Activity: **Dragon Putt-Putt 1** Name:

Revised from Mr. Underwood's Dragon Putt-Putt Project

Challenge 1

In Challenge 1, you will be constructing a scale drawing of **two or three** miniature golf holes.

In order to present your final materials list, you have been asked to create a scale drawing of each of your putt-putt holes to present to the owner, Mr. Bogey.

Construct all your putt-putt holes on a single piece of graph paper.

All drawings should use the following checklist:

- Use a straight edge of ruler for all your lines
- Make sure to include the scale (0.25 inches = 1 foot) and draw neatly on graph paper.
- Each hole must be a composite shape.
- Label each hole in all caps (HOLE 1) above the actual hole.
- Draw a light solid line to outline each composite shape
- Each hole needs to have a cup which will be indicated with a solid black dot. The cup has a 6 inch diameter in real life.
- Each hole needs a tee which will be indicated with a solid red dot. The tee has a 6 inch diameter in real life. The cup must not be seen directly from the tee.
- Each hole should have one or two major obstacles. Lightly color your obstacles.
- The total area of your putt-putt holes must be $200\ ft^2$ or greater.

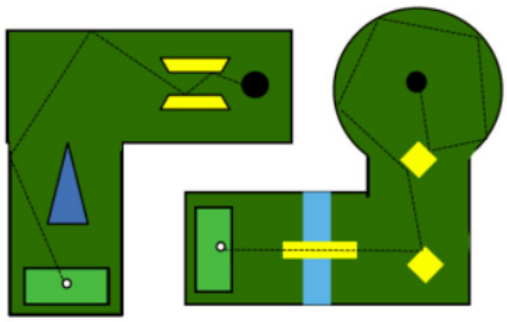
Shape Check Chart (to be included below your putt-putt holes):

Shapes Used To Design the Hole	**Triangle**	**Rectangle**	**Parallelogram (that is not a rectangle)**	**Trapezoid**	**Circle**	**Semicircle**	**Quarter-circle**
Hole 1							
Hole 2							
Hole 3							

Each hole must be designed using at least three different shapes and you must use all 7 shapes above at least once. Using a triangle (for example) just as an obstacle is not the same as designing the hole with a triangle.

You want your hole to be challenging, but at that same time make it possible to get a hole in one.

Putt-putt video (go to 1:18)
https://www.youtube.com/watch?v=KLz4syGdoaU



Activity: **Dragon Putt-Putt 2** Name:

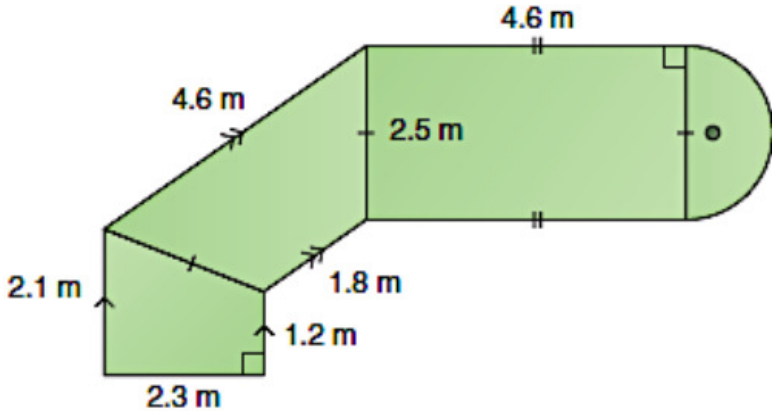
Challenge 2

In Challenge 2, you will need to calculate the amount of edging that is needed to surround each of the golf holes.

The edging needs to be installed for each hole at Dragon Putt-Putt. How much edging will be needed at each of your golf holes?

Use your scale drawings from Challenge 1 and the following checklist:

- Be neat.
- Label in pencil the length of each side of the smaller shapes that makeup the composite shape including units. Write your number just outside of the hole. Round up to the nearest whole number on circular parts. Labels should be consistent in the way they are facing.
- Calculate the perimeter of your putt-putt holes. You may use a calculator.
- Outline the perimeter of each hole in thin black sharpie.



Challenge 3

In Challenge 3, you will need to calculate the amount of carpet needed to be installed on each of your holes.

To complete the materials list for Dragon Putt-Putt, determine the amount of indoor/outdoor carpeting needed to resurface each of your golf holes. Divide hole into separate composite shapes (rectangles, circles, etc.) and find their areas.

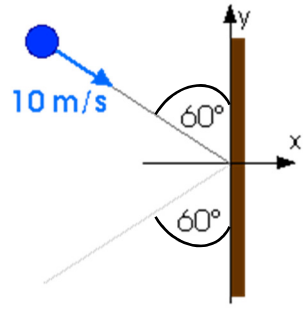
Use your scale drawings from Challenge 1 and the following checklist:

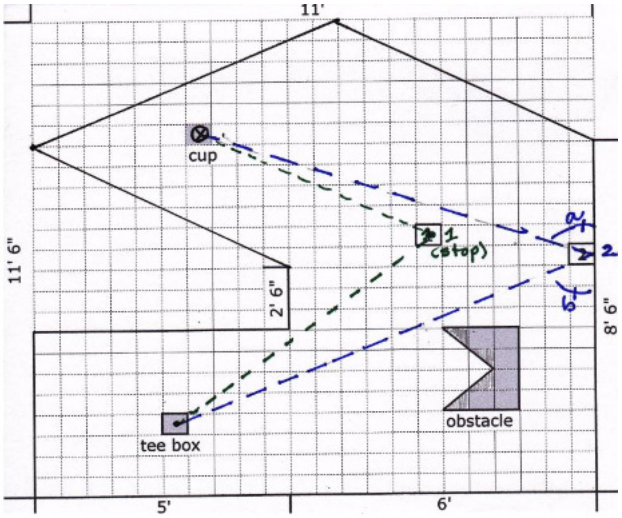
- Be neat.
- Calculate the area of your putt-putt holes. Round up to the nearest whole number when necessary. You do not need to subtract the area of the tee, cup, or obstacles.
- Show the "3 steps" for each area. Box your individual area answers. You may use a calculator.

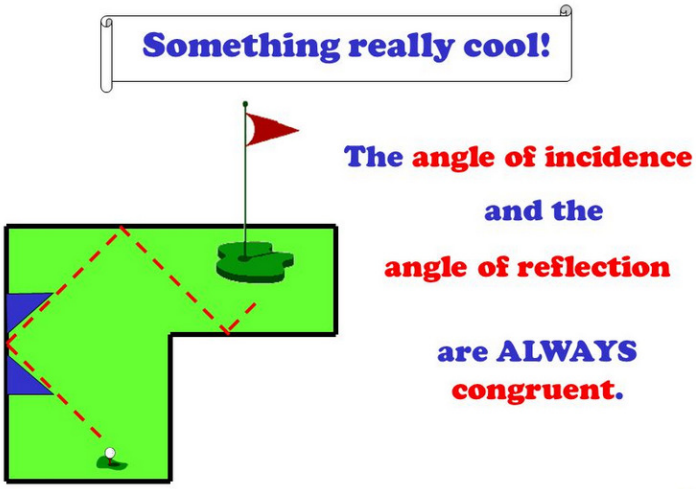
Activity: **Dragon Putt-Putt 3** Name:

Challenge 4

Using your knowledge of angles draw a shot (**a solid green line**) from the tee could reach the cup for a hole in one. Since your cup is not visible from the tee, this should require you to bank the ball off of an edging/wall/obstacle. Remember the angle a ball hits the wall is the same angle it will bounce off the wall.







Challenge 5

Three local stores are bidding to build the entire Dragon Putt-Putt Golf Course. Which store will be the most cost effective? What is the total cost for the needed supplies? Compare the total costs for each store.

	Edging	***Indoor/Outdoor Carpet***
ManghamMart	$12 per foot	$23 per square foot
Fauatea's Fixtures	$10 per foot	$25 per square foot
Underwood Depot	$15 per foot	$21 per square foot

Final Presentation

Mr. Bogey, owner of Dragon Putt-Putt Mini Golf, has contacted you. You will use the results from these challenges above to develop your quote. Present your three putt-putt holes and your quote all together on one piece of construction paper.

DRAGON PUTT-PUTT FINAL QUOTE		
Edging (ft)		
Hole 1	**Hole 2**	**Hole 3**
Data:	Data:	Data:
Total:	Total:	Total:

Carpet (ft^2)		
Hole 1	**Hole 2**	**Hole 3**
3 Step Equations:	3 Step Equations:	3 Step Equations:
Total:	Total:	Total:

Total Cost ($)			
	<u>ManghamMart</u> Edging - $12 per foot Carpet - $23 per sq. ft.	<u>Fauatea's Fixtures</u> Edging - $10 per foot Carpet - $25 per sq. ft.	<u>Underwood Depot</u> Edging - $15 per foot Carpet - $21 per sq. ft.
Edging			
Carpet			
Grand Total			
Which store will be the most cost effective?			

Name: _____

Putt-Putt Grading Rubric

	Points Possible	Score
General: • Name • Scale • Holes listed • Outlined • Black hole • Red tee • Obstacles drawn • Edge lengths shown	20	
Shapes used: • Triangle • Rectangle/Square • Parallelogram/Rhombus • Trapezoid • Circle • Semicircle • Quarter-circle • Pentagon (bonus)	20	
Hole-in-one shot	5	
Edging calculated correctly	10	
Carpet calculated correctly Work/steps shown	20	
Total cost calculated correctly	20	
Reasonable total area	5	
TOTAL	100	