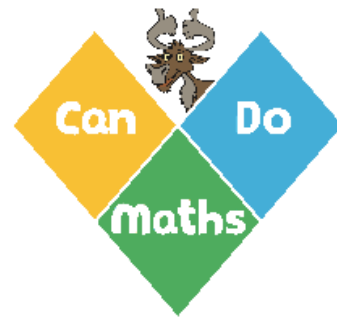


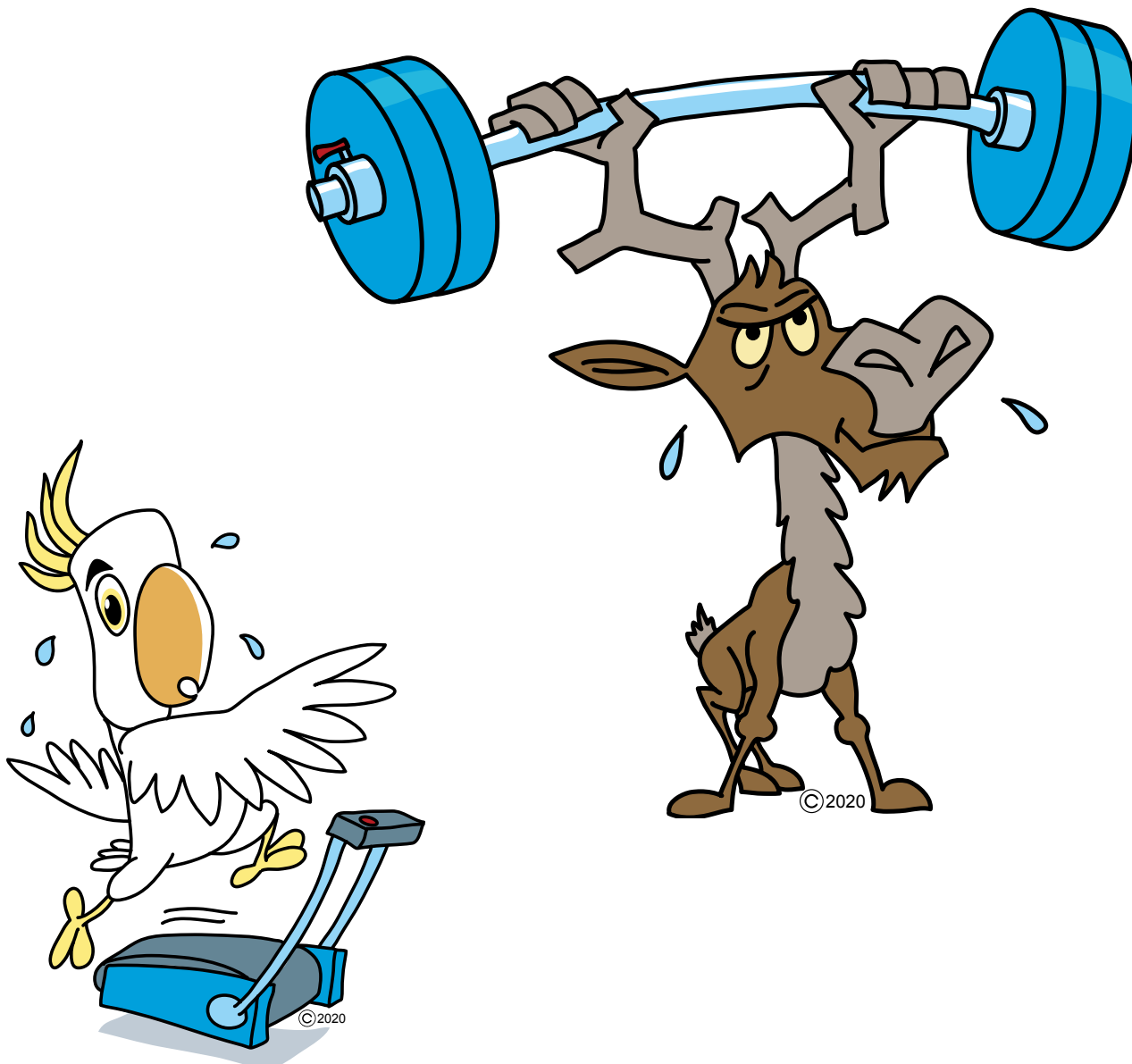


Colin and Coco's Deliberate Practice

Year 3 Unit 1

Number and Place Value

Answers





Contents

This pack of deliberate practice is designed to be used flexibly to secure the manageable steps of this unit.

The table below indicates which activities are linked to which manageable steps.

	Do It	Challenge It	Play It
Represent 3-digit numbers	1	1	
Recognise the value of digits in 3-digit numbers	1		1
Partition 3-digit numbers in different ways		2	2
Read 3-digit numbers in words and write using numerals	2		
Read 3-digit numbers in numerals and write in words	2		
Read 3-digit numbers in words and write using numerals including zero as a place holder	2		
Read 3-digit numbers in numerals and write in words, including zero as a place holder	2		
Identify 3-digit numbers on a number line	3		
Represent 3-digit numbers on a number line	3		
Count in steps of 50 and 100 from zero		3	3
Count up in steps of 10 from any 2 or 3-digit number	4	4	4, 5
Count back in steps of 10 from any 3-digit number	4	4	4, 5
Count up in steps of 100 from any 2 or 3-digit number	5	5	5
Count back in steps of 100 from any 3-digit number	5	5	5
Find 10 more than a given number	6, 10	6	
Find 10 less than a given number	6, 10	6, 10	
Find 100 more than a given number	10	10	6
Find 100 less than a given number	7, 10		7
Compare any two 3-digit numbers	7	7	
Order 3-digit numbers with different hundreds	8	8	8
Order 3-digit numbers with the same hundreds	8	8	8
Order 3-digit numbers	8	8	8
Find tenths of whole numbers and express as fractions and decimals		9	
Count up in tenths and position them on a number line	9		9
Count down in tenths and position them on a number line	9		9



Do It 1

What are the numbers?

What is the value of the underlined digit?

100s	10s	1s	
			112
			243
			154
			208
			350
			104

431

thirty or three tens

628

six hundreds

709

nine ones

350

three hundreds

604

zero tens

251

two hundreds

317

one ten

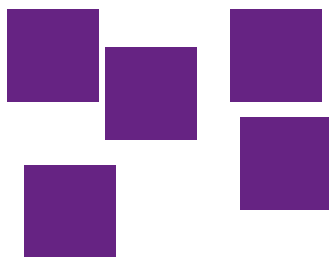
562

two ones

Challenge It 1

There are some piles of Base Ten.

There is a pile of five hundreds, a pile of five tens and a pile of eight ones.



Make all the possible numbers using an odd number of hundreds, no tens and an even number of ones. (You must use some ones each time!)

502, 504, 506, 508, 302, 304, 306, 308, 102, 104, 106, 108,

Make all the possible 3-digit numbers using an even number of hundreds and an odd number of tens.

210, 230, 250, 410, 430, 450,



Digits Game

Play It 1

You need:

Pencil and paper each

To play:

Each player writes three 3-digit numbers using the digits 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each, without showing their opponent.

Take it in turns to choose a column and number to request from your opponent's numbers.

Player 1: "Can I have the hundreds digit from your second number please?"

Player 2: "My second number has three hundreds so you score 3"

Player 2: "Can I have the tens digit from your first number please?"

Player 1: "My first number has fifty, so you score 5"

Have three goes each, then add your three digits together. The player with the largest total scores a point.

Write three new numbers and play again.

To win:

The winner is the first player to score 5 points.



Do It 2

Write these using numerals.

six hundred and forty-two

642

one hundred and fifty-six

156

nine hundred and thirty-one

931

two hundred and sixty

260

three hundred and ten

310

four hundred and eight

408

seven hundred and thirteen

713

five hundred and one

501

Write these numbers in words.

342

three hundred and forty-two

557

five hundred and fifty-seven

938

nine hundred and thirty-eight

870

eight hundred and seventy

150

one hundred and fifty

209

two hundred and nine

612

six hundred and twelve

702

seven hundred and two

Challenge It 2

Start with the number 467

Partition it in six different ways.

possible solutions:

3

hundreds

16

tens

7

ones

2

25

17

Start with the number 542

Partition it in six different ways.

possible solutions:

5

hundreds

4

tens

2

ones

2

33

12



Parts of a number game

Play It 2

You need:

1-6 dice

Pencil and paper each

Base Ten resources (optional)

To play:

Agree a target between 200 and 400 e.g. 345

Throw the dice to get 5 digits each. e.g. 2, 6, 4, 1, 1

Use the digits to write a number of hundreds, tens and ones to make the parts of a number that is as close to the target as possible. You do not have to use all your digits but you cannot use the same one twice.

Score 2 points if you make the target exactly.

If neither player makes the target the closest player scores 1 point.

For example:

Target number 343

Player 1: Digits thrown 2, 6, 4, 1, 1

Parts of the number: 2 hundreds, 14 tens, 1 one make 341

Player 2: Digits thrown 2, 3, 4, 1, 2

Parts of the number: 3 hundreds, 2 tens, 24 ones make 344

Player 2 is closer so scores 1 point.

Choose a new target and play again.

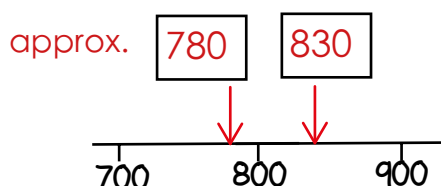
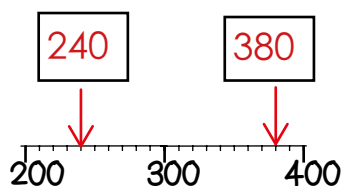
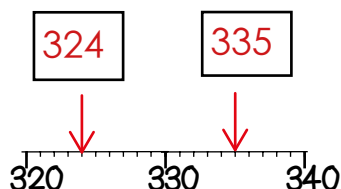
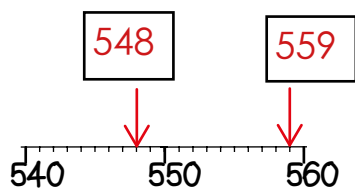
To win:

The winner is the first player to score 5 points.



Do It 3

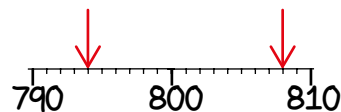
What numbers are the arrows pointing to?



Represent these numbers on the lines.

a. 794

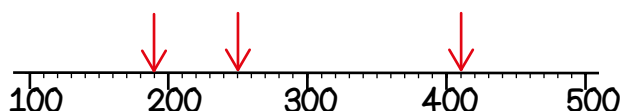
b. 808



c. 190

d. 250

e. 410



f. 250

g. 320

h. 490



Challenge It 3

You must count in steps of 50 or 100 for both parts of this challenge.

Take 8 steps from zero.

Where might you finish your steps?

Find all the possible finishing numbers.

800, 750, 700, 650, 600, 550, 500, 450, 400

Finish on 600

Find all the possible combinations of steps you can take from zero.

6 steps of 100
5 steps of 100, 2 steps of 50
4 steps of 100, 4 steps of 50
3 steps of 100, 6 steps of 50
2 steps of 100, 8 steps of 50
1 step of 100, 10 steps of 50
12 steps of 50



Steps of 50 and 100 Game

Play It 3

You need:

0 - 9 cards or dice

To play:

Take it in turns to throw the dice to get three numbers. (If you throw 0, then throw again.) These are the number of steps you must take.

You must take steps of 50 and/or 100 up and /or down the number line.

You must start at zero. You are aiming to land on the target of 450

For example:

Player 1: throws 4, 7 and 9

7 steps up of 100 to land on 700

9 steps back of 50 to land on 250

4 steps up of 50 to land on 450

Score 2 points for landing exactly on 450

If neither player lands on the target the closest player scores 1 point.

Players may want to use a landmarked number line to support their explanations.

After playing to a target of 450 several times, change the target to a different multiple of 50

To win:

The winner is the first player to score 5 points.



Do It 4

Count up four steps of ten from:

340

350, 360, 370, 380

150

160, 170, 180, 190

270

280, 290, 300, 310

680

690, 700, 710, 720

435

445, 455, 465, 475

376

386, 396, 406, 416

788

798, 808, 818, 828

89

99, 109, 119, 129

Count down four steps of ten from:

350

340, 330, 320, 310

230

220, 210, 200, 190

270

260, 250, 240, 230

608

598, 588, 578, 568

475

465, 455, 445, 435

316

306, 296, 286, 276

788

778, 768, 758, 748

109

99, 89, 79, 69

Challenge It 4

1. Start with the number 368

You must count up in steps of 10 or 1

You must take 5 steps.

Investigate the numbers you can finish on after carrying out 5 steps.

Possible solutions: 5 steps of ten - 418

3 steps of ten and 2 steps of 1 - 400

2. Start with the number 477

You must count up in steps of 10 or 1

You must take 7 steps.

Investigate the numbers you can finish on after carrying out 7 steps.

Possible solutions: 7 steps of 10 - 547

1 step of 10, 6 steps of 1 - 493

3. What if you count back?



Steps of 10 game

Play It 4

You need:

0 - 9 dice (or cards)

0 - 1000 blank or landmarked number line

To play:

Throw the dice to get 3 digits and make a 3-digit number.

Choose whether to count on three steps of ten from your number or count back three steps of ten. Do this aloud.

Now plot the number you end on on the number line.

For example:

Player 1: Digits thrown 2, 6, 9

Number created 692

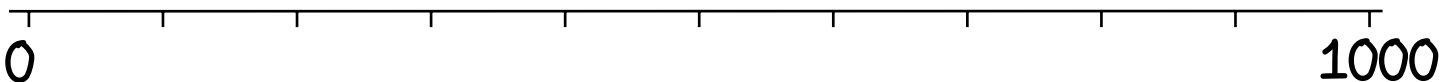
Count on three steps of 10 - 702, 712, 722

Plot 722 on the number line.

Now it is player 2's turn.

To win:

The winner is the first player to plot four of their points without any of their opponent's points in between.





Do It 5

Count up four steps of one hundred from:

340

440, 540, 640, 740

150

250, 350, 450, 550

270

370, 470, 570, 670

80

180, 280, 380, 480

435

535, 635, 735, 835

376

476, 576, 676, 776

588

688, 788, 888, 988

19

119, 219, 319, 419

Count down four steps of one hundred from:

640

540, 440, 340, 240

450

350, 250, 150, 50

870

770, 670, 570, 470

680

580, 480, 380, 280

935

835, 735, 635, 535

576

476, 376, 276, 176

788

688, 588, 488, 388

989

889, 789, 689, 589

Challenge It 5

Choose from the digits 4, 5 and 6 to make a 3-digit number.

Count on three steps of 100 from your number. List the numbers you say.

Count back three steps of 100 from your number. List the numbers you say.

Count back in 100s



Count up in 100s



for example: 156, 256, 356,

456

556, 656, 756

Make a different three digit number and repeat.

Do this for all the three digit numbers you can make.

What do you notice?



Steps of 1, 10 and 100 Game

Play It 5

You need:

0 - 9 cards or dice

To play:

Agree a 3-digit target number.

Take it in turns to throw the dice to get three digits and make a 3-digit number.

You must now take 6 steps to get as close to the target as possible.

Your steps can be of 1, 10 or 100 and can be any combination of counting up or counting back.

For example:

Target 387

Player 1: throws 1, 6 and 9 and makes 196

2 steps up of 100 to make 396

1 step back of 10 to make 386

2 steps up of 1 to make 388

1 step back of 1 to make 387

Score 2 points for landing exactly on the target.

If neither player lands on the target the closest player scores 1 point.

To win:

The winner is the first player to score 5 points.



Do It 6

Find ten more than each number.

260

270

176

186

398

408

450

460

385

395

197

207

670

680

208

218

696

706

830

840

590

600

791

801

Find ten less than each number.

260

250

176

166

308

298

450

440

385

375

107

97

670

660

200

190

606

596

830

820

500

490

701

691

Challenge It 6

Put digits in the empty boxes and make the statement true in several different ways.

$$\square\square\square + 10 = ?$$

What do you notice?

Make the statement true in several different ways.

$$\square\square\square - 10 = ?$$

What do you notice?



100 More game

Play It 6

You need:

0 - 9 dice (or cards)

0 - 1000 blank or landmarked number line

To play:

Throw the dice to get 3 digits and make a 3-digit number.

Find 100 more than your number and plot it on the number line.

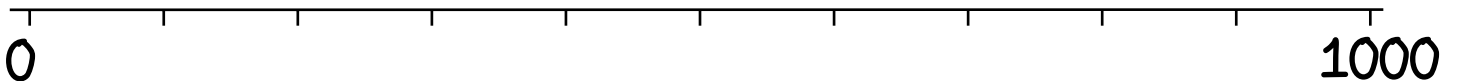
For example:

Player 1: Digits thrown 4, 2, 7
Number created 274
100 more than 274 is 374
Plot 374 on the number line.

Now it is player 2's turn.

To win:

The winner is the first player to plot four of their points without any of their opponents' points in between.





Do It 7

Find one hundred less than each number.

260

160

176

76

308

208

450

350

385

285

107

7

670

570

200

100

606

506

830

730

500

400

701

601

Insert < or >

900 > 800

420 < 520

926 > 921

130 < 180

838 > 636

719 > 717

600 > 500

301 > 201

694 > 691

108 < 109

715 > 625

559 < 560

Challenge It 7

Use the digits 4, 5 and 6 twice each to make the statement true.
Complete it in several different ways.

<

Use the digits 1 and 9 three times each to make the statement true.
Complete it in several different ways.

<



100 Less Game

Play It 7

You need:

0 - 9 dice (or cards)

0 - 1000 blank or landmarked number line

To play:

Throw the dice to get 3 digits and make a 3-digit number.

Find 100 less than your number and plot it on the number line.

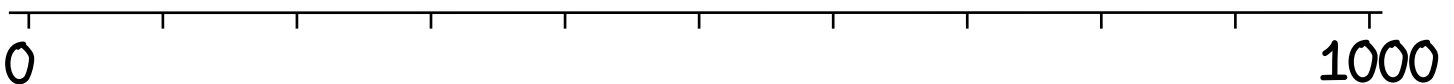
For example:

Player 1: Digits thrown 5, 1, 6
Number created 165
100 less than 165 is 65
Plot 65 on the number line.

Now it is player 2's turn.

To win:

The winner is the first player to plot four of their points without any of their opponent's points in between.





Do It 8

Put each set of numbers in order from largest to smallest.

313, 330, 301

330, 313, 301

707, 770, 717

770, 717, 707

281, 268, 218

281, 268, 218

555, 505, 550

555, 550, 505

Put each set of numbers in order from smallest to largest.

113, 90, 301

90, 113, 301

701, 709, 690

690, 701, 709

208, 280, 820

208, 280, 820

811, 810, 108

108, 810, 811

166, 262, 162

162, 166, 262

299, 209, 301

209, 299, 301

401, 104, 140

104, 140, 401

903, 319, 390

319, 390, 903

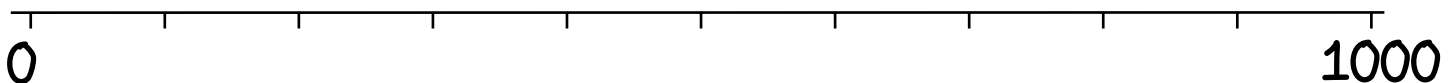
Challenge It 8

Using the digits 3, 6 and 8 once each time, make all the possible three-digit numbers.

Put them in order from smallest to largest.

368, 386, 638, 683, 836, 863

Plot them on a blank number line.



Repeat this with the digits 2, 5 and 7

257, 275, 527, 572, 725, 752



In Between Game

Play It 8

You need:

0 - 9 dice (or cards)

0 - 1000 blank or landmarked number line to explain thinking (optional)

To play:

Player 1 throws the dice to get 3 digits and makes a 3-digit number. This number cannot be changed.

Player 1 throws the dice again to get 3 digits and makes another 3-digit number.

Player 2 throws the dice to get 3 digits and tries to make a number that will go between player 1's numbers.

For example:

Player 1: Digits thrown 4, 2, 7
Number created 274
Digits thrown 5, 8, 0
Number created 508

Player 2: Digits thrown 6, 8, 3
Number created 386

Player 2 scores a point. If they cannot make a number that is between player 1's numbers they do not score a point.

Players swap roles.

To win:

The winner is the first player to score 5 points.



Count up in tenths for 4 steps from:

0.1 0.2, 0.3, 0.4, 0.5

0.4 0.5, 0.6, 0.7, 0.8

$\frac{6}{10}$ $\frac{7}{10}$ $\frac{8}{10}$ $\frac{9}{10}$ $\frac{10}{10}$

$\frac{3}{10}$ $\frac{4}{10}$ $\frac{5}{10}$ $\frac{6}{10}$ $\frac{7}{10}$

Count down in tenths for 4 steps from:

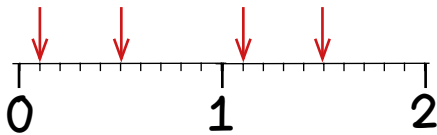
$\frac{5}{10}$ $\frac{4}{10}$ $\frac{3}{10}$ $\frac{2}{10}$ $\frac{1}{10}$

0.9 0.8, 0.7, 0.6, 0.5

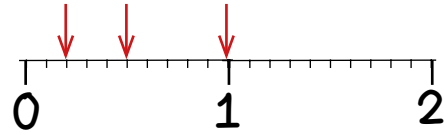
1.3 1.2, 1.1, 1.0, 0.9

$\frac{10}{10}$ $\frac{9}{10}$ $\frac{8}{10}$ $\frac{7}{10}$ $\frac{6}{10}$

Plot 0.1, 0.5, 1.1, 1.5 on the line.



Plot $\frac{2}{10}$, $\frac{5}{10}$, $\frac{10}{10}$ on the line.



Complete the tenths to an equivalent number or statement.
Find the missing buddies.

Challenge It 9

$\frac{2}{10}$		0.9
$\frac{5}{10}$		one tenth of 5
$\frac{9}{10}$		2 divided by 10
$\frac{1}{10}$		0.3
$\frac{7}{10}$		one tenth of 8
$\frac{3}{10}$		7 divided by 10
$\frac{8}{10}$		0.1



Tenths Game

Play It 9

You need:

1 - 6 dice (or cards)

0 - 2 number line marked in tenths

A counter.

To play:

The counter starts on 1 which is 10 tenths.

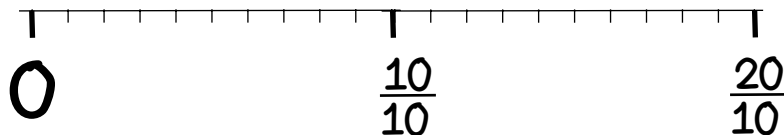
Every time player 1 moves the counter they move towards 0

Every time player 2 moves the counter they move towards 2

Take turns to throw the dice and count that number of tenths along the number line. Players must say the tenths they are landing on aloud as they count.

To win:

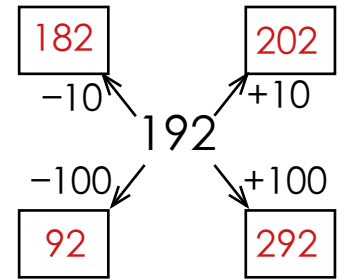
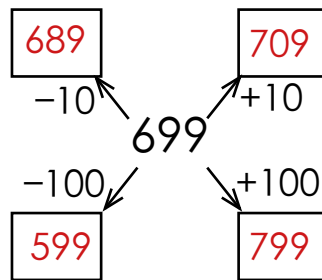
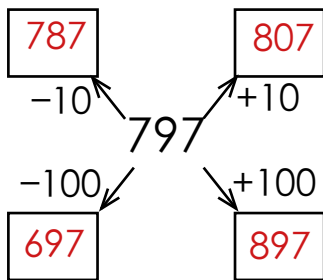
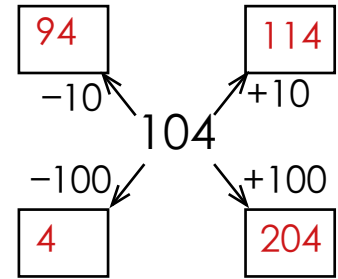
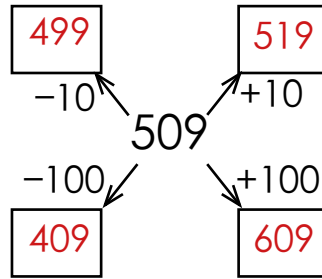
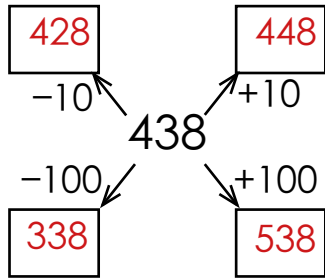
The first player to reach their end of the line wins.





Do It 10

Calculate and fill in the boxes.



Challenge It 10

Match numbers, so the first number is ten less than the middle number, and the last number is one hundred more than the middle number. Find the missing buddies.

Diagram showing three columns of numbers with arrows indicating relationships:

- Column 1 (Left): 250, 342, 96, 687, 801, 496, 455, 189
- Column 2 (Middle): 106, 465, 352, 697, 811, 260, 506, 199
- Column 3 (Right): 565, 797, 360, 206, 452, 299, 911, 606

Arrows indicate:

- 10 less (from middle to left): 106 to 96, 465 to 455, 352 to 342, 697 to 687, 811 to 801, 260 to 250, 506 to 496, 199 to 189.
- 100 more (from middle to right): 106 to 206, 465 to 565, 352 to 452, 697 to 797, 811 to 911, 260 to 360, 506 to 606, 199 to 299.



Plot It Game

Play It 10

You need:

0 - 1000 benchmarked number line (at the bottom of this page.)

0 - 9 dice (or cards)

To play:

Take it in turns to throw the dice three times and make a three-digit number. Choose which digit represents the hundreds, and which represents the tens and which represents the ones.

Plot your number on the number line, convincing your opponent that you are plotting it in the correct place.

Player 1: Digits thrown 3, 5 and 7
Number created 537
Plot 537 on the number line.

Then it is the next player's turn.

To win:

The winner is the first player to get 4 of their points plotted without any of their opponent's points in between.

