

# STEM



## 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.

VA SOL: K.4,1,2,2.3,3.2,4.2,5.4

### 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.

VA SOL: K.1,1,2,2.1,3.3,4.2,5.1



### LESSON 3: 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 & tones.

VA SOL: K.3,1,2,2.2,3.1,4.3,5.2

### LESSON 4: 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.

VA SOL: K.8,1,4,2.1,3.1,4.1,5.3

### LESSON 5: 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.

VA SOL: K.4,1,2,2.3,3.2,4.2,5.4

### 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.

VA SOL: K.5, 1.5,2.5,3.5,4.5,5.5

### LESSON 7: 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.

VA SOL:

K.2,1.2,2.2,3.2,4.2,5.2,6.2,P.H.7.1

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# STEM

**2023**  
**2024**

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