# http://www.holton.k12.ks.us/staff/bbarta/images/Clip%20Art/small2a.gifPutt Putt Course Projecthttp://www.holton.k12.ks.us/staff/bbarta/images/Clip%20Art/small2b.gif

Putt Putt Course Design

This Project is intended to organize each class into a team in charge of designing a nine hole putt putt golf course. It will be important that each student in the class contributes his fair share to his or her committee and class as well as his or her own individual work. Students will be graded on their contribution to the project on different levels. Each student will be evaluated by the following rubric with input from the rest of the class as well as the instructor. In order to successfully complete the project students will have to understand such concepts as measurement, scale drawings, surface area, volume, transformations, cost evaluation, CAD, hands on application, mathematical communication, teamwork and problem solving.

This project wil include a building team that will create a scale version of a putt putt golf course. You will be divided into three committees that are responsible for making decisions, direction all members of the class and collecting information that will be turned into the instructor. You are responsible and will be graded on three levels. 1)as a class 2) as a committee 3) as an individual. Organization, teamwork and effort are the key ingredients to producing a quality project and getting an "A". You will enjoy this project and the time will fly by if you buy into the project and show effort. It will be frustrating at times, but it will all come together at some point.

Here is all the information you will need to create your own putt putt Cource.

|  |  |
| --- | --- |
| [Checklist of Tasks](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/handinchecklist.html) | [Description of the Process](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/puttphasesdesign.html) |
| [Checklist of Activities](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/activitychecklist.htm) | [Previous Putt Putt Course Design](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Charts%20%26%20objects/Project%20Pictures/Golf/Image13) |
| [Putt Putt Grading Rubric](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/rubric.html) | [Quia Quiz and Flashcards](http://www.quia.com/jg/32859.html) |
| [Individual and Team Evaluation](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/projectevaluation.html) | [Reflections,Tutorial,Quiz](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/reflections_page.htm) |
| [Individual Report](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/individualreport.html) | [Volume, Area and Cost Tutorial](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/areavolumecosttutorial.htm) |
| [Committee Report](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/committeereport.html) | [Project Prices](http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/projectpricing.html) |

http://www.holton.k12.ks.us/staff/bbarta/images/Clip%20Art/1greencourse.gif

# Putt-Putt

# Hand In Check List

 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class/Hour\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Committee\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_Checklist on Top of packet and Stapled.

\_\_\_\_\_\_Your individual Report.

\_\_\_\_\_\_Copy of the Committee Report.

\_\_\_\_\_\_Reflection Worksheet #1.

\_\_\_\_\_\_Rough Draft of Area Organization for the total project.

\_\_\_\_\_\_Three Thumbnail sketchs of your hole design.

\_\_\_\_\_\_Blue Print of Hole that is pasted to the group's board.

\_\_\_\_\_\_Blue Print of Hole (Scaled to one page) with three color reflection solution. Make sure to Leave the A' etc. on the drawing.

\_\_\_\_\_\_Copy of your evaluation of yourself and the group.

# Miniature Golf Course Project

Your creative team has been given the responsibility to create nine holes of the new miniature golf course. Three other creative teams will be taking care of the other 27 holes. You have been given a parcel of the land to design your part of the the course. Your job is to divide up the land and let your people get after the project. There is a list of things that need to be accomplished.

### Phase I - Course blueprint and design.

Specifications

You must have between 350 and 400 ft2 of running water on your section or land.

You must have between 300 and 500 ft2 of shrubbery on your section.

Hole areas must fit together in a logical order and there must be room to walk to each hole.

You are allowed to use bridges and decorative objects. ( This will be a two dimensional model.)

Each hole is delegated out and each person must present their ideas to the group for approval.

Scale: 1 cm = 1ft

### Phase II - Planning Greens

Make a minimum of three thumbnail sketches of your green ideas and get input from others on your team.

Pick your choice and create a computer generated model to scale that includes all lengths, angles, areas and distances. (Save this in your file)

Fit each of the nine holes together to test the accuracy of the measurements.

### Phase III - Construction

Construct the actual scale model on computer, then cover it with the appropriate construction paper. (Put you name on your model)

Blue Construction Paper: water, Green Construction Paper: shrubbery, Green Paper: putting green, Gray: Sidewalks or cement.

Affix model to your division of the land development.

### Phase IV - Wrap Up ( individual )

Each person will construct 3 original keys that have complete reflection solutions with them.

Attach a 1 full page typed "history of the hole" paper that includes a cost and material write up, surface area and what transformations or ideas were involved in the design of the hole.

The group must submit totals for the surface area , putting area, water area, and shrubbery area in an organized manner for each individual hole as well as all nine holes. There should be a similar table of costs for each material on each hole as well as for the total project. Individuals are responsible for reporting results to the appropriate commitee.

# \_\_\_\_\_\_ Division (NE, NW, SE, SW)

|  |
| --- |
| Head of Operations |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |  |
| --- | --- | --- |
| Head of Landscape Design | Head of Putting Green Design | Head of Project Design |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |  |
| --- | --- | --- |
| Committee Members | Committee Members | Committee Members |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Runs water area area through the course and figures volume of water  2 Totals and assigns shrubbery area  3. Totals cost of wood for benches and other items  4. Totals Cost of concrete for water containment. | 1. Runs Design of greens approval  2. Totals volume and cost of concrete for greens  3. Totals area and cost of carpet  4. Approves the design and reflection solutions of each green. | 1. Runs Sidewalks and totals volume and cost concrete  2. Orders the individual holes as well as tee boxes and holes.  3. Controls allotment of all area to each person to work with  4. Insures proper fit of areas into to total project |

Class\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Hour\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



# Putt-Putt Rubric

### Group Grade

Perfect Great Good Average Poor None

Course Fit 10 8 6 4 2 0

Teamwork 10 8 6 4 2 0

Meet Requirements 10 8 6 4 2 0

Totals Complete 10 8 6 4 2 0

### Individual Grade

### Paper-

Properly put together and complete- includes all totals and costs and history of their hole

Perfect Mostly Half Little info Short and no info None

20 16 12 8 4 0

### Reflections -

Include the primes and proper measurements. Must work correctly.

Perfect Good 2/3 correct 1/3 correct Attempted None

20 16 12 8 4 0

### Hole Design -

Must meet specifications of the project and show neatness and some creativity.

Neatness and Creativity

Perfect Neat Good Sloppy None

10 8 6 4 2 0

Met Specifications

All Most Some Attempt None

10 8 6 4 2 0

# Supply Costs

### Holton Lumber Supply

4 x 4 Treated Lumber 10 ft boards for $10.64 plus tax

Outdoor Carpet $5.95 ft2

### Holton Concrete and Supply

$60.50 plus tax per cubic yard

### Sutherlands

6 ft wide $1.69 per linear foot

12 ft wide $4.99 per yd2

Treated 4 x 4 lumber 10 ft boards for $11.09

### Payless

carpeting

6 ft wide for $4.29 per linear yard

12 ft wide for $6.99 yd2

 Treated Lumber 4x4 10 ft $12.99 12 ft $14.48

### Notes

Concrete will be laid 6 inches deep

Scale of Project 1cm=1ft

Water will be 2 feet deep in all places

Anything holding water will be have 2ft 6 inch walls and will be 4 inches thick.

The bottom will be 6 inches thick.

Putt Putt Project Review

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Title of Project:

Partners:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Comittee:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This review page will have an impact on your grade. You must use complete sentences and thoughts when answering the following questions. Write neat and small. Your answers will also have an impact on the grade that your partners will receive. This is confidential.

1. List the things that you did for the group when putting the project together.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. List the name and the things that each one of your partner's did when putting the project together. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Evaluate your effort and willingness to work with the group in 8 - 10 sentences. What could you have done better or more efficiently?

4. Evaluate each person's effort and willingness to work with the group in 4-6 sentences each. Give specific examples.

5. Honestly give an appropriate grade for each of the following categories. My opinion of your honesty will influence your final grade.

A = Excellent B = Pretty Good C = Average D = Below Standards F = Terrible

Name You\_\_\_\_\_\_\_\_\_\_ Partner\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_=\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_=\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_=\_\_\_\_\_\_\_\_\_

Overall effectiveness of the project\_\_\_\_\_\_\_\_\_\_\_\_\_

Overall effort of the committee \_\_\_\_\_\_\_\_\_\_\_\_\_ Committee Grade\_\_\_\_\_\_\_

## (Individual Report)

Class Hour

Committee

Name

Introduction: Description of the hole including features, landscaping, hole design, etc.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Totals

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Wood | Concret | Carpet | Water |  | Total |
| Area or Volume |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Cost |  |  |  |  |  |  |

(Use proper labeling for costs, volumes and areas)

Summary: What was challenging, What was easy, What was the process of seeing it come together, Are you satisfied with your product?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | (Committee Report) |  |

Class Hour

Committee Name

Head of Committee Name

Name

Name

Name

Short summary of the obligations and contributions of the committee

Totals (example)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Total Area | Volume Carpet | Cost of Carpet | Volume Concrete | Cost of Concret | Total Price |
| Hole #1 |  |  |  |  |  |
| Hole #2 |  |  |  |  |  |
| #3 |  |  |  |  |  |
| #4 |  |  |  |  |  |
| #5 |  |  |  |  |  |
| #6 |  |  |  |  |  |
| #7 |  |  |  |  |  |
| #8 |  |  |  |  |  |
| #9 |  |  |  |  |  |
| Totals |  |  |  |  |  |

Short summary of mistakes and successes of the committee.

**Area Volume and Cost**

**Figuring Surface Area**

In order to find area or surface area you must measure in two directions. Therefore, we say that we are measuring a two dimensional surface even that it may be one surface of a three dimensional object. Generally we would use length x width or base x height to find the area of the given shape. Cirlces are a little different in that we have to fit "pi" = 3.14 into the equation.Sometimes the figures we are working on are actually several of our shapes put together. In this case we must break the area down into shapes the we can work with. When finding area we must always label our answers in square units.

|  |  |
| --- | --- |
| Area of a Rectangle | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/Arectangle.html |
| Area of a Triangle | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/Triangle |
| Area of Parallelegram | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/Aparallelagram.html |
| Area of Trapezoid | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/Atrapezoid.html |
| Area of Circle | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/acircle.html |
| Multiple Areas | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/Amultiple.html |

**Figuring Volume**

 To figure volume we go one step further than area. We now have to find measurments for three dimensions. We can also look at it as using the area of one end of the object and multiplying it by depth. For instance on the rectangular solid you would pick one end and find the area of that specific rectangle. Multiply this area time the depth in the third direction (measurement) and you now have the volume. Since we are measuring in three directions we now have to label everything in cubic units.

|  |  |
| --- | --- |
| Volume of a Rectangular Solid | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/Vrectsolid.html |
|
|
|
| Volume of a Prism  (Triangular Solid) | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/Vtriangularsolid.html |
| Volume of a Cylinder | http://www.holton.k12.ks.us/staff/bbarta/Gen%20Y/Projects/Putt%20Putt%20/imagesputt/Vcylinder.html |

Use this quiz to prepare for the test.

[Area and Volume Practice Quiz (Matching Game)](http://www.quia.com/custom/34026main.html)

**Figuring Cost**

When figuring cost we must multiply the cost per unit times the number of units. For example if lumber costs $1.25 per foot we must now exactly how many feet that we have or need. If we are ordering concrete then we must find out how many yards we need and how much concrete costs per yard.

 Example

Mark has figured out the volume of concrete that is needed for his project. He needs 6.5 cubic yards of concrete and knows that it costs $68.00 per cubic yard.

6.5 yd3 x $68.00 = $442.00