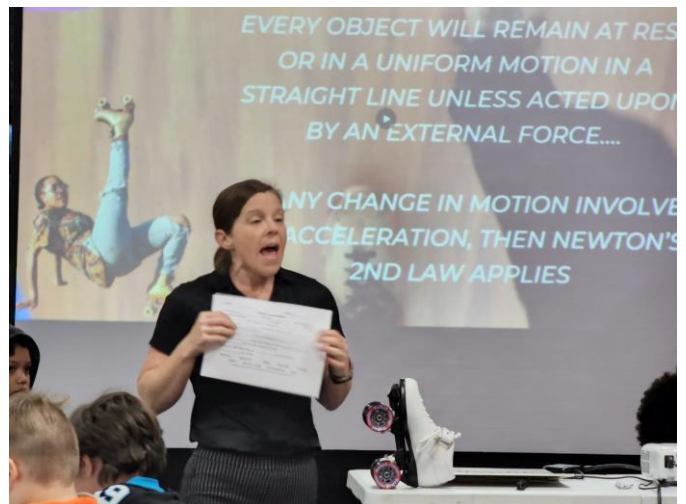




Thank you for asking about Kate's Skating Rinks' S.T.E.M. Program, the Science of Roller Skating. The Science of Roller Skating is a National STEM Program put together by Educators from all over the country. Students will participate in a unique experience that gets them excited about **SCIENCE, TECHNOLOGY, ENGINEERING and MATH!** Students will be taught how S.T.E.M. concepts can be found in everyday experiences, even fun experiences like roller skating during their visit.

Each trip will consist of 3-hours at Kate's. Your trip will be broken down into two segments. The first segment consists of the educational aspects of your trip (usually 1 hour), while the second segment (time remaining) consists of open skating, lunch and most important..... fun for you and your students! Price options are listed later in this document. At this time, due to STEM Program licensing agreement, our classes are only being offered at our Kate's Gastonia locations.

The STEM program is geared towards the educational level of your students at the time of their visit. Curriculum is broken into segments targeting K-2nd Grade, 3rd – 5th, Middle School and even High School level curriculum. We offer different levels of educational segments that allow schools to take more than one field trip per grade level during the school year. Our programs are updated annually, leaving a unique impression on the student each time they come. Our instructor has a college degree in education and has worked in our facilities for over 16 years, which provides the best relationship with our students that visit.



We have several pricing options available for your trip. Kate's will also work with 3rd parties, such as local businesses or Non-profits that may be interested in sponsoring your school trip. A minimum number of students is required for each field trip and spaces and times are limited so book fast! We do require a \$500 minimum for all STEM classes with admission.

ALL PRICES INCLUDE:

- **REGULAR SKATE RENTAL**
 - **ROLLERBLADE PREMIUM RENTAL IS \$5 ADDITIONAL**
- **SKATE MATES ARE AVAILABLE FOR NOVICE SKATERS**
- **PLAY AREA FOR SMALLER STUDENTS**
- **1 Hour Educational Class**
- **2 Hours of Skating**
 - **3 Hour Total Trip Time**
 - **Extra time can be added for additional fees per student**

TRIP PACKAGE PRICING

- Package 1
 - \$12/student
 - Students Can Bring a Bagged Lunch
- Package 2
 - \$15/Student
 - Slice of Cheese Pizza, bag of chips, and drinks
- Package 3
 - \$18/Student
 - Unlimited Cheese Pizza and Sodas for first hour after class for all in attendance

If you have any questions in regards to lesson plans, our educator will be happy to be of assistance. Kate's looks forward to partnering with you and your students on this unique educational experience.

If you would like to book, please contact us via the following:

Email: info@katesonline.com

Phone: 704-864-7007 (Gastonia) or 704-821-7465 (Indian Trail)

Thank you and we look forward to rolling with you and your students.

Kate's Skating Rinks

KatesOnline.com



All S.T.E.M. Lessons Align with NGSS!

STEM

2023
2024

EDUCATIONAL FIELD TRIPS

Attention: Elementary Educators



Over 1,200,000 students participated in our STEM program nationwide, in more than 125 locations!

UNIQUE EDUCATION EXPERIENCE!

When participating in one of our STEM field trip adventures, students will learn **Science, Technology, Engineering and Math** can be found in everyday experiences, even in **FUN EXPERIENCES** like **ROLLER SKATING!**

PLUS FUN & SAFE PHYSICAL FITNESS!

One hour of STEM education and two hours of physical fitness through roller skating.

RESERVE YOUR SCHOOL TODAY! CALL US NOW!

704.864.7007 or 704.821.7465

1151 Skating Rink Dr.
Gastonia, NC



14500 E Independence Blvd
Indian Trail, NC

STEM

2023
2024



Elementary School STEM Lessons

LESSON 1: THE SCIENCE OF ROLLER SKATING

Students will learn about the parts of a roller skate/inline skate and how each part functions to make the skate. They will discuss how surfaces in the rink are made of different materials and how that affects the skate in motion. Students will have a chance to showcase their creativity and design a new feature for a skate.

Topics Like: Geometry, Friction, Reverse Engineering, Design

LESSON 2: MOTION & SKATE DESIGN

Students will get an introduction into the physics of roller skating by discussing the four parameters of motion. Students will answer an open-ended question by inventing their own skate design.

Topics Like: Motion, Physics, Design

LESSON 3: MUSIC, MATH & ROLLER SKATING

Students will learn how to count using the beats of the music played in a roller rink and will learn how the type of music affects the speed of the skater. Fourth and fifth graders will also learn how to control the speed of skaters using the beat of the music.

Topics Like: Sound Waves, Beats per Minute, Frequency

LESSON 4: SUPER SOUND! ACOUSTICS & RINK DESIGN

Students will explore how sound waves look and how they travel through different mediums. They will discuss sounds that relate to the roller skating rink including the differentiation in speaker pitch and tones.

Topics Like: Sound Waves, Doppler Effect, Sound System Design

LESSON 5: SCIENCE OF LIGHTING

Students will learn about the speed of light and how light travels. Students will learn the exciting effects of light with the use of reflection and refraction.

Topics Like: Electromagnetic Spectrum, The Speed of Light, Light Waves

LESSON 6: HEART, HEALTH & FITNESS

Students will learn about basic human biology and how the body works from the inside out. Students will focus on heart related anatomy, nutrition, and exercise. Students will have fun exploring through heart healthy activities, such as finding and calculating an average heart rate. Students will also learn about the importance of making heart healthy food choices by identifying and understanding nutritional labels and facts.

Topics Like: Basic Anatomy, Heart Health, Calculating an Average, Labeling a Graph

LESSON 7: FORMULAS, FRACTIONS, AND FUN; THE RELATIONSHIP BETWEEN MATH & ROLLER SKATING

Students will learn how math concepts can be found all over the skating rink. Students will measure and calculate the speed of a skater, use mean, median, and mode to talk about skate sizes, and study all of the shapes that can be found in a skating rink.

Topics Like: Mean, Median, and Mode, Geometry, Calculating Speed

LESSON 8: NEWTON'S LAWS OF MOTION

Students will learn about Newton's three laws, how they relate to real world experiences and roller skating. They will learn how force and mass play a large role in motion and construct a balloon rocket.

Topics Like: Motion, Inertia, Force

LESSON 9: THE SCIENCE BEHIND ROLLER AND ICE HOCKEY

Students will learn how STEM plays a very large part in sports, specifically roller and ice hockey. They will learn how three different kinds of motion can make a difference in the outcome of the game. They will also learn how roller skates and inline skates used in roller and ice hockey work.

Topics like: Physics, Force, Potential Energy and Motion

LESSON 10: ARCADE STEM

Students will learn about reaction time, what it has to do with arcade games and how to improve it. Students will also learn about probability through discussion of arcade games in our facility.

Topics like: Reaction Time, Probability and Engineering Through Game Design

KatesOnline.com

CALL
704.864.7007 or 704.821.7465
to BOOK
your school
TODAY!



Kate's
Skating Rinks
est. 1961



**All S.T.E.M.
Lessons
Align with
NGSS!**

STEM

**2023
2024**

**ATTENTION: MIDDLE SCHOOL EDUCATORS!
EDUCATIONAL FIELD TRIPS**

**A TRULY UNIQUE
EDUCATION EXPERIENCE!**

When participating in one of our **STEM Field Trip** adventures, students will learn **Science, Technology, Engineering & Math** can be found in everyday experiences, even in **FUN EXPERIENCES** like **ROLLER SKATING!**



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**PLUS FUN & SAFE
PHYSICAL FITNESS!**

One hour of STEM education and two hours of physical fitness through roller skating.

Over 1,200,000 students participated in our STEM program nationwide, in more than 125 locations!

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**Call 704.864.7007 or 704.821.7465
To Reserve Your School TODAY!**

STEM

2023
2024



MIDDLE SCHOOL STEM LESSONS!

LESSON 1: THE SCIENCE OF ROLLER SKATING

Students will learn about the parts of a roller skate/inline skate and how each part functions to make the skate. They will discuss how surfaces in the rink are made of different materials and how that affects the skate in motion. Students will have a chance to showcase their creativity and design a new feature for a skate.

Topics Like: Geometry, Friction, Reverse Engineering, Design

LESSON 2: MOTION & SKATE DESIGN

Students will get an introduction into the physics of roller skating by discussing the four parameters of motion. Students will answer an open-ended question by inventing their own skate design.

Topics Like: Motion, Physics, Design

LESSON 3: MUSIC, MATH & ROLLER SKATING

Students will learn how to count using the beats of the music played in a roller rink and will learn how the type of music affects the speed of the skater. Students will also learn how to control the speed of skaters using the beat of the music.

Topics Like: Sound Waves, Beats per Minute, Frequency

LESSON 4: SUPER SOUND! ACOUSTICS & RINK DESIGN

Students will explore how sound waves look and how they travel through different mediums. They will discuss sounds that relate to the roller skating rink including the differentiation in speaker pitch and tones.

Topics Like: Sound Waves, Doppler Effect, Sound System Design

LESSON 5: SCIENCE OF LIGHTING

Students will learn about the speed of light and how light travels. Students will learn the exciting effects of light with the use of reflection and refraction.

Topics Like: Electromagnetic Spectrum, The Speed of Light, Light Waves

LESSON 6: HEART, HEALTH & FITNESS

Students will learn about the functions of the cardiovascular system and about leading a healthy lifestyle. They will make predictions and then calculate their average heart rate through physical activity.

Topics Like: Cardiovascular System, Heart Health, Importance of Exercise

LESSON 7: FORMULAS, FRACTIONS & FUN

Students will learn how math concepts can be found all over the skating rink. Students will measure, compare, and average the speed of several skaters, discover how engineers use geometry in the rink, and how statistics relates to roller skating.

Topics Like: Averages, Geometry, Statistics

LESSON 8: NEWTON ON ROLLER SKATES

Students will learn that each one of Newton's Three Laws of Motion are present in the skating rink. They will experiment with force and mass and discuss the importance of physics and roller skating.

Topics Like: Physics, Laws of Motion, Inertia

LESSON 9: THE SCIENCE BEHIND ROLLER AND ICE HOCKEY

Students will learn how STEM plays a very large part in sports, specifically roller and ice hockey. They will learn how three different kinds of motion can make a difference in the outcome of the game. Students will also talk probability and construct a catapult.

Topics like: Physics, Probability, Angular, Projectile and Linear Motion

LESSON 10: ARCADE STEM

Students will learn about reaction time, what it has to do with arcade games and how to improve it. Students will also learn about probability through discussion of arcade games in our facility.

Topics like: Reaction Time, Probability and Engineering Through Game Design

LESSON 11: PHYSICS OF ARTISTIC ROLLER SKATING

Students will learn how science, math, and the arts blend together in artistic roller skating. They will study the physics behind jumps and spins, and how the skater uses music, dance, and precision to create art. Students will participate in an interactive lab on projectile motion.

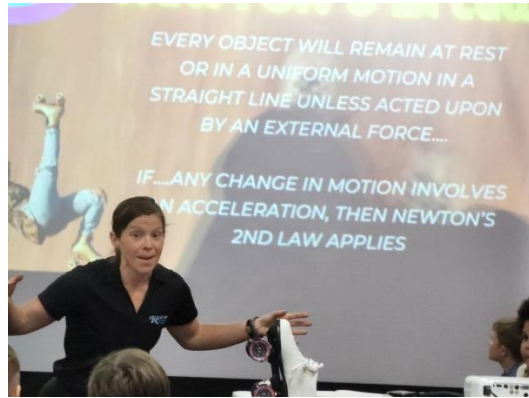
Topics Like: Angular Momentum, Center of Mass, Projective Motion

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