

Mini-golfing

Content Standards:

- Use the Pythagorean Theorem and its converse.
- Use trigonometry ratios to find side lengths and angle measures of right triangles.

Process Standards:

- Collaborate with partners or small groups.

Task:

We are going miniature golfing! However, you will be doing math before you golf each hole. For each hole that has an incline, you will find the length of the incline and the angle of elevation. For the incline, you can't simply measure the length. Think of other methods that will help you find the length. (Hint: Use the Pythagorean Theorem and trigonometric ratios to help you.) You will be working in groups of three. Each group will be given a long piece of string and a ruler to help you. Make sure to show all work so I know how you found the length of the incline and the angle of elevation.

After you finish golfing the 18 holes, you will need to write your **own** paragraph describing the methods you used to find the length of the incline and the angle of elevation. (Students will be given a handout so they know which holes they have to complete math problems for.)

Criteria

- Find the length of the inclines with work shown
- Find the angles of elevation with work shown
- Write paragraph explaining how to find the length of the incline
- Write a paragraph explaining how to find the angle of elevation

Rubric

Criteria	Poor	Unsatisfactory	Satisfactory	Excellent
Find the length of the inclines	Did not find the length of any inclines (0 pts)	Found the correct lengths of 1 - 5 inclines (1 - 5 pts)	Found the correct lengths of 6 - 8 inclines (6 - 8 pts)	Found the correct lengths of 9 inclines (9 pts)
Explanation of process to find the length of inclines	Did not complete an explanation (0 pts)	Wrote an explanation but not correct (1 - 2 pts)	Wrote an explanation and mostly correct (3 - 4 pts)	Wrote a correct and clear explanation (5 pts)
Find the angle of elevation	Did not find the angle of elevation for any hole (0 pts)	Found the angle of elevation for 1 - 5 holes (1 - 5 pts)	Found the angle of elevation for 6 - 8 holes (6 - 8 pts)	Found the angle of elevation for 9 holes (9 pts)
Explanation of process to find the angle of elevation	Did not complete an explanation (0 pts)	Wrote an explanation but not correct (1 - 2 pts)	Wrote an explanation and mostly correct (3 - 4 pts)	Wrote a correct and clear explanation (5 pts)

Total _____/28

- There are 9 inclines that students must measure and find the angle of elevation.