Stage 6 Mathematics Life Skills

## Number games and activities for distributed practice

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All outcomes referred to in this unit come from the [Stage 6 Mathematics Life Skills Syllabus](https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/stage-6-learning-areas/stage-6-mathematics/mathematics-life-skills-2017)
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## How to use this resource

The games and activities in this resource are designed to be used for distributed practice to build number knowledge. Teachers are encouraged to build routines that use them to regularly begin or end lessons to provide engaging and meaningful distributed practice to build number knowledge. Activities will also include suggestions about how the task could be used to complement the learning in the other topics of Stage 6 Mathematics Life Skills.

## Games and activities

### Dicey addition

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * match place value to the digits of an integer
* compare and order numbers Critical and creative thinking icon
* recognise, read and record numbers and interpret numerical information in various contexts
 | Lesson starter – distributed practiceStudents play [dicey addition:](https://sites.google.com/education.nsw.gov.au/mathematics-life-skills/n1-3-number-problems/dicey-addition)* Find a partner and a 0-9 dice or spinner​
* Draw your game board so you each have the same one​
* Each player takes a turn to spin the spinner and decide where to play that digit in the number sentence​
* Spin the spinner 9 times each​
* The person whose result is closest to the chosen number is the winner!
 |  |  |

### Factors fun

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * recognise factors and multiples of numbers
 | Lesson starter – distributed practiceStudents play [factors fun](https://sites.google.com/education.nsw.gov.au/get-mathematical-stage-3/contexts-for-practise/factors-fun)* Get your game board, spinner, recording sheet, counters, and pencils ready.
* Take it in turns to spin the spinner and divide the number by the chosen divisor (for example, 5).
* Players work out the solution and explain their thinking to their partner.
* The partner records their thinking and if they agree, the player is able to place one of their counters on the number on the game board, claiming that place.
* If the number is taken, students miss a turn.
* If there are no new counters that can be added to the game board, players have to move an existing counter to a new place.
* Players win by getting four counters in a row (in any orientation, or a square).
* If preferred, students can use 5 or 6 counters, looking for 4 in a row.
 |  |  |

### Mastermind

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * match place value to the digits of an integer
* compare and order numbers Critical and creative thinking icon
* recognise, read and record numbers and interpret numerical information in various contexts
 | Lesson starter – distributed practiceStudents play [Mastermind](https://sites.google.com/education.nsw.gov.au/get-mathematical-stage-3/contexts-for-practise/mastermind). To play the game, students will need a pencil and workbook. * Each player writes down a 3-digit number (with no repeating digits)
* Each player draws up their game board (a table with 3 columns: 'guess', 'digits', 'places'
* Players take turns to guess a 3-digit number
* Their opponent tells them how many digits are correct and how many are in the correct place
* Players record their guess, the number of digits that are correct and the number of digits that are in the right place. Players then use this information to refine their guesses.
* The first player to correctly guess their opponent’s number is the winner!
* Players can choose to play using 2-digit numbers through to 5-digit numbers.

**Related topic:** MLS-S2 Probability. Students are using probability to refine their guesses, whilst practising recognising reading and recording numbers. It is suggested that this concept is explored with in the MLS-S2 unit of learning.  |  |  |

### Multiple madness

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * recognise factors and multiples of numbers
 | Lesson starter – distributed practiceStudents play [multiple madness](https://sites.google.com/education.nsw.gov.au/get-mathematical-stage-2/contexts-for-practise/multiples-madness-fives)* Players take turns to roll the dice or spin the spinner and multiply the number selected (for example 6) by the number rolled and work out the product, explaining their thinking to their partner.
* Their partner records their thinking and if they agree, the first player is able to place one of their counters on the number on the game board, claiming that place.
* If the number is taken, players miss a turn.
* A player wins by getting three counters in a row (in any orientation).
* Since players only have 5 counters, they will need to choose which counter to move once all 5 have been placed on the game board.
 |  |  |

### Multiplication toss

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * recognise factors and multiples of numbers
 | Lesson starter – distributed practiceStudents play [multiplication toss](https://sites.google.com/education.nsw.gov.au/get-mathematical-stage-3/contexts-for-practise/multiplication-toss-part-2). To play the game, students will need a 10 x 10 grid and a spinner. Students:* take turns to spin the spinner twice
* If a 3 and 6 are spun, players can enclose either a block out of 3 rows of 6 (3 sixes) or 6 rows of 3 (6 threes).
* The game continues with no overlapping areas.
* The winner is the player with the largest area blocked out after 10 spins.
* Eventually the space on the grid paper gets really small. Then, you have to think: What if my 3 sixes won’t fit as 3 sixes or as 6 threes?
* Players can partition to help them! So, for example, I can rename 3 sixes as 2 sixes and 1 six (if that helps me fit the block into my game board).

**Related topic:** MLS-M2 Measuring 2D and 3D shapes. Students recognise the relationship between length and width and the number of grid squares in the rows and columns of a square or rectangle. It is suggested that this game is used with the MLS-M2 unit of learning.  |  |  |

### Multo

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * recognise factors and multiples of numbers
 | Lesson starter – distributed practiceStudents play [multo](https://www.maths300.com/lessons/sample/4). * To play the game, students will need a 4 x 4 grid and a spinner. The game is similar to bingo but uses number facts.

**Related topic:** MLS-S2 Probability. Students are using probability to refine their boards, whilst practising recognising reading and recording numbers. It is suggested that this concept is explored with in the MLS-S2 unit of learning. |  |  |

### Number busting!

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * identify which digit is in a given place value for a number, for example:
* identify how many hundreds there are in 523
* match place value to the digits of an integer
* recognise, read and record numbers and interpret numerical information in various contexts
* compare and order numbers Critical and creative thinking icon
 | Lesson starter – distributed practiceStudents play [[number busting](https://sites.google.com/education.nsw.gov.au/get-mathematical-stage-1/contexts-for-practise/number-busting)](https://sites.google.com/education.nsw.gov.au/get-mathematical-stage-3/contexts-for-practise/hit-it) To play the game, students will need 2 markers, some paper and a 0-9 dice. **Instructions:*** Draw up a game board.
* Select a multiple of one hundred between 100 and 900 to be the target number.
* The person with the most letters in their surname goes first.
* Take it in turns to roll the dice and use the digit somewhere in your number.
* Once the digits are full, players read their number and determine how far they are away from the target number. The player who is closest to the target number wins a point.
* The player with the most points after 3 rounds is declared the winner.
 |  |  |

### Which one doesn’t belong?

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * recognise language related to number, for example:
* few
* more
* none
* all
* double
* third Literacy icon
* recognise factors and multiples of numbers
 | Lesson starter – distributed practiceUsing number properties to compare numbers:* Teachers may like to view and recreate the introduction activity, [which one doesn’t belong?](https://education.abc.net.au/HOME#!/media/3538689/maths-years-3-4-with-ms-kirszman-partitioning-numbers-using-place-value-parts). This explores, place value, and both standard and non-standard partitioning.
* Use a [which one doesn’t belong?](https://sites.google.com/education.nsw.gov.au/get-mathematical-stage-3/targeted-teaching/which-one-doesnt-belong) activity to begin a lesson. You can find many other examples at <https://wodb.ca/numbers.html>

**Related topic:** MLS-M2 Measuring 2D and 3D shapes. There are Which one doesn’t belong? activities focused on shapes at <https://wodb.ca/shapes.html>. It is suggested that these games could be used with the MLS-M2 unit of learning.  |  |  |

### 101 and you’re out!

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * identify which digit is in a given place value for a number, for example:
* identify how many hundreds there are in 523
* match place value to the digits of an integer
* compare and order numbers Critical and creative thinking icon
 | Lesson starter – distributed practiceStudents play [101 and you're out](https://sites.google.com/education.nsw.gov.au/get-mathematical-stage-3/contexts-for-practise/101-and-youre-out). To play the game, students will need dice or numeral cards 1-6, pencils or marker. Students:* Make a game board by drawing a 6 x 4 table.
* Label the first column as ‘tens’, the second column as ‘ones’, the third column as number and forth column as total.
* Roll the dice and decide whether the number is representing ‘ones’ or ‘tens’. For example, if a 3 is rolled, you could use it as 3 ones (3) or 3 tens.
* Continue to play for 6 rolls.
* Once you write a number, you can’t change it.
* The winner is the player with the sum that is closest to 100 without going over!
* Students could also draw up 4 new game boards and using the same numbers rolled, use the game boards to get closer to 100 than in the first game.
 |  |  |

### 4 strikes and you’re out!

| **Content****Students learn to:** | **Suggested teaching strategies and resources** | **Differentiation and modifications**  | **Date and initial** |
| --- | --- | --- | --- |
| * identify which digit is in a given place value for a number, for example:
* identify how many hundreds there are in 523
* match place value to the digits of an integer
* compare and order numbers Critical and creative thinking icon
 | Lesson starter – distributed practiceStudents play 4 strikes and you’re out, from Marilyn Burns. To play the game, students will need pencils/pens and paper. Instructions:* Player 1 creates an equation. Then, share with your opponent the equation, with no numbers filled in. **e.g.**\_\_ x \_\_ +\_\_ = \_\_​
* Player 1 writes down digits 0-9.​
* The opponent/s choose a digit. ​
* If it is in the equation, player 1 records the digit in all appropriate places.​
* If it is incorrect, the digit is struck out.​
* Play continues until the equation is complete, or, the opponent/s receive 4 strikes.
 |  |  |