Warm up: Sprouts

Join 2 dots & **sprout** a new one

Maximum of **3 lines** per dot

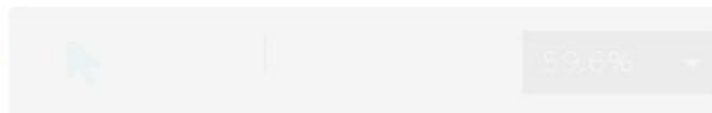Is it random or are there strategies?

Is the game fair?

What effect does the number of dots have?

If you start with *n* dots, how many will there be at the end?

Lines **can't** cross

Last player to draw is the winner!

Problem Solving lesson structure

- ► <u>Warm-up</u> game or activity   (5 - 20 mins)
- ► <u>Launch</u> the problem   (5 mins)
- ► <u>Explore</u>   *silent time   (5 mins)

  *continue working, either

  individually or collaboratively   (30 mins)

- ► <u>Summary</u>   (5 -15 mins)

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Anna's Patterns

Reflection

What did you notice?

What did you wonder?

How might you modify this launch to suit your class?

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Party Drinks

There were a number of cans in the recycling container.

When I divide them by 3 there is a remainder of 1 and when I divide them by 4 there is a remainder of 1.

How many cans might I have?

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Reflection

What did you notice?

What did you wonder?

How might you modify this launch to suit your class?
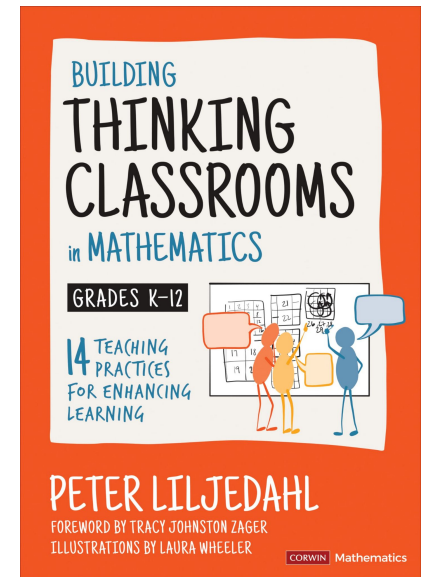
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Launch

- ► Brief
- ► Narrative/story hook
- ► Pitch task
- ► Discuss any tricky terminology
- ► Clarify expectations
- ► No modelling of solutions
- ► Glimpse/snapshot of strategies

Why is an engaging launch important?

Peter Liljedahl, Building Thinking Classrooms

"If a lesson begins with a low-energy state of passively receiving knowledge in the form of a lecture or taking notes, it is much harder to then raise their energy level and get them to start thinking."

"In every case where we were able to create a story, students' uptake of the task was better- they had fewer questions, they were able to more quickly begin the task, and they were less likely to misunderstand what they were meant to do."

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How can I engage **my** students?

- ► Use storytelling
- ► Connect to students' interests and school events
- ► Connect to community and world events (Olympics, football finals, Taylor Swift etc)
- ► Connect to teacher's life
- ► Use student or teacher names
- ► Have real life items (eg coins, smarties etc) available
- ► Consider the physical space

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Your turn to launch it...

For each task, work with a partner to come up with a brief launch story or narrative that would suit and engage your learners.

Be brave and ready to share

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Who ate the most cake?

Ms Tomkin ate 1/3 of a cake.

Mr Tess ate 4/10 of a cake.

Mrs Cram ate 9/20 of a cake.

Who ate the <u>most</u> cake?

Who ate the <u>least</u> cake?

Prove your answer using <u>two</u> strategies.

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Dreaming of the Taylor Swift Concert.

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Taylor Swift Outfits

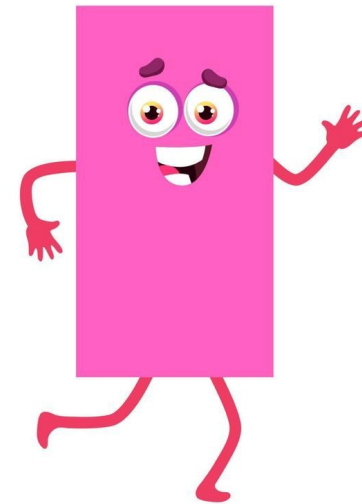How many different outfits could Taylor Swift make, if she had:

► 3 dresses; a gold, a white, a red
► 2 pairs of boots (brown, black)
► 2 hats (green, black)

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Shape shifters

The area of a shape is 24 square centimetres.

What might the shape look like?

Thanks!

- Questions?

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www.lovemaths.me