



Index of Mathematics and numeracy  
digital curriculum content

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## Introduction

This document is an index of **Mathematics and numeracy** digital curriculum content made available by The Learning Federation (TLF) to all schools in Australia and New Zealand.

The Mathematics and numeracy digital curriculum content, which has been created or licensed by TLF, supports and enhances students' understanding of key Mathematics concepts in a range of contexts for the P–12 years.

In this index, the curriculum content is grouped into the following Mathematics strands:

- Algebra
- Chance
- Data
- Measurement
- Number
- Space.

The **learning objects** are grouped in year levels. TLF-created learning objects are generally published in series and some learning objects within a series are aggregated into single learning objects. Aggregated learning objects are identified with the  symbol.

## Catalogues

Catalogues for each of the Mathematics and numeracy strands are available to download from TLF's website: [www.thelearningfederation.edu.au](http://www.thelearningfederation.edu.au).

These catalogues provide detailed descriptions of interactive learning and assessment objects, as well as many samples of digitised items licensed from TLF's partner institutions.



## Accessing and viewing the content





Government and non-government education authorities in each Australian state and territory and in New Zealand have responsibility for facilitating access to the pool of digital content. Full details about how to access the content, including the necessary technical and software requirements for viewing it, can be found on TLF's website.

[www.thelearningfederation.edu.au](http://www.thelearningfederation.edu.au)

## Algebra

**Learning objects**

Years	Learning object	TLF ID
	<b>Monster choir series (Years P–3)</b>	
2–3	Monster choir: look and listen	L494
0–1	Monster choir: making patterns	L1056
P–2	Monster choir: missing monsters	L1057
	<b>Musical number patterns series (Years 1–6)</b>	
2–3	Musical number patterns: music maker	L589
1–2	Musical number patterns: musical counter	L1063
3–4	Musical number patterns: musical times	L1065
3–4	Musical number patterns: odds and evens	L1064
5–6	Musical number patterns: the challenge	L1067
	<b>Balance the cups series (Years 2–4)</b>	
2–4	 Balance the cups	L5974
2–3	Balance the cups: use the rule 1	L5975
3–4	Balance the cups: use the rule 2	L5976
3–4	Balance the cups: use the rule 3	L5977
	<b>Balance the blobs (Years 3–6)</b>	
3–6	 Balance the blobs	L5978
3–4	Balance the blobs: find the rule 1	L5979
4–5	Balance the blobs: find the rule 2	L5980
5–6	Balance the blobs: find the rule 3	L5981
	<b>Hopper series (Years 3–6)</b>	
6	Hopper challenge: tenths	L1088
6	Hopper challenge: ultimate	L1090
6	Hopper challenge: whole numbers	L1087
5–6	Hopper: hundredths	L587
4–5	Hopper: tenths	L1085
5–6	Hopper: ultimate	L1086
3–4	Hopper: whole numbers	L1084
	<b>Squirt series (Years 4–8)</b>	
V	Squirt: three containers	L1990
6–8	Squirt: three containers: complex proportional relationships	L1996
6–8	Squirt: three containers: level 1	L1991
6–8	Squirt: three containers: level 2	L1992
2–4	Squirt: two containers	L1993
2–4	Squirt: two containers: level 1	L1994
2–4	Squirt: two containers: level 2	L1995
	<b>Bridge builder series (Years 5–9)</b>	
5–9	Bridge builder: complex pentagons	L1926
5–9	Bridge builder: complex squares	L1925
5–9	Bridge builder: quadrilaterals	L1924
5–9	Bridge builder: triangles 1	L1922
5–9	Bridge builder: triangles 2	L1923
	<b>Biscuit factory series (Years 5–9)</b>	
7–9	Biscuit factory: complex ratios	L2372
7–9	Biscuit factory: gear direction	L2283
7–9	Biscuit factory: gears	L2375
5–9	Biscuit factory: ratios	L2371
7–9	Biscuit factory: three-gear system	L2374
7–9	Biscuit factory: two-gear system	L2373





	<b>Circus towers series (Years 7–9)</b>	
7–9	Circus towers: rectangular prisms	L1938
7–9	Circus towers: square pyramids	L1939
7–9	Circus towers: square stacks	L1935
7–9	Circus towers: triangular prisms	L1937
7–9	Circus towers: triangular towers	L1936
	<b>Filling glasses series (Years 6–9)</b>	
6–9	Filling glasses: create the right glass	L761
6–9	Filling glasses: create the right graph	L760
6–9	Filling glasses: find the right glass	L1105
6–9	Filling glasses: find the right graph	L1106
6–9	Filling glasses: graphing and comparing	L759
	<b>Mobile phone plans series (Years 8–9)</b>	
8–9	Mobile phone plans: find the best deal 1	L762
8–9	Mobile phone plans: find the best deal 2	L763
8–9	Mobile phone plans: find the best deal 3	L1107
8–9	Mobile phone plans: one company	L1109
8–9	Mobile phone plans: peak and off-peak	L1108
8–9	Mobile phone plans: several companies	L1110
	<b>Triathlon series (Years 6–9)</b>	
8–9	Triathlon: distance-time graphs	L757
6–9	Triathlon: elite triathletes	L1103
8–9	Triathlon: the course	L1104
8–9	Triathlon: triathlete	L758
8–9	Triathlon: assessment	L8274
	<b>Lifting loads series (Years 8–9)</b>	
8–9	Lifting loads: adding pulleys	L4061
8–9	Lifting loads: challenge	L4063
8–9	Lifting loads: force	L4059
8–9	Lifting loads: pulling ropes	L4062
8–9	Lifting loads: reducing force	L4060
	<b>Trig radians series (Years 11–12)</b>	
11–12	 Trig radians	L7847
11–12	Trig radians: introduction	L7848
11–12	Trig radians: sine	L7849
11–12	Trig radians: cosine	L7850
11–12	Trig radians: tangent	L7851
11–12	Trig radians: sine tool	L9119
11–12	Trig radians: cosine tool	L9120
11–12	Trig radians: tangent tool	L9121
	<b>Trigonometry: assessment (Years 10–12)</b>	
10–12	Trigonometry: assessment	10–12
	<b>Differential calculus series (Years 11–12)</b>	
11–12	Differential calculus: linear graphs	L7819
11–12	Differential calculus: derivatives graphing tool	L7825
11–12	Differential calculus: non-linear graphs	L7820
11–12	 Differential calculus: linear and non-linear graphs	L7826
11–12	Differential calculus: the derivative	L7821
11–12	Differential calculus: power functions	L7822
11–12	 Differential calculus: derivatives and power functions	L7827
11–12	Differential calculus: cubic function	L7823
11–12	Differential calculus: quartic function	L7824
11–12	 Differential calculus: cubic and quartic functions	L7828

**Content from other sources**

	<b>Algebra manipulatives series (Years P–9)</b>	
P–3	Colour patterns	L3516
4–9	Attribute trains	L3551
4–9	Tower of Hanoi	L4158
6–9	Algebra balance scales [Windows version]	L3509
6–9	Algebra balance scales: negatives	L3510
6–9	Coin problem	L3514
7–9	Grapher	L3531
4–9	Function machine	L3527
	<b>Exploring Algebra series (Years 6–9)</b>	
6–9	Exploring algebra	L6552
7–9	Exploring the laws of exponents	L6549
	<b>Mathematics and the car: loan calculator (Years 9–12)</b>	
9–12	Mathematics and the car: loan calculator	L1449
	<b>EagleCat: cubic-G (Years 10–12)</b>	
10–12	EagleCat: cubic-G	L10088
	<b>EagleCat: trig-G (Year 12)</b>	
12	EagleCat: trig-G	L10089
	<b>EagleCat: linear graph (Years 8–11)</b>	
8–11	EagleCat: linear graph	L10090
	<b>EagleCat: parabola (Years 9–12)</b>	
9–12	EagleCat: parabola	L10095

## Chance









**Learning objects**

Years	Learning object	TLF ID
	<b>Spinners series (Years P–6)</b>	
3–4	Spinners: basic builder	L2376
3–6	Spinners: advanced builder	L2377
P–1	Spinners: predict and test	L2378
1–2	Spinners: spin and label	L2379
2–3	Spinners: explore	L2380
4–5	Spinners: match up	L2381
3–6	Spinners: assessment	L8277
	<b>The slushy sludger series (Years 2–4)</b>	
2–4	The slushy sludger: questions	L115
2–4	The slushy sludger: best guess	L116
2–4	The slushy sludger: go figure	L117
	<b>The vile vendor series (Years 4–6)</b>	
4–6	The vile vendor: questions	L118
4–6	The vile vendor: go figure	L211
4–6	The vile vendor: best guess	L168
4–6	 The vile vendor	L226
	<b>Mystery spinner series (Years 5–6)</b>	
5–6	Mystery spinner: challenge	L2384
5–6	Mystery spinner: match the graph	L2383
5–6	 Mystery spinner	L2382
	<b>The foul food maker series (Years 5–7)</b>	
5–7	The foul food maker: questions 1	L212
5–7	The foul food maker: questions 2	L213
5–7	The foul food maker: best guess	L214
5–7	The foul food maker: go figure	L215
5–7	 The foul food maker	L227
	<b>Dice duels series (Years 6–9)</b>	
6–9	Dice duels: go-kart race	L2634
6–9	Dice duels: fair or unfair?	L2635
6–9	Dice duels: uneven distribution	L2636
6–9	Dice duels: bike race	L2637
6–9	Dice duels: lucky 16 game	L2639
6–9	Dice duels: airport addition	L2323
6–9	Dice duels: airport subtraction	L2640
6–9	 Dice duels	L2641
6–9	Dice duels: load one dice	L3671
6–9	Dice duels: load a pair of dice	L3672
6–9	Dice duels: find the bias	L3673
6–9	Dice duels: tool	L2645
	<b>Random or not series (Years 6–9)</b>	
6–9	Random or not: explore numbers of jubes (1:1:1)	L2392
6–9	Random or not: explore numbers of jubes (1:1)	L3653
6–9	Random or not: explore numbers of jubes (2:1)	L3654
6–9	Random or not: explore runs of jubes (1:1:1)	L3658
6–9	Random or not: explore runs of jubes (1:1)	L3659
6–9	Random or not: explore runs of jubes (2:1)	L3660
6–9	Random or not: explore alternating jubes (2:1)	L3661
6–9	Random or not: explore alternating jubes (1:1)	L3662


6–9	Random or not: analyse numbers of jubes (1:1:1)	L3655
6–9	Random or not: analyse numbers of jubes (1:1)	L3656
6–9	Random or not: analyse numbers of jubes (2:1)	L3657
6–9	Random or not: analyse runs of jubes (1:1:1)	L3663
6–9	Random or not: analyse runs of jubes (1:1)	L3664
6–9	Random or not: analyse runs of jubes (2:1)	L3665
6–9	Random or not: analyse alternating jubes (2:1)	L3666
6–9	Random or not: analyse alternating jubes (1:1)	L3667
6–9	Random or not: open investigations	L3668
<b>Content from other sources</b>		
<b>Assessment items (Years 5–8)</b>		
5–9	Tennis tournament: assessment	L8492
7–8	Red balls: assessment	L8865
7–8	Snakes and spinners: assessment	L8868
<b>Exploring probability (Years 6–9)</b>		
6–9	Exploring probability	L6567
<b>Chance manipulatives series (Years 5–12)</b>		
5–9	Hamlet happens	L3532
5–12	Coin tossing	L3515
<b>EagleCat: scatter (Years 11–12)</b>		
11–12	EagleCat: scatter	L10087

## Data


**Learning objects**

Years	Learning object	TLF ID
	<b>Scatter plots series (Years 5–9)</b>	
5–9	Scatter plots: about scatter plots	L5858
5–9	Scatter plots: height and bellybutton height	L5859
5–9	Scatter plots: age and reaction time	L5860
5–9	Scatterplots: foot length and hand span	L5861
5–9	Scatterplots: create your own data	L5862
5–9	 Scatterplots	L5857
	<b>Matchbox machine series* (Years 5–9)</b>	
5–8	Matchbox machine: take a sample	L2338
5–8	Matchbox machine: plot the variation	L2339
6–9	 Matchbox machine	L2340
5–8	*Matchbox machine: varying scoop size and speed	L2343
5–8	*Matchbox machine: varying scoop size	L2336
6–9	*Matchbox machine: varying speed	L2337
	<b>Fix the matchbox machine series (Years 5–9)</b>	
6–9	Fix the matchbox machine: scoop size and speed	L2343
6–9	Fix the matchbox machine: scoop size	L2336
6–9	Fix the matchbox machine: speed	L2337
	<b>Rice crisp machine series (Years 5–9)</b>	
5–8	Rice crisp machine: take a sample	L2342
5–8	Rice crisp machine: plot the variation	L3192
6–9	 Rice crisp machine	L2341
	<b>Leisure survey series (Years 6–9)</b>	
6–9	Leisure survey: team sport	L3155
6–9	Leisure survey: popular sports	L3156
6–9	Leisure survey: artistic activities	L3157
6–9	 Leisure survey	L3154
	<b>Healthy life survey series (Years 6–9)</b>	
6–9	Healthy life survey: bringing lunch to school	L3159
6–9	Healthy life survey: staying active	L3160
6–9	Healthy life survey: lunchtime activities	L3161
6–9	 Healthy life survey	L3158
	<b>Home internet survey series (Years 6–9)</b>	
6–9	Home internet survey: who?	L3151
6–9	Home internet survey: what?	L3152
6–9	Home internet survey: where?	L3153
6–9	 Home internet survey	L3150
	<b>Media report series (Years 6–9)</b>	
6–9	Media report: junk food	L2625
6–9	Media report: music	L2626
6–9	Media report: cost of petrol	L2627
6–9	 Media report 1	L2393
6–9	Media report: future plans	L2629
6–9	Media report: starting salaries	L2630
6–9	Media report: water usage	L2631
6–9	 Media report 2	L2628
	<b>Skateboard survey (Years 6–9)</b>	
6–9	Skateboard survey	L2394


**Graph investigator series (Years 7–9)**

7–9	 Graph investigator	L5903
7–9	Graph investigator: concentration	L5908
7–9	Graph investigator: getting to school	L5907
7–9	Graph investigator: hand preference	L5906
7–9	Graph investigator: home Internet access	L5910
7–9	Graph investigator: homework hours	L5909
7–9	Graph investigator: reaction time	L5905
7–9	Graph investigator: types of graphs	L5904

**Stem-and-leaf graphs series (Years 7–9)**

7–9	 Stem-and-leaf graphs	L5911
7–9	Stem-and-leaf graphs: an introduction	L5912
7–9	Stem-and-leaf graphs: height	L5914
7–9	Stem-and-leaf graphs: preferred hand speed	L5915
7–9	Stem-and-leaf graphs: reaction time	L5913

**Data handler series (Years 5–9)**

6–9	Data handler: bus handler	L8239
6–9	Data handler: sock order	L8238
6–9	Data handler: T shirt order	L8237
6–9	 Data handler	L5988

**Content from other sources****Data manipulatives series (Years 2–12)**

2–9	Pie chart	L3541
3–9	Spinners	L3546
6–9	Bar chart	L3512
6–9	Box plot/Histogram	L3513
9–12	Scatterplot	L3544

**Exploring data series (Years 6–9)**

6–9	Exploring graphs	L6563
6–9	Exploring measures of central tendency	L6564

**Graphing (Years 9–12)**




9–12	Graphing: the line of best fit	L1430
9–12	Graphing: pie graphs and column graphs	L1428


**EagleCat: scatter (Years 11–12)**

11–12	EagleCat: scatter	L10087
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## Measurement





### Learning objects




Years	Learning object	TLF ID
	<b>School day series (Years P–2)</b>	
P–1	School day: analogue	L7789
P–1	School day: 12-hour digital	L7790
2	School day: 24-hour digital	L7797
	<b>Area concept series (Years P–4)</b>	
P–2	Finding the area of rectangles	L384
2–4	Finding the area of compound shapes	L383
P–4	 Area Counting with Coco	L139
	<b>Wake up, Pup series (Year 1–2)</b>	
1–2	Wake up, Pup: analogue	L7791
1–2	Wake up, Pup: analogue and digital	L7792
	<b>After school series (Year 2)</b>	
2	After school: analogue and digital	L7796
2	After school: analogue	L7795
	<b>Rice paper rolls series (Year 2)</b>	
2	Rice paper rolls: analogue	L7793
2	Rice paper rolls: analogue and digital	
	<b>Cubirocks (Years 2–4)</b>	
2–4	Cubirocks galore	L161
2–4	Cubirocks are measured	L162
2–4	Cubirocks go!	L160
	<b>Area of triangles series (Years 6–9)</b>	
6–9	 Area of triangles	L145
6–9	Area of triangles: height intersects with the base inside the triangle	L355
6–9	Area of triangles: height intersects with the base outside the triangle	L356
6–9	Area of triangles: triangles with a right angle	L354
6–9	Area of triangles: triangles without vertical or horizontal sides	L357
6–8	Area of triangles: assessment	L8273
	<b>Area of compound shapes series (Years 6–9)</b>	
6–9	Compound shapes: small shapes	L150
6–9	Compound shapes: medium-sized shapes	L151
6–9	Compound shapes: large shapes	L152
6–9	 Compound shapes	L153
	<b>The Metrix series (Years 7–8)</b>	
7–8	The Metrix: new planet	L8146
	<b>Measures series (Years 7–9)</b>	
7–9	Measures: similar shapes	L2309
7–9	Measures: scaling up	L2310
7–9	Measures: scaling down	L2311
7–9	Measures: similar solids	L2312
7–9	Measures: scaling up solids	L2313
7–9	Measures: scaling down solids	L2314
7–9	Measures: scaling surface area	L2315
7–9	Measures: volumes	L2316
	<b>Inside cubes series (Years 5–9)</b>	
5–8	How big is a cubic metre?	L163
5–8	Inside a cubic metre	L164
5–8	What's in a cube?: level 1	L165
5–8	What's in a cube?: level 2	L166


7–9	Working it out!	L167
	<b>Trigonometry series (Years 7–9)</b>	
7–9	Trigonometry: measuring with triangles	L2326
7–9	Trigonometry: similar triangles	L2327
7–9	Trigonometry: cosine	L2328
7–9	Trigonometry: sine	L2329
7–9	Trigonometry: tangent	L2330
7–9	Trigonometry: using sine	L2332
7–9	Trigonometry: using cosine	L2333
7–9	Trigonometry: using tangent	L2331
7–9	Trigonometry: finding the hypotenuse	L2334
7–9	Trigonometry: finding angles	L2335
	<b>Trigonometry: assessment (Years 10–12)</b>	
10–12	Trigonometry: assessment	L9180
	<b>Trig degrees series (Years 11–12)</b>	
11–12	Trig degrees: sine tool	L9113
11–12	Trig degrees: cosine tool	L9114
11–12	Trig degrees: tangent tool	L9115
11–12	Trig degrees: sine to 360	L7844
11–12	Trig degrees: cosine to 360	L7845
11–12	Trig degrees: tangent to 360	L7846
11–12	Trig degrees: sine to 360: demo	L9116
11–12	Trig degrees: cosine to 360: demo	L9117
11–12	Trig degrees: tangent to 360: demo	L9118
11–12	 Trig degrees	L7843
	<b>Content from other sources</b>	
	<b>Exploring measurement series (Years 6–10)</b>	
6–9	Exploring ratios and proportions	L6546
6–9	Exploring area and perimeter	L6557
6–9	Exploring triangles	L6558
7–9	Exploring square roots	L6547
7–9	Exploring the Pythagorean theorem	L6559
8–10	Exploring trigonometry	L6561
	<b>Time manipulatives series (Years P–10)</b>	
P–6	Time: analogue and digital clocks	L3548
P–6	Time: match clocks	L3549
P–6	Time: what time will it be?	L3550
	<b>Volume manipulative series (Years 4–9)</b>	
4–9	How high?	L3534
	<b>EagleCat: rotasym (Years 6–9)</b>	
6–9	EagleCat: rotasym	L10086
	<b>EagleCat: scale it (Years 7–10)</b>	
7–10	EagleCat: scale it	L10091
	<b>EagleCat: spin graph (Years 5–12)</b>	
5–12	EagleCat: spin graph	L10092
	<b>EagleCat: motion graphs (Year 10)</b>	
10	EagleCat: motion graphs	L10093
	<b>EagleCat: bearings (Year 7)</b>	
7	EagleCat: bearings	L10094
	<b>EagleCat: trig-G (Year 12)</b>	
12	EagleCat: trig-G	L10089





## Number

### Learning objects

Years	Learning object	TLF ID
<b>Number – exploring numbers</b>		
<b>Number trains series (Years P–5)</b>		
P–1	Number trains: numbers 1–10	L2318
P–1	Number trains: numbers 1–20	L2319
1–2	Number trains: numbers 30–50	L2320
1–2	Number trains: numbers 90–120	L2321
1–3	Number trains: skip counting	L2322
P–3	 Number trains	L2317
3–5	Number trains: patterns: assessment	L8275
3–5	Number trains: counting on: assessment	L8276
3–5	Number trains: counting on: assessment	L8276
<b>Scale matters series (Years P–8)</b>		
P–2	Scale matters: ones	L2003
2–4	Scale matters: tens	L2004
2–4	Scale matters: hundreds	L2005
4–6	Scale matters: tens of thousands	L1999
P–4	Scale matters: simple units	L2002
4–6	Scale matters: tenths	L1998
6–8	Scale matters: hundredths	L2000
6–8	Scale matters: negatives	L2001
4–8	 Scale matters: range of numbers	L1997
7–8	Scale matters: all numbers: assessment	L8629
5–7	Scale matters: decimal numbers: assessment	L8630
1–4	Scale matters: whole numbers: assessment	L8631
<b>What's the problem series (Years 3–6)</b>		
3–4	What's the problem: nature: level 1	L8154
3–4	What's the problem: planets: level 1	L8155
3–4	What's the problem: sports: level 1	L8156
5–6	What's the problem: nature: level 2	L8157
5–6	What's the problem: planets: level 2	L8158
<b>Number – calculation</b>		
<b>Counting beetle (Years P–1)</b>		
P–1	 Counting beetles	L8280
P	Counting beetles: level 1	L8281
P–1	Counting beetles: level 2	L8282
1	Counting beetles: level 3	L8283
1–2	Counting beetles: making word problems	L8284
1–2	Counting beetles: solving word problems	L8285
<b>The number partner series (Years 2–4)</b>		
2–4	The number partner	L103
2–4	The number partner: go figure	L105
<b>The part-adder series (Years 3–6)</b>		
3–6	 The part-adder	L220
3–6	The part-adder: generate easy sums	L93
3–6	The part-adder: generate hard sums	L94
3–6	The part-adder: go figure	L96
3–6	The part-adder: make your own easy sums	L91
3–6	The part-adder: make your own hard sums	L92

	<b>The difference bar series (Years 3–6)</b>	
3–6	The difference bar: generate easy subtractions	L111
3–6	The difference bar: generate hard subtractions	L112
3–6	The difference bar: go figure	L114
3–6	The difference bar: make your own easy subtractions	L109
3–6	The difference bar: make your own hard subtractions	L110
3–6	 Difference bars	L224
	<b>The take-away bar series (Years 3–6)</b>	
3–6	The take-away bar: generate easy subtractions	L99
3–6	The take-away bar: generate hard subtractions	L100
3–6	The take-away bar: go figure	L102
3–6	The take-away bar: make your own easy subtractions	L97
3–6	The take-away bar: make your own hard subtractions	L98
3–6	 Take-away bars	L221
	<b>The array series (Years 2–4)</b>	
2–4	The array	L106
2–4	The array: go figure	L108
	<b>Pobble arrays series (Years 2–4)</b>	
2	Pobble arrays: find a factor	L2057
2–3	Pobble arrays: find two factors	L2058
3–4	Pobble arrays: make multiples	L2056
	<b>Arrays series (Years 3–5)</b>	
3–4	Arrays: factor families	L2059
4–5	Arrays: explore factors	L2060
4–5	Arrays: word problems with products from 10 to 30	L2054
4–5	Arrays: word problems with products from 30 to 50	L2055
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