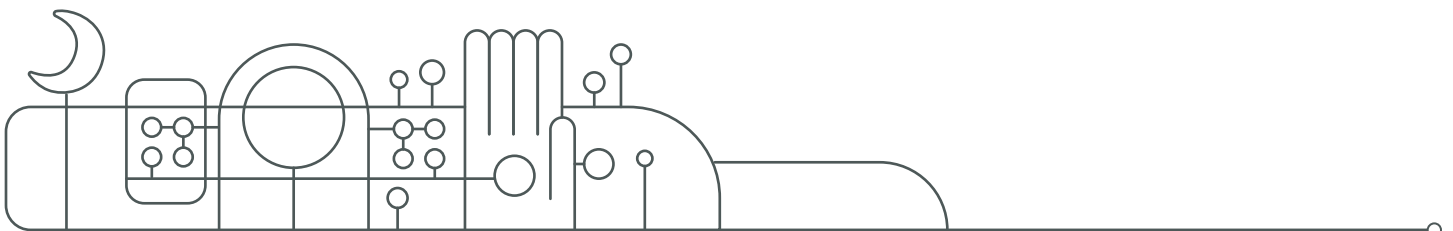


FUTURE GOALS™ Math Edition

Course Outline

Lesson	Game Description	Learning Objectives <i>Students will be able to...</i>	Key Terms
Uncover the Ice	Students derive area formula and proper units of measurement to calculate the area of each section of ice as they remove covering.	<ul style="list-style-type: none"> ○ Identify and explain the units of measurement used for area calculations. ○ Describe how unit squares can be combined to create an object of a given area. ○ Analyze area calculations to derive the area formula. ○ Apply area formulas for whole-number edge lengths. 	Area, units, unit square, square meters, formula
Paint the Ice	Students apply knowledge of geometric figures and coordinate planes to paint the ice rink.	<ul style="list-style-type: none"> ○ Define and identify points, parallel & perpendicular lines, line segments, radius, diameter, chords, and congruent figures. ○ Identify, compare, and construct circles of a given radius and diameter. ○ Use ordered pairs to describe and find the location of a point. 	Point, coordinate, x/y-axis, parallel lines, perpendicular lines, right angle, line segment, radius, chord, diameter, center, congruent
The Pass	Students measure and find patterns between angles lying on a straight line, by setting up a pass that bounces off the boards. Students discover the Law of Reflection based on their angle data.	<ul style="list-style-type: none"> ○ Measure angles in whole-number degrees using a protractor. ○ Analyze data in tables to reveal patterns that indicate relationships (e.G. Additive angles and the law of reflection) and to predict future results. ○ Describe the law of reflection and list real-life examples where it occur. 	Protractor, degrees, right angle, straight angles, Law of Reflection, adjacent angles
The Shot	Students explore the interaction between two unbalanced forces – applied force and frictional force – and use this knowledge to hit specific targets on the ice.	<ul style="list-style-type: none"> ○ Define force, magnitude, direction, and friction. ○ Explain how different forces (ex: friction, applied force) will influence the motion of the puck. ○ Identify the differences in an object's motion when forces are balanced or unbalanced. ○ To describe newton's 1st law (an object in motion will stay in motion unless acted upon by an outside force) and how it applies to real-life scenarios. 	Force, magnitude, direction, friction, Newton's 1st Law



Lesson	Game Description	Learning Objectives	Key Terms
Speed	Students record and calculate a player's average speed (using $d = vt$ formula) over short and long sprint distances.	<ul style="list-style-type: none"> ○ Identify correct units of measurement for time, distance & speed. ○ Calculate average speed using distance and time data from multiple trials. ○ Identify and utilize the formula for speed. ○ Explain the importance of performing multiple trials in a scientific experiment. 	Rate, units of distance (m, km, mi), trials, average, formula
The Skate Blades	Students help players stop on a certain target based on the radius of hollow (curve between the edges) of their skate blades, and use this data to figure out the correlation between radius of hollow and stopping distance.	<ul style="list-style-type: none"> ○ Define and identify independent variables, dependent variables, and controls in an experiment. ○ Define and describe correlations. ○ Identify the radius of a circle. ○ Construct, analyze and describe patterns from scatterplot graphs. 	Variables, radius, correlation