Contributed by Nan Chiau Primary (CAA 12 April 2017)

Using micro:bit to facilitate learning of Patterns – Whole Numbers

Subject: Mathematics **Level:** Primary 2
Unit: Pattern
Topic: Whole Numbers

Summary

Students will observe given patterns and they have to guess the next sequence of the given patterns. There will be three levels, i.e. Beginners (Shapes), Intermediate (Objects) and Advance (Numbers).

Prior Knowledge:	Whole Numbers Understanding of Shapes
Objectives:	To observe the patterns and guess the next sequence
Resources:	micro:bit Whiteboard & marker

Step/Time	Teacher Activities	Purpose	Resources Needed
Lesson 1			
Lesson Development	Engagement (Tuning-in): • Teacher to engage students using authentic examples related to the concept of patterns • Students to explore the mathematical content using hands-on activities and manipulatives • Students to explain their understanding of concepts and processes involved in problem-solving Showcase • Pupils will present answers posed by teachers using concrete manipulatives	CPA (Concrete Pictorial Abstract) – Concrete: • The students are introduced to a concept by acting out with the objects • Students will relate the hands-on experience to representations • Mathematical communication and public speaking skill	▪ Manipulatives ▪ Authentic examples provided by teachers

Step/Time	Teacher Activities	Purpose	Resources Needed
Lesson 2			
Lesson Development	<u>Students explore number patterns and patterns with shapes using micro:bit</u> • Students to work in pairs • Students need to communicate their mathematical knowledge thorough interactive micro:bit games programmed prior lesson. • Their partner will check and provide feedback based on their answers and self-assessment rubrics provided	<u>CPA (Concrete Pictorial Abstract) – Pictorial:</u> • The students explore concept by using interactive micro:bit games (pictorial) • Students learn how to communicate mathematical knowledge on patterns through formative assessment with element of fun	▪ micro:bit with battery pack ▪ Self-assessment rubrics
Lesson 3			
Lesson Development	<u>Students show understanding through hands-on activities with whiteboard and markers:</u> • Teachers use interactive micro:bit games to pose random question on patterns to class • Students to compete in answering maths questions posed by teachers by writing answers on whiteboard	<u>CPA (Concrete Pictorial Abstract) – Abstract:</u> • To challenge students to think fast and accurately • Showcase their understanding through abstract representation	▪ micro:bit with battery pack ▪ whiteboard and marker

Additional Remarks: