADES 4-6 EDUCATION PROGRAMS

### Training Camp Experience: Data, Muscles and Movement

In this module, students will find it takes preparation, nutrition, strength and conditioning training to be able to compete at the professional football level. Students will learn what prospective NFL players go through by actively participating in similar training activities and some of the well-known NFL Combine drills.

### Engineering Your Plate: Nutrition & You

Students will discover their overall health and fitness go hand in hand and explore the concept of how nutrition is the key to a healthy body. Students will gain a new perspective of what they eat daily by exploring the nutritional value of common foods, and gain the knowledge that healthy food choices and being physically active is significant to their overall health. Student teams will then construct a well-balanced meal for a 49ers player through table-top simulations after being given an array of nutritional options from which to choose.



## GRADES 7-8 EDUCATION PROGRAMS

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### Experience Synopsis

The museum’s middle school program options are designed to drive interest in STEM concepts and build career awareness in the field of professional football and in STEM-related disciplines. Each class will enjoy a guided Levi’s® Stadium tour and museum STEM hands-on activity outlined by the 49ers Museum Learning Playbook. The 49ers Museum Learning Playbook incorporates the STEM content elements by development level and guides students through the museum experience. Each STEM activity provided occurs on the museum floor and is directly related to an exhibit or artifact.

### Program Components:

1. Pre-lesson experience: At school site—content introduction and STEM support
2. At-Museum:
  - Guided education tour—49ers’ Heritage: Student engagement is channeled through celebrated stories of the 49ers: One (1) hour
  - Standards-based STEM Activity : One (1) hour
  - Levi’s® Stadium Tour: One (1) hour
3. Post-lesson experience: At school site—follow up materials/evaluation of programs

### Forces behind Football Flight

Students will explore the variety of competing forces that affect the football after it has been thrown or kicked. After learning these concepts, students will participate in hands-on activities and simulations that model such forces and then reflect on the data they receive.

### Career Connections: Working for the 49ers

Students will get a behind-the-scenes look at career opportunities within the 49ers organization. Students will learn about an assortment of 49ers careers and the education needed to attain certain roles within the organization through exploring real-life statistics. The culminating activity will involve interactive discussion and collaborative research where students will develop a career action plan.

### Fit for Football

Museum instructors will lead students in an active fitness routine designed to help students get fit through the game of football. By combining music, football drills, and teamwork, students are inspired to live an active and healthy lifestyle through basic fitness exercises and applying motor skills to various elements of the game.

### The Art of Football

Students will participate in a captivating guided exercise that examines the various, unique elements that make up a work of art. Students will build their working vocabulary and explore the visual elements of line, shape, color, value, form and texture through multiple examples of football art and mediums. In this activity, students will view artistic creations within the museum and around Levi’s® Stadium. This activity encourages self-expression and students will build confidence while learning and experimenting with various elements of design.

### The History & Design of the Mascot

Students will take a glimpse back in time to discover how the 49ers mascot was created and will explore its evolution. Students will learn that professional mascots are thought up by creative designers based on public-opinion surveys and market research. The culminating activity gives students the opportunity to design their own mascot that represents who they are and the values they represent.

### Sports Broadcasting

Have you ever wanted to report on a the “big” game? Students will be given such an opportunity during this exciting activity. Allowing students to be a part of the broadcast experience encourages students to improve

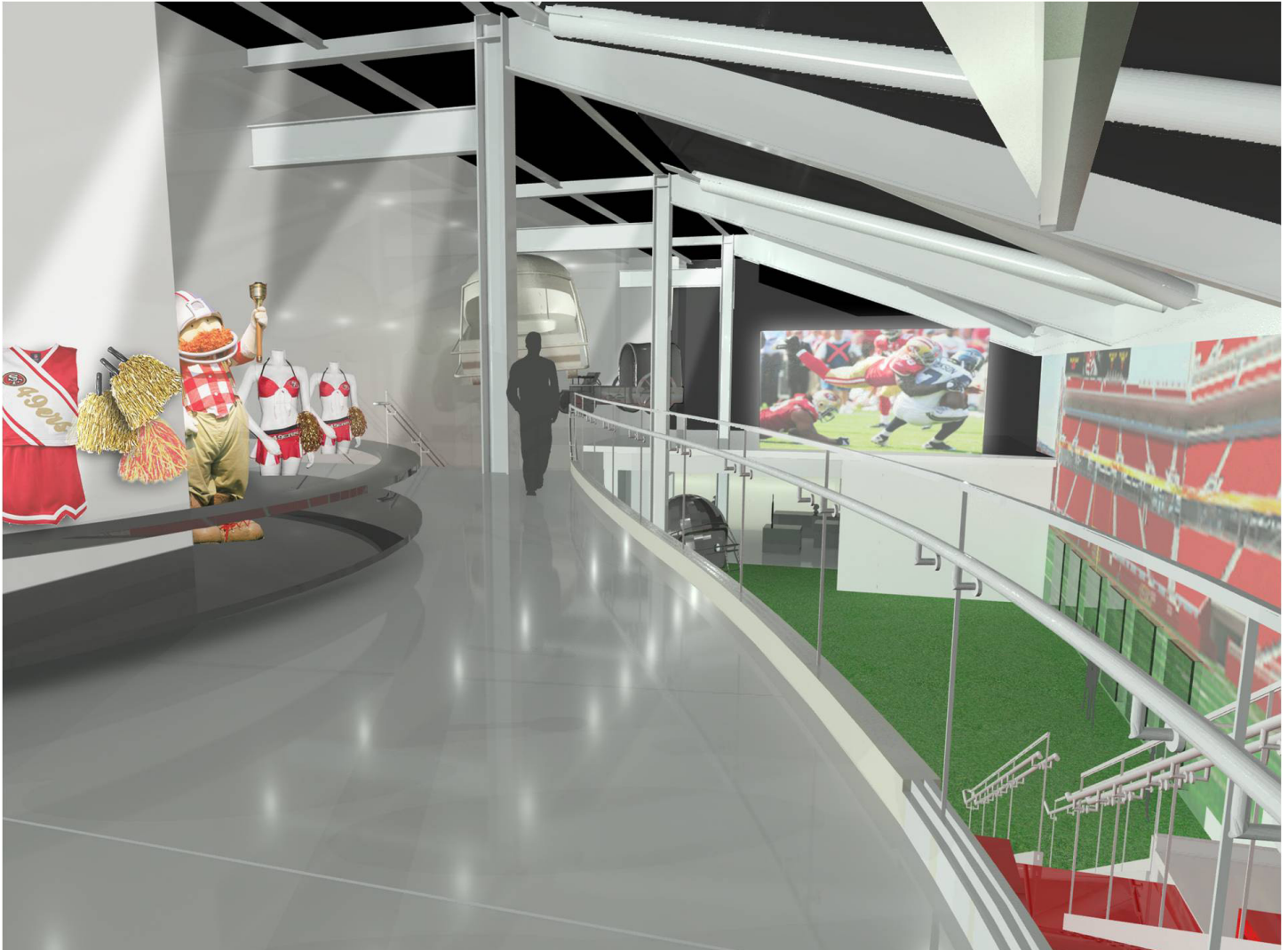
## GRADES 7-8 EDUCATION PROGRAMS

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one's writing, interaction with technology, public speaking, media, and broadcast design skills. Students will identify structural features of sports broadcasts and then, in groups, come up with a one-minute 49ers sportscast after reviewing the latest 49ers news reports.

### Gearing Up for the Big Game

Students will learn that in an actual game, 49ers players have to be prepared before they head on the field and must be properly equipped to handle the physicality of the game. Instructors will have a 49ers uniform and equipment and explain the intricately engineered parts of the uniform as students participate in a hands-on culminating activity.



## MORE INFORMATION

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### Frequently Asked Questions

1. *What is the cost of a field trip?*

Field trips are free standards-aligned quality educational experiences

2. *What grade levels do the programs cover?*

Kindergarten through 8<sup>TH</sup> grade (K-8)

3. *What subjects do the programs cover?*

Science, technology, engineering, mathematics, life skills, health & fitness, history, career connections, the game of football, and the arts

4. *How do schools receive an opportunity for a field trip?*

To qualify for a field trip, schools must:

- Serve students in the K-8 grades in California. We highly encourage schools located in the greater Bay Area to apply
- Submit the 49ers Museum Field Trip Application
- Complete pre and post visit lessons

5. *What time does the program start?*

Most education programs typically run from 10:00 AM – 2:00 PM

6. *Does the museum charge for teachers and chaperones?*

No, we do not charge for teachers and chaperones, however, we do keep to a chaperone-to-student ratio: In grades K-2: One (1) adult to five (5) students and in grades 3-8: One (1) adult to ten (10) students

### Stay Informed with E-News for Educators

Sign up today for the *Goalline*, the 49ers Museum quarterly education e-newsletter, to learn more about museum field trips, special events, professional development opportunities, and classroom resources or email [museum@49ers.com](mailto:museum@49ers.com).

Our staff is always scouring the education world for new STEM lessons and activities. If you have found, or had the opportunity to teach a successful lesson, we are happy to share this with other teachers and professionals in the education field.