O'BRIEN GROUP ARENA MATHEMATICS CURRICULUM
Victorian Curriculum and Assessment Authority Levels Addressed: Levels 3, 4, 5 and 6

At level 3, students are working towards level 4 standards
At level 4, students are working towards level 5 standards
At level 5, students are working towards level 6 standards
At level 6, students are working towards level 7 standards

1. On the picture below, use the number line to help you draw on the rink:

    a. A *RED* line at the 1/2 way point

    b. Two *BLUE* lines, the first at the 1/3 point and the second at the 2/3 point

    c. Mark in the fractions 1/3, 1/2, and 2/3 on the number line.

    d. Place a circle around the denominator and a square around the nominator.
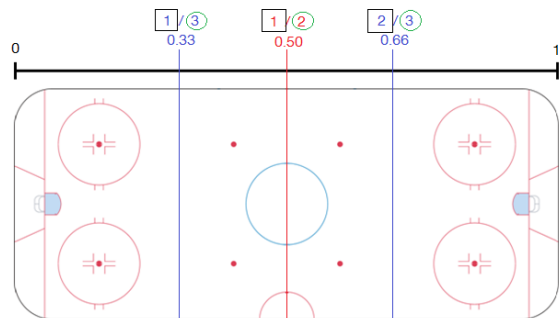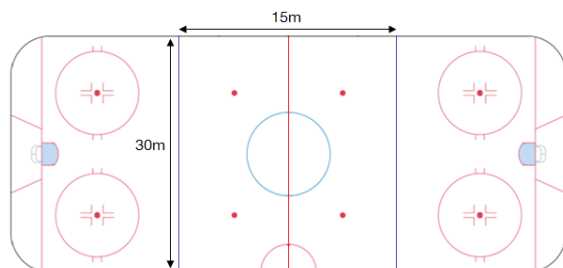
ADVANCED: Underneath the fractions you have places on the number line, use a calculator to help you write its equivalent as a decimal (to two decimal places where necessary).

Domain	Content Strand	Proficiency Strand	Key Elements of Standards
Mathematics	**Number and Algebra:** Fractions and decimals	Literacy Numeracy Information and communication technology capability Creative and Critical Thinking	**Level 3:** Students Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole. **Level 4:** Students make connections between fractions and decimal notation, Count by quarters halves and thirds, and locate and represent these fractions on a number line. **Level 5:** Students compare and order fractions and locate and represent them on a number line, as well as order and represent decimals on a number line. **Level 6:** Students compare fractions with related denominators and locate and represent them on a number line. They are able to add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers. Connections should be made between equivalent fractions, decimals and percentages.

2. If the length between the two BLUE lines is 15m, and the width of the rink is 30m, what is the area of space between the two BLUE lines?

    AREA = 15 x 30

    = 450 m²

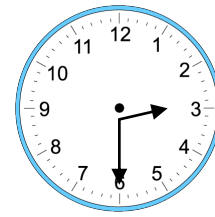| Domain	Content Strand	Proficiency Strand	Key Elements of Standards
Mathematics	**Measurement and Geometry:** Using units of measurement	Literacy Numeracy Creative and Critical Thinking	**Level 3:** Not Applicable **Level 4:** Compare objects using familiar metric units of area and volume. At this level, students may need to draw in squares between the blue lines to determine the area. **Level 5:** Students are required to choose appropriate units of measurement for length and, area and calculate the area of rectangles using familiar metric units **Level 6:** Solve problems involving the comparison of lengths and areas using appropriate units and calculate the area of rectangles using familiar metric units

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3. Brian, Ice Cat driver at the O'Brien Group Arena, has an ice re-surface scheduled at 2:30pm. Draw this time on the analogue clock below.
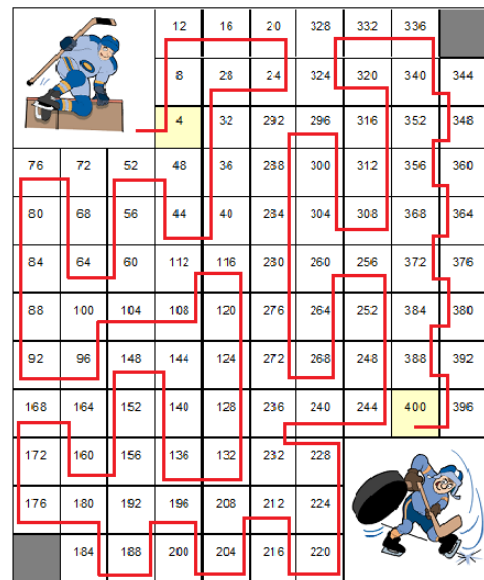
4. Brian has to re-surface the ice every two and a half hour starting at 9:30am and finishing at 7:30pm. In 24hr time, write down all the times Brian has to re-surface the ice.

0930 – 1200 – 1430 – 1700 – 1930

Domain	Content Strand	Proficiency Strand	Key Elements of Standards
Mathematics	**Measurement and Geometry:** Using units of measurement	Literacy Numeracy Creative and Critical Thinking	**Level 3:** Students tell time to the minute and investigate the relationship between units of time **Level 4:** Students convert between units of time **Level 5:** Compare 12- and 24-hour time systems and convert between them **Level 6:** Compare 12- and 24-hour time systems and convert between them and investigate the use of timetables

Draw the path starting at 4 and counting by 4s up to 400.

Domain	Content Strand	Proficiency Strand	Key Elements of Standards
Mathematics	**Number and Algebra:** Numbers and Place Value	Literacy Numeracy Creative and Critical Thinking	**Level 3:** Recognise, and order numbers to at least 10 000, Recall addition facts for single-digit numbers to develop increasingly efficient mental strategies for computation. **Level 4:** Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9. Develop efficient mental strategies and use appropriate digital technologies for multiplication and for division where there is no remainder **Level 5:** Select and apply efficient mental strategies to solve problems with whole numbers **Level 6:** Select and apply efficient mental strategies to solve problems with whole numbers
	Number and Algebra: Patterns and Algebra		**Level 3:** Describe and continue number patterns resulting from performing addition or subtraction **Level 4:** Explore and describe number patterns resulting from performing multiplication **Level 5:** Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction

		Level 6: Continue sequences involving whole numbers, fractions and/or decimals.

Nina is a great skater but her puck shooting needs some practice! Out of 45 shots on goal, she only gets in 12.
1. *Draw the probability of Nina shooting a goal as a fraction*
   12/45

ADVANCED: *Use a calculator to determine what her percentage of shots landed in the goal is. Round your answer to two decimal places.*
   26.67%

Domain	Content Strand	Proficiency Strand	Key Elements of Standards
Mathematics	**Statistics and Probability:** Chance	Literacy	**Level 3:** N/A **Level 4:** N/A **Level 5:** List outcomes of chance experiments involving equally likely outcomes and represent probabilities of those outcomes using fractions **Level 6:** Describe probabilities using fractions, decimals and percentages. Compare observed frequencies across experiments with expected frequencies
	Number and Algebra: Fractions and Decimals	Numeracy Creative and Critical Thinking	**Level 3:** N/A **Level 4:** Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation **Level 5:** Compare, order and represent fractions as decimals **Level 6:** Make connections between equivalent fractions, decimals and percentages

Draw 4 things you might find at the O'Brien Group Arena which are symmetrical.
Draw a line of symmetry in each of your drawings.

Answers might include, but are not limited to: hockey puck, ice rink, yeti, wonderballz, coffee saucer, water bottle.

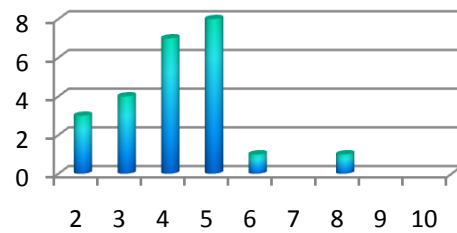| Domain	Content Strand	Proficiency Strand	Key Elements of Standards
Mathematics	**Measurement and Geometry:** Location and Transformation	Literacy Numeracy Creative and Critical Thinking	**Level 3:** Identify symmetry in the environment **Level 4:** Create symmetrical patterns, pictures and shapes with and without digital technologies **Level 5/6:** Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries

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Extra Activity
After your visit at the O'Brien Group Arena, use this table to tally your classmates' skate sizes!

Shoe Size	Tally Marks	Total
3	////	4

On the axis below, plot this data as a column graph.
Example (this can be done either using the plane provided or using digital technologies):

Domain	Content Strand	Proficiency Strand	Key Elements of Standards
Mathematics	**Statistics and Probability:** Data Representation and Interpretation	Literacy Numeracy Creative and Critical Thinking	**Level 3:** Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies **Level 4:** Complete a recording sheet to construct suitable data displays, with and without the use of digital technologies, from the collected data. Use a column graph to represent many data values collected. **Level 5:** Collect categorical or numerical data by observation or survey. Construct a column graph with or without the use of digital technologies **Level 6:** Interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables