

Name: _____

The Puck & Stick

GRADES 3-5

Explore/Elaborate

Describe how each ball would function as a hockey puck, including shape and bounce-ability, hypothesizing how each sport ball would function if they were to play hockey with it.

Baseball: _____

Golf ball: _____

Ping Pong ball: _____

Softball: _____

Tennis ball: _____

Using the data collected, identify properties and materials that support a hockey puck's function.

	Size/Shape	Materials	Weight	Texture	Other Features
Baseball					
Golf ball					
Ping Pong ball					
Softball					
Tennis ball					

Name: _____

The Puck & Stick

GRADES 3-5

Describe how each stick would function as a hockey stick, including shape, hardness, and distance, hypothesizing how each sport stick/club would function if they were to play hockey with it.

Baseball bat: _____

Golf club: _____

Ping Pong paddle: _____

Softball bat: _____

Tennis racket: _____

Using the data collected, identify properties and materials that support a hockey stick's function.

	Size/Shape	Materials	Weight	Texture	Other Features
Baseball bat					
Golf club					
Ping Pong paddle					
Softball bat					
Tennis racket					

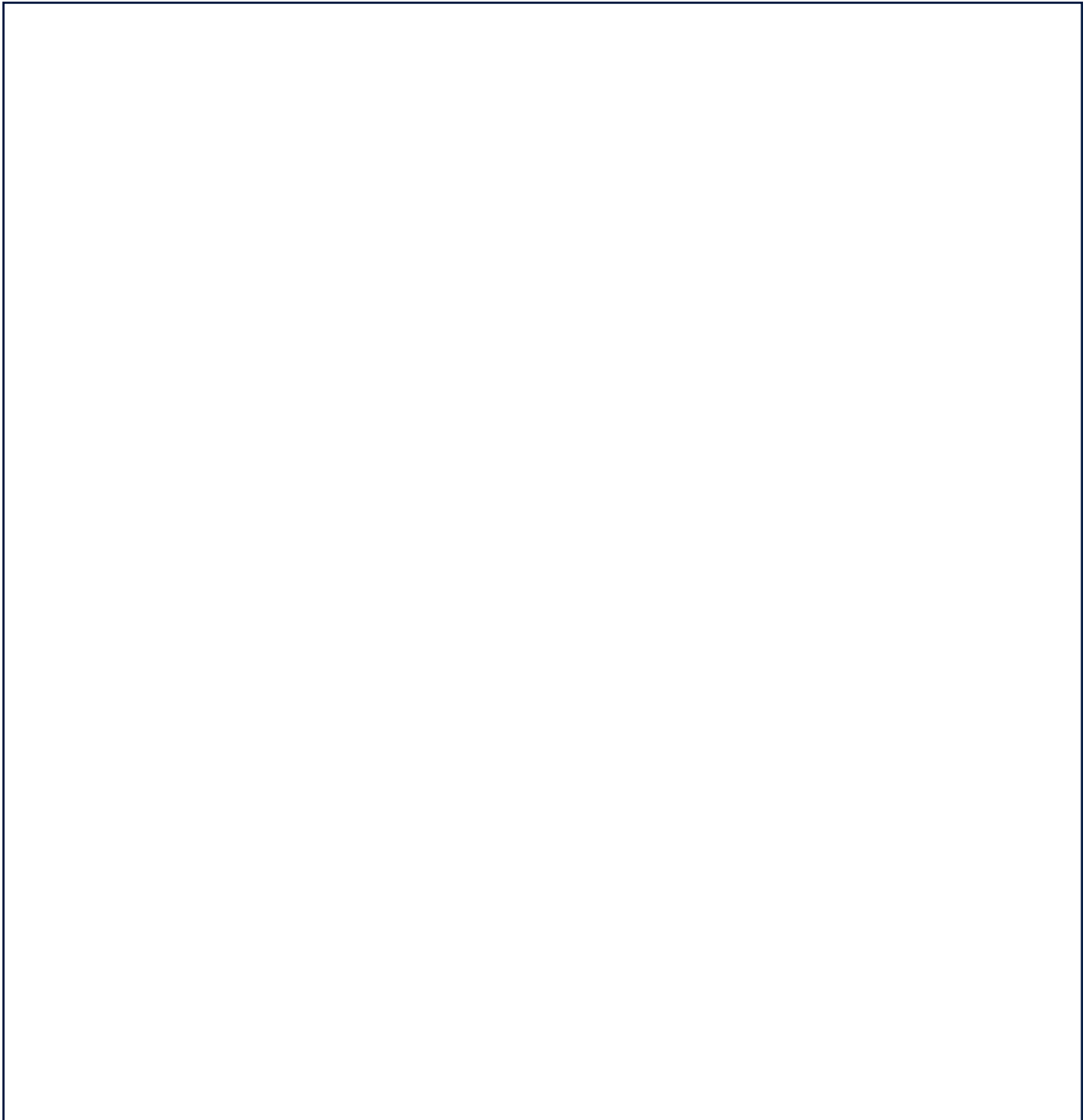
Name: _____

The Net

GRADES 3-5

Explore

Sketch a detailed diagram of your hockey net model. Each vertex (point where two lines meet) should be labeled with a different letter.



Name: _____

The Net

GRADES 3-5

Evaluate

Please answer the questions below using your sketched model.

1. What are the parallel lines in your hockey net?

2. What are the perpendicular lines in your hockey net?

3. What acute angles are in your hockey net?

4. What obtuse angles are in your hockey net?

5. What right angles are in your hockey net?

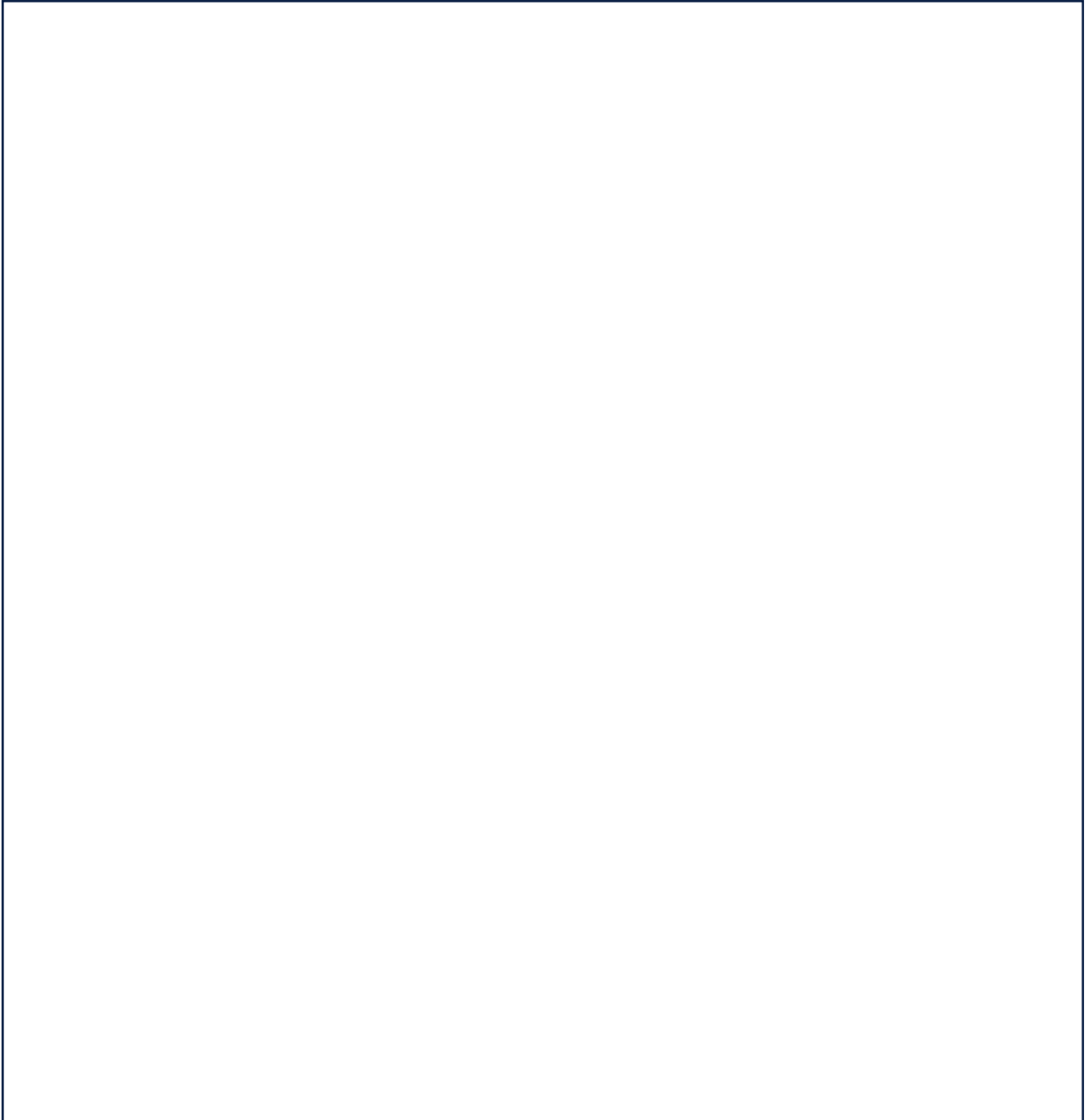
Name: _____

Playing on Ice

GRADES 3-5

Elaborate

Create a diagram that demonstrates the change from a liquid to a solid. Use lines, arrows, boxes, and circles to clearly describe this change.

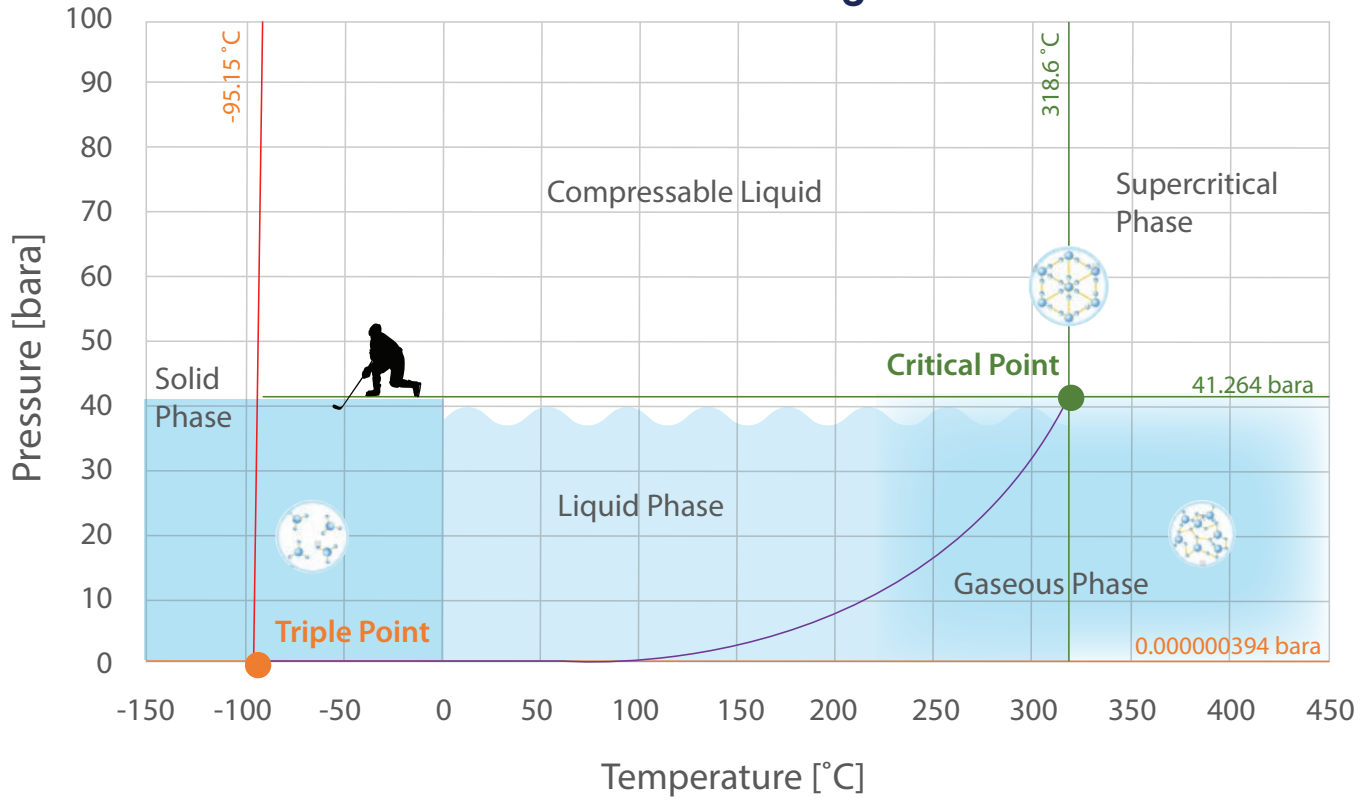


Name: _____

Playing on Ice

GRADES 3-5

Toluene Phase Diagram



Name: _____

Playing on Ice

GRADES 3-5

Evaluate

Fill in the blanks to determine the best playing surface for ice hockey.

1. When water reaches its freezing point, molecules form a definitive structure known as a _____ structure. (Molecular or Proton)
2. The temperature to play ice hockey must be at least: _____ °C / _____ °F
3. Before changing to ice, it is this state of matter _____. (Solid or Liquid)
4. To play on the ice, it must be in this state of matter _____. (Liquid or Solid)
5. Based on the images from the *Explore* section, as well as your diagram that demonstrates the change from a liquid to a solid, why do you think this reaction occurs on ice? Please explain your answer.

Name: _____

Ice Time

GRADES 3-5

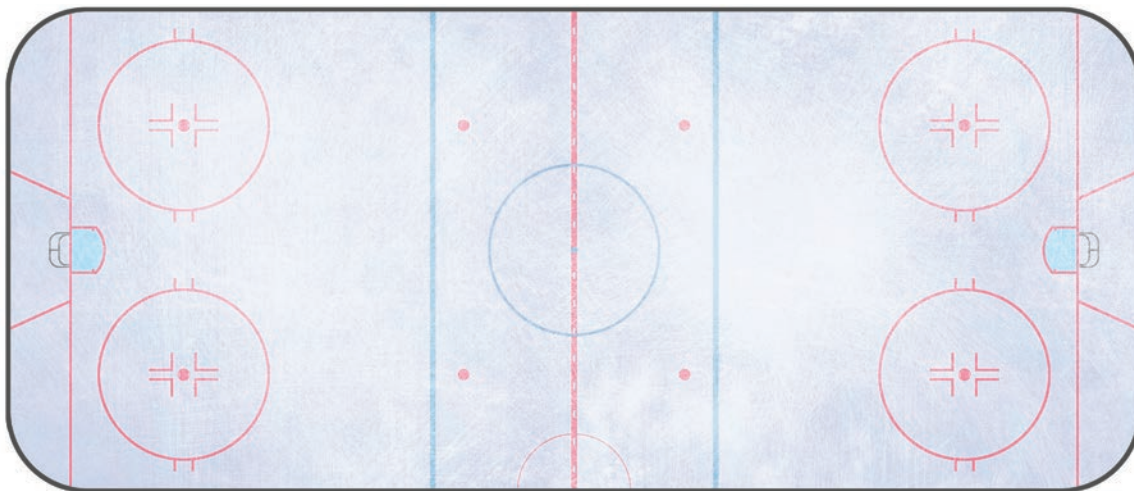
Explore

Draw a line connecting the ice marking to its corresponding rule.

Ice Marking		Rule
Center Line		Used to separate the ice into three zones: offensive, defensive, and neutral
Dots		Used for face-offs: marks where the players can position themselves
Blue Lines		Used to judge icing
Circles		Used to judge goals
Goal Line		Used for face-offs

Explain

Label the five ice markings mentioned above on the rink below.



Using the color _____, outline the hockey markings that result in parallel lines.

Using the color _____, outline the hockey markings that result in perpendicular lines.

Using the color _____, outline the hockey markings that result in right angles.

Using the color _____, outline the hockey markings that result in acute angles.

Using the color _____, outline the hockey markings that result in obtuse angles.

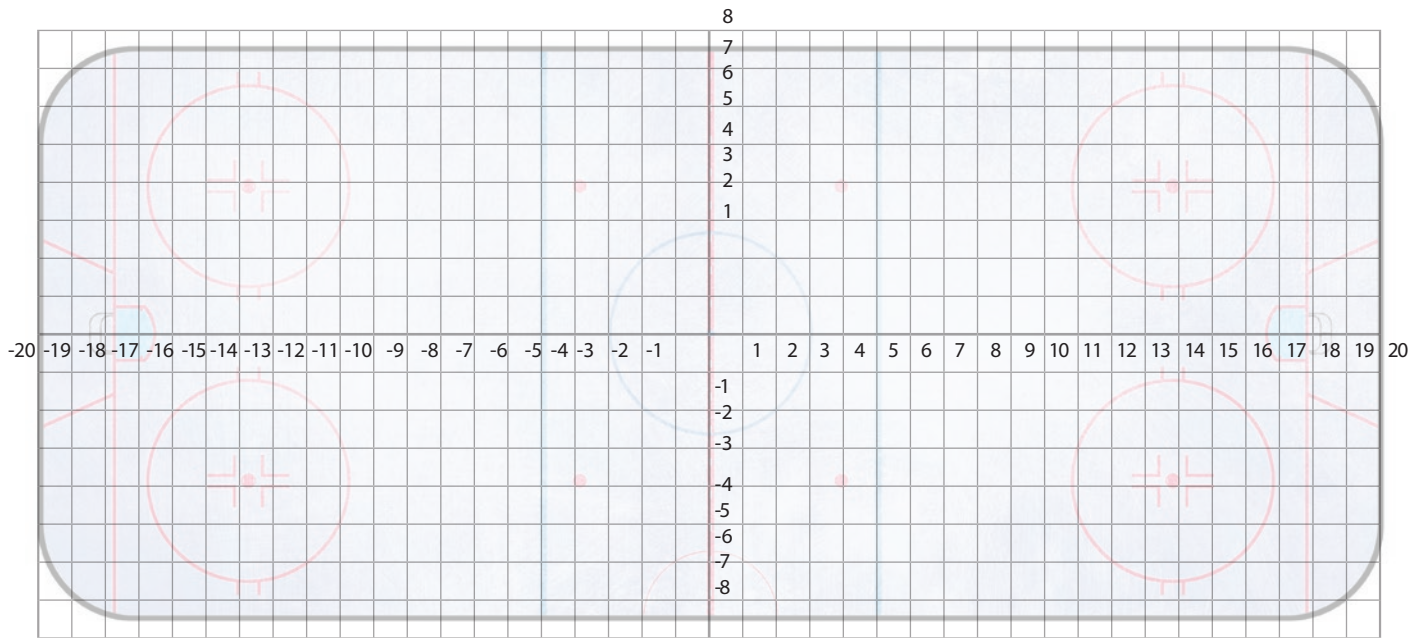
Using the color _____, draw the two lines of symmetry in the hockey rink.

Name: _____

Ice Time

GRADES 3-5

Elaborate



Evaluate

1. Graph the point (5, 2). What is the name of this hockey marking?

2. Graph the point (18, 6). What is the name of this hockey marking?

3. Graph the point (0, 5). What is the name of this hockey marking?

4. Graph the point (11, 3). What is the name of this hockey marking?

5. Name two coordinate points where you can find a face-off dot.

Name: _____

Puck Precision

GRADES 3-5

Elaborate

Take ten forehand shots from each of the shooting spots. Record your makes and misses below.

Distance of Shot = 8 ft	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9	Shot 10
Person 1										
Person 2										
Person 3										
Person 4										

Calculate each person's probability of scoring a goal and write it as a fraction and decimal.

Person 1

Person 2

Person 3

Person 4

Name: _____

Puck Precision

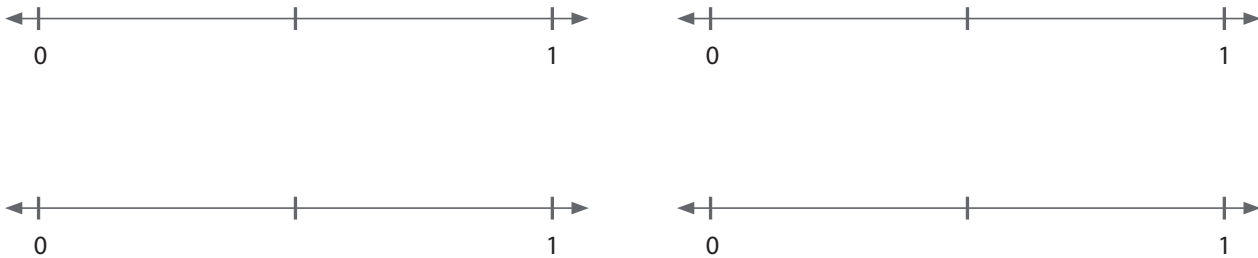
GRADES 3-5

Evaluate

Use each person's probability from *Elaborate* to predict how many goals you would expect them to make based on the following number of shot attempts.

	20 Shot Attempts	50 Shot Attempts	100 Shot Attempts
Person 1			
Person 2			
Person 3			
Person 4			

Represent each person's probability of scoring on a scale of 0 to 1.



Name: _____

Shooting Forces in Hockey

GRADES 3-5

Elaborate

Pass and Shot Type	Fastest (1) to Slowest (4)	Observations
Forehand Pass		
Wrister (Shot)		
Slap Shot/One-timer		
Student idea: _____		

Pass and Shot Type	Trial 1		Trial 2		Trial 3	
	Speed	Distance	Speed	Distance	Speed	Distance
Forehand Pass						
Wrister (Shot)						
Slap Shot/One-timer						
Student idea: _____						

Name: _____

Shooting Forces in Hockey

GRADES 3-5

Evaluate

Use the below space to create your Force Diagrams.

How does a larger unbalanced force change motion? Please answer using evidence from your experiment.

Name: _____

Skating in the Zone

GRADES 3-5

Explore

Measure the Neutral Zone and Defensive/Offensive zone; do not include the area behind the goal line.

Zones	Length (feet)	Width (feet)
Defensive/Offensive Zone		
Neutral Zone		

Elaborate

Record the time it took to skate around each zone. Then use your dimensions from *Explore* to calculate the total time, distance, and area skated.

Neutral Zone	Time	How far did you skate? (perimeter)	How much area of the ice did you cover? (area)
Attempt 1			
Attempt 2			
Attempt 3			
Total			

Name: _____

Skating in the Zone

GRADES 3-5

Evaluate

Record the time it took to skate around each zone. Then use your dimensions from *Explore* to calculate the total time, distance, and area skated.

Defensive/ Offensive Zone	Time	How far did you skate? (perimeter)	How much area of the ice did you cover? (area)
Attempt 1			
Attempt 2			
Attempt 3			
Total			

Use your totals from both zones to calculate the total time, distance, and area skated.

Zones	Time	How far did you skate? (perimeter)	How much area of the ice did you cover? (area)
Neutral Zone Total			
Defensive/ Offensive Zone Total			
Total			

Name: _____

Skating in the Zone

GRADES 3-5

Extend

As a group, calculate your total time, distance, and area skated.

Both Zones	Time	How far did you skate? (perimeter)	How much area of the ice did you cover? (area)
Student 1 Total			
Student 2 Total			
Student 3 Total			
Student 4 Total			
Team Total			

Name: _____

Advancements in Hockey

GRADES 3-5

Elaborate

Circle your stance regarding instant replay: *For* or *Against*

Brainstorm: What problems does instant replay solve?

OR

What problems does instant replay cause?

Criteria for Improvements/Changes of Instant Replay	Constraints for Improvements/Changes of Instant Replay

