Description/ Examples of Assessment Strategies

These are merely descriptions/ examples to help you identify assessment strategies in Mathematics

1. Forced-choice

a) Multiple-choice

I was asked to choose the correct answer from among several options.
For example:
56.78 written in standard form is

A. 0.5678×10^{-2} **B.** 5.678×10^{-1} **C.** 5.678×10^{1} **D.** 56.78×10^{2}

b) Matching

I drew an arrow from the items to the correct option or I matched each letter of the item to a number from the option.
For example:
For each item below, select the option that accurately completes the statement

Items	A. 4 x 5 =	B. 4/5 =	C. 12 x 14=	D. 6 x 7=
Options	42 25 125	168 24 20	0.8 116	16

c) Alternate Choice

I had to choose between two answers.
For example:

The inclusion of one set within another is called a
A Subset B. Venn Diagram

d) True/ False

I was asked to state whether the statement presented was true or false.
For example:
Mark **F** if the statement is false and **T** if the statement is true
.....pi is equal to the circumference of a circle divided by its diameter.
.....Congruent means 'the same'.

e) Multiple response items

I was asked to identify all correct answers from a list of options:
For example:
Which of the following are factors of 12

1) 3	2) 6	3) 24	4) 12
A. 1 & 2	B. 2 & 3	C. 1, 3, and 4	D. 2,3, and 4

(f) Fill in the blank

I worked out the answer mentally and wrote the answer on a blank line.
For example:
The L.C.M of 6 and 12 is _____

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2. Essays

I attempted essay type questions in mathematics which consisted of several parts OR I was asked to write a literary piece on a topic of interest.
For example:
A cylindrical tin has a radius of 14cm and a height of 9cm. Take $\pi = 22/7$
(i) Calculate the area of the top of the tin.
(ii) Calculate the area of the curved surface of the tin.
(iii) What is the area of paper used to cover the top and curved surface of the tin?
OR
Write an essay on John Venn's (1834-1923), contribution to the Venn diagram and its impact on mathematics (150 words).
OR
Write a personal essay entitled "The Mathematical Part of Me" (250 words).

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3. Short written responses

I was required to show the necessary working to a question:
For example:
(i) "Provide a brief explanation of…"

(ii) Show the steps necessary to perform the following calculations:
$\frac{1}{2} \div \frac{3}{4}$

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4. Oral Reports

I was required to provide a description, explanation or answer a question similar to an essay, but had to do so verbally.
For example:
(i) Describe how you would find the length of arc from the formula for circumference of a circle.

(ii) What is meant by enlargement and scale factor?

(iii) Give a verbal explanation of processes involved in writing numbers to the required number of significant figures.

5. Performance Tasks (a to f –Students' Products; g to i – Students' Skills)

I was required to do a performance-based task. I had to produce a product or demonstrate a skill or do a performance. Performance tasks can also be done in groups.

a) Project

For example:

(i) Produce the net of a cube.

(ii) Calculate the amount of material needed to make a circular frame and produce it.

(iii) Investigate, in groups of four, whether information on volume stated on labels of cans and boxes are correct.

b) Portfolio

I collected samples, artifacts, or documents that provided evidence of my mathematical development during a specific period. The contents were selected by me, sometimes in collaboration with my teacher. I also included a reflective explanation offering the rationale for the selection and a rationale for the order of the pieces.

For example:

Compile pieces of work which include: the definition and historical development of rational numbers, samples of solutions to simultaneous equations, and journal articles of classroom experiences.

c)

Journal

I wrote about what I learned in class and wrote about my reactions to activities that I encountered during the week. I expressed in written form concerns about the class teaching or mathematics in general.

For example:

(i) Write about the main idea of today's lesson.

(ii) Write to a friend in a letter how the formula for area of a circle was developed.

d) Graph

I drew graphs using graph paper

For example:

(i) Draw the graph of the straight line y= x+1

(ii) Draw a quadratic graph

(iii) Construct of a frequency polygon

e) Table

I used a table to summarize my knowledge of certain topics.

For example:

Tabulate similarities and differences in the properties of translation, reflection, rotation, and enlargement.

f) Illustration

I used pictures, figures, diagrams, photographs, images, graphics or visual for answering a question.

For example:

(i) Illustrate the rules for multiplication and division of decimals.

(ii) Representation of solutions to inequalities on a number line.

(iii) Display differences between simple and compound interest on a display board.

(iv) Students display of statistical data using pie charts, bar graphs etc.

g) Demonstration

I used visual, audio, art, drama, movement, and/or music to explain a solution to a non-routine math problem.

For example:

I demonstrated what a rotation was by making a complete turn

h) Debate

I presented arguments for and against an issue in mathematics.

For example:

(i) Use of debate to present arguments to investigate the meaning of 0/0

(ii) For subsets, debate the relationship among groups in the society and compare the relationship among numbers with the relationship among different groups in the society.

i) Enactment

I created a simulated version of a grocery where students purchase groceries.

6. Teacher Observation

My teacher observed students in a learning situation, looked for evidence of understanding and mathematical development, and made written notes about students' comments, insights, and behaviors.

a) Informal Observation
For example

(i) My teacher observes how students represent fractions in their notebooks.

(ii) My teacher observes how students display concretely, visually and in symbols, the use of equivalent fractions. How students add and subtract fractions with same denominator, and relate different denominators.

(iii) My teacher observes how students draw quadratic graphs on graph paper.

(iv) My teacher watches students interacting with classmates and comments on our effort, behavior and attendance.

(v) My teacher asks a student to describe her thinking while reading a graph.

b) Interviews

I have been asked a series of questions by my teacher. Questions were asked to assess my thinking and reasoning. My teacher was interested in my background, knowledge, interests, and attitudes about a topic in mathematics.

For example:

(i) What would happen if…? How do you know that…? Can you predict…?
(ii) The teacher might ask "Can you say more about what you mean?" or "Can you explain that to me in a different way?"

7. Student Self-assessment

Students are encouraged to participate in setting goals and monitoring their own learning.

a) Attitude survey

I filled out a survey which consisted of direct questions or rating scales that requested information about my products, attitudes, and interests in mathematics.

For example:

(i) I strongly agree that producing the net of a cube was challenging but enjoyable.
(ii) I agree that students feel motivated when they contribute to what is assessed.

b) Focus questions

I ask myself questions and reflect on the answers

For example:

(i) What have I learned?
(ii) How well have I learned it?
(iii) What do I need to learn next to move to the next level?

c) Checklist

I used a checklist to assess my knowledge of certain concepts.

For example:
I know the following properties of a cube:
√ It has 6 sides
It has a circular base
√ It has 8 vertices
√ It has 12 edges