**Lesson 5: Lesson Plan**

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| --- | --- |
| Subject | Teaching methodology of mathematics |
| Target |  |
| Domain | 4. How to support students learning |
| Topic | Teaching Methodology for Number: The concept of Numbers |
| General Objectives | At the end of Lessons 5, learners will be able to explain the points to pay attention in teaching the basic number concept. |
| Specific Objectives | At the end of Lessons 5, learners will be able to understand how children grasp the concept of number and why using semi-concrete objects is effective. |
| Teaching methods | Lecture, hands-on activity using semi-concrete objects, plenary discussion |
| Teaching Learning Materials | Students’ reference, Topic Diagram of Primary Mathematics (extract the part of “number”), Cards of learning numbers, semi-concrete objects (10 squares /students) |
| Time allocation | 50 min |

**Teaching Learning Process**

| Teaching Learning Activities | Time allocated | Teaching Learning Materials |
| --- | --- | --- |
| **Introduction**  Students review the 4 strands of the primary mathematics. Teacher explains that in this lesson, “numbers” will be main focus. | 2 min |  |
| **Activity 1**  Teacher acts as primary G1 teacher and explains the concept of number by showing concrete objects and semi-concrete objects, like in the second picture in the students’ handout (a) acquiring the number concept and semi-concrete objects. And teacher asks students why teacher used semi-concrete objects in the explanation. | 5 min |  |
| **Explanation**  Teacher explains based on students’ handout. Along with the lecture, students use semi-concrete objects to understand how to use and how it can guide primary students to understand the concept of number and addition.  After explanation, teacher asks the students to find out answer of the following question.   * What are the advantages of using semi-concrete objects? * How to explain addition up to 10 by using semi-concrete objects? | 25 min | Students’ Reference  Semi-concrete objects |
| **Activity 2: Pair Work**  Students practice explaining how to calculate following addition by using semi-concrete objects in pair.  (a) 14+2, (b) 8 + 5, (c) 4 + 9  After practising, students will answer the following question.   * What is the key points to explain how to do addition up to 19 using semi-concrete objects? | 15 min | Semi-concrete objects |
| **Conclusion/ Assessment**  Summarizing the lesson by asking the following questions.   * What are the advantages of using semi-concrete objects? | 3 min |  |

**Lesson 5: Lecture Notes**

**<Before the lesson>**

Teachers need to prepare semi-concrete objects as follows;

* Use thick paper (such as cardboard)
* 2cm square is appropriate size, as EC students can practice easily
* Make sure all of the semi-concrete objects are in the same size and made by same material, as all of them should be exactly same
* Each student need to get 10 semi-concrete objects in this lesson

Teacher can distribute the semi-concrete objects to students before the lesson starts to save time.

**<Introduction>**

There are four strands in the curriculum, namely, numbers, geometry, measurement and mathematical relations.

**<Activity 1>**

**Objective of this Activity**

Students to understand how primary children acquire the concept of number. As EC students already know the concept of number, it is difficult for them to imagine how primary children who haven’t understood the concept of number encounter at the beginning.

**Key points for facilitation**

Teacher should prepare concrete objects, such as book, cups, pencils, etc, and semi-concrete objects made by thick paper (it should be big size as teacher can need to stick on the board when explanation). Teacher should keep in mind that the semi-concrete objects are representing the number, but not replacing the concrete objects.

**<Explanation>**

**Objective of this Activity**

Students to understand the advantages of using semi-concrete objects, become familiar with using semi-concrete objects, and understand how to use semi-concrete objects to explain the concept of number and addition.

**Key points for Explanation**

Students should keep in mind that using semi-concrete objects is only to help primary children to acquire the concept of number, and after acquiring the concept of number, primary children need to be able to use number without using any objects. Additionally, students need to understand that composition and decomposition should be understood before learning addition.

**<Activity 2: Pair work>**

Students will explain how to calculate given problems by using semi-concrete objects in pair.

**Key points of this Activity**

* Students need to show how to make group of 10 clearly
* Students need to understand the idea of composition and decomposition within 10
* Students need to show the steps of calculation clearly

**Key points to explain how to do addition up to 19 using semi-concrete objects**

In explanation, it is important to make a group of 10. To make a group of 10, composition and decomposition will be used.

**<Conclusion>**

* Semi-concrete objects can be used as medium between concrete objects and numbers, so that students can understand that the concept of numbers is not depend on the type, colour, size of the objects.
* Group of 10 can be clearly seen by using semi-concrete objects. Idea of group of 10 is vital for G1 students and this idea leads to the idea of 100, 1000.
* Process of calculation can be clearly seen by operating semi-concrete objects.