**Annex 1B to DepEd Order No. 42, s. 2016**

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| **GRADES 1 to 12**  **DAILY LESSON LOG** | **School** | Ternate National High School |  |  |
| **Teacher** | Suzette A. Joya |  |  |
| **Teaching Dates and Time** |  |  |  |

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|  | **DAY 1** | **DAY 2** | **DAY 3** | **DAY 4** | **DAY 5** |
| 1. **OBJECTIVES** |  | | | | |
| 1. **Content Standards** | The learner demonstrates understanding of the basic concepts of trigonometry. | | | |  |
| 1. **Performance Standards** | The learner is able to apply the concepts of trigonometric ratios to formulate and solve real-life problems with precision and accuracy. | | | |  |
| 1. **Learning Competencies/Objectives**   Write the LC code for each |  | ( M9GE-IVa-1)   1. Apply trigonometric ratios to solve right triangles. 2. Find the missing sides and angle given the hypotenuse and a leg. 3. Appreciate trigonometric ratios in solving real life problems. | ( M9GE-IVa-1)  a. Determine the conditions that make a quadrilateral a parallelogram  b. Apply the conditions to prove that a quadrilateral is a parallelogram  c. Show camaraderie in doing the activity |  |  |
| 1. **CONTENT** |  | Apply trigonometric ratios to solve right triangle given the length of hypotenuse and a leg. | Apply trigonometric ratios to solve right triangle given the length of hypotenuse and an acute angle. |  |  |
| 1. **LEARNING RESOURCES** |  |  |  |  |  |
| 1. **References** |  |  |  |  |  |
| 1. **Teacher’s Guide pages** |  | 279 | 279 |  |  |
| 1. **Learner’s Materials pages** |  | 437 | 437-438 |  |  |
| 1. **Textbook pages** |  |  | E-math Advanced Algebra and Trigonometry, page 231-232 |  |  |
| 1. **Additional Materials from Learning Resource (LR) portal** |  |  |  |  |  |
| 1. **Other Learning Resources** |  |  |  |  |  |
| 1. **PROCEDURES** |  |  |  |  |  |
| 1. **Reviewing previous lesson or presenting the new lesson** |  | **MOTIVATION**  How many right triangles do you see?  right  **RECALL**  **recall1**Directions: Find the 6 trigonometric functions of the triangle. | **RECALL**  Directions: Find the word related to right triangle and trigonometric ratios. The words may be written forward, backward, upward, downward, horizontally, vertically, or diagonally.  (9 WORDS)  **CORRWORD2**  Give the measure of the other acute angle of right ACB.  1. A = 450  2. B = 250  3. A = 190  4. A = 620  5. B = 300 |  |  |
| 1. **Establishing a purpose for the lesson** |  | **ACTIVITY**  Given the cut-out right triangles, find the unknown length and unknown angles using a ruler and a protractor.  mentaltrue  Motive questions:   1. Was it easy for you to find the unknown length and unknown angle of the right triangle given to your group? 2. Without using a ruler and a protractor, do you think you can able to find the unknown side and angle? 3. What technique you will use to find the unknown side and angle? | GROUP ACTIVITY  A 60-foot ramp is used to load cargo onto an airplane. If the ramp makes a 25⁰ angle with the ground, how far away from the plane is the bottom of the ramp?  President Duterte thinks….  The side involved are the hypotenuse and the leg adjacent to ∠A.  He will use the cosine ratio  cos A =  Vice President Robredo thinks….  The missing length is opposite ∠B. But we have the measure of ∠A. Since the sum of the measures of the three angles of a triangle is 180, m∠B = 65.  She will use the sine ratio  sin B =  1. Who used the correct trigonometric ratios?  2. Continue answering the problem to find out who is correct, President Duterte or Vice President Robredo? |  |  |
| 1. **Presenting examples/instances of the new lesson** |  | Solving a right triangle means finding the measure of the remaining parts.  Example:  Triangle BCA is right-angled at C. If *c* = 23 and *b* = 17, find ∠A, ∠B and a. Express your answers up to two decimal places.  Solution: Sketch a figure:  example   1. Side b is the adjacent side of ∠A; c is the hypotenuse of right triangle BCA. Use CAH, that is   cos θ =  cos A =  cos A =  cos A = 0.7391  A = cos-1 (0.7391)  A = 42.34°   1. Since in part (a), it was already found that A = 42.34°, then B = 90° - 42.34° B = 47.66o 2. Using the Pythagorean Theorem:   a² + b² = c²  a2 + (17)2 = (23)2  a² + 289 = 529  a² = 529 – 289  a² = 240  a =  a = 15.49 | **Example:**  Triangle BCA is right-angled at C if c = 27 and ∠A = 58º find ∠B, b, and a.  Solution: Sketch a figure:  2rt   1. To find B, since B and ∠A are complementary angles, then   ∠B + ∠A = 90⁰  ∠B = 90⁰ - 58⁰  ∠B = 32⁰     1. To find b, since b is the adjacent side of ∠A and c is the hypotenuse of right triangle BCA then CAH.   cos A =  cos 58⁰ =  b = 27 cos 58⁰  b = 27 (0.5299)  b = 14.31   1. To find a, since a is the opposite side of ∠A and c is the hypotenuse of right triangle BCA, then SOH.   sin A =  sin 58⁰=  a = 27 sin 58⁰  a = 27 (0.8480)  a = 22.9 |  |  |
| 1. **Discussing new concepts and practicing new skills #1** |  | **Directions:** Solve the right triangle given a = 12 and c = 27.  act1 | **Directions:** Solve the missing side of the right triangle given.  **unnamed (1)** ? |  |  |
| 1. **Discussing new concepts and practicing new skills #2** |  | **Directions:** Solve each of the following right triangles. Give the lengths of the side to two decimal places and angles in degrees and minute.  images (2)1.  images (2)2. | ghghjgDirections: Solve each of the following right triangles. Give the lengths of the side to two decimal places and angles in degrees and minute.   1. kjkjk |  |  |
| 1. **Developing mastery**   **(Leads to Formative Assessment 3)** |  |  |  |  |  |
| 1. **Finding practical applications of concepts and skills in daily living** |  | **Group Activity**  A ladder 15 m long rests against a tree. How tall is the tree? If the foot of the ladder is 7 m long from the base of the tree. Find the angle the ladder makes with the ground?  application | **Group Activity:**  To be safe, a 20 ft-ladder should not incline more than 70⁰ angle with the ground. Suppose the ladder is leaned against a wall at this angle, as shown below. Find (a) the distance b from from the base of the wall to the foot of the ladder and (b) the height *a* reached by the ladder.  apptionb |  |  |
| 1. **Making generalizations and abstractions about the lesson** |  | Six Trigonometric Ratios  sin = csc =  cos = sec =  tan = cot =  Here are some steps which are useful in solving right triangles.   1. Draw a right triangle. 2. Label the sides and the vertices of the right triangle. 3. Enter the given data in the figure. 4. Use the appropriate trigonometric functions to find the unknown parts of the triangle.   (Refer to e-math - Advanced Algebra and Trigonometry by Orlando A. Oronce and Marilyn o. Mendoza) | Six Trigonometric Ratios  sin = csc =  cos = sec =  tan = cot =  Here are some steps which are useful in solving right triangles.  1. Draw a right triangle.  2. Label the sides and the vertices of the right triangle.  3. Enter the given data in the figure.  4. Use the appropriate trigonometric functions to find the unknown parts of the triangle.  (Refer to e-math - Advanced Algebra and Trigonometry by Orlando A. Oronce and Marilyn o. Mendoza) |  |  |
| 1. **Evaluating learning** |  | **QUIZ**  Use the given figure to solve the remaining parts of right triangle ACB.quiz   1. *b* = 17 cm and   *c* = 23 cm   1. *c* = 16 and *a* = 7 2. *b* = 10 and *c* = 20 3. *b* = 6 and *c* = 13 4. *c* = 13 and *a* = 12 | **QUIZ**  Sketch a figure and solve each right triangle ABC with right angle at C, given that:  1. A = 15⁰ and c = 37  2. B = 64⁰ and c = 19.2  3. A = 15⁰ and c = 25  4. A = 45⁰ and c = 16  5. B = 56⁰ and c = 16 |  |  |
| 1. **Additional activities for application or remediation** |  | Assignment:   1. **Study**   How to apply trigonometric ratios to solve right triangle given the length of the hypotenuse and an acute angle. | Assignment:  **Follow-Up**  A kite has a string 400ft. long. If the string makes an angle of 420 with the ground, find the height of the kite to the nearest foot. |  |  |
| 1. **REMARKS** |  |  |  |  |  |
| 1. **REFLECTION** |  |  |  |  |  |
| 1. No. of learners who earned 80% in the evaluation |  |  |  |  |  |
| 1. No. of learners who require additional activities for remediation |  |  |  |  |  |
| 1. Did the remedial lessons work? No. of learners who have caught up in the lesson |  |  |  |  |  |
| 1. No. of learners who continue to require remediation |  |  |  |  |  |
| 1. Which of my teaching strategies worked well? Why did these work? |  |  |  |  |  |
| 1. What difficulties did I encounter which my principal or supervisor can help me solve? |  |  |  |  |  |
| 1. What innovation or localized materials did I used/discover which I wish to share with other teachers? |  |  |  |  |  |