AMT-01

ASSIGNMENT BOOKLET

Teaching of Primary School Mathematics

Valid from 1st January, 2025 to 31st December, 2025

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School of Sciences
Indira Gandhi National Open University
Maidan Garhi, New Delhi-110068
(2025)

Dear Student,

Please read the section on assignments in the Programme Guide that we sent you after your enrolment. A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation, **which would consist of one tutor-marked assignment** for this course. The assignment is in this booklet.

Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully:

1) On top of the first page of your answer sheet, please write the details exactly in the following format:

ROLL NO.: ……

NAME: ……

ADDRESS: ……

……

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COURSE CODE: …….

COURSE TITLE: …….

STUDY CENTRE: ……..….. **DATE:** ……..……...

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.

3) Leave 4 cm margin on the left, top and bottom of your answer sheet.

4) Your answers should be precise.

5) While solving problems, clearly indicate which part of which question is being solved.

6) This assignment is **valid from 1st Jan, 2025 to 31st Dec, 2025**. If you have failed in this assignment or fail to submit it by Dec, 2025, then you need to get the assignment for the year 2026, and submit it as per the instructions given in the Programme Guide.

7) **You cannot fill the examination form for this course** until you have submitted this assignment.

We strongly suggest that you retain a copy of your answer sheets.

We wish you good luck.

ASSIGNMENT

Course Code: AMT-01
Assignment Code: AMT-01/TMA/2025
Maximum Marks: 100

Note:

1) In any question, whenever we ask you to suggest an activity, we expect you to give one other than those covered in the units.

2) For any question worth 5 marks, the word limit is about 200 words, for a 10 mark question it is 350 words, and for a 15 mark question it is 500 words.

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1. a) Explain why use of concrete material and hands on experiences, in teaching learning of mathematics at primary level are more effective. Illustrate with the help of one example each. (4)

   b) Jaya solved the division problem as shown below: (6)

$$
\begin{array}{r}
36 \\
3\overline{)918} \\
\underline{9} \\
18 \\
\underline{18} \\
x
\end{array}
$$

   i) What is the mistake she committed?
   ii) What is the probable reason for her mistake?
   iii) Devise a strategy to overcome her misconception.

2. a) Enlist two situations each from our daily life in which we use (6)

   i) Geometry
   ii) Integers
   iii) Algebra

   b) What is an 'open-ended' question? Give two examples of such questions, one pertaining to single digit addition and one to multiplication. (4)

3. a) Rinku, 8 years old has her birthday in December and Sonal (6 years old) has her birthday in April. Rinku says Sonal is older than her. What is the misconception Rinku has? Derive a detailed strategy to help Rinku overcome this misconception. (6)

   b) Represent pictorially (4)

   i) .17 and .07
   ii) $\frac{1}{2} \div \frac{1}{4}$

4. a) Explain how mathematics is a language. Further give two distinct activities to help assess how comfortable a child is with her language. (4)

b) Give an example each, with justification, of a situation in which a child uses deductive reasoning. (4)

i) While playing
ii) In Mathematics.

c) Explain the relationship of arithmetic and algebra with the help of a suitable example. (2)

5. a) Suman plays basketball. State two different mathematical concepts she used for this. Justify your answer. (4)

b) 'Mathematics is hierarchical in nature'. Justify this statement with help of an example. (2)

c) Suggest two activities of different kinds that would help children arrive at a formula that relates centimeters to meters. (4)

6. a) Evaluation at every step, through immediate feedback, should form part of teaching – learning process. Explain this statement in the context of each, teaching and learning of place-value. Further give three distinct multiple assessment techniques for evaluation in the context given. (7)

b) How would you convince a child that any number multiplied by 0 is 0, using a teaching aid. (3)

7. a) Illustrate the use of each of the following in learning the concept of "fraction". (5)

i) an outdoor activity
ii) newspapers and magazines

b) What could be the logic behind the following subtraction done by a child:

$$\begin{array}{r} 3.45 \\ -\ 4.6 \\ \hline 1.39 \end{array}$$

Does this shows that the child has not understood the process of subtraction of numbers? Give reasons for your answer. How will you help her to correct her mistake. (5)

8. a) i) What is an equation? Does all the equation involve a variable. Give an example of an equation with a variable in it and which does not have a variable in it.

ii) Here is a think of a number game: '*Think of a number, then double it, add six to the sum, divide the sum by half and then subtract 3 from it the number*'. Did you receive the same number you had started with? Why? Justify. (5)

b) Prove that the sum of the first n even numbers is an even number. Is the kind of logic used in proving this is inductive, deductive or both? Justify your answer. (5)

9. a) What is a magic square? Complete entries in the following and make it a magic square.

	8	12	1
11	7		2
10	5	3	
4		6	9

Illustrate the methods used for filling the entries. Also explain why the method work? (5)

b) Much of Mathematics teaching is actually about encouraging children to become more aware about patterns they find and to use them in their thinking. Illustrate this in the case of the situation given below by answering the questions given in questions (i), (ii) and (iii), below.

"A mathematics teacher in class 5 showed the following pattern in the class.

$46 \times 44 = 2024$

$63 \times 67 = 4221$

$71 \times 79 = 4909$

She gave some time for the students to identify the pattern. After some time she asked the students to find the answer of "84 × 86" in one second. One student answered 7224. Based on this situation, answer the following question.

i) What is the pattern used by the student?

ii) Explain why it works?

iii) Describe how it helps to encourage mathematical thinking. (5)

10. Which of the following statements are true or false? Give reasons for your answer. (10)

i) 'Today is a bright day' is an unambiguous statement.

ii) The sum of the interior angles of a Pentagon is 450^{o}.

iii) Pre-operational thinking is the characteristic of a two year old child.

iv) If the capacity of a 3D-objects increases, then the volume also increases.

v) Each mathematical problem have a unique solution.