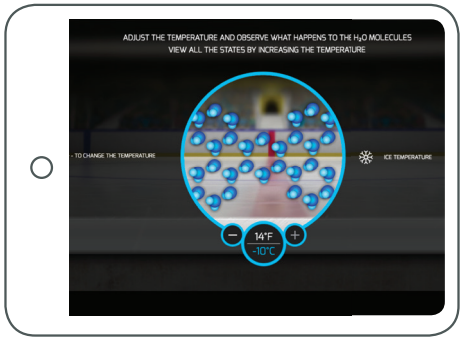
Future Goals—Hockey Scholar

Science Edition

Total Lessons: 6 lessons, approximately 25 minutes each
Subject Fit: Science, STEM
Standards Alignment: Next Generation Science Standards, State Academic Standards



Future Goals - Hockey Scholar™: Science Edition uses the game of hockey to teach students about important, but difficult to teach Science concepts. From calculating kinetic and potential energy to understanding phases of matter, students apply their scientific understanding to real world scenarios. In one lesson, students examine how friction affects a player's speed. Each of the 6 lessons uses the Scientific Method framework to scaffold students through the process of making predictions, collecting data, and conducting analysis. The result is an experience that students both love and learn from.

Key components

Digital Lessons

Self-paced digital activities give students a safe and differentiated place to build new knowledge and skills.

Lesson Plans

Classroom-ready lessons provide educators with standards-aligned guides to integrate effortlessly into classroom instruction.

Reporting

See where your students are mastering concepts or where more support might be needed with a gradebook that updates as they move through the course.

Example Topics

- Force and Friction
- Potential and Kinetic Energy
- Phases of Matter

Course Flow

- **Prediction**
- **Introductory Video**
- **Experiment**
- **Analysis**
- **Conclusion**

For more information about bringing this program to your school or district, visit **https://everfi.com/k-12/hockeyscholar**

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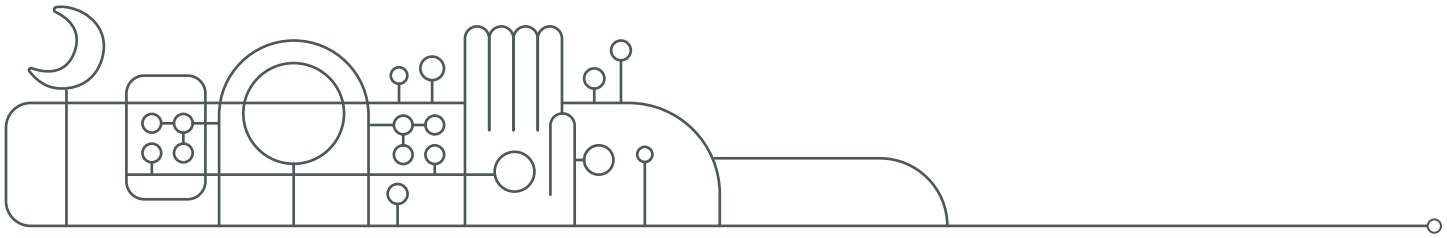
FUTURE GOALS™ Science Edition

Course Outline

Lesson	Game Description	Learning Objectives *Students will be able to...*	Key Terms
Prepare the Surface	Students explore the particle motion of different phases (solids, liquids and gases) and use that to set the air and ice temperature for the arena.	○ Explain that matter is made up of particles that are too small to see (i.E. Molecules). ○ Describe how changes in temperature affect molecular motion and kinetic energy. ○ Describe and compare the phases of matter (solid, liquid, and gas) based on temperature and molecular motion.	Molecules, atoms, H_2O, O_2, phases, solid, liquid, gas, volume, kinetic energy, Celsius, Fahrenheit, freezing, melting
The Face-Off	Students explore the relationship between potential and kinetic energy during a puck drop.	○ Explain the difference between kinetic energy (ke) and potential energy (pe). ○ Identify the relative amount of ke and pe in a system, based on an object's speed and position relative to the ground. ○ Explain the relationship between ke and pe in a closed system (i.E. Energy is conserved).	Kinetic energy, potential energy, energy transformation, conservation of energy
Strength	Students explore the effect of mass and speed on a player's kinetic energy by adding removing their equipment and adjusting their skating speed.	○ Identify and define independent and dependent variables. ○ Recognize patterns and correlations in data sets. ○ Explain the positive relationships between mass, speed (velocity), and kinetic energy. ○ Identify that changes in speed (velocity) have a greater impact on kinetic energy than changes in mass.	Independent variable, dependent variable, kinetic energy, mass, speed
Endurance	Students train players in their target heart rate zone during an on-ice shift to see the effect of exercise on heart rate and breathing rate.	○ Describe the components and function of the respiratory and circulatory system. ○ Collect data to analyze the relationship between physical exercise and heart rate and breathing rate. ○ Describe the relationship between cells, tissues, organs and organ systems.	Specialized cells, tissue, rate, organ, organ system, circulatory system, respiratory system, red blood cell, capillaries, heart rate, breathing rate



Lesson	Game Description	Learning Objectives *"Students will be able to..."*	Key Terms
The Stick	Students make observations about player's stick design preferences based on their skating, shooting, and passing styles and use this observational data to design the best stick for a new player.	○ Define and identify variables and criteria in an engineering design task. ○ Analyze data tables to discover patterns and correlations. ○ Select an optimal design solution to meet given criteria.	Observation, criteria, variable, qualitative data, quantitative data
The Goalie Pads	Students isolate and control variables to see how different pad materials affect protection & maneuverability.	○ To define and identify controls (or controlled variables) in an engineering design task. ○ Perform controlled experiments by adjusting experimental variables. ○ Analyze data tables to find patterns and correlations. ○ Select an optimal design solution based on given requirements.	Criteria, independent/ dependent/controlled variables, optimization

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