Session 16: BODMAS (+,-, ×, ÷)

Session Title	**BODMAS (+,-, ×, ÷)**
Objectives	1. Understanding the Order of Operations 2. Recognize and apply the BODMAS rule to solve mathematical expressions. 3. Identify and differentiate between operations such as addition subtraction, multiplication, division, powers, and brackets.
Topics	1. What is BODMAS, 2. Why is BODMAS studied?
Materials required	1. Chart with BODMAS acronym 2. Worksheets with practice problems
Methodology	The teacher explains BODMAS with examples. Students practice through group and individual work.
Session Duration	90 Minutes

Introduction Activity (25 minutes):

Give the children problems first .(10 minutes)

1. $6 + 4 \times 5 = ?$
2. $(8 + 2) \times (10 - 4) = ?$
3. $50 - 6 \times 3 + 8 \div 2 = ?$

- Then ask the students to find the answer.
- They will get different types of answers
- Then analyze why everyone gets different answers instead of the same ones.
- Then tell the children that we need to follow some rules to ensure that everyone gets the same correct answers

Then introduce BODMAS (15 minutes)

BODMAS stands for Brackets, Orders, Division/Multiplication, Addition/Subtraction. It is a rule used to determine the order of operations when solving mathematical expressions.

Steps of Solving BODMAS

1. **B – Brackets** (Solve anything inside ( ), [ ], or { } first .Example: $(3 + 2) \times 4 \rightarrow 5 \times 4 = 20$)
2. **O – Orders** (Calculate exponents (powers) or roots. Example: $2^2 = 4$)
3. **D – Division** (Do any division from left to right.)
4. **M – Multiplication** (Do any multiplication from left to right)
5. **A – Addition** (Do any addition from left to right)
6. **S – Subtraction** (Do any subtraction from left to right)

Main Activity (50 minutes):

Practice session (30 minutes)

Solve:

8+4× 3-6÷2

Solution

1. According to BODMAS (Brackets, Orders (powers & roots), Division and Multiplication, Addition and Subtraction), we first handle multiplication and division from left to right, then addition and subtraction.
2. Multiply and divide first: 8+(4×3)-(6÷2)=8+12-3
3. Then, perform addition and subtraction from left to right:

8+12=20,20-3=17 , Answer: 17

Solve

5×(6+4)-3square

Solution :

1. Start with the parentheses : 5×(6+4)-3 square = 5×10-3 square
2. Next, handle the exponent (3 squared): 5×10-9
3. Perform multiplication: 50-9=41, Answer 41

Solve

(12÷4)+(5×2)-3

Solution :

1. Handle the division and multiplication first
   (12÷4)+(5×2)-3=3+10-3
2. Perform addition and subtraction:
   3+10=13, 13-3=10, Answer 10

BODMAS Relay Race (20 minutes)

Objective: Solve as many BODMAS problems as possible in a race format.

How to Play:

- Divide players into teams. Each team will have a whiteboard and a marker or paper and a pen.
- The host reads out a math problem that requires the BODMAS rule to solve (e.g., 3 × (4 + 2) - 5).
- The team must solve it step by step, following the BODMAS order.
- When the first team solves the problem correctly, they pass the turn to the next team member who has to solve a new problem.
- Continue until the team solves a set number of problems. The team that finishes first with all correct answers wins.

BODMAS Relay Race Problems

1. (4 + 6) × 3 - 8
2. 8 × (5 + 7) ÷ 4
3. (9 + 3) × 2 + 5
4. (15 - 3) × (7 ÷ 7)
5. (6 + 4) × (12 ÷ 3) - 2

Review Questions (10 minutes):

1. Why is the order of operations important in math?
2. What happens if we don’t follow BODMAS correctly?
3. Which part of BODMAS do you find most challenging and why?
4. How do brackets change the outcome of an expression?

Follow up Task (5 minutes):

Home Work

Simplify the following using BODMAS:

1. 6 + 3 × 2
2. (4 + 5) × 3
3. 18 ÷ (3 × 3)
4. 24 – [6 + (2 × 3)]

Expected Learning Outcome:

Knowledge building:

- Foundational understanding of operations
- Problem solving skill

Skill building:

- Recognition skill
- Collaborative and reflective learning

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