



EDUCATIONAL EXPLORATIONS, WORKSHOPS, CHALLENGES AND SEMINARS SCHOOL YEAR 2018-19 CATALOG

Enhance your educational learning experience at the NASCAR Hall of Fame by participating in one or more of our grade-level workshops, tours or seminars (additional costs apply). Programs are designed to engage students in active and problem-based learning that taps into their applied learning skills. Through a variety of curriculum-driven activities, the Hall of Fame uses real-world data and scenarios to take the classroom experience to the race track. Cross-curricula variations of subject matters are available upon request.

Special STE(A)M and Teacher Days

| Teacher Discovery Days | | | | | |
|--|---|----------------|--|--|--|
| Teacher Open House | Saturday, Sept. 22 | 9 a.m.–1 p.m. | Explore the Hall and experience live demos of our curriculum-based programming. Discover our educational exhibit learning moments throughout the facility. Learn how to plan a field trip driven by real-world STE(A)M applications. | Free for teachers, administrators and educators. Bring a friend or family member for special one-day admission price. | RSVP today by emailing “Open House” to grouppreservations@nascarhall.com |
| Special Tours and pre-Field Trip visit for Teachers | Monday–Friday, Weekends by appointment | 10 a.m.–5 p.m. | Staff-led tours and prep sessions are available to help you plan your field trip. | Free for teachers, administrators and educators. | RSVP by emailing “Pre-Field Trip Tour” to grouppreservations@nascarhall.com |
| Special Tuesday STE(A)M Days at the Hall* | | | | | |
| Full Throttle STE(A)M Days at the Hall <i>(High School Classes)</i> | Tuesday, Feb. 12 and Tuesday, Feb. 19 <i>(Anticipated dates. Final dates available Oct. 1 at nascarhall.com)</i> | 9 a.m.–2 p.m. | Sessions are limited to 250 students. (Full description of the day will be available in the catalog or on the website.) | High school students and teachers. Included in the day’s special pricing is participation, lunch and a souvenir photo. | Reserve your space! Join our mailing list by emailing Full Throttle HS to grouppreservations@nascarhall.com |
| STE(A)M Days at the Hall <i>(Middle School Classes)</i> | Tuesday, Nov. 13 and Tuesday, Jan. 15 <i>(Anticipated dates. Final dates available Sept. 15 at nascarhall.com)</i> | 9 a.m.–2 p.m. | Sessions are limited to 250 students. (Full description of the day will be available in the catalog or on the website.) | Middle school students and teachers. Included in the day’s special pricing is participation, lunch and a souvenir photo. | Reserve your space! Join our mailing list by emailing STE(A)M MS at grouppreservations@nascarhall.com |



**EDUCATIONAL EXPLORATIONS, WORKSHOPS, CHALLENGES AND SEMINARS
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Preschool Explorations (Ages 3-5)

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade</i> | <i>Subject Area(s)</i> | <i>Program Length</i> |
|---------------------------------------|--|---------------------------------|---|-----------------------|
| Race to Victory Lane | Students will participate in a series of six learning activities including: comparison and difference; number and color recognition/meaning; drawing in 2-D; large motor and small motor skills through a driving experience and visual observations. | Pre-K | Math, Science, Language, Large and Small Motor Skill Development, Character Development | 60 minutes |
| <i>Curriculum Standard Alignments</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | Understands an increasingly complex and varied vocabulary. Begins to associate number concepts, vocabulary, quantities and written numerals in meaningful ways | CD-10-12; LDC-7; APL-1; HPD-4-5 | ELA-K.2; ELA-K.6; M-4K-1.4; M-K-2.2; M-4K-4.1; SE-K-4.4 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade</i> | <i>Subject Area(s)</i> | <i>Program Length</i> |
| Fast as Lightning | Explore the world of racing through the world of "Cars 3." Students will participate in a fitness challenge, explore different tracks and surfaces, discover the real person behind one of the characters, and have a chance to build a car. There will also be a special visit with a character from the movie. | Pre-K-1 | Math, Science, Language, Large and Small Motor Skill Development | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | Understands an increasingly complex and varied vocabulary. Begins to associate number concepts, vocabulary, quantities and written numerals in meaningful ways | CD-10-12; LDC-8; APL-1 | ELA-K.2; ELA-K.6; M-4K-1.4; M-K-2.2; M-4K-4.1 | |



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Lower Elementary Explorations (Grades K-2)

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|----------------------------|--|---|---|-----------------------|
| Push and Pull | Forces are either a push or a pull. For a race car to move, it has to use force. Students will explore what a force is, where it impacts racing, and conduct an experiment utilizing magnets to move cars around a track. Students will take home a discovery pack. | K-1 | Physical Science, Language Arts | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> K-PS2-1; K.CC.3 | <i>State Standards NC</i> K.P.1; 1.P.1 | <i>State Standards SC</i> K.P.4A.1;21.S.1A.2;2.P.4 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| On the Move | NASCAR races take place around the country. Every race track and race is unique. Students will explore some of the East Coast tracks in their corresponding states through a game-design activity based on location and geology. Students will also figure out math problems based on laps and cars at a track. | K-1 | Math, Science, Geography | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> 1.MD.C.4; K.MD.A.1 | <i>State Standards NC</i> 1.E.2; K.P.2 | <i>State Standards SC</i> K.S.1; K.P.4; 1.S.1; | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Going the Distance | Math, geography and weather are all critical to the success of a race weekend. Students in this class will utilize real-world data and information to solve a series of problems while working as a team to finish the race. | 2 | Math, Geography, Weather | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> 2.OA.1; 2.MD1 | <i>State Standards NC</i> 2.E.1.2 and 2.E.1.4; 2.MD1 | <i>State Standards SC</i> K.E.3A.1;1.ATO.1; 2.E.2;2.ATO.1, 2.MDA.1; | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Roar of the Engines | Sound is around us each and every day. At a shop or at the track, NASCAR is a great way to explore sound waves. Students will conduct a series of sound experiments and measure sound waves for impact. Real recordings from the garage and track will be included in the experiments. Using a sound-level meter, students will graph their data for comparison of values. | 2 | Science, Math, Language Arts | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |



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| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|-----------------------------------|---|---------------------------|---------------------------|-----------------------|
| Vroom! States of Matter in Action | From fuel to tires to air, race cars contain different states of matter. During this workshop, students will explore states of matter (solid, liquid and gas) by observing how changing states of matter can move a car. Students will conduct an experiment to test changing states of matter and measure how far an object can travel. Students will build their own cars to test at school or home. <i>(Allergy alert: Vinegar, and citrus acids (lemon or lime juice) and baking soda are used for this experiment)</i> | 2 | Science, Math | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | 1-PS4-1; 1-PS4-4 | 2.P.1-2; 1.MD.1 | 2.ATO.1;2.S.1A.1 | |
| | 2-PS1.1;2-PS1-2;2-PS1-4 | 2.P.2; 2.MD.9 | 2.MDA.7;2.P.3A.1-3 | |



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Limited-Time Programs: Lower Elementary

Fall/Winter 2018-19 (Available until March 1, 2019)

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|---------------------------------|---|--|--|-----------------------|
| 1948: People in Our Communities | During this staff-guided experience, students will explore what communities, including Charlotte, looked like in 1948. Students will meet some of the people, places and cars in the racing communities, including four NASCAR Hall of Fame inductees. (This program complements our "1948: Proving Grounds" exhibit) | K-2 | Language Arts/Geography, Social Studies, Science and Community | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | CCSS.ELA-Literacy.RI.K.1; CCSS.ELA-Literacy.RI.K.9 | K.G.1; K.E.1; 1.H.1; 1.C&G.1; 2.H.1; 2.G.2; RI.1.1; RI.2.1 | K-1.1; K-4.1; 1-1.1; 2-2.1; -4.15.1; 5.2 | |

Spring 2019 (March 1–Aug. 31)

| | | | | |
|----------------------------|--|----------------------------|--|---|
| Art of the Race | Race cars and trucks are dynamic. Their shape, design and overall look has changed over the years. During this workshop, students will explore the engineering behind a race car/truck through three STEM stations. Each station will provide a different learning activity and students will be adding parts to a car they can take home. | K-2 | Art, Language Arts | 60 minutes (Available on Mondays and Wednesdays) |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | VA:Cr.1.2.1a; VA:Cr1.2.2a; VA:Cr.2.3.Ka; VA:CR.2.2.1a; VA:Cr.2.2.2a; VA:Cn.10.1.1a, Ka, 2a | K.V.1.3-4; K.CR.1.1; K.V.3 | VAk-2.2; VAK-3.2; VA1-1.2-3; VI1-2.4; VA2-1.1; VA2-1.3; VA-2-2.2 | |



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Upper Elementary Workshops (Grades 3-5)

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|----------------------------|---|---|---|-----------------------|
| Object in Motion | “An object in motion stays in motion”—Newton’s laws are no better represented than during a race. Students will explore forces (gravity, electrical and laws of motion) and its impact on racing. They will build a race car to test their engineering and application of motion. Application and engineering requirements vary by grade level to meet standards. <i>(Allergy alert: Latex balloons are used in this workshop.)</i> | 3-5 | Physical Science, Engineering, Problem- based Learning | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> 3-PS2.A; 4-PS2-1; 4-PS2-2 | <i>State Standards NC</i> 3.P.1.1; 5.P.1 | <i>State Standards SC</i> 3.S.1;4.S.1.A; 5.S.1A; 5.S.1B.1;5.P.5A.2 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| SPARK! (States of Matter) | Fuel (gasoline) and air combine with a spark to generate the energy it requires to move a car. During this workshop, students will explore states of matter (solid, liquid and gas) by creating a reaction car, which will move using its own energy source. Students will then compare their cars’ reactions by measuring the distance traveled. <i>(Allergy alert: Vinegar, and citrus acids (lemon or lime juice) and baking soda used for experiment)</i> | 3 | Science, Math | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> 2-PS1.1;2-PS1-2;2-PS1-4 | <i>State Standards NC</i> 3.P.2; | <i>State Standards SC</i> 3.P.2 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Heating up | Friction and transfer of energy are key scientific lessons and critical elements in the sport of NASCAR. During this session, students will learn about the role of friction and its impact on different parts of the car, everything from the engine to the tires. Students will conduct a series of experiments with different surfaces and angles to calculate distance and velocity. | 3-4 | Physical Science, Math, Technology | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> 4-PS2-1; 4-PS2-2; | <i>State Standards NC</i> 3.P.3; 4.P.3 | <i>State Standards SC</i> 3.P.2 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Seconds Count | Fractions of a second make a difference in NASCAR. Races are won by seconds. Utilizing game instruction, students and their teammates will solve a series of NASCAR problems using their math, social studies, science and language art skills. | 3-5 | Math, Social Studies, Language Arts | 30 minutes |



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| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
|--------------------------------|---|--|--|-----------------------|
| | OA.A.1; OA.D.8;NF.A.2; MD.A.1; NF.A.1; | NC.3.OA.3; NC.3.OA.8; NC.3.NF.1; NC.3.MD.2 NC.4.OA.3; NC.4.MD.1; NC.5.NBT.7 | 3.NSBT.3 ;3.NSF.2;3.ATO.3; 3.ATO.8; 3.MDA.1; 4.NSF.6; 4.ATO.3 ;4.MDA.2; 5.NSF.6 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Weather and Racing | Weather forecasting technology influences races both from impact on engines to discovering a winning race strategy. Student will utilize real weather data and forecasting to generate models of impact using race scenarios from current and past seasons. | 4-5 | Math, Science, Language Arts | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | ESS2.D | 5.E.1 | 4.E.2B | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Race Strong | Physical condition, nutrition and mental fitness enhance the performance of drivers, pit crews and teams. Being ready to race and perform at top speed is the challenge every race day. Students will explore how to get race ready through a series of challenges to test their strength, wellness, senses and reaction. <i>(Workshop contains physical activity.)</i> | 5 | Physical Education, Science, Health | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | 6.5.1-2; 7.5.1-3 | 5.L.1 | P-3.3.1;P-3.1.3;N-3.1.2; N-3.1.9-10;N-4.1.2;N-4.1.4;D-5.1.1;N-5.5.2 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Legends, Heroes and Innovators | What makes someone's work and legacy legendary? During this workshop, students will explore some of the NASCAR Hall of Fame inductees through their personal careers and impacts on the sport. Students will participate in object-based activities (such as a crew chief's tools and career) highlight their careers and take home their own discovery kit. | 3-5 | Language Arts, Social Studies and Science | 30 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | CCSS.ELA-Literacy.RI.3.7; CCSS.ELA-Literacy.RI.3.8; CCSS.ELA-Literacy.RI.4.5; CCSS.ELA-Literacy.RI.5.7 | RI.3.1; RI.4.1.RI.5.1; RI.2; 4.H.1;4.E.2;5.G.1 | 5-4; RI.5.1; | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |



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| Explore and Discover Tour | During this staff-guided exploration of the NASCAR Hall of Fame exhibits, students will have a chance to discover five different forces in action that impact racing (and their daily lives). Students will examine cars and tracks, tires and car parts; utilize educational tools and carts to investigate air and friction as forces; and measure speed impact. | 3-5 | Math, Science, Language Arts | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | 3-5-ETS1 | Science as Inquiry; STEM | 3.S.A.1;4.S.A.1;5.S.1A; 5.S.1B.1 | |

Exclusive for Fall/Winter 2018-19 (Available until March 1, 2019)

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|--------------------------------|--|--|-------------------------------|-----------------------|
| Looking in the Rearview Mirror | Celebrate the 70th anniversary of NASCAR and the role and impact of racing in the Carolinas. Students will explore the roots of NASCAR through its drivers, teams and race tracks by examining racing reports of the day, discovering life in the 1948 for drivers and teams, and reviewing primary documents and photos. Then they'll build their own newspapers using 1948 technology. | 3-5 | Social Studies, Language Arts | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | CCSS.ELA-Literacy.RI.3.7; CCSS.ELA-Literacy.RI.3.8; CCSS.ELA-Literacy.RI.4.5; CCSS.ELA-Literacy.RI.5.7 | RI.3.1; RI.4.1.RI.5.1; RI.2; 4.H.1;4.E.2;5.G.1 | 5-4; RI.5.1; | |

Coming Soon! Spring 2019 (March 1 – Dec. 15) Upper Elementary

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|--|--|---------------------------|----------------------------------|--|
| Starts with a Problem: Engineering in Action | Using the engineering design process, students will participate in each step from imagining to improving while working in small teams to solve real-world engineering racing problems. Pre-visit assignments will be provided. On-site classes will run in stations of exploration format. | 3-5 | STEM | 60 minutes; Offered on designated days (Mondays and Tuesday) |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | 3-5-ETS1 | Science as Inquiry; STEM | 3.S.A.1;4.S.A.1;5.S.1A; 5.S.1B.1 | |



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Middle Grades Challenges (Grades 6-8)

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|---------------------------------------|---|---------------------------|--|-----------------------|
| 10 Seconds Flat | Precision and execution are essential elements in the garage and on the track. Pit stops are a clear representation of this need. During this session, students will utilize math and technology to measure, map and execute pit stops to collect data on the best strategies. As part of the session, students will use real data points from the track. | 7 | Math, Language Arts, Technology | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | 7.RP.7.G; 8.G | 7.RP.7.G | 7.EEI.1; 7.RP.3.1; 7.GM.1; 7.GM | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Engines! Powerhouse of Work | Energy is needed to make everything—from humans to machines—move. Students will explore the concept of energy and work and learn how it is applied to a car. Students will conduct an energy experiment by building a battery-operated car. <i>(Special instructional tool: Functional cutaway race engine, transmission, drive train and rear housing)</i> | 6;8 | Physical Science | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | MS-PS3 | 6.P.3; 7.P.2; 8.P.2; | 6.S.1A; 6.S.1B.1; 6.P.3A.1; 8.S.1A.8.S.1B.1; 8.P.2A | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Aerodynamics of NASCAR - Clean Air | Aerodynamics are a critical factor in NASCAR. The impact of air—its flow, speed and racing advantages—are analyzed in each race. Students will explore air as a force, understand how it works and conduct experiments related to its downforce and drag properties. Students will utilize models, a wind tunnel and anemometers during the class. | 6-8 | Physical Science, Math, Language Arts | 60 minutes |
| <i>Curriculum Standard Alignments</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | MS-PA2 | 7.P.1.2; 7.P.2.2 | 6.S.1A; 6.S.1B.1; 6.P.3A.1; 8.S.1A.8.S.1B.1; 8.P.2A; 8.EEI.8 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Tight and Loose (Unbalanced Forces) | Engineering for unbalanced and balanced forces is important in NASCAR. Car chassis and handling varies by track. While learning and using NASCAR terminology, students will study the impact of unbalanced and balanced forces and how performance is critical for speed. Students | 7-8 | Physical Science, Math, Language Arts | 60 minutes |



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| | will build friction energy cars. (<i>Allergy Alert: Rubber bands are used in this workshop.</i>) | | | |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | MS-PA2 | 7.P.1; 7.P.2 | 8.S.1A.8.S.1B.1; 8.P.2A; 8.EE.1.8 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| KaPow! | Chemical reactions are essential for engine performance. The power of an engine is the result of gas and air combining before combustion. Students in this class will build reaction cars to test the chemical reactions needed to power their vehicles. (<i>Allergy alert: Vinegar, and citrus acids (lemon or lime juice) and baking soda are used for this experiment.</i>) | 7-8 | Physical Science | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | MS-PS1.B | 8.P.1 | 7.S.1A; 7.S.1B.1; 7.P.2B.3-5; 7.DSP.4 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Sticky Phenomena | Viscosity of liquids and how they respond to heat affects the performance of a car. Students will explore different viscosities of liquids and compare them to car fluids such as water and oil. They'll also graph how heat changes the liquids. | 6-8 | Science, Math, Language Arts | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | PS1.A | 6.P.2; 8.P.1 | 7.P.2B | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Coefficient of Friction | Students will analyze the impact of friction on the speed and velocity of a car by changing a series of variables. How can they maintain speed while adjusting banking angles, surface conditions, and heat and temperature variants? Data collected will be used to build a track condition record similar to teams at a track. Additionally, students will compare real NASCAR team notes about track and tires for friction impact. | 6-8 | Science, Math, Technology | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | PS3.A | 7.P.2 | 6.P.3 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Investigation Challenge | During this problem-based investigation, students receive three problems to solve as they explore the building under staff-guidance. Teams work together to deduce solution(s) for their problem to present back to the | 6-8 | Language Arts, STEAM) | 60 minutes |



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|----------------------------|---|---------------------------|----------------------------------|--|
| | group. Problems will explore safety, aerodynamics and car design, and role of track surfaces. | | | |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | MS-ETS1 | Science Inquiry | 6.S.1A;6.S.1B.1;7.S.1A; 7.S.1B.1 | |

STEM Days at the Hall (Middle School Classes Only)

Reserve your space! Final dates will be available Sept. 15. Anticipated session dates are Tuesday, Nov. 13 and Tuesday, Jan. 15. Join our mailing list to learn more!

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|----------------------------|--|---------------------------|----------------------------------|---|
| STEM through NASCAR | Schedule as a four-hour, PBL session with pre-work activities. Students will work in small groups on real-world, NASCAR-inspired problems. Each problem will focus on STEM in NASCAR, such as improving speed when rules reduce downforce. During the visit to the Hall, students will have hands-on materials and supplementary resources including interviews or data to help them create their solution for the problem. Stations will be available through the Hall for students to utilize as part of their solutions. The day will conclude with each group presenting their problem and solution to industry professionals. | 6-8 | Language Arts, STE(A)M | 4 hours (8 a.m.–noon) Capacity: 250 students per four-hour session |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | MS-ETS1 | Science Inquiry | 6.S.1A;6.S.1B.1;7.S.1A; 7.S.1B.1 | |



**EDUCATIONAL EXPLORATIONS, WORKSHOPS, CHALLENGES AND SEMINARS
SCHOOL YEAR 2018-19 CATALOG**

High School Seminars (Grades 9-12)

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|------------------------------------|---|--|---|-----------------------|
| Keeping the Wheels on the Race Car | Whether in the form of sponsorships, promotion, social media or gear, NASCAR, since its inception, has needed support to keep the wheels of the cars moving. Students will explore how marketing and sponsorships shape every aspect of the sport, from the teams to the tracks. As part of a challenge, students will create a pitch to persuade their “client” to provide support and resources they need to build a car. Teams will then build and race a functional “car.” | 9-12 | Marketing, Sports Marketing, Communications | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | Marketing/Business | Supports MH1; MU32; Marketing and Entrepreneurship Education | Supports course 5425 (Sports Marketing) | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| From Chemistry to Power | The engine is the heart of a race car; its performance is a critical aspect of a team’s success on any given race day. During this science and engineering-focused class, students will learn how combustion and friction rev up race engines. They’ll explore the way chemical compositions, viscosity and the effective use of power maximize the work within an engine. Students will conduct an experiment, during which they’ll see firsthand how chemical reactions transform energy and energy makes it possible to race a car. <i>(Special instructional tool: Functional cutaway race engine, transmission, drive train and rear housing.)</i> | 9-12 | Chemistry, Physics | 60 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | HS-PS1.B; HS-PS2; HS-PS3 | Phy.1.1; Phy.2.1; Chm.2.1-2; Support Automotive IT 11; IT 17 | H.C.4A.1; H.C.6A; H.P.1B.1; H.P.2A; H.P.2B;H.P.3A; Supports Automotive Tech | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |



**EDUCATIONAL EXPLORATIONS, WORKSHOPS, CHALLENGES AND SEMINARS
SCHOOL YEAR 2018-19 CATALOG**

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|----------------------------|--|-----------------------------|---|-----------------------|
| Innovation and Innovators | “Reinvent the wheel” is what NASCAR pioneers, engineers and innovators have been doing since racing began. The NASCAR Hall of Fame celebrates those who have made significant contributions to the sport. Students will utilize data sources, images and research to construct and present a nomination platform for a racing legend to become part of the Hall of Fame. Students will vote based on the presentation. (<i>Mock nomination/voting panel experience</i>) | 9-12 | English, Social Sciences, Business | 90 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | CCSS.ELA-LITERACY.RI.9-10.1; CCSS.ELA-LITERACY.RI.9-10.10; CCSS.ELA-LITERACY.SL.9-10.4; CCSS.ELA-LITERACY.SL.9-10.5; CCSS.ELA-LITERACY.SL.11-12.5 | SL: 9-12-1-6 | MC-5.1; LCS 4.2 | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Speed! | Velocity and management of speed through angles of banking have impacted the design and function of race cars since NASCAR’s inception. Students will utilize a series of cars (remote, CO ² and future design) to determine the ideal speed on different track surfaces and banking to make project-based recommendations. (<i>Additional course work is required at school.</i>) | 9-12 | Math, Physics, Automotive Science, Technology | 90 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | HS-PS1.B; HS-PS2; HS-PS3 | Phy.1.1; Phy.1.2 | H.P.2A; H.P.2B;H.P.3A | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
| Under the Hood | Focus on the engineering and automotive comparison for stock cars and stock racing. Students will explore generations of race vehicles for critical developments and improvements for a racing advantage. Seminar will highlight varying aspects of the vehicles and skills used for building, testing and race day application. Focus aligns with CTE coursework such as welding, chassis design and development, engines, body and safety. Session includes behind-the-scenes learning opportunities and digital challenges based on generations of racing development | 9-12 | CTE Automotive | 90 minutes |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | Automotive | Automotive; Welding; Safety | Automotive; Welding; Safety | |
| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |



**EDUCATIONAL EXPLORATIONS, WORKSHOPS, CHALLENGES AND SEMINARS
SCHOOL YEAR 2018-19 CATALOG**

| | | | | |
|----------------------------|---|------|---------|------------|
| Customizable Topic/Program | Not seeing your direct fit or combination? The NASCAR Hall of Fame staff (with minimum of two months advance notice) will work with your goals and objectives to develop a customized program for your group. Program topics and application will utilize NASCAR as the fundamental learning application for any program. | 9-12 | STE(A)M | 90 minutes |
|----------------------------|---|------|---------|------------|

Full Throttle STEM Days at the Hall (High School Classes Only)

Reserve your space! Final dates will be available Oct. 1. Anticipated session dates are Tuesday, Feb. 12 and Tuesday, Feb. 19. Join our mailing list to learn more!

| <i>Program Title</i> | <i>Class Description</i> | <i>Grade Level</i> | <i>Subject Matter</i> | <i>Program Length</i> |
|---------------------------------|---|---------------------------|----------------------------------|--|
| Full Throttle to NASCAR STE(A)M | Scheduled as a six-hour, PBL session with pre-work activities, students will focus on STEM within NASCAR from specific real-world problems. Working collaboratively, students will analyze data, devise and test engineering solutions, and highlight scientific theory and application involved in the problem. Industry experts from different STEM career fields provide opportunities for Q&A and advice. Additional resources and stations will be available to extend learning applications. The day will conclude with each group presenting their problem and solution to industry professionals. | 9-12 | Language Arts, STE(A)M | 6 hours (8 a.m.–2 p.m.) Capacity: 250 students each day |
| <i>Curriculum Standard</i> | <i>National (NGS, CCS)</i> | <i>State Standards NC</i> | <i>State Standards SC</i> | |
| | MS-ETS1 | Science Inquiry | 6.S.1A;6.S.1B.1;7.S.1A; 7.S.1B.1 | |



**EDUCATIONAL EXPLORATIONS, WORKSHOPS, CHALLENGES AND SEMINARS
SCHOOL YEAR 2018-19 CATALOG
School Year 2018-19 Student Pricing**

| Classification | Admission | Admission + Workshop | Admission + Workshop + Simulator | Additional Workshop | Workshop Length |
|------------------------|-----------|----------------------|----------------------------------|---------------------|-----------------|
| Pre-K | \$11 | \$11 | NA | NA | ~60 minutes |
| Elementary | \$11 | \$14 | \$17 | \$3 | ~30 minutes |
| Middle | \$11 | \$15 | \$18 | \$4 | ~60 minutes |
| High | NA | NA | \$20 | \$6 | 60-90 minutes |
| Teachers / Chaperones* | Free | Free | \$3 | | |
| Additional Chaperones | \$18 | \$18 | \$21 | | |

All prices include sales tax.

*One complimentary chaperone admission per 10 students.

*If your district requires adjusted chaperone or special chaperones, please contact groupreservations@nascarhall.com to discuss.

Student pricing applies to school/teacher direct bookings only. Does not include external bus or tour companies.