



Term 1 Revision Week on Decimals

Recommended for Years 4-6

Maths at the Winter Paralympics and Winter Olympics

using on-demand replays for real-life contexts for
decimals

Top Ten Mathematics

- + The perfect engaging revision week for
 - decimals at the end of Term 1 using Winter Paralympics and Olympics replays as real-life contexts and hooks, or at the start of Term 2, or any revision week throughout the year.

Use Nine Now, Stan Sport,
or similar
for on-demand replays,
or use YouTube clips of the sports
listed on the slides that follow.





Luge for ordering decimals and placement on number lines

(particularly the end of 'Run 3' for each athlete)

Watch 'Run 3' for each competitor (Run 4 is not ideal, as the athlete's score is added as a total, rather than separately displayed for each run).

At the end of Run 3 for each athlete, order the decimals and place each time on a number line with an appropriate range.

Also calculate the range (best run – worst run) to see whether they are performing consistently, or quite unpredictably. Calculate the average/mean to predict their time for Run 4.

**Front-loading or related lesson options:
Years 3-6 Planning Package – Place Value
– Decimals – Year 5 Lessons 4 and 5**

ascending order:

5 2 . 5 ^{run 1} 9 0 , 5 2 . 6 ^{run 2} 5 9 , 5 4 . 1 ^{run 3} 4 4

each run got worse, the third was much slower

average = 5 3 . 1 3 1 seconds

mean

so about 5 3 seconds on average

range = 5 4 . 1 4 4 - 5 2 . 5 9 0

$E \approx 1.5 s$

+ 0.41

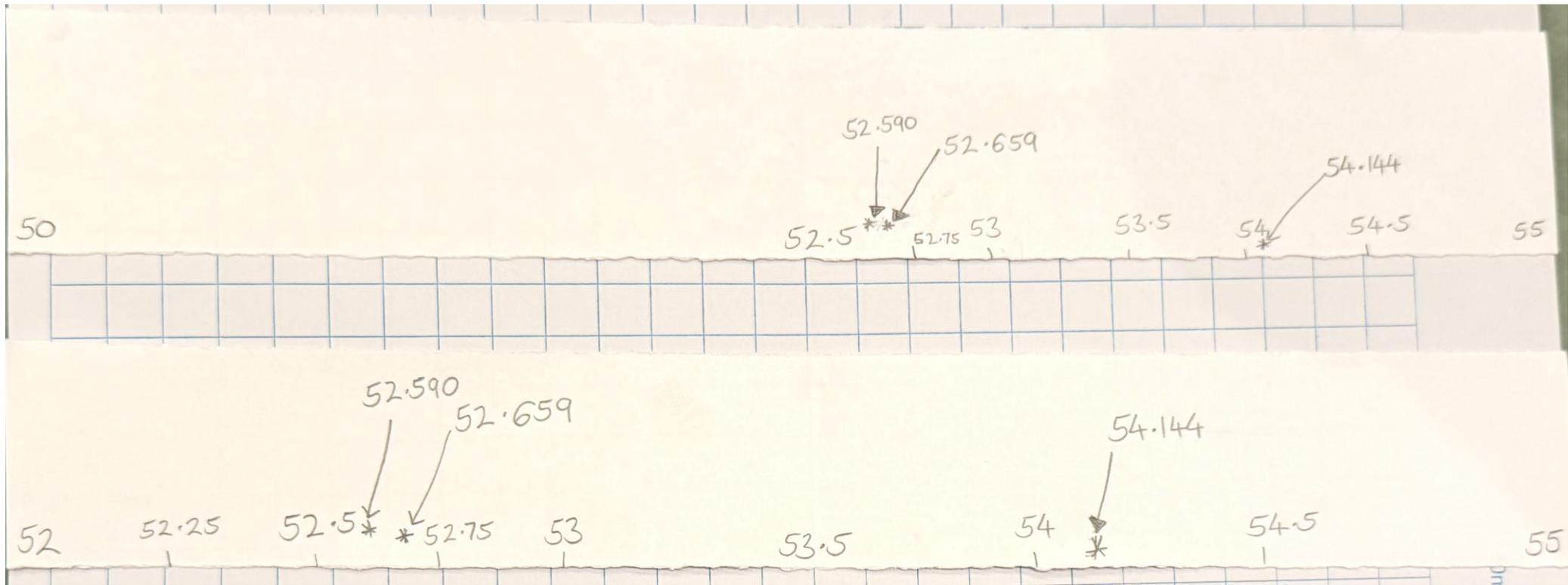
+ 1.144

5 2 . 5 9

→ 5 3

→ 5 4 . 1 4 4

range = 1 . 5 5 4 seconds



Tip: Choose the range of the number line and place benchmark numbers along the line first.

Tip: Use slices of blank paper to place the decimal numbers on a number line, as the grid paper can be an obstacle for students, in terms of breaking the line into its most helpful intervals.

Tip: Try different ranges for the number line for the same times (same athlete), and see how that impacts the placement of the numbers and appearance of the line.

Teacher tip: Pre-slice all the paper for the number lines to the same size, using either the short side of an A4 or A3 page.

Downhill skiing or snowboarding for recording decimals in multiple forms

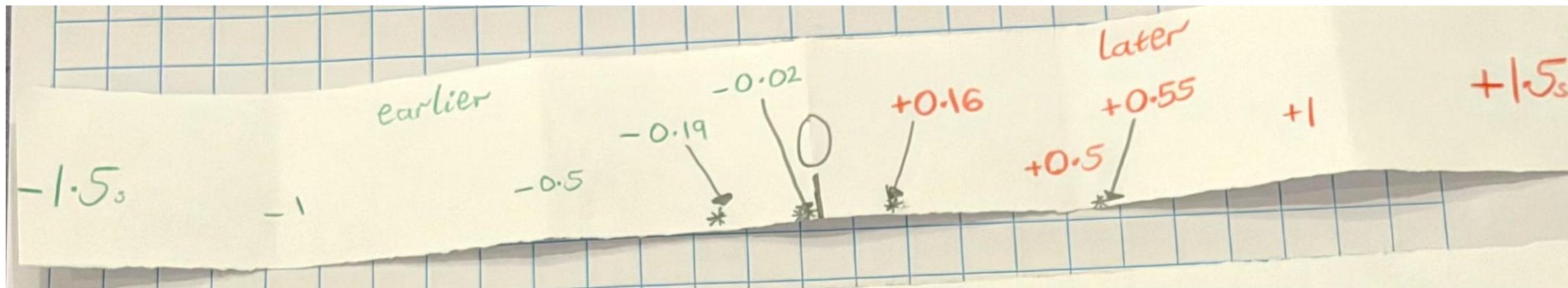
(or any other winter sport with sector times displayed as ahead or behind the other athletes)

Pause as you watch each ski or snowboard run, challenging students to record each decimal displayed in as many forms as possible.

Front-loading or related lesson options:
Years 3-6 Planning Package
– Place Value – Decimals –
Year 4 Lessons 4 and 7,
Year 5 Lessons 6-9

For example:

$\frac{16}{100}$	0.16	16% of one second
$\frac{1}{10} + \frac{6}{100}$		
$\frac{55}{100}$	0.55	55% of one second
$\frac{5}{10} + \frac{5}{100}$		



Extension: Place all times displayed on a -1.5 to +1.5 number line, or -2 to +2 or similar, depending on the range needed for that athlete's times, showing the greens as being **earlier** than the best time so far, and the reds as being **later** than the best time recorded so far by other athletes.



Big air events for describing transformations and real-life degrees in angles

Create a mini snowboarder or skier using paper and popsicle sticks.

Student A ‘performs a big air jump’ and student B attempts to describe it, using the language of transformations (translate, rotate, reflect), as well as how many degrees were involved if it was a rotation type of move.

Both students can reference the ***transformations mat (separate download)*** to assist with this. For example, “You rotated clockwise 270 degrees.”

Pause the televised run after it is complete, before the score is revealed. Each student predicts the score of the run, and as a group of 6, delete the highest and lowest scores, then average the other scores given. Work out the difference between the score your group of 6 calculated and what the official judges awarded.



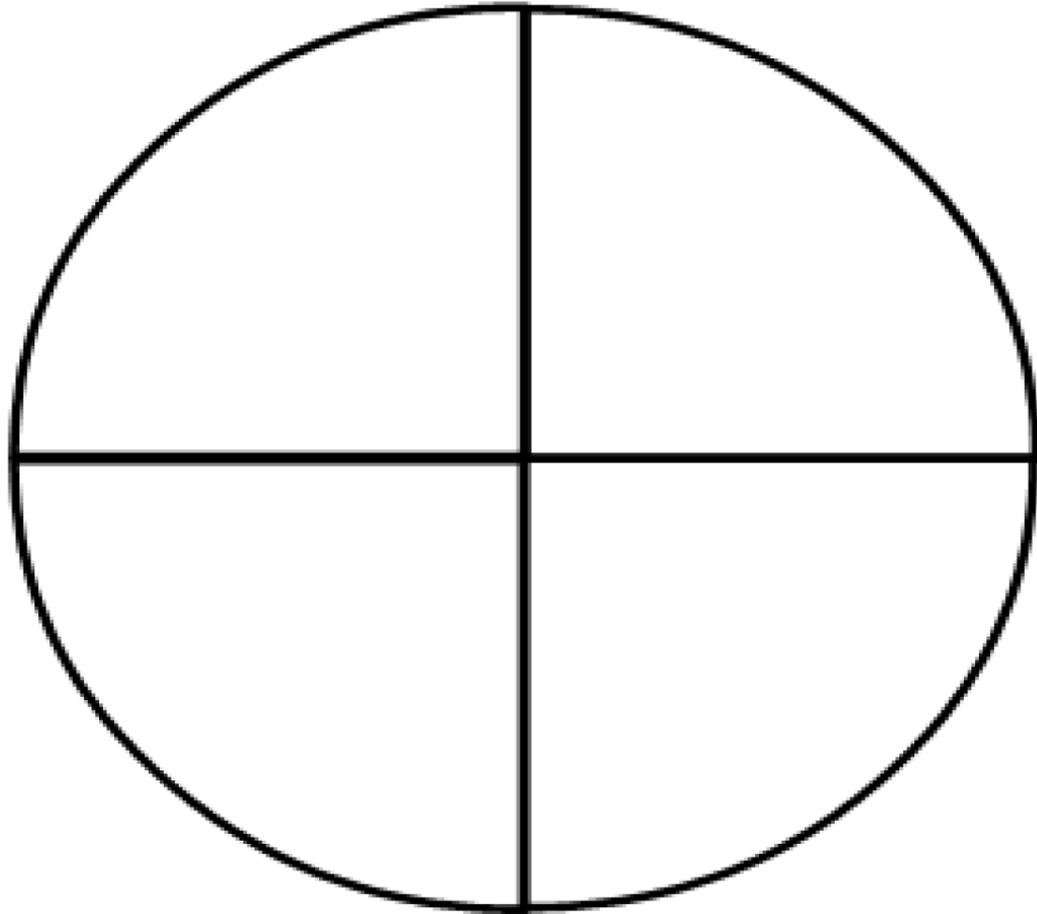
Mini snowboarder, including an arrow to indicate the direction of travel.

Support: Use the language of forwards/backwards to describe the transformations. “You translated forwards/backwards,” or even, “You moved forwards/backwards/left/right/sideways.”

① Rotated 90° clockwise ($\frac{1}{4}$ turn)

② Translated left/about west 1.5 cm (half a ruler)

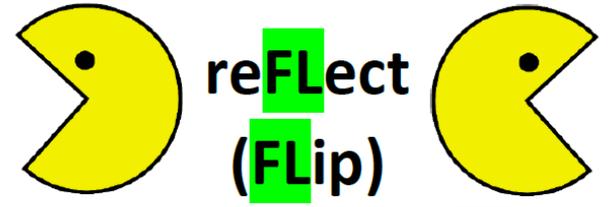
③ Reflected vertically or rotated 180°
anti-clockwise (half turn upside down)



Transformations Mat

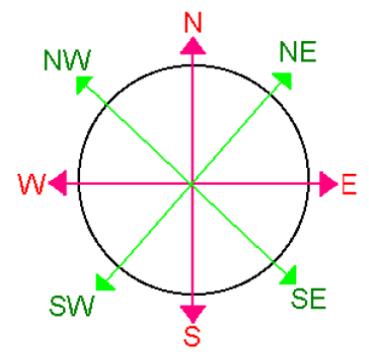
tranSLate
(SLide)

roTate
(Turn)

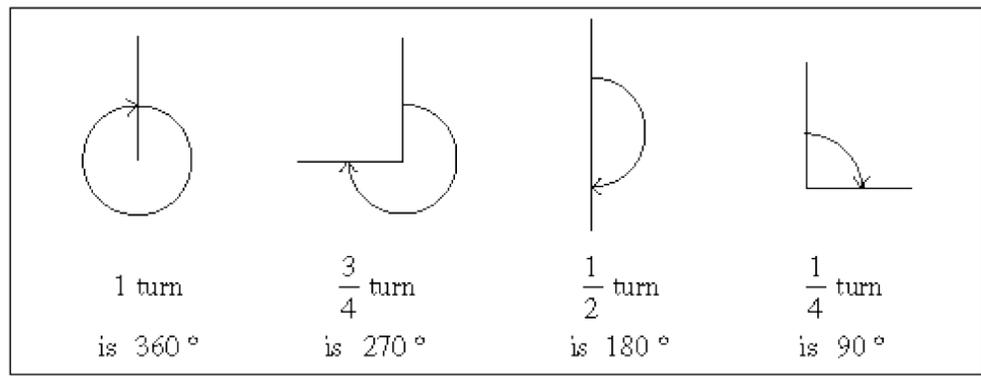


reFLect
(FLip)

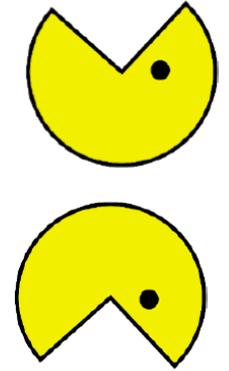
tranSLate



roTate



reFLect



Front-loading or related lesson options:
Years 3-6 Planning Package For whole numbers:
Subtraction – Unit 4 – Lesson 2
For decimals: Place Value – Decimals – Year 6 Lesson 6

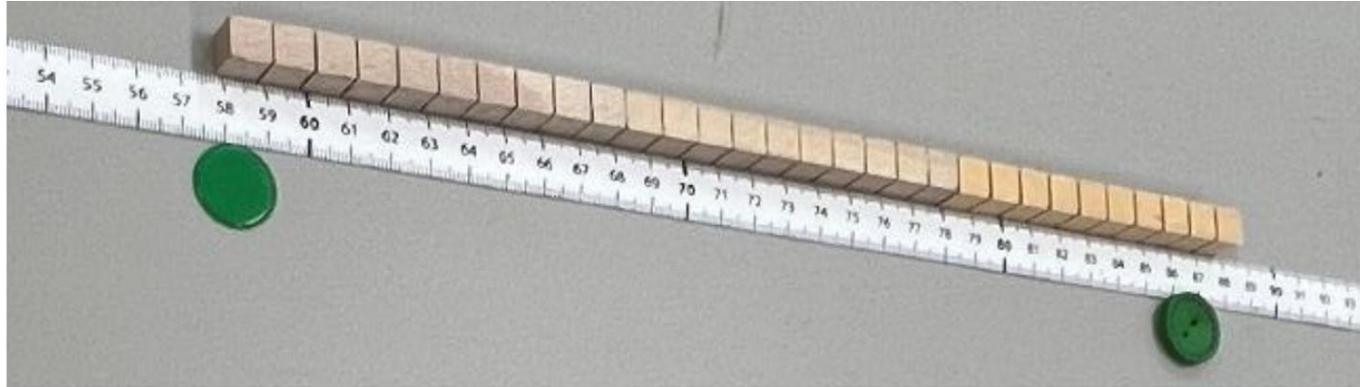


New 3-6 Pack
Subtraction Unit 4 Lesson 2

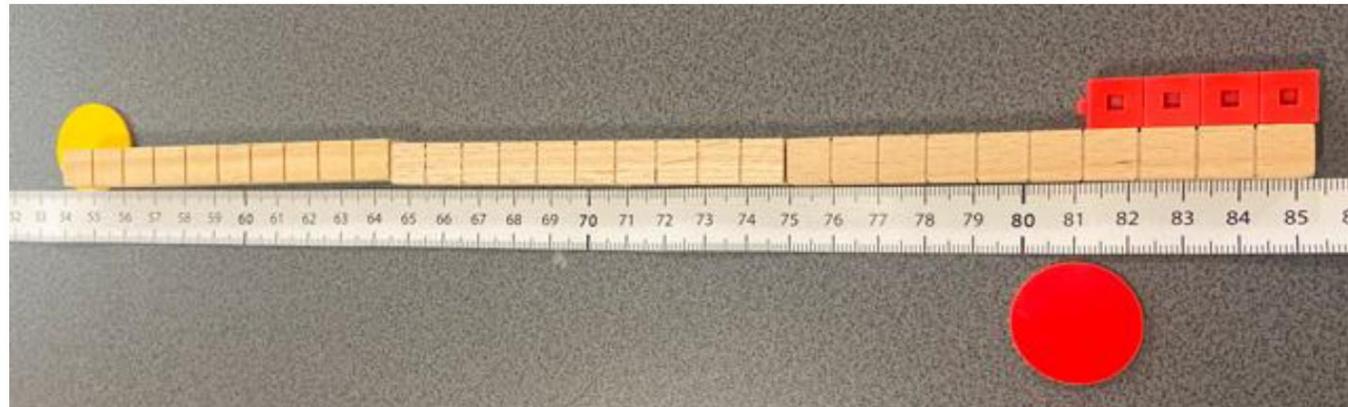


Curling for the difference between concept

- Stick a measuring tape to the desk (whole number side or decimal side – whichever is matched to that pair's point-of-need).
- Set up a 'target' button at a number along the tape. For example, the target could be at 37. Students slide their own counter from either side of the measuring tape, and work out how far off they were. Students can use tens blocks (MAB) to help work it out, and record the difference using an open number line. **Extension:** Flip the measuring tape to the decimal side and record in metres as decimals.



Critical tip: Sometimes it may be best to 'over jump' the difference in tens, then jump back using red ones blocks, like so:



To work out the difference between 81 and 55, jump from 55 for 3 tens more to reach 85, then 4 ones back, so the difference is 3 tens take away 4 ones, so 26.

Winter Olympics

Strategy 1

Strategy 2

$$64 - 38 = 38 \xrightarrow{+2} 40 \xrightarrow{+24} 64 = \textcircled{26}$$

Jump difference

$$64 \xrightarrow{-30} 34 \xrightarrow{-4} 30 \xrightarrow{-4} 26 = -38$$

Jump back

$$85 - 49 \xrightarrow{+1} 86 \xrightarrow{+1} 87 - 50 = \textcircled{36}$$

Pump it up

$$49 \xrightarrow{+1} 50 \xrightarrow{+35} 85 = \textcircled{36}$$

Jump difference

$$35 - 27 = 8$$

$+3$ $+5$
27 30 35

$$96 = 87 = 9$$

$+3$ $+6$
87 90 96

The difference
between 61 and
39

$$61 - 39 = 22$$

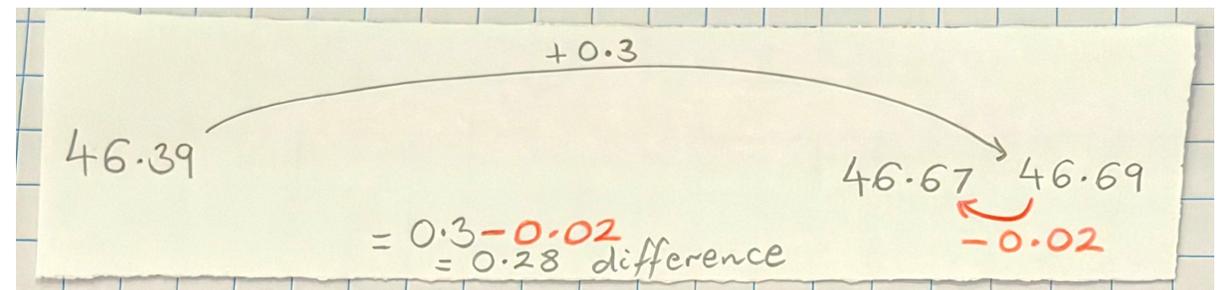
$+20$ $+2$
39 59 61 ✓

Dual skiing or snowboarding events for the difference between concept



Pause at the end of each dual run and work out by how much the victorious skier/boarder won, often using an open number line 'jump the difference' strategy.

For example:



Front-loading or related lesson options:
Years 3-6 Planning Package For whole numbers: Subtraction – Unit 7 – Lessons 2-4

46.39 $+ 0.3$ 46.67 46.69
 $- 0.02$
= 0.3 - 0.02
= 0.28 difference

**Front-loading or related lesson options:
Years 3-6 Planning Package For whole
numbers: Subtraction – Unit 7 – Lessons 2-4**

Skiing and snowboarding lengths with angles experiments



Position a strong surface (plank of wood, clipboard or similar) on a diagonal against a desk or wall at a diagonal angle.

Calculate the angle of the board using a protractor, after classifying and estimating the angle first (acute, 45 degrees).

Estimate how far a tennis ball will travel down the 'mountain,' by simply releasing it at the top with no push factor and always starting from the same point on the board.

The ball is, in effect, 'skiing' or 'snowboarding' down the mountain.

Measure the length and compare it to your initial estimate.

Adjust the angle and re-estimate.

Chairlift multiplication and division

6 people on
5 chairlifts



$$6 \times 5 =$$

$\times 10$, then halve it.

$$6 \times 10 = 60$$
$$60 \div 2 = 30 \text{ people.}$$



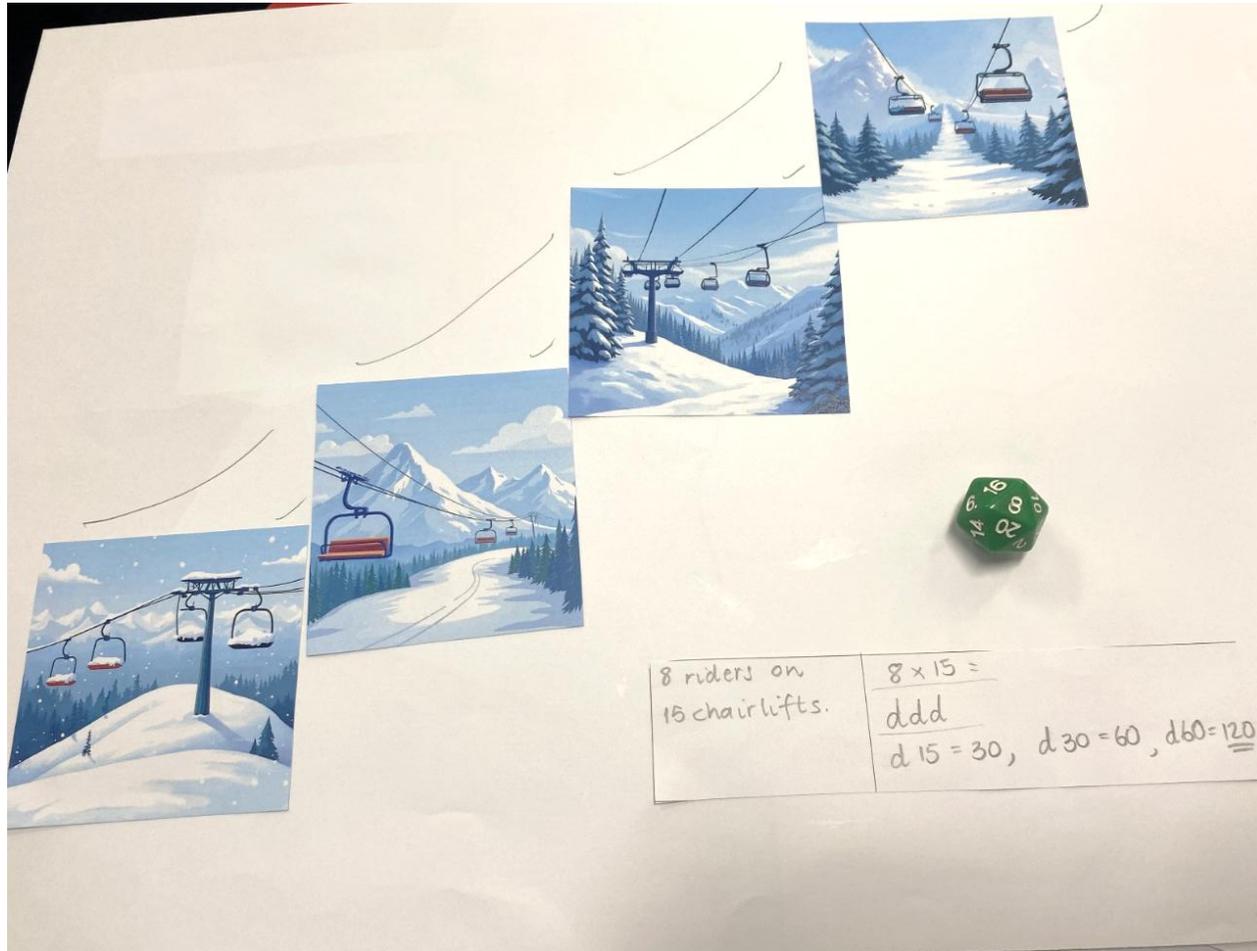
- Allocate dice by current ability to multiply and divide – 3-dot or 6-sided for support, 10-sided for mids, 20-sided for high-mid, or two or more of any of the above for extension to form two-digit or three-digit numbers.
- Roll for the number of chairlifts on the mountain and the number of riders each lift can hold on its way up.
- Use multiplicative strategies (see the student anchor chart on the next page) to work out how many riders can be pulled up the mountain at any one time.
- For division, pull cards for how many riders are waiting in line (two-digit or three-digit number), then roll the dice for how many riders a single chairlift can hold. Calculate how many lifts it will take to load all the waiting riders.

Front-loading or related lesson options:
Years 3-6 Planning Package
Multiplication – Unit 5
– Lesson 6
Division – Unit 5 –
Lesson 8

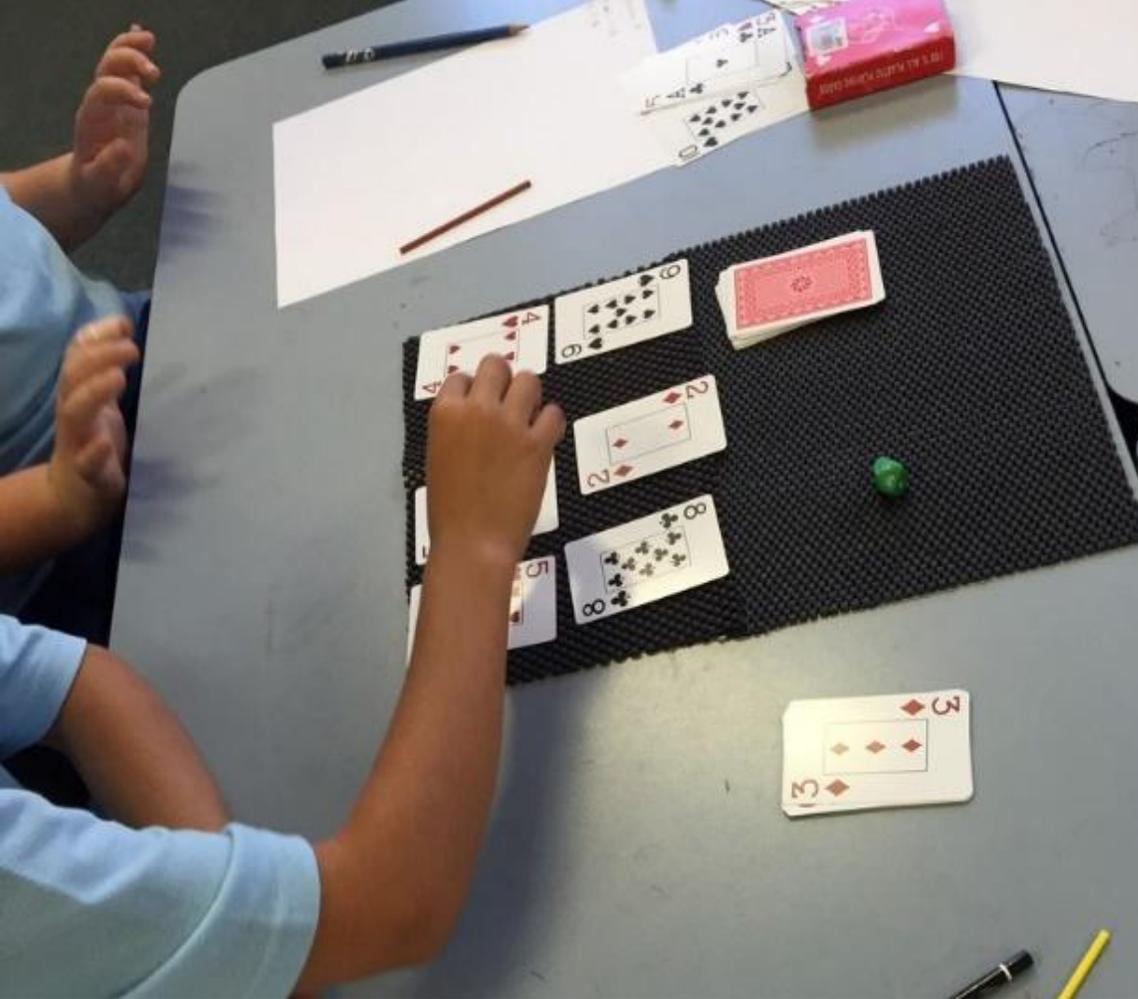


4 chairlifts

Story and equation	Strategy
5 riders on 4 chairlifts 	$5 \times 4 =$ $d4 = d5 = 10, d10 = 20$ people



- **Extension 1:** Use 20-sided dice and apply the same multiplicative strategies.
- **Extension 2:** Roll for how many seconds it takes one chairlift to travel up the mountain, from base to peak. Then calculate how many riders could be transported in the hour, given ___ (roll dice) many chairlifts are running at any one time and _ (roll dice) how many each lift holds.
- **Extension 3:** Charge a price per ride and calculate how much money the lift can earn in an hour, day, or the entire winter season. Highly recommend the lattice strategy for multiplying decimals.



A sequential, materials-based, hands-on approach to growing numerate students

2024 regional-comparison NAPLAN student gain data (Year 3):

NAPLAN - Students by Proficiency Levels ⓘ

Exceeding or Strong students in 2024 (%) ⓘ

For students in Year 3, Numeracy

98%

Your school

67%

Similar schools

Chirnside Park PS results after four years of implementing Top Ten Maths with fidelity.

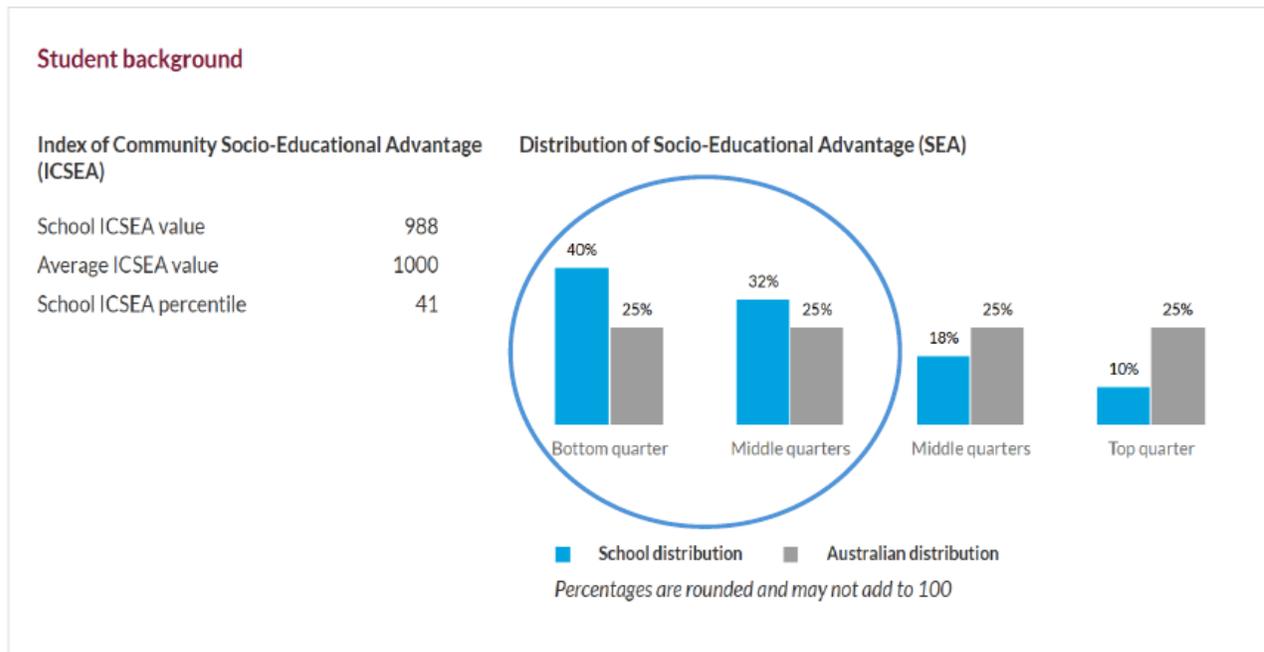
Students by proficiency level (%) ⓘ

For students in Year 3, Numeracy

- Exceeding
- Strong
- Developing
- Needs additional support
- Exempt

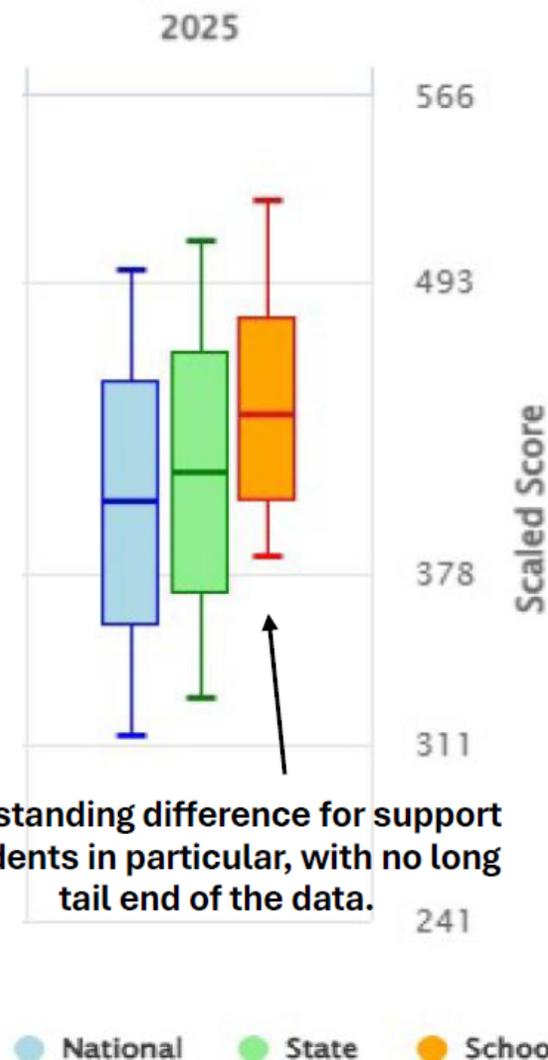


Kananook PS – Intensive Top Ten Member School 2025 NAPLAN Results for students that started the program in Prep who have now entered Year 3



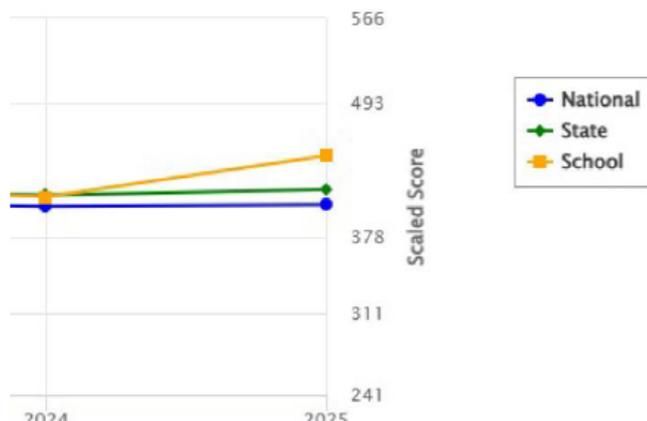
Significantly outperforming state and national scores, even though their ICSEA in terms of family backgrounds is significantly below the median in terms of socio-educational advantage.

This proves that an approach to numeracy that has been developed for ten years in Australian classrooms, implemented with fidelity by teachers and leaders, will make a huge impact to the educational outcomes of students, regardless of the school's socio-economic status.



	2025
National Mean	405
State Mean	418
School Mean	448

The school's ICSEA would generally indicate the cohort should be achieving, on average, below the state and national mean, not 43 points above national and 30 points above state levels.



Outstanding difference for support students in particular, with no long tail end of the data.

Feedback from leaders and teachers members at Chirnside Park PS

“When the change narrative is presented well and teachers are embedded in the change process with all resources required, look at the impact for students. Your passion and impact at our school has been immense. Thank you again for your incredible support at CPPS. You go above and beyond for our community and we see that and appreciate that. So proud of our staff and students.”

Mr Graham Elliott, Principal, Chirnside Park PS

“Thanks again for the continued support you provide our teams. The enthusiasm and passion you share has continued to support our aim in developing a rich and effective mathematics program.”

David, Assistant Principal, Chirnside Park PS

“Our students across the school love Maths because of Top Ten. It is extremely engaging and develops their conceptual understanding. The approach is evidence based, the PDs are incredible for teachers, and the support of the consultant is so valuable. Our results have lifted so much since committing.”

Natalie, Year 3/4 Teacher, Chirnside Park PS

“You are always so supportive of how I plan. Thank you.”

Sharon, 5/6 Teacher, Chirnside Park PS

Feedback from Top Ten member schools

“This is an incredible resource for schools wishing to see a real shift in student perceptions and attitudes to maths – as well as improved data along the way.”

Ms Lynette Robberts, Teaching Principal, Tallarook PS

“The planning packs make fantastic well-researched activities available to all teachers, especially graduates, returnees from family leave and tutors. It is so easy to match them with the results from the assessments, and allow children to work at their point of need.”

Suzanne, Numeracy Leader, Yuille Park Community College

“Our results are showing that students are tracking more at-level on pre-tests, so we can start at a higher level than in previous years. This is a direct result of the hands-on planning packs.”

Ms Martene Matthews, Teaching and Learning Specialist, Kananook PS

Feedback from Top Ten member schools

“The program is excellent and very relevant and accessible to our students. Frankly they have never enjoyed maths more.”

Ms Anne Shipway, Principal, Yulga Jinna Remote Community School

“Our school is loving the program. The yearly overviews provide a very clear guide for teachers to follow. The diagnostic tests are also fabulous in identifying student strengths and areas in need of development.”

Mr Shane Wilson, Principal, Marble Bar PS

“I love learning new things and your whole framework surrounding Maths certainly is a great fit for our students at this school. The approach by Top Ten is a resource that encompasses exemplary pedagogy with a view to supporting the whole child (auditory, sensory, processing and fine motor skills) to ensure high engagement with Mathematics. It is educative, informative and definitely hands-on.”

Ms Jenny Bruce, Deputy Principal, South Kalgoorlie PS

Feedback from Top Ten member schools

“Top Ten Maths has provided staff with an understanding of how to sequence the teaching of mathematical concepts, as well as providing tasks to teach students the given concept - a fantastic resource.” **Mr Paul Hilton, Assistant Principal, Dandenong North PS (2020).** **Dandenong North PS has recently been recognised as the highest-performing school in terms of student gain results in Victoria for 2022. Top Ten delivered four intensive curriculum days for Dandenong North PS teams in 2020 and 2021.**

“The Top Ten Planning Packs have transformed attitudes to maths at my school. Teachers and students now look forward to maths sessions more than ever.”
Evan, Numeracy Learning Specialist, Belvedere Park PS

“Engaging lesson plans which do not require specialised resources, just everyday things you'd find in most classrooms. Teachers find the differentiated tasks through enabling and extending prompts particularly helpful. Students give it a double thumbs up, they love it!”
Annie, Maths Coordinator, Heidelberg PS

Feedback from Top Ten member schools

“The Top Ten Numeracy Program has given our teachers a 'kick start' in the delivery of rich learning tasks, across our classrooms. The pre/post tests and the associated data tables provide a consistent measure for assessing and tracking student growth. The PD Days are hands-on and motivating; staff were able to experience the activities in action. The activities speak for themselves. It's a program that is valued by all staff at our school.” **Pam, Numeracy Leader, Boort District P-12 School**

“We love the clear learning intentions; enabling and extending prompts; and photos that show what work (especially recording methods) might look like in a real classroom. The packs are teacher-friendly. The activities are engaging and fun for the learners and teachers too. They use simple equipment in a variety of ways.”
Sue and Katrina, Maths Leaders, Pakenham Hills PS

“The hands on sessions are inspiring and so accessible. I can see the piggybacking of ideas happening before my eyes. The excitement, interest and buzz of maths has had a rebirth – thanks so much!” **Maree Seymour, Principal, Sherbourne PS**

Feedback from Top Ten member schools

“Every student at our school is experiencing success with Maths every day. This program has revolutionised the way in which our students feel about Maths. It has led to astoundingly improved student engagement and comprehensive progress in student outcomes. The pre and post testing component is invaluable, in that it continually directs teaching towards targeting specific goals that are achievable for each student. All lessons utilise peer teaching and practice, and zero in on understanding the language of Maths which is crucial for students to attain real, deep and rich understandings of the concepts being taught.”

Ms Rebecca Szeremeta, Numeracy Leader, Thomastown East PS

“We have really enjoyed the dynamic approach to mathematics learning and the engaging resources that Top Ten Maths has provided.”

Kathy Winton, Numeracy Leader, Footscray PS

Feedback from Top Ten member schools

“The Top Ten units have not only saved me hours of work but my students have LOVED the activities. The lessons are easy to follow and clearly break down the developmental steps of the curriculum. I have a very mixed ability cohort and I have found each lesson easy to differentiate, and the hands on factor has kept all of the students, including those with behavioural difficulties, engaged. The pre- and post-tests are easy to use and have allowed me to have measurable, topic-specific data for each of my students. I have been able to easily adapt most of the lessons and resources to remote learning and my students have enjoyed playing the games with their families.” **Ms Philadelphia Love, 3/4 Teacher, small school in north east Victoria**

“Love the hands on activities and the 'openness' of most of the tasks. Fluency activities and warm ups are great. Sequence of tasks is also great. We love the links to picture story books - we use them at every level. No worksheets!!”
Kim, Numeracy Learning Specialist, Bendigo Violet St Primary

Feedback from Top Ten member schools

“Our teachers are actually enjoying teaching maths again! The way Top Ten is set up takes the guesswork out of planning. We love the packs!”

Ms Michelle Young, Principal, Bruthen PS

“The packs have high quality mathematics teaching that is hands-on with everything you need in one spot. Fantastic lessons! Making outstanding mathematics teaching easy!”

Ms Donna Krenn, Assistant Principal, The Basin PS

“All of our year levels are using it as a starting point for planning. Teachers love the literacy links and connections and the great rich tasks. It has added so much to our teachers' confidence.”

Ms Jodie Bray, Principal, Hillsmeade PS

Feedback from Top Ten member schools

“Top ten unit plans are time savers and provide a hands on, succinct learning approach that allows for differentiation for all students. The units are easy to follow with minimum preparation, link to great picture story books, and all focus on hands on activities with picture examples and extension tasks. They are engaging, fun and thought provoking lessons that allow maths to be provided in real-life contexts.”

Ashlea, Year 1/2 Teacher, Kialla Central School

“We have been using Top Ten for a few years now. We love the hands-on engaging lessons, warm ups, assessment resources and support/extension prompts.”

Marie, Maths Leader, Yarra Glen PS

“Our school is working on Literacy in Numeracy so the resources are excellent for our needs. The reading resources are interesting and provide a stimulating introduction to mathematical topics.” **Leanne, Maths Leader, Clayton South PS**

“We love the easy to follow instructions and multiple activities to choose from. So much time saved!” **Diana, Numeracy Learning Specialist, Coral Park PS**

Feedback from Top Ten member schools

“We have just reviewed our whole school model of maths instruction. The Top Ten Numeracy Package fit perfectly into the new model that we created and assisted teachers to implement our model with ease. The engaging hook activities were particularly utilised, as this was the newest element of our model. Staff found that there were many fabulous ideas for these hooks and it actually inspired them to come up with their own ideas. The highlight is the highly engaging activities, particularly the 'zero worksheet' element of the resource. Many other resources just provide you with worksheets to use.”

Ms Lauren Ray, Curriculum Coordinator, White Hills PS

“This is a great resource for staff. All components are user friendly and easy to use. The resource has been a great hit with our staff and is being extensively used by teachers at all year levels.”

Mrs Sue Jones, Principal, Cranbourne Park PS

“We love the ease of use of this resource. Our staff are really enjoying using the packs.” **Ms Trish Perry, Principal, Lancaster PS**

Feedback from Top Ten member schools

“Top Ten has reinvigorated and improved maths teaching and learning at Yeo Park within a few short terms. Teachers find the differentiation included in each lesson and within assessment has allowed them to cater to individuals successfully. We love the maths library and lessons!”

Ms Fiona Wood, Principal, Yeo Park School

“We love the hands on activities and pictures that show you exactly what to do! Both our students and teachers are happier since we have used Top Ten Maths packs.”

Nicki, Maths Leader, Narranga PS

“We are really enjoying using Top Ten and have actively embraced it as an important resource for planning. I have found the assessments very helpful. There has been a lot of positive feedback from parents and students about how much they enjoy learning maths now. Thank you for your amazing resource.”

**Ms Nicole Nolan, Junior School Mathematics Leader,
The Hills Grammar School**

“An excellent hands on resource that links literacy and numeracy.”

Melissa, Leader of Numeracy, Hurstville PS

Feedback from Top Ten member schools

“We have had a lot of feedback from our teachers. We are loving the planning resources!”

Glendenning PS

“The lessons promote higher order thinking, are engaging, requiring students to organise and record their data/results. Lessons have differentiation and extension activities. Our teachers love the step by step instructions with pictures that demonstrate, suggested questioning, lists of required resources, classroom organisation and teaching tips. Each lesson displays photos to enhance the instructions. Well set out lessons and units.”

Jodi, Instructional Leader, Mount Austin PS

“The hands-on tasks and the thinking about maths is inspiring.”

Mrs Kath Cambetis, Deputy Principal, South Kalgoorlie Primary School

Feedback from Top Ten member schools

“The assessments are great and help with our differentiation, then show the value adding and growth students made between the pre and post. Our teams have said that it is a very good, very user friendly program. Our teachers in Foundation have used the Top Ten resource to plan their entire Term 4 program in Number and Algebra. The unit timings are a great help with fitting all the content in. We love that the activities are developmentally sequenced and how each lesson shows you how to differentiate. Our teams also really love the warm-up games, which are very easy to set up, and the links to videos and story books at the start of the lessons. Our Year 3/4 teachers particularly love the photographs of the activities and that they are adaptable.”

Madeley PS

“We have been thrilled with the Top Ten Maths program and recommended this widely to other schools as it has been so helpful to my school. The resources have been received highly by my staff.”

Mrs Kerry Coffey, Principal, Fleetwood PS

Feedback from Top Ten member schools

“The Maths packs are all encompassing with play based activities that engage students. Easy to navigate, applicable for all levels and FUN.”

Hayley, Assistant Principal, Goodooga Central School

“We were looking for something to make our maths teaching more engaging and real for our students, and we found something really great in Top Ten. The activities are fun and interesting for the students, but also explicitly target needed skills. I’ve especially loved watching students at all levels building a deep conceptual understanding of key maths ideas, which they can easily transfer to subsequent tasks. Best of all, the students are excited when they see maths on the timetable!” **Mr Steven Edwards, Numeracy Leading Teacher, Mill Park PS**

About us

- **Top Ten was founded and is entirely owned by Australian primary school teachers, not programmers or IT graduates. All units were created, then tried-and-tested in Australian classrooms for over ten years (2010 to present).**
- **Our program is dedicated to bringing the power and joy of materials-based mathematics to life in every Australian classroom and to make engaging, high-impact mathematics instruction achievable for every Australian teacher.**

How Top Ten is different to other approaches to numeracy instruction

- Top Ten teaches maths using a hands-on approach, not worksheets or click-answer technologies. We take primary maths back to its origins – back to materials.
- While we often use technology (YouTube clips, interactive games, links to students' interests) as engaging hooks to tune-in students, the critical mathematical skills are established through explicit teacher modelling (fishbowls with materials) and with students using manipulatives to develop conceptions and efficient strategies.
- All units are developmentally-sequenced, taking teachers and students on a journey through the big ideas of mathematics.
- Top Ten diagnostic assessments are paper-based, focusing on strategies, not just answers. These then pinpoint developmental gaps using spreadsheets that calculate points-of-need, gaps, growth and value-add before and after each unit. Formative assessments are also built into the units.
- While all lessons and units are developmentally-sequenced and directly aligned to all Australian's states curriculum/syllabus, our units go beyond what to teach and support teachers on a day-by-day basis with how to teach.

Hands-on Maths Pack inclusions

To maximise each teacher's time, our sequential units and explicit teaching tasks include:

- **Photographs of numeracy leaders' classroom modelling, lessons in action in real classrooms and detailed student work samples.**
- **Warm-ups and engaging hooks.**
- **Sequential learning intentions and relevant maths vocabulary for every session.**
- **Pre-planned enabling and extending prompts to cater for the wide range of abilities that exists in any classroom, with extension and support built into every rich task.**
- **Diagnostic and formative assessments that pinpoint points-of-need, developmental gaps, calculate growth and track impact for targeted teaching.**

Thank you for your time!

More information and sample packs: www.toptenresources.com, [Early Years Planning Package](#) and [New Years 3-6 Planning Package](#)

Enquiries or questions: maths@toptenresources.com