



EMERGENT MATHEMATICS

EMA1501

ASSESSMENT 2

DEPARTMENT OF EARLY CHILDHOOD EDUCATION

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1 ASSESSMENT 2

Assessment 2 is a written assessment which contributes 25% towards your final mark.

This assessment measures your achievement of the outcomes pertaining to Learning Unit 1 and 2 of the study guide

1.1 Outcomes of Assessment 2

In this assessment, you will be required to demonstrate that you have met the following outcomes and assessment criteria:

List the outcomes

- explain what “emergent mathematics” is
- use the relevant child development theories to explain how children learn
- identify and explain basic pre-mathematical concepts related to emergent mathematics
- explain how mathematical concepts are developed through an integrative play-based approach
- define number sense
- explain the importance of number sense in the early years
- describe how number sense is developed in the early years
- explain how basic types of technology can be used to teach number concepts

1.2 Resources

To complete this assessment, refer to the content of learning units 1 and 2.

1.3 Submission of Assessment 2

Note that your **assessments must be submitted online only, before the due dates**. Assessments may **not** be submitted by email. To obtain detailed information on the requirements for the assessments, consult the *Study @ Unisa* publication/website.

Please ensure that you submit the correct assessment. You have three opportunities to submit, whereafter the portal will block you from making any further attempts. To ensure that you find and upload the correct assessment, always save an assessment under your student number, surname, module name and assessment number (for example, **1237654 Msibi EMA1501 Ass 2**).

Make sure you understand the wording of the assessment correctly. Do not deliberately interpret the assessment incorrectly to make it easier to answer.

Work systematically. Work out a scheme before you start answering the question. The first page of your submission should have a cover page with your name and student number, as well as the relevant assessment information.

In the case of handwritten assessments, use the official answer pads and assignment covers. Write on one side of the paper only and ensure that the various pages are attached in the correct order. Scan and submit online as a single PDF document.

1.4 Plagiarism

We want to remind you that it is unethical (and unacceptable) to hand in assessments that are not your own work. Whenever the University becomes aware of such malpractices, it will take stern measures against the student concerned. When doing assessments, you must submit your own ideas, in your own words, sometimes interspersed with relevant short quotations that are properly referenced. **Also note that, although you may work together with other students when preparing assessments/assignments, each of you must submit your own individual assignment. It is unacceptable for students to submit identical assignments on the basis that they worked together. That is regarded as copying (a form of plagiarism), and none of those assessments will be marked. Furthermore, you may be penalised or subjected to disciplinary proceedings by the University.**

1.5 Assessment 2

Question 1

1. Bruner's theory focuses on levels of knowing and operates on three levels, that is, enactive, iconic and symbolic levels.

1.1 Discuss the three types of knowledge and provide an example of each. Do not use the examples in the study guide, create your own. (9)

1.2 Generate a three-column table where you evaluate how learning takes place according to:

- Piaget
- Vygotsky
- Bruner

(15)

1.3 Young children learn mathematics informally through a wide variety of play experiences. Name and give examples with illustrations (drawings or pictures) of any three (3) types of play from the six you learnt about and discuss how each of the three types of play contributes to the development of mathematics concepts in children. $10 \times 3 = 30$

(54)

Question 2

2. Learners with a sense of numbers are able to understand numbers and can use numbers effectively in their everyday lives.

2.1 With the above statement in mind, define your understanding of the concept number sense. (3)

2.2 Justify the importance of number sense in emergent mathematics. (5)

2.3 The pre-number concepts below are important, because they form the basis for developing a sound sense of numbers. Show your understanding of the following pre-number concepts by discussing each concept and providing examples and illustrations/drawings.

2.3.1 One-to-one correspondence (3)

2.3.2 Classification (3)

2.3.3 Counting (3)

2.3.4 Ordering (3)

(20)

Question 3

3.1 Match column B with column A. write only the correct **LETTER** next to the correct number in your answer sheet, for example, **3.1.1. E**

(8)

COLUMN A	COLUMN B
3.1.1 Symbolic Knowledge	A. The ability to link one object with one other object or, in counting, to name each object individually
3.1.2 Object performance	B. Language development and the expression of conceptual knowledge are observed

3.1.3 Pre-operational stage	C. The realisation that an object or person still exists even if it cannot be seen
3.1.4 Subitising	D. It derives from the physical manipulation of objects and the child's own movement
3.1.5 Conservation	E. The word counted last stands for the number of the set of objects
3.1.6. Enactive Knowledge	F. The ability to use abstract symbols.
3.1.7. Cardinality	G. The fact that the number of counters remain the same, even if the representation changes by spreading them.
3.1.8. One-to-one correspondence	H. The ability to tell the number of objects in a set without counting them

3.2 Story sums/word problems are highly significant when it comes to reading comprehension and understanding basic mathematics principles. They promote an interest in mathematics by illustrating the connection between mathematics and the “real world”.

3.2.1 Create a fun story sum activity that you could use in class. Write down the steps you would follow to introduce the activity. (15)

3.3 Do you agree/disagree with the use of technology to teach number sense in the early years? Justify your answer. (3)

(26)

TOTAL: 100 MARKS

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2 ADDENDUM A

HONESTY DECLARATION FOR THE DEPARTMENT OF EARLY CHILDHOOD EDUCATION

Module code: _____ Assessment date: _____

1. I know that plagiarism means taking and using the ideas, writings, works or inventions of another as if they were one's own. I know that plagiarism not only includes verbatim copying, but also the extensive use of another person's ideas without proper acknowledgement (including the proper use of quotation marks). It also includes any attempt to cheat the plagiarism checking system. I know that plagiarism covers the use of material found in textual sources and from the internet.
2. I acknowledge and understand that plagiarism is wrong.
3. I understand that my assignment/exam answers must be accurately referenced.
4. This assignment / exam file / portfolio is my own work. I acknowledge that copying someone else's work, or part thereof, is wrong, and that submitting identical work to others constitutes a form of plagiarism.
5. I have not allowed, nor will I in the future allow, anyone to copy my work with the intention of passing it off as their own work.
6. I understand that I can be awarded 0% if I have plagiarised.
7. I confirm that I have read and understood the following UNISA policies:
 - 7.1 Policy for Copyright and Plagiarism
 - 7.2 Policy on Academic Integrity
 - 7.3 Student Disciplinary Code

Name..... Student number:

Signed Date

