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

## Challenge 1

In Challenge 1, you will be constructing a scale drawing of 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 three putt-putt holes to present to the owner, Mr. Bogey.

All drawings must use the following checklist:
- Make sure to include the scale and draw neatly on graph paper.
- Complete a scale drawing for all three holes using the scale 0.25 inches = 1 foot.
- Each hole must be a composite shape.
- Holes must be numbered with capital letters (HOLE 1).
- Lightly place a dotted line to show each of your individual shapes that make the hole.
- 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 box which will be indicated with a solid red dot. The cup must not be seen directly from the tee box.
- Your putt-putt hole must be between 90 to 130 square feet at full scale.
- Each hole should have at least one obstacle.
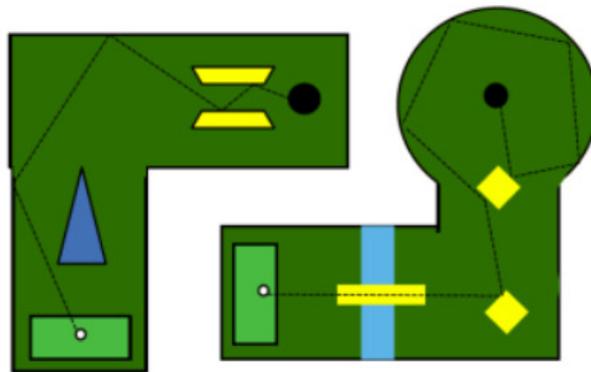
Shapes to choose from:        1. Triangle, 2. Rectangle/Square, 3. Parallelogram/Rhombus, 4. Trapezoid,
                              5. Pentagon, 6. Circle, 7. Semicircle, 8. Quarter circle

Each hole must have:
- At least three different shapes and you must use all 8 shapes above at least once

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
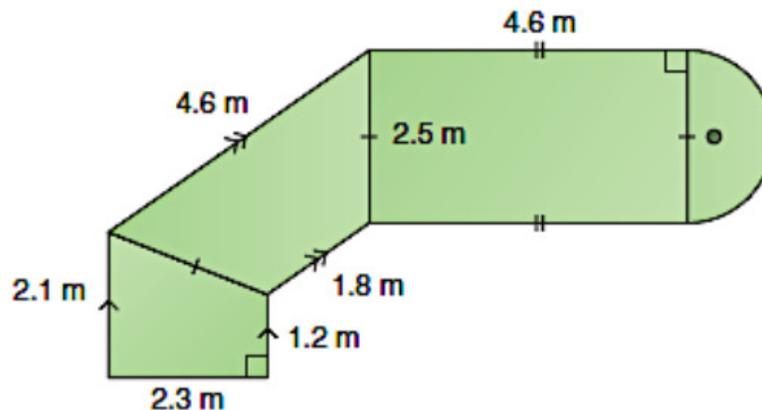
## Challenge 2

In Challenge 2, you will need to calculate the amount of edging that is needed to surround each of the three 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 three 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. Round to nearest half foot unless a circle and then it's to tenths place. Labels should be consistent in the way they are facing.
- Calculate the perimeter of your three putt-putt holes. You may use a calculator.
- Outline the perimeter of each hole/cup in thin black sharpie (Very <u>LAST</u> thing you do).



## Challenge 3

In Challenge 3, you will need to calculate the amount of carpet needed to be installed on each of your three holes.
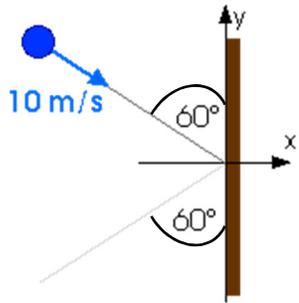
To complete the materials list for Dragon Putt-Putt, determine the amount of indoor/outdoor carpeting needed to resurface each of your three golf holes. Divide hole into separate composite shapes (rectangles, circles, etc.) and find their areas.

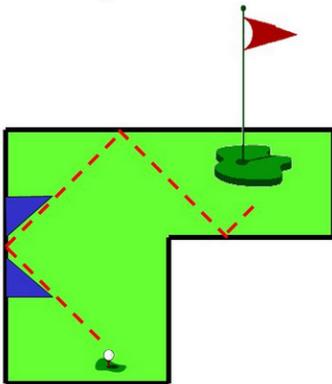Use your scale drawings from Challenge 1 and the following checklist:
- Be neat.
- Calculate the area of your three putt-putt holes. Be sure to subtract the cup and the obstacles you have placed on the hole as they will not require carpet.
- Show the "3 steps" for each area. Box your individual area answers. You may use a calculator.
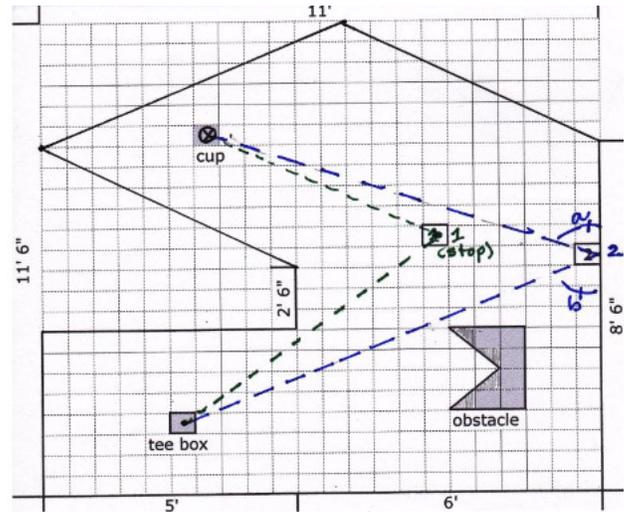
## Challenge 4

Using your knowledge of angles draw a shot 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 have the supplies that are needed to build the 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 | $26 per square foot |
| *Underwood Depot* | $15 per foot | $20 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 (ft²)

| Hole 1 | Hole 2 | Hole 3 |
|---|---|---|
| Formulas: | Formulas: | Formulas: |
| Total: | Total: | Total: |

### Total Cost ($)

| | ManghamMart<br>Edging - $12 per foot<br>Carpet - $23 per sq. ft. | Fauatea's Fixtures<br>Edging - $10 per foot<br>Carpet - $26 per sq. ft. | Underwood Depot<br>Edging - $15 per foot<br>Carpet - $20 per sq. ft. |
|---|---|---|---|
| Edging | | | |
| Carpet | | | |
| Grand Total | | | |
| Which store will be the most cost effective? | | | |