VICTORIAN CURRICULUM F-10
LEVEL 3 – NUMBER & ALGEBRA
Recall multiplication facts of two, three, five and ten and related division facts (VCMNA134)
Elaborations: establishing multiplication facts using number sequences; using strategies to recall the multiplication and related division facts for the twos, threes, fives and tens
Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies (VCMNA135)
Elaborations: writing simple word problems in numerical form and vice versa; using technology to check the solution and reasonableness of the answer
**LEVEL 4 – NUMBER & ALGEBRA**
Recall multiplication facts up to 10 × 10 and related division facts (VCMNA155)
Elaborations: using known multiplication facts to calculate related division facts; using strategies to recall the multiplication facts; extending multiplication facts (for example 4 by 7 is 28 so 4 by 7 tens is 28 tens)
Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder(VCMNA156)
Elaborations: using known facts and strategies, such as commutativity, doubling and halving for multiplication, and connecting division to multiplication when there is no remainder

| BACKGROUND INFORMATION |
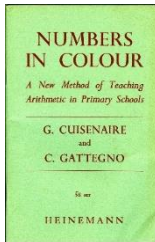
Cuisenaire Rods
The coloured rods we use today, also known as Cuisenaire rods, were developed in the early 1930s by a Belgium primary school teacher, Georges Cuisenaire. Cuisenaire was the first person to link the size of the rods to the metric system, e.g. the white rod is 1 cm in length. Cuisenaire later worked with Caleb Gattegno, a British mathematician and educator, to promote the use of the rods in classrooms in the 1950s. Together the pair wrote the book, Numbers in Colour, which became a staple in teacher reading materials.
The rods are not just colourful, there is a relationship between the colours and the rods. The warm colours are linked and so are the cool colours. The black rod is the 7. It is only linked to the white rod. It has no multiple or factor (other than 1) within the other rods.

YEAR 3/4 – 100 Face	CONTENT: Number & Algebra	FOCUS: Multiplication
RESOURCES: Cuisenaire rods (10 containers)	**LANGUAGE:** Cuisenaire rods, colours, addition, skip counting, relationships, ratios, multiplication, division, repeated addition, doubling, halving, times tables, multiply, product, factors, multiples, arrays, groups, rows, skip counting, commutativity, distributive law, friendly numbers (also known as benchmark or landmark numbers)	

PURPOSE	EXPLICIT TEACHING & LEARNING	
- Use materials to represent different amounts - Identify the relationship between different quantities - Use strategies including skip counting and repeated addition to solve multiplication problems - Make the link between skip counting and multiples - Apply known facts to solve more challenging multiplication problems - Record and explain thinking using numbers and symbols	**Cuisenaire Rods** Provide students with a pile of mixed rods. Allow time for students to explore the rods. What do they notice? Now show students the orange rod. What amount is this rod? How can we check? (for this part of the lesson we will assume that students believe that the white rod is worth one). If students are having difficulty seeing the relationship between the rods, encourage them to create a rod staircase from white to orange (1 to 10). **100 Face** Now that the students are able to identify the value of the rods- challenge them to create a face that represents exactly 100. Encourage students to use numbers and symbols to check that their design totals 100. **Challenge** Once students can make a standard 100 face (white = 1) modify the task by changing the value of the rods, i.e. white – 2, white – 5, orange – 100 and again ask students to make a face that represents 100.	

QUESTIONS & PROMPTS	ASSESSMENT, REFLECTION & MISCONCEPTIONS	
- What do you notice about the rods? - Is there any connection between the colours? - If the white rod is one, what is the value of the other rods? - Can you make a staircase to show the relationship between the rods? - Can you make a face that has a total of 100? - How can you check to see if your face is worth 100? - Can you use numbers and symbols to explain your thinking? - What would be the value of the rods if the white rod was worth 2? 5? - What if the orange rod was worth 100? - What if the yellow rod was worth 100?	**Reflection** Tell me three things that you discovered today about Cuisenaire rods	

AMSI AUSTRALIAN MATHEMATICAL SCIENCES INSTITUTE