Contributed by Yu Neng Pri (CAA 12 April 2017)

Using micro:bit to facilitate learning of Geometry – Area of Triangle

Subject: Mathematics **Level:** Primary 5
Unit: Geometry
Topic: Area of Triangle

Summary

Students will program how to calculate the area of triangle given the base of a triangle and its corresponding height with speed and accuracy. Conducted over 3x 1hr lessons

Prior Knowledge:	Multiplication Understanding of Shapes
Objectives:	Use formula to calculate area of a triangle
Resources:	micro:bit with battery pack Computer with Internet access Kahoot.

Step/Time	Teacher Activities	Purpose	Resources Needed
Lesson 1			
Lesson Development	Programming their micro:bit in pairs Students begin with deciding how best to program their micro:bit factoring in that it has to be fast and accurate. (E.g. should I press button A to input values or can I use the accelerometer? How to use button B?) Showcase Pupils will present their micro:bit to the class	Students learn how to program simple calculation Mathematical communication and public speaking skill	▪ micro:bit with battery pack ▪ laptop with internet access
Lesson 2			
Lesson Development	Write down manual to teach others how to operate their micro:bit Pupils need to communicate their mathematical knowledge of area of triangle to teach others how to operate their micro:bit individually In pairs, pupils will take turns to	Students learn how to communicate mathematical knowledge of the area of triangle	▪ micro:bit with battery pack ▪ laptop with internet access ▪ Self-assessment rubrics

	follow each other manual Their partner will check and provide feedback based on their answers Pupils will refine their manual based on the feedback		
Lesson 3			
Lesson Development	<u>Put the calculator through a test</u> Using Kahoot, pupils to compete in answer maths questions with their micro:bit as a form of competition to determine the best micro:bit programming (speed and accuracy) No calculator allowed. Numbers chosen will be challenging enough that mental calculation is highly unlikely	Test the speed and accuracy of the students micro:bit To expose to students some coding and programming to enable them to understand and appreciate how a calculator may work To challenge students to think creatively and exceed other inventions and thinking	▪ micro:bit with battery pack ▪ laptop with internet access ▪ Kahoot

Additional Remarks: