

As with all projects, you want your final project to look **professional**.

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.

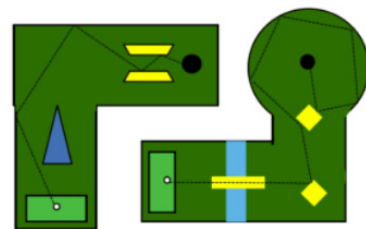
Construct all your putt-putt holes on **one side of a single piece of graph paper**.

Use the following checklist to complete your holes.

	Choose a theme for your putt-putt course. This year the 3 options are: <ul style="list-style-type: none"> • Superheroes • Sports • Nature
	Title your graph paper with the name of your putt-putt course.
	Use a straight edge of ruler for all your lines. Draw neatly.
	Scale: 0.25 inches = 1 foot Be sure to include this on your graph paper.
	Use at least 3 different shapes below to build each hole.
	You must use all 7 shapes at least once to build the holes (obstacles are separate).
	The total area of all your putt-putt holes must be 300 ft ² or greater.
	Label each hole in all caps (HOLE 1) above the actual hole (not the cup, the entire hole).
	In pencil, draw a light solid line to outline each composite shape.
	Each hole starts with a tee. This is a 6 inch diameter (real life) solid red dot.
	Each hole ends with a cup. This is a 6 inch diameter (real life) solid black dot.
	The cup may not be seen directly from the tee.
	Each hole should have at least one major obstacle. Lightly color your obstacles.
	You want your hole to be challenging, but make it possible to get a hole in one.

Putt-putt video (go to 1:18)

<https://www.youtube.com/watch?v=KLz4syGdoaU>



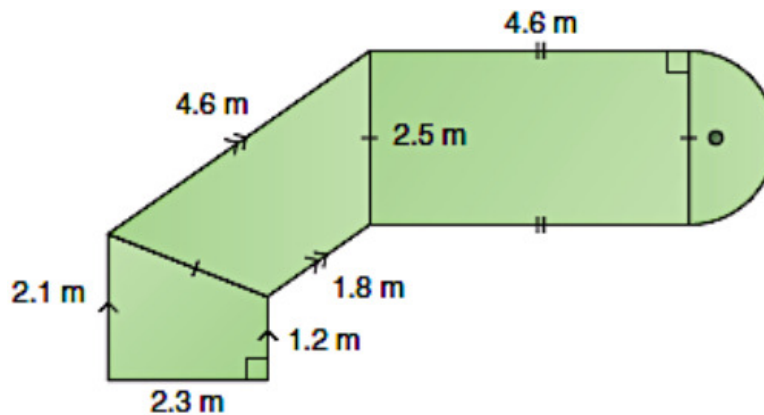
Challenge 2

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 and professional.
	Label in pencil the length of the sides of the smaller shapes that make up the composite shape (just the sides that make the overall perimeter, not like the 2.5m in the picture below) including units. Write your number just outside of the hole. Round up to the nearest whole number on all parts. Labels should be consistent in the way they face.
	Calculate the perimeter of your putt-putt holes. You may use a calculator.
	Using a ruler, outline the perimeter of the entire hole (not each individual shape) 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.

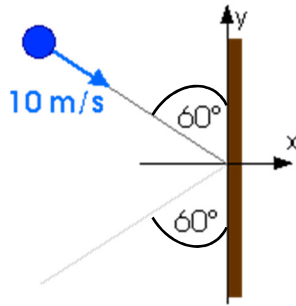
To complete the materials list for Dragon Putt-Putt, determine the amount of indoor/outdoor carpeting needed to resurface each of your golf holes. Divide hole into separate composite shapes (rectangles, circles, etc.) and find their areas.

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

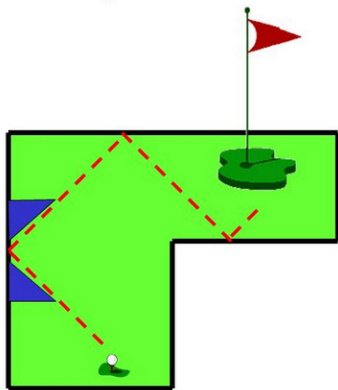
	Be neat and professional.
	Calculate the area of your putt-putt holes. Round up to the nearest whole number when necessary. You do not need to subtract the area of the tee, cup, or obstacles.
	Show the “3 steps” for each area. Box your individual area answers. You may use a calculator.

Challenge 4

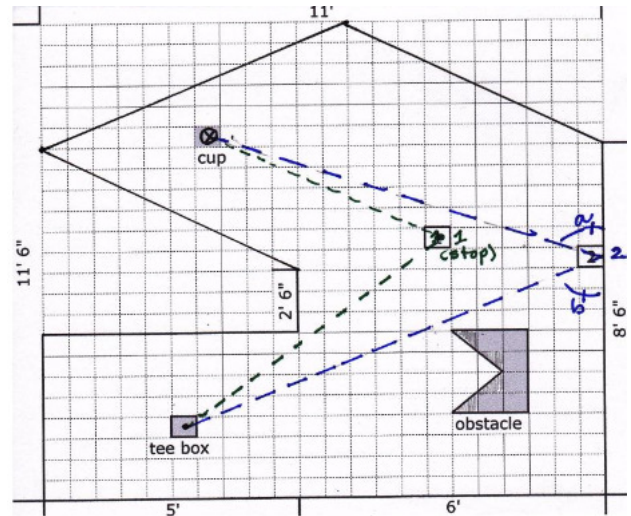
Using your knowledge of angles draw a shot (a **solid green line**) from the tee could reach the cup for a hole in one. Since your cup is not visible from the tee, this should require you to bank the ball off of an edging/wall/obstacle. Remember the angle a ball hits the wall is the same angle it will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



Something really cool!



**The angle of incidence
and the
angle of reflection
are ALWAYS
congruent.**



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. **You must purchase in quantities of 25 feet or 25 square feet.**

	<i>Edging</i>	<i>Indoor/Outdoor Carpet</i>
<i>ManghamMart</i>	\$350 for 25 feet	\$550 for 25 square feet
<i>Fauatea's Fixtures</i>	\$250 for 25 feet	\$600 for 25 square feet
<i>Underwood Depot</i>	\$450 for 25 feet	\$500 for 25 square feet

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 (if you did two leave the last column blank) and your quote all together on one piece of construction paper.

DRAGON PUTT-PUTT FINAL QUOTE

SHAPE CHECK CHART

Shapes Used On Holes (circle if used)	Triangle	Rectangle	Parallelogram (non-rectangle)	Trapezoid	Circle	Semicircle	Quarter circle
	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3

EDGING (ft)

Hole 1	Hole 2	Hole 3
Data:	Data:	Data:
Total:	Total:	Total:
Grand Total:		Feet of edging ordered:

CARPET (ft²)

Hole 1	Hole 2	Hole 3
3 Step Equations:	3 Step Equations:	3 Step Equations:
Total:	Total:	Total:
Grand Total:		Square feet of carpet ordered:

TOTAL COST (\$)

	<u>ManghamMart</u>	<u>Fauatea's Fixtures</u>	<u>Underwood Depot</u>
Edging			
Carpet			
Grand Total			

Name: _____

Putt-Putt Grading Rubric

	Points Possible	Score
General: <ul style="list-style-type: none"> • Name • Scale • Holes listed and in caps • Outlined • Red tee • Black hole • Obstacles drawn • Perimeter lengths shown 	15	
Shapes used: <ul style="list-style-type: none"> • Lightly drawn lines to see shapes • Triangle • Rectangle/Square • Parallelogram/Rhombus • Trapezoid • Circle • Semicircle • Quarter-circle 	15	
Hole-in-one shot, green line	10	
Edging calculated correctly	10	
Carpet calculated correctly Work/steps shown	20	
Total cost calculated correctly	10	
Professional quality/Use of theme	20	
WOW ME Bonus		
TOTAL	100	