

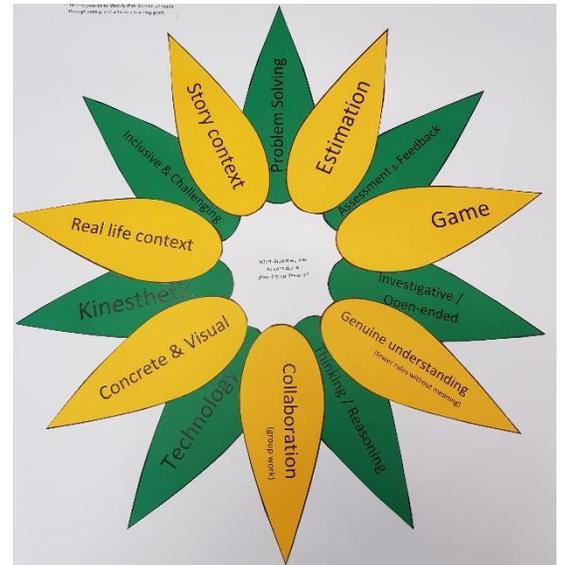
# Mathematics Teaching and Learning Framework

## Our Vision:

Our aim is to provide students with an authentic, balanced, engaging and inclusive maths program that empowers them to make connections to the world around them.

## All students will:

- Approach their learning with a positive mindset
- Be challenged to deepen their understanding through an investigative hands-on approach
- Work collaboratively, cooperatively or independently to become efficient and flexible problem solvers
- Develop the ability to explain and justify their ideas using mathematical language
- Be empowered to identify their individual needs through setting and achieving learning goals



## Launch

(10 min)

**Tuning in / Provide a problem**  
 Teachers pose a problem without explicitly telling students how to solve it.

### **Inspire and engage in mathematical thinking**

Teachers use this opportunity to identify what students know and any misconceptions. This time and discussion fosters creativity and student-led discovery of solution methods.

### **Zone of Confusion**

Students are appropriately challenged with tasks including enabling and extending prompts. Students are encouraged to independently puzzle over the solution before collaboration. Students are more likely to be engaged, make sense of, and find value in what they are learning when they go through the Zone of Confusion.

## Explore

(30-60 min)

### **Finding strategies and investigating solutions**

Students are provided with opportunities to trial their own strategies and later share or explain their ideas. All strategies are valued by the teacher and explored through collaborative discussions. Teacher uses identified strategies to assist in guiding discussions.

### **Explicit Teaching**

Teachers guide students with careful and effective questioning. Teachers take opportunities to discuss with the students about the efficiency and effectiveness of various strategies. Teachers use small or whole group situations to explore new strategies. They provide explicit modelling or instruction, often building on what students have already demonstrated.

## Explain

(5 min each time)

### **Going deeper and making connections**

Linking what has been learnt to an authentic purpose. Students share their understanding with others; making connections between prior knowledge and new learning. Students take on a teacher role presenting their strategies to others, justifying why it works for them and how they came to understand this solution.

### **Reflecting and applying knowledge**

Students utilize their understanding to solve similar problems and justify what they did and why – identifying efficiency. Teachers provide rich tasks that allow students to demonstrate their understanding. Students have multiple exposures to content and opportunities for self-reflection on their learning.

(Number Talks are expected to be included 4 times per week at times selected by the teacher)