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| **THEME:** | PLANE FIGURES |
| **DATE**: | 07– 10 – 2024 |
| **CLASS**: | Js 3 |
| **TIME**: | 8:40-09:20am |
| **DURATION** | 40 MINUTES |
| **SUBJECT**: | Mathematics |
| **UNIT TOPIC:** | AREA OF PLANE FIGURES |
| **LESSON TOPIC:** | Triangles, Parallelogram and Trapeziums |

**SPECIFIC OBJECTIVE**: By the end of the lesson, students should be able to solve problems involving

1. Area of Triangles
2. Area of parallelograms
3. Area of trapezium

**INSTRUCTIONAL RESOURCES:** Model shapes of Triangles, Parallelogram and Trapeziums

**LESSON PRESENTATION**

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| **STEP 1** | **PREVIOUS KNOWLEDGE:** students were taught the meaning proportion in math and the calculations and applications on rational and irrational numbers | | Students recall. |
| **STEP 2** | **EXPLORATION:**  The teacher introduces the topic with the following questions:   1. State the formulae for solving the area of a triangle. 2. Calculate the area of a parallelogram 3. Calculate the area of a trapezium | | Students make attempt to answer the questions. |
| **STEP 3**  **Obj 1;**  **Obj 2**  **Obj 3** | **DISCUSSION:**  ***Teacher starts the discussion:***  For a given triangle, where the base of the triangle is b and height is h, the area of the triangle can be calculated by the formula, such as;  **A = ½ (b × h)** Square Unit  Examples  Q.1: The height and base of a triangle are 5cm, and 12cm. Find the area  Solution: In △ in which base= 12 cm and height= 5 cm  Area of △ABC=12×B×H  A = 12×12×5  A = 30cm.   |  | | --- | | Area of a Trapezium |  |  | | --- | | A [trapezium](https://www.mathsteacher.com.au/year8/ch09_geometry/07_quad/quad.htm#trap) is a [quadrilateral](https://www.mathsteacher.com.au/year8/ch09_geometry/07_quad/quad.htm#quad) that has only one pair of [parallel](https://www.mathsteacher.com.au/year8/ch09_geometry/03_parallel/lines.htm#parallel) sides.  Consider the area of the following trapezium.  https://www.mathsteacher.com.au/year8/ch12_area/04_trap/Image15458.gif  To calculate the area of a trapezium, divide it into a rectangle and two triangles as shown below.  https://www.mathsteacher.com.au/year8/ch12_area/04_trap/Image15459.gif  Now, piece together the triangular ends so that the trapezium is divided into a [triangle](https://www.mathsteacher.com.au/year8/ch09_geometry/04_triangle/tri.htm#triangle) and [rectangle](https://www.mathsteacher.com.au/year8/ch09_geometry/07_quad/quad.htm#rect).  The base of the triangle is the difference between the lengths of two parallel sides.  That is, *a* – *b*.  https://www.mathsteacher.com.au/year8/ch12_area/04_trap/Image15460.gif  https://www.mathsteacher.com.au/year8/ch12_area/04_trap/Image15461.gif Exampes  1. Find the area of the following trapezium.   https://www.mathsteacher.com.au/year8/ch12_area/04_trap/Image15462.gifSolution https://www.mathsteacher.com.au/year8/ch12_area/04_trap/Image15463.gif So, the area of the trapezium is 204 m2. |   **Area of a parallelogram**  The **area of a parallelogram** is the region bounded by the parallelogram in a given two-dimension space. To recall, a parallelogram is a special type of quadrilateral which has four sides and the pair of opposite sides are parallel.  To find the area of the parallelogram, multiply the base of the perpendicular by its height. It should be noted that the base and the height of the parallelogram are perpendicular to each other, whereas the lateral side of the parallelogram is not perpendicular to the base. Thus, a dotted line is drawn to represent the height.  Area-of-Parallelogram-2.jpg  Therefore, **Area = b × h Square units**  Where “b” is the base and “h” is the height of the parallelogram.  Examples **1: Find the area of the parallelogram with the base of 4 cm and height of 5 cm.**  **Solution:**  Given: Base, b = 4 cm and h = 5 cm  We know that,  Area of Parallelogram = b×h Square units  = 4 × 5 = 20 sq.cm  Therefore, the area of a parallelogram = 20 cm2  **Q 2: Find the area of a parallelogram whose breadth is 8 cm and height is 11 cm.**  **Solution:**  Given: b = 8 cm and h = 11 cm  Area of a parallelogram = b × h  = 8 × 11 cm2 = 88 cm2 | | Students listen attentively and take down notes. |
| **STEP 4** | **APPLICATION:**  areatriangle4.gif  AREA OF A TRIANGLE.gif  The area of the triangle is 18cm2. | | Students ask questions on the topic which the teacher answers. |
| **STEP 5** | **EVALUATION:** the teacher evaluates the students with the following questions:   1. Find the area of an acute triangle with a base of 13 inches and a height of 5 inches. 2. **Find the area of a parallelogram whose breadth is 7 cm and height is 16 cm.** 3. **Find the area of a trapezium whose sides are 8cm and 12cm and height 7cm**. | | The students answer the questions. |
| **Assignment**  **The base of the parallelogram is thrice its height. If the area is 192 cm2, find the base and height.**  **References**  **New concept mathematics for Jss3 by A. A. Arigbabu et al.**  **New general mathematics for Jss3 by M. F. Macrae et al.** | |  |