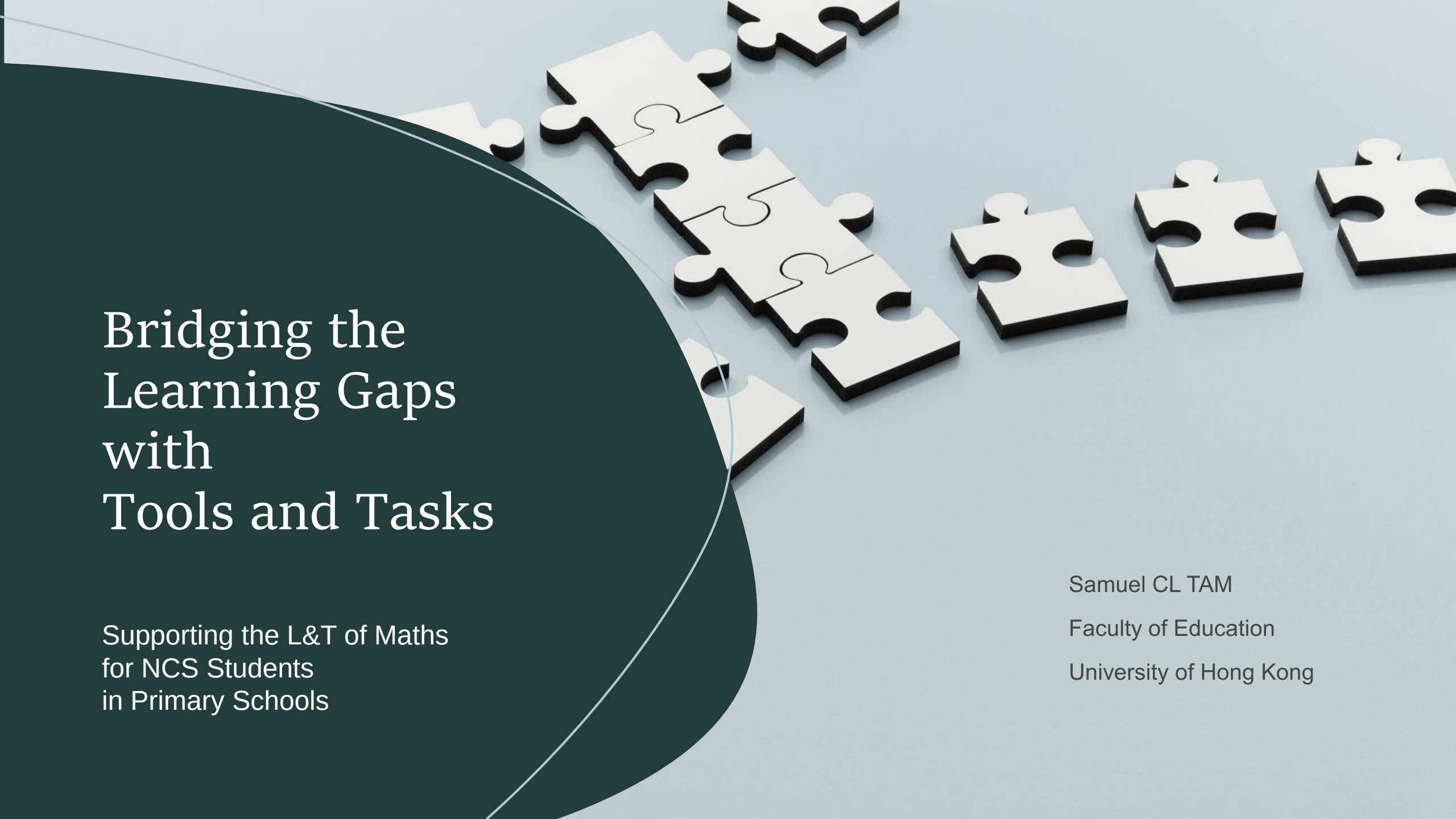


Bridging the Learning Gaps with Tools and Tasks

Supporting the L&T of Maths
for NCS Students
in Primary Schools

Samuel CL TAM

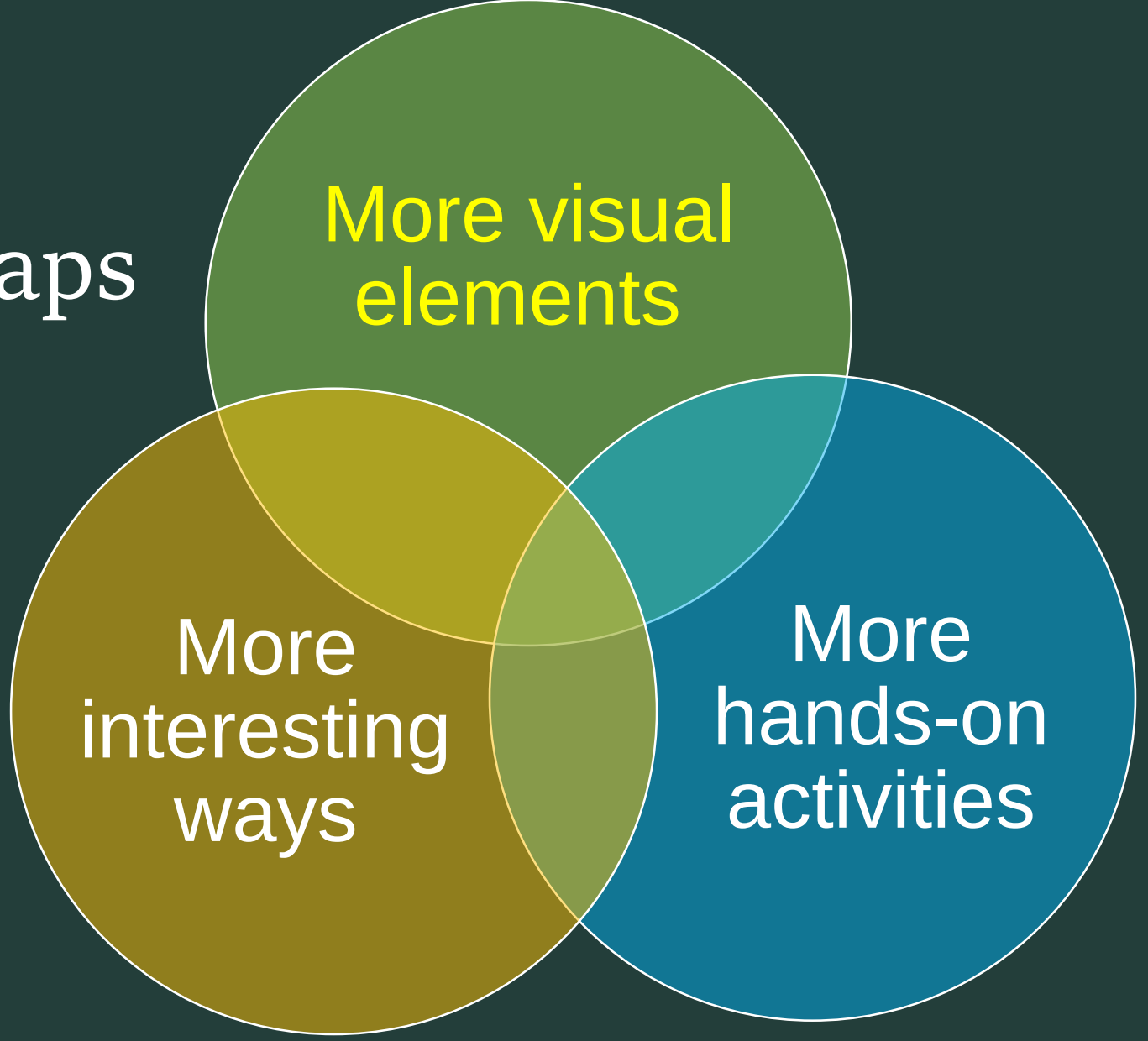
Faculty of Education

University of Hong Kong

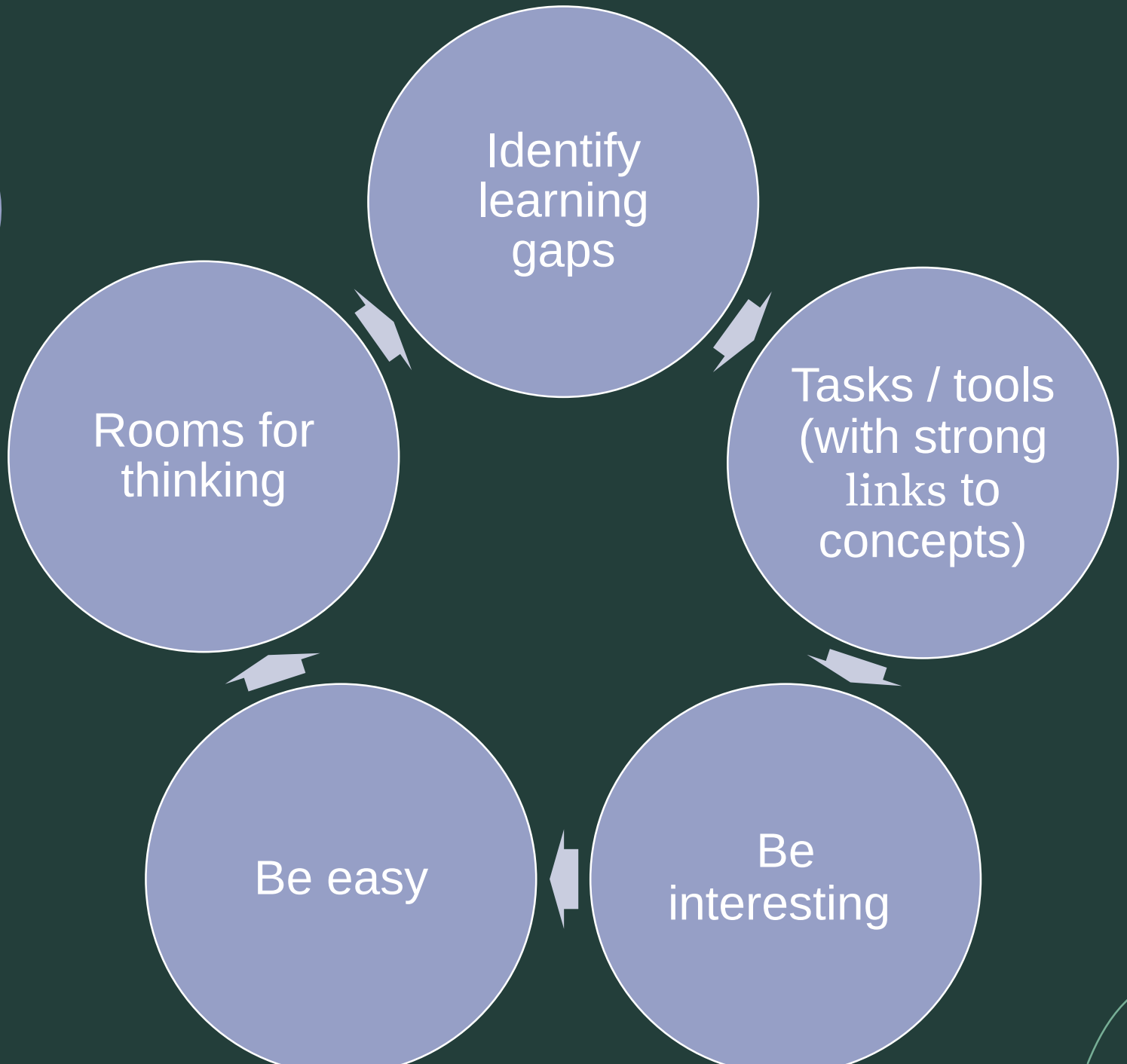
Learning Gaps

Language barrier (2nd language learners)	• More difficult to understand verbal explanations in class • Lower motivation
Diversity in family support	• Less practice at home (usually) • Lower expectations (commonly)

Bridging the Gaps



Collaborative Lesson Planning



Case : Primary Four Fractions

Identify Major Difficulties

- Fractions (Numerator ? Denominator?)
- Comparing Fractions
- Expanding & Reducing Fractions (How? Value unchanged?)

Tools & Tasks

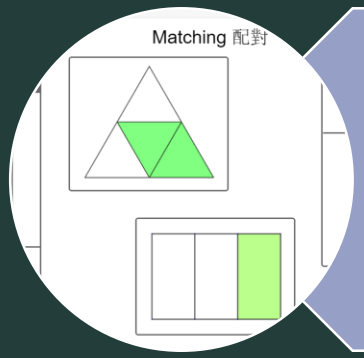
One (Whole) **vs** Fraction (Part)

Visual aids

Tracking students' progress

Folding paper

Fraction Apps from Maths Learning Centre



Desmos tasks for concept testing

Sharing of Teaching Ideas

https://padlet.com/samueltamchileung/wflg49aymbwk

padlet

REMAKE SHARE

Chi Leung TAM + 4 • 1m

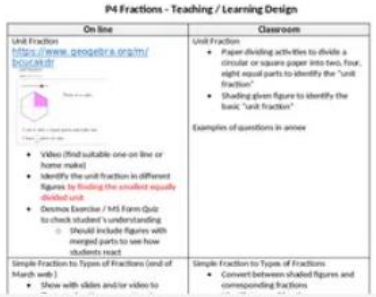
P4 Fractions

Idea on L&T

故事點子 Using Story to Teach

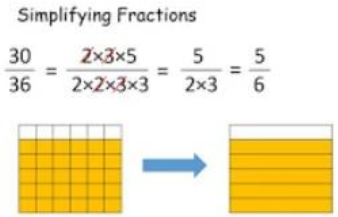
引入擴分約分的故事
Word document
padlet drive

L&T design, samples and Links



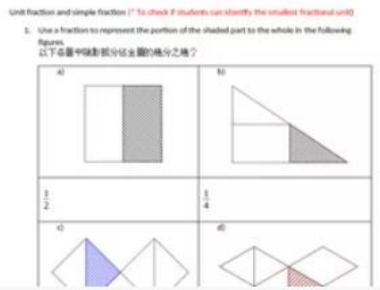
P4 Fractions - L&T with links and examples
Word document
padlet drive

Simplifying Fractions (sek)



Question Design

As a starting point for the design of questions to check basic understanding

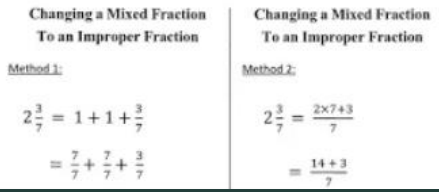


P4 Fractions_Q_design
Word document
padlet drive

Unit Fractions

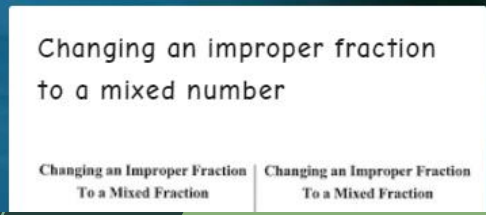
Unit Fractions

Changing a mixed number to an improper fraction



Equivalent Fractions

Changing an improper fraction to a mixed number

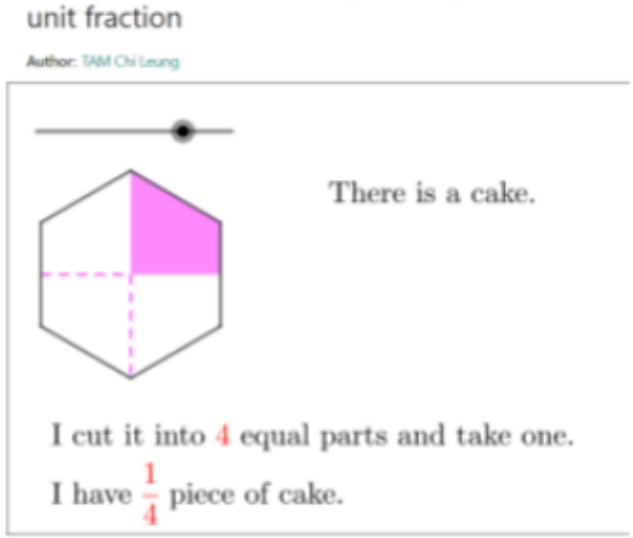


Comparing Fraction

GeoGebra Apps to compare fraction
https://www.geogebra.org/m/edvzy

Catering for the Special Situations in Hong Kong

P4 Fractions - Teaching / Learning Design

On line	Classroom
Unit Fraction https://www.geogebra.org/m/bcucakdr  • Video (find suitable one on line or home make)	Unit Fraction • Paper dividing activities to divide a circular or square paper into two, four, eight equal parts to identify the “unit fraction” • Shading given figure to identify the basic “unit fraction” Examples of questions in annex

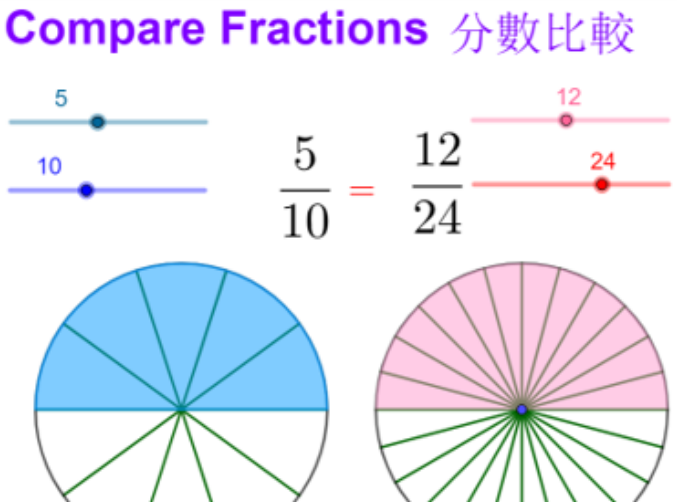
Learning via Multiple Ways / Tools / Tasks

Expanding and Reducing of Fractions (April)

note: the process will not change the value

- Find video / record ppt for student to get the idea
- Matching /MC on-line exercise for students

https://www.geogebra.org/m/edvzycbc



Expanding and Reducing of Fractions

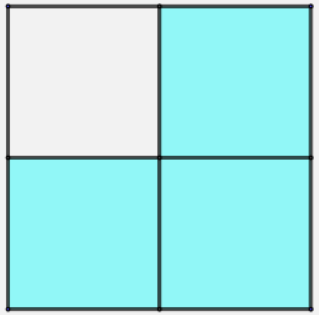
- Use story to illustrate the concepts related
- Use paper folding to strengthen the concept

A story for expanding and reducing fractions

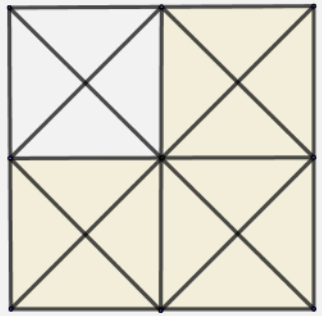
Yesterday mother made a cake. She cut $\frac{1}{3}$ for me, $\frac{1}{3}$ for Jojo, my younger sister, and she ate the last part.

Today mother buys a pizza home. Both Jojo and I wanted to have more. So mother cuts the pizza in 6 equal parts. She gave two parts to me, two parts to Jojo, and ate the remaining parts.

All of us ate the pizza happily and satisfied.



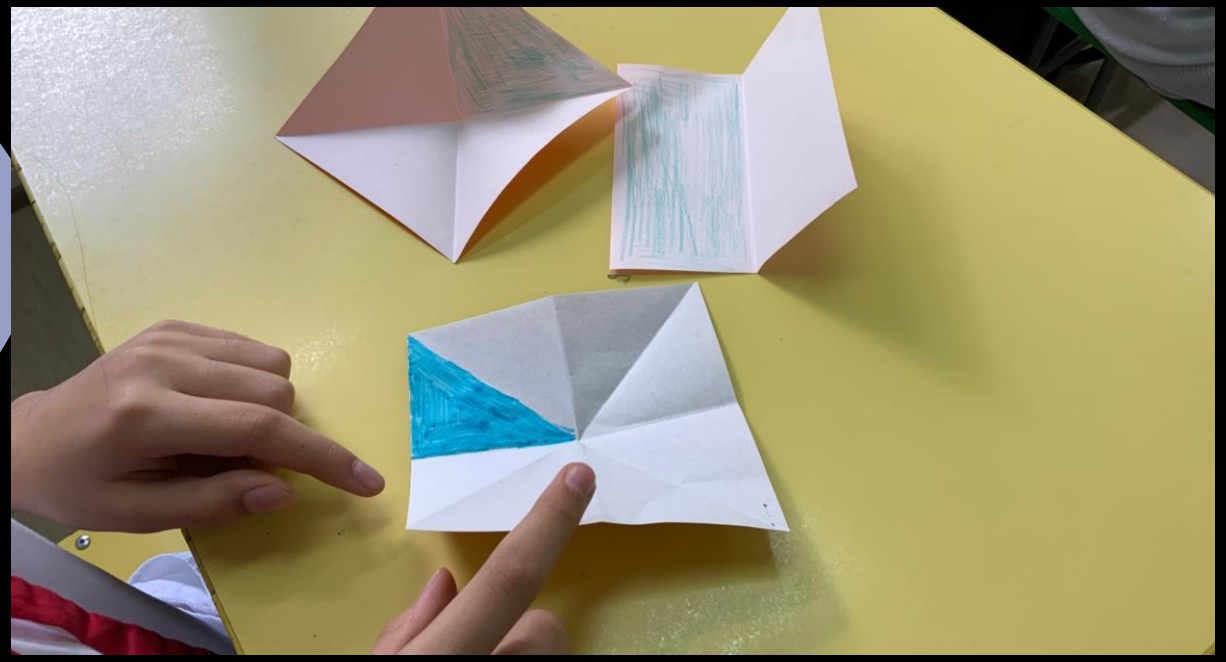
A large square (1) is divided into 4 small squares and 3 of them are coloured. $\frac{3}{4}$ (3 thirds) of the large square is coloured.

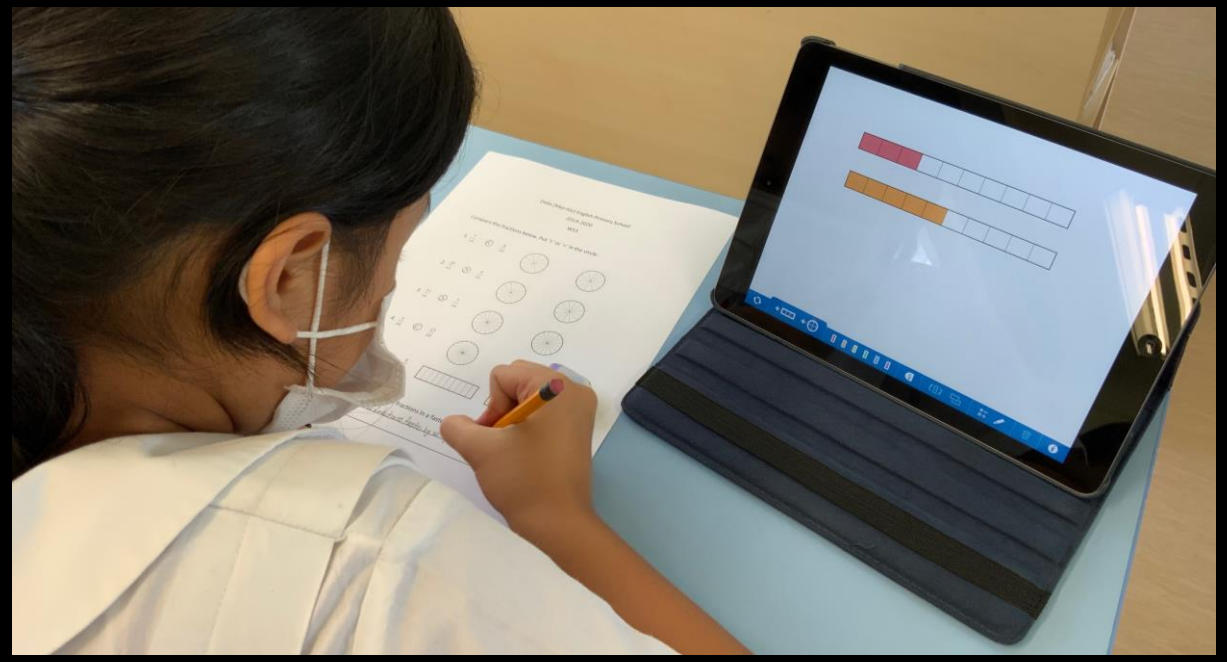


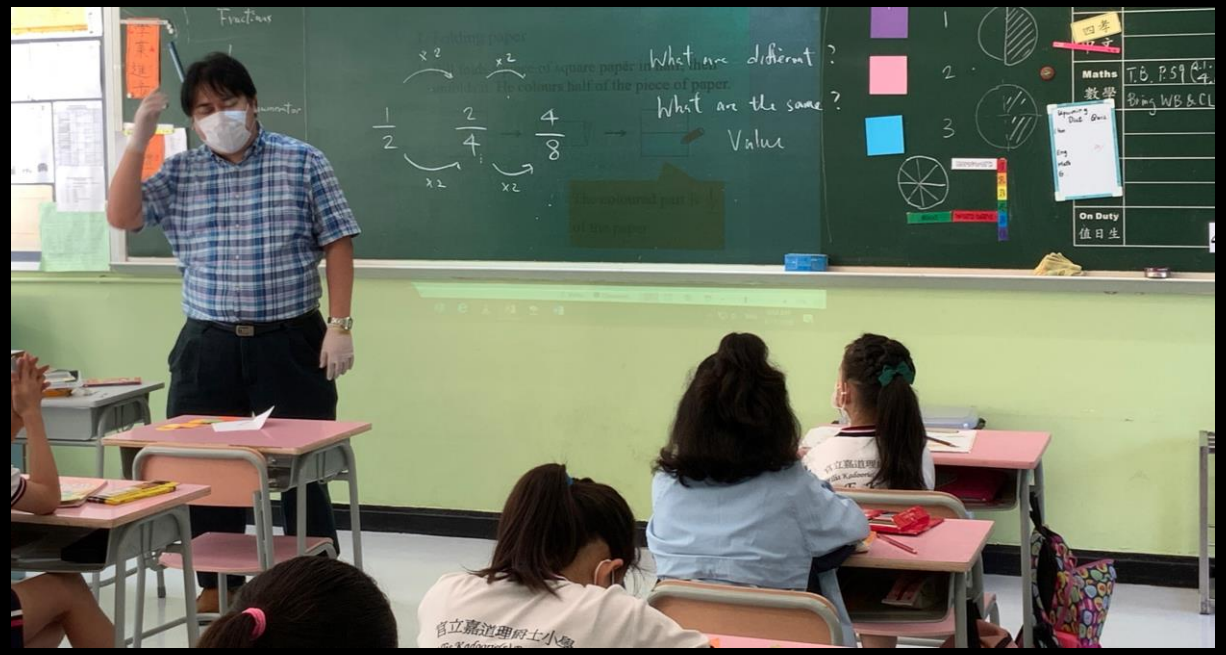
Each small square is divided into 4 equal triangles.
So, there are 4×4 triangles and 3×4 of them are coloured ones.
$\frac{12}{16}$ (12 sixteenths) of the large square is coloured.

Dividing the coloured squares into more equal parts will not change the area of the coloured portion.

$$\frac{3}{4} = \frac{3 \times 4}{4 \times 4} = \frac{12}{16}$$

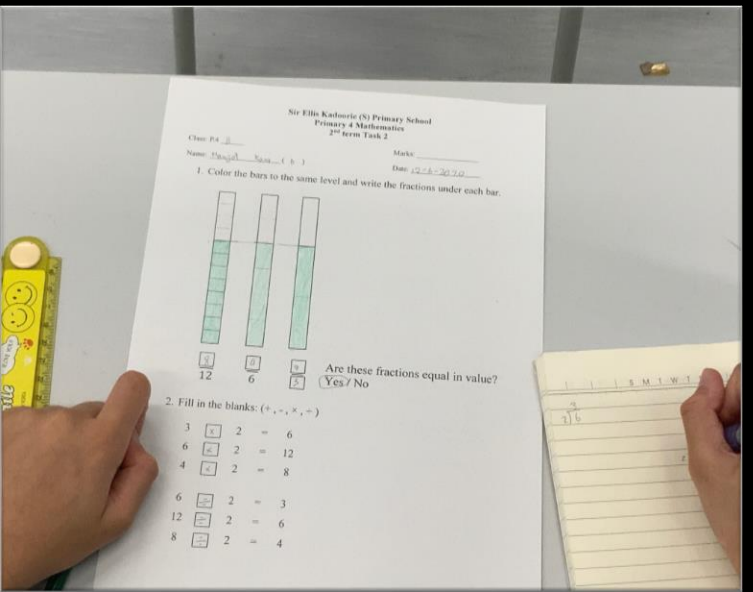




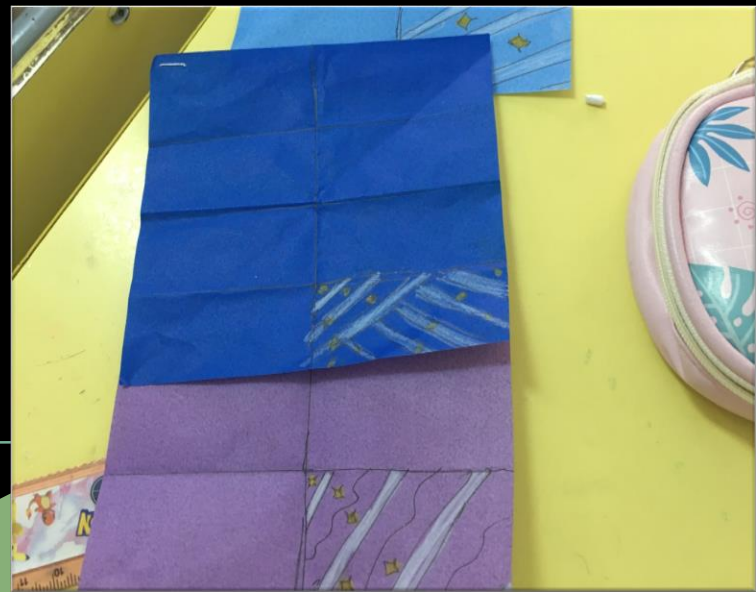

Fractions
What are different?
What are the same?
Value
Maths
On Duty
值日生

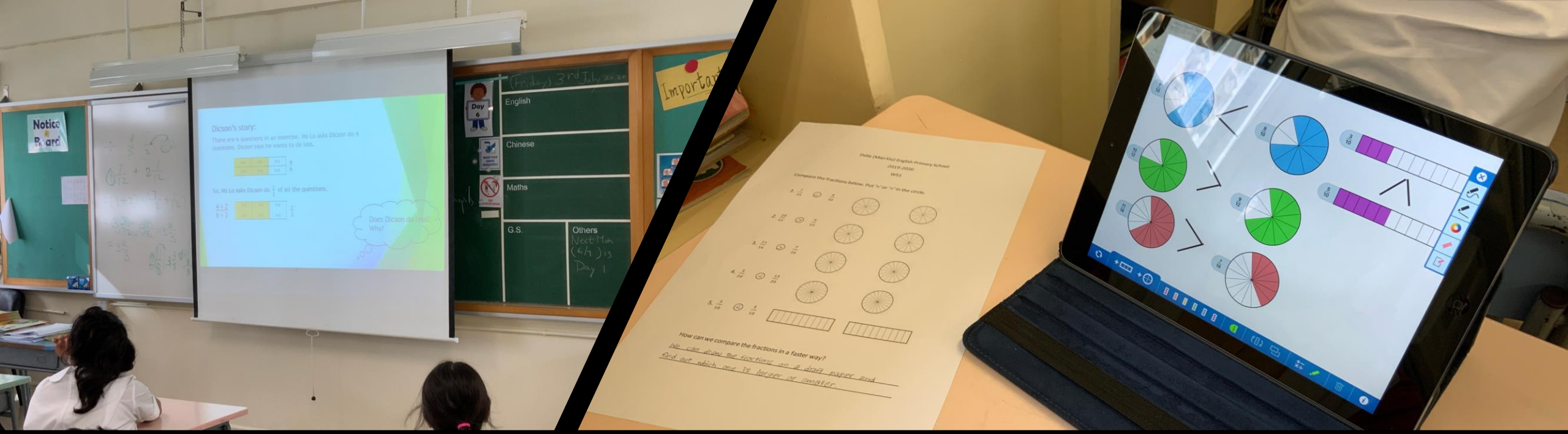

Expanding Fraction
Fractions
numerator
denominator
4C
SEKPS


Vineeta and Tom want to have more.
So Manjot cuts the cake into 6 equal parts.
Manjot give 2 slices to Tom and 2 slices to Vineeta.
English
英文
四信
中文
Maths
數學
G.S.
常識
On Duty
值日生


Sir Ellis Kadoorie (S) Primary School
Primary 4 Mathematics
2nd term Task 2
1. Color the bars to the same level and write the fractions under each bar.
Are these fractions equal in value?
Yes / No
2. Fill in the blanks: (+, −, ×, ÷)


4A




Dicson's story:
There are 6 questions in an exercise. Ms Lo asks Dicson do 4 questions. Dicson says he wants to do less.
So, Ms Lo asks Dicson do $\frac{1}{2}$ of all the questions.
Does Dicson do less? Why?
(Friday) 3rd July
English
Chinese
Maths
G.S.
Others
Day 1
How can we compare the fractions in a faster way?
We can draw the fractions on a draft paper and find out which one is larger or smaller.


Expanding Fractions
Equivalent Fractions
Simplest Form
Expanded Fraction
X
Chinese
Maths
G.S.

We share the views that

All NCS students have potentials, sometimes even beyond our expectations

We try to **minimize** their barriers and **maximize** their achievement

We explore, review and design tools and tasks

We design and deliver concept-rich learning activities

Other Cases

- Circles
  - https://padlet.com/samueltamchileung/x1r7kc6galq7qdtq

- P5 Addition of Fractions
  - https://padlet.com/samueltamchileung/o1skuldw9hjz

Thank You