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Leadership content knowledge

Nadia Walker

Leadership content knowledge: What do leaders need to know?

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- There is key knowledge and skills that are required to enhance the learning of students in mathematics.
- Effective instructional leaders must be able to differentiate between high quality and low quality instruction.
- In this session we'll use tasks, work samples and videos from the classroom to identify high quality instructional practices, discuss ways in which leaders provide purposeful feedback to teachers and strategies for communicating expectations of high quality practice.

Context: FISO
(Framework for Improving Student Outcomes)

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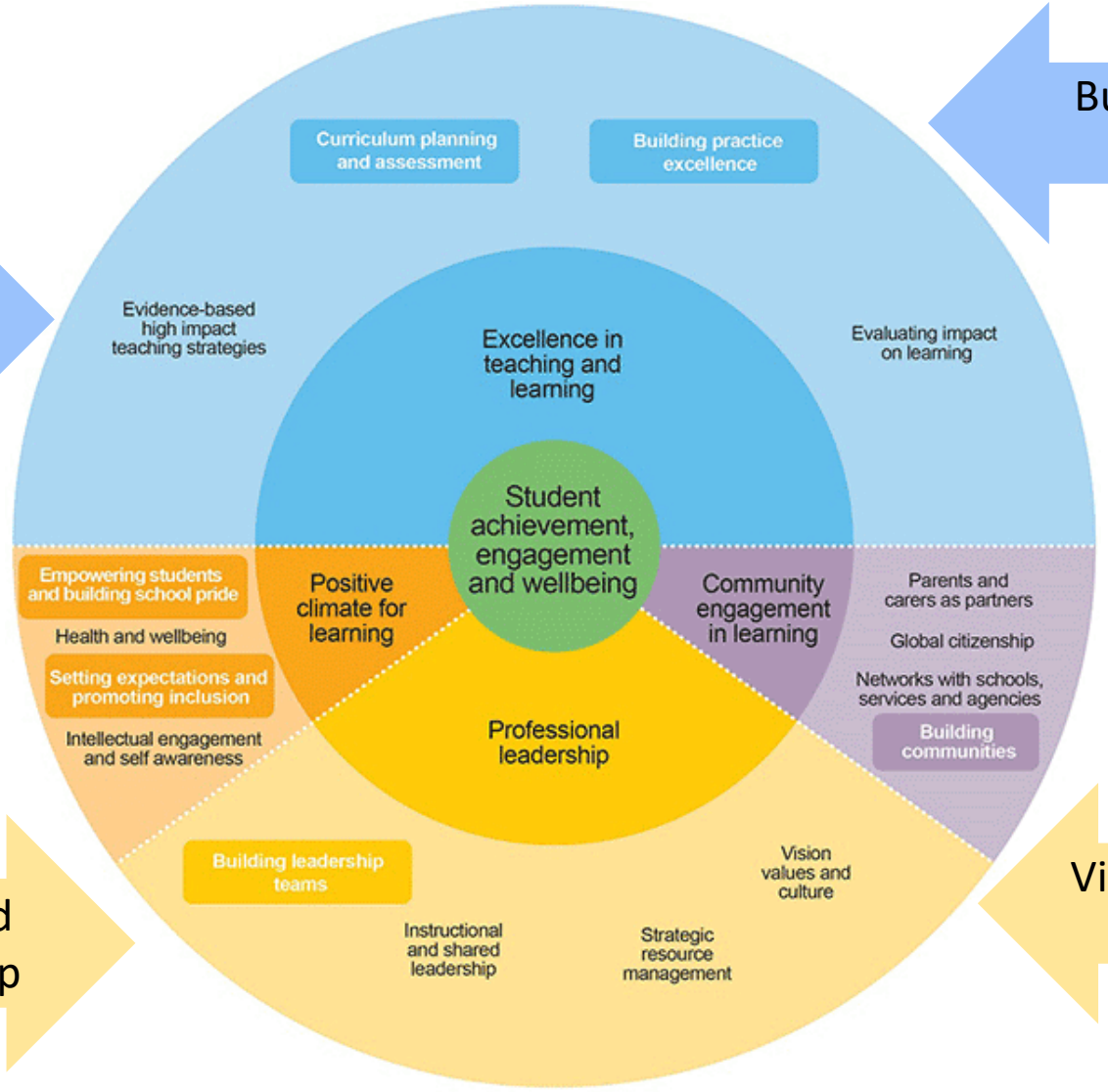
Building practice excellence

Evidence-based high impact teaching strategies



Instructional and shared leadership

Vision, values and culture

The 9 Pillars of Greatness

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A shared vision, values, culture & ethos, based on the highest expectations of all members of the school community.

All those connected with the school are able to articulate their collective values and beliefs and their attention is focused on working to a common ideal and shared goals.

The vision and aspirations of the school are optimistic and based on a ‘growth mindset’ philosophy. There is no ceiling on the expectations of the performance of any member of the school community.

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Big picture thinking

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What is the ***vision, values and culture*** that drives the teaching of mathematics at your school?

What are your beliefs about teaching mathematics that influence that vision?

Think, Pair, Share

Use the butcher's paper to collate

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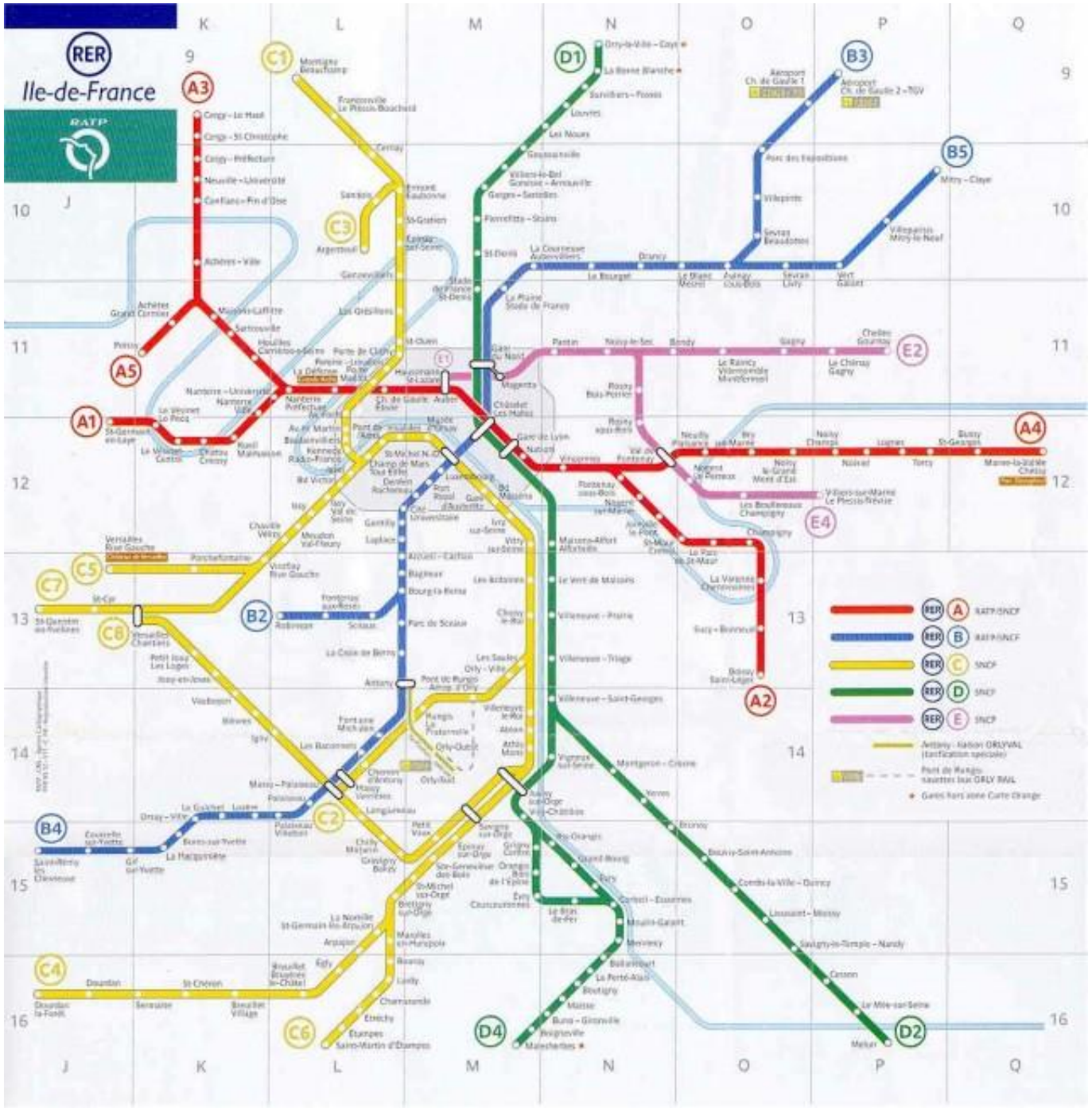
- Starting with a challenge can build a sense of success
- The type of task is important
- High level thinking enhances learning
- Cognitive activation builds positive motivation
- Challenge needs to be appropriate and productive
- Challenge is beneficial for all students



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Developing a whole school vision

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- What are the guaranteed practices and actions/ non-negotiables that support that vision?

- How are teachers accountable for ensuring the enactment of those?

Small group discussion

Investigating how to support Principals as Instructional Leaders of Mathematics

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Research by: Boston et al. 2017

Anyone in the role of leading mathematics, not just those in the Principal class,

… need sufficient knowledge of what constitutes high quality instruction, specifically in mathematics, to be effective instructional leaders … particularly when observing classroom practice, designing support to implement a high quality curriculum and providing beneficial feedback to teachers.

What do we mean by ‘high quality instruction’ in mathematics?

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- How do we describe ‘high quality instruction’ in the mathematics classroom?
- What factors impact on the effectiveness of instruction?

Use answergarden to collect ideas

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- The challenge for teachers and schools is to develop a shared understanding of what excellent practice looks like.

- While we don't expect (nor want) it to look exactly the same in every classroom … we know that one of the biggest hurdles for improving student learning is the differences in the quality of instruction from classroom to classroom ***within*** schools is greater than differences in instructional quality ***between*** schools.

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- It is the collective responsibility of all teachers to ensure that every child learns mathematics to a high level.

Lesson structure and lesson design

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High impact teaching strategies (HITS)

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Structuring Lessons: Overview

- A lesson structure maps teaching and learning that occurs in class. Sound lesson structures reinforce routines, scaffold learning via specific steps/activities. They optimise time on task and classroom climate by using smooth transitions. Planned sequencing of teaching and learning activities stimulates and maintains engagement by linking lesson and unit learning.

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This strategy is demonstrated when the teacher:

- explains to students the steps in the lesson, including presenting learning intentions, explicitly presenting new knowledge, identifying planned opportunities for practice, outlining questioning techniques, and describing assessment formats
- makes clear connections between the learning goals, activities and assessment tasks
- creates transparent, predictable and purposeful routines for students
- identifies clear transitions between each step in the lesson
- plans the sequence of steps to scaffold student learning
- monitors student understanding and provides feedback.

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Turning Teaching Upside Down

- *Cathy L. Seeley*
- **Students learn more when we let them wrestle with a math problem before we teach them how to solve it.**

Does this argument make sense?

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reSolve PL Module 4 Contrasting Approaches video

Task choice and task design

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Consider this task ...

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Find the sum of these 20 numbers below.

321 + 322 + 323 + 324 + 325 +

321 + 322 + 323 + 324 + 325 +

321 + 322 + 323 + 324 + 325 +

321 + 322 + 323 + 324 + 325

Consider this task ...

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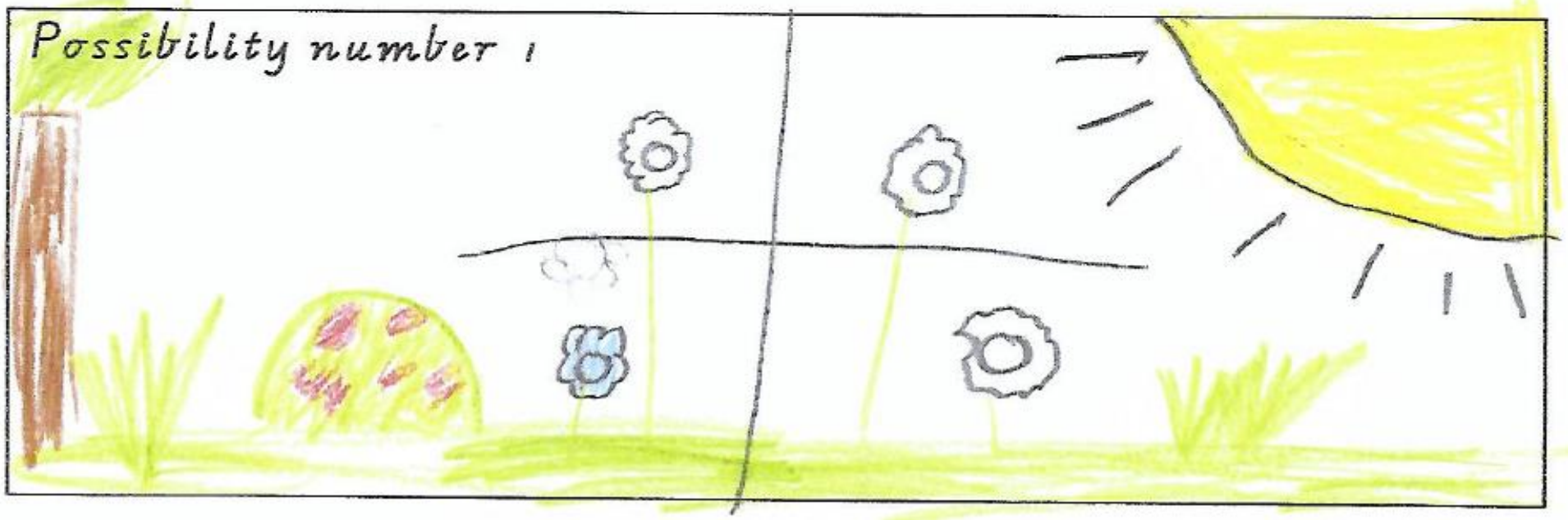
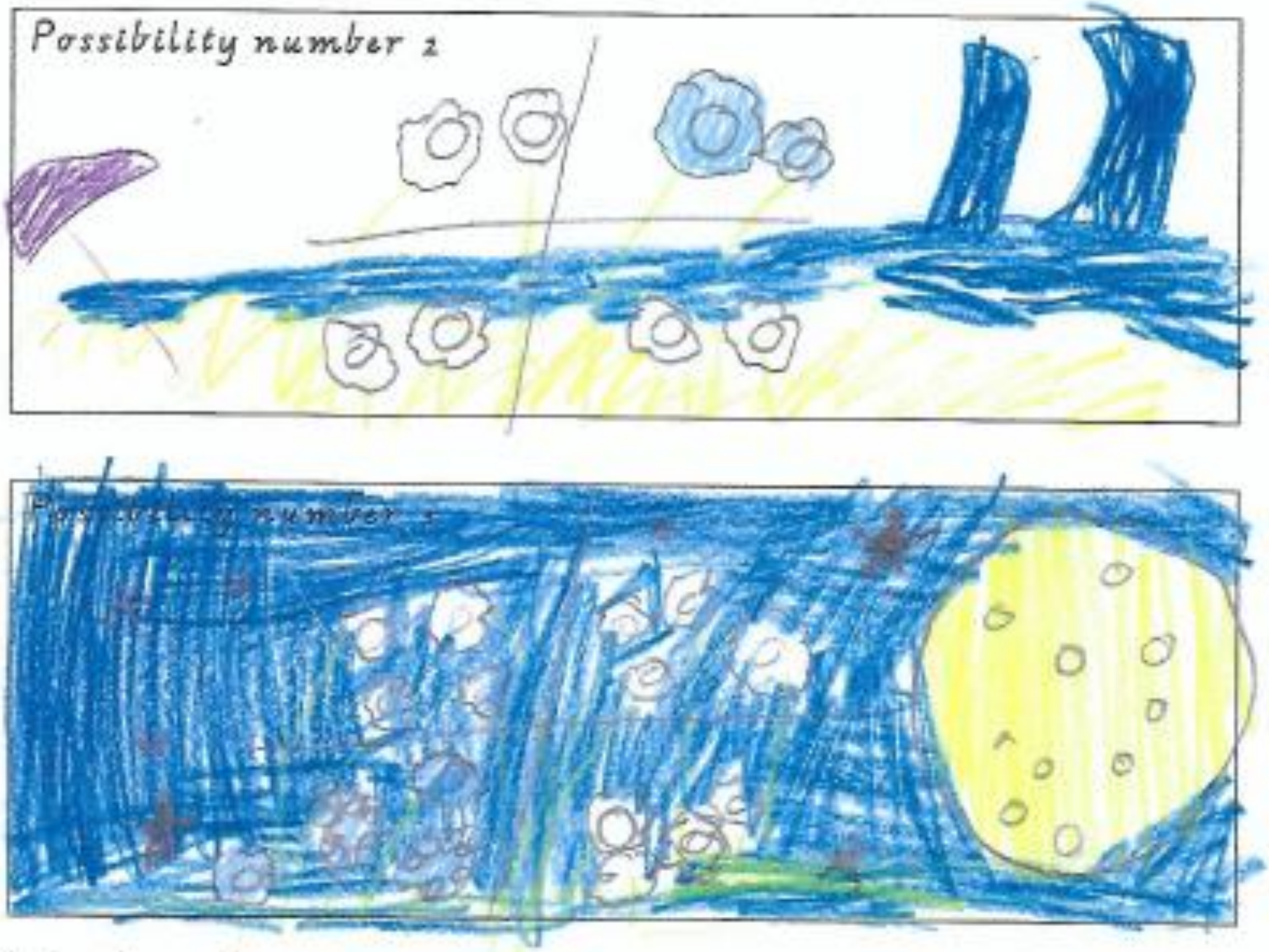
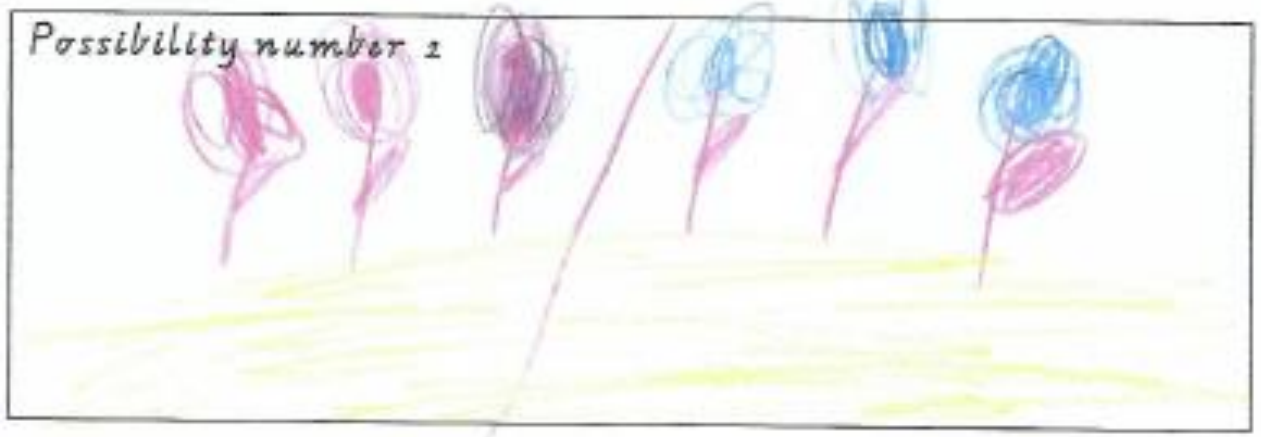
Name: Claudia

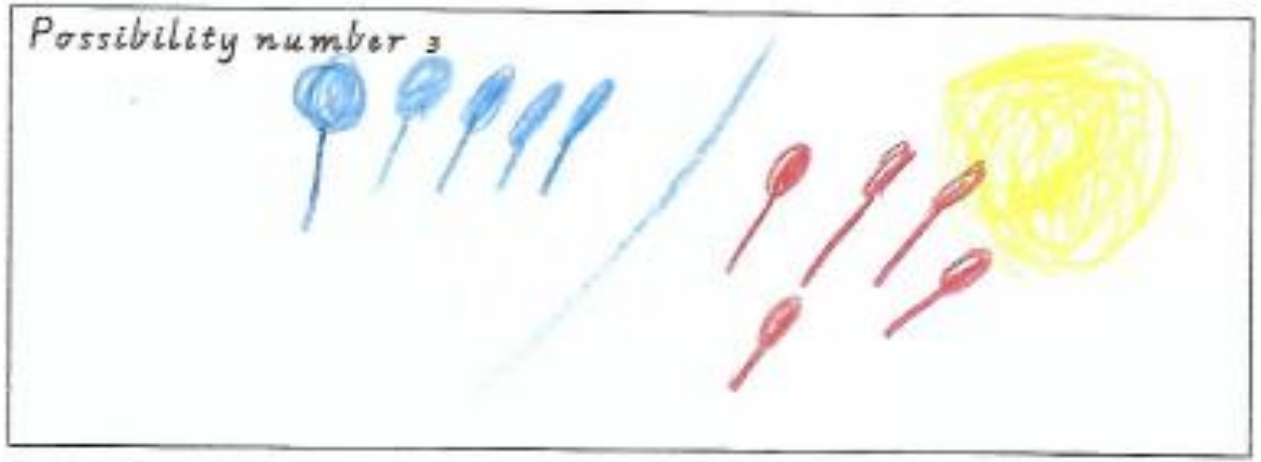
Fractions Challenging Task - November 2016

A quarter of the flowers in the garden are blue.
What might the garden look like?




Possibility number 2





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Consider this task …

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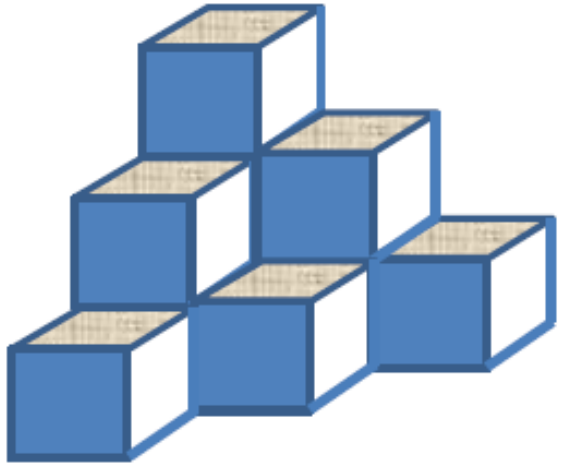
CUBES AND FACES



How many cubes have been used to make the object represented by this drawing?

How many faces does the object have?

Draw what the object would look like from above.

Choosing tasks for learning

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We are after tasks which:

- *expose students thinking*
- *promote understanding*
- *support problem solving*
- *enable success for all students by differentiation*
- *articulate important mathematical ideas*
- *strengthen the connections to other mathematical ideas and strategies*
- *thin an over crowded curriculum*

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"If we want to get all of our teachers to be the best, they have to know what the best looks like."

Principal Dandenong North PS

Kevin MacKay

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- Content knowledge is important, but the best teachers I have worked with mastered the art of questioning. This is because teaching is less about what you know and more about ***enabling students to know for themselves***.

Brian Sztabnik

Leadership content knowledge

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The construct of ***pedagogical content knowledge*** was created to call attention to the fact that subject knowledge must be transformed for the purpose of teaching.

The kind of knowledge that will equip Principals to be strong instructional leaders we will call ***leadership content knowledge***. Standing at the intersection of subject matter knowledge and the practices that define leadership, this form of knowledge would be the special province of principals and others charged with the improvement of teaching and learning.

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We define leadership content knowledge as that knowledge of subjects and how students learn them that is used by leaders when they function as instructional leaders.

Principals must not only be capable of providing a pedagogical vision for teachers, but also have the knowledge, skills, and strength of character to hold teachers accountable for enacting it.

Leadership Content Knowledge

Mary Kay Stein and Barbara S. Nelson

Educational Evaluation and Policy Analysis

Winter 2003, Vol. 25, No. 4, pp. 423–448

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- In every successful school, mathematics was led (or championed by) someone in the Leadership Team/ School Improvement Team.

Providing effective feedback

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- What avenues are in place to give purposeful feedback to your teachers about their teaching of mathematics?

Where can you have impact?

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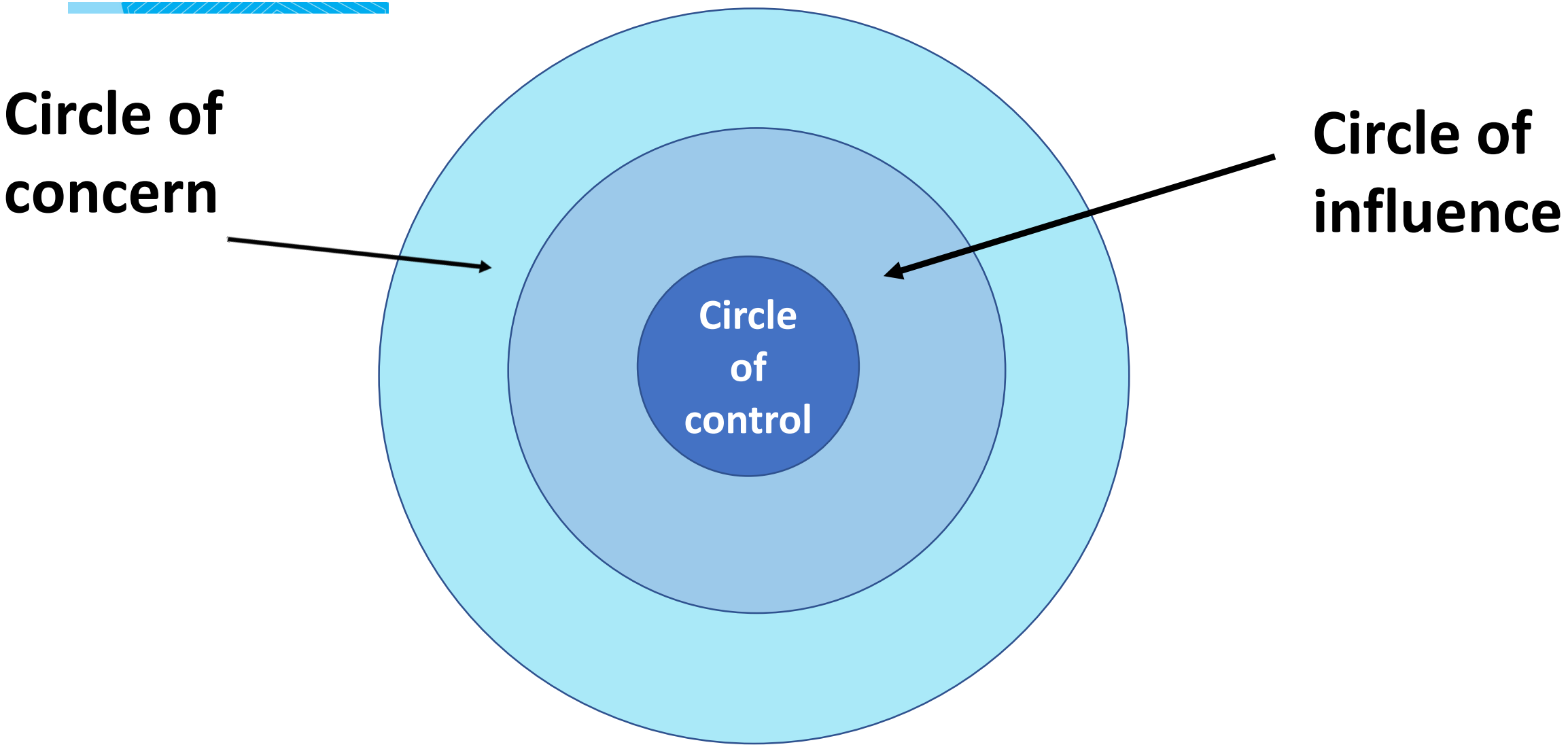

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- *Perhaps it makes sense to see education as being less about how much the teacher **covers** and more about what the students can be helped to **discover**.*

Alfie Kohn

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