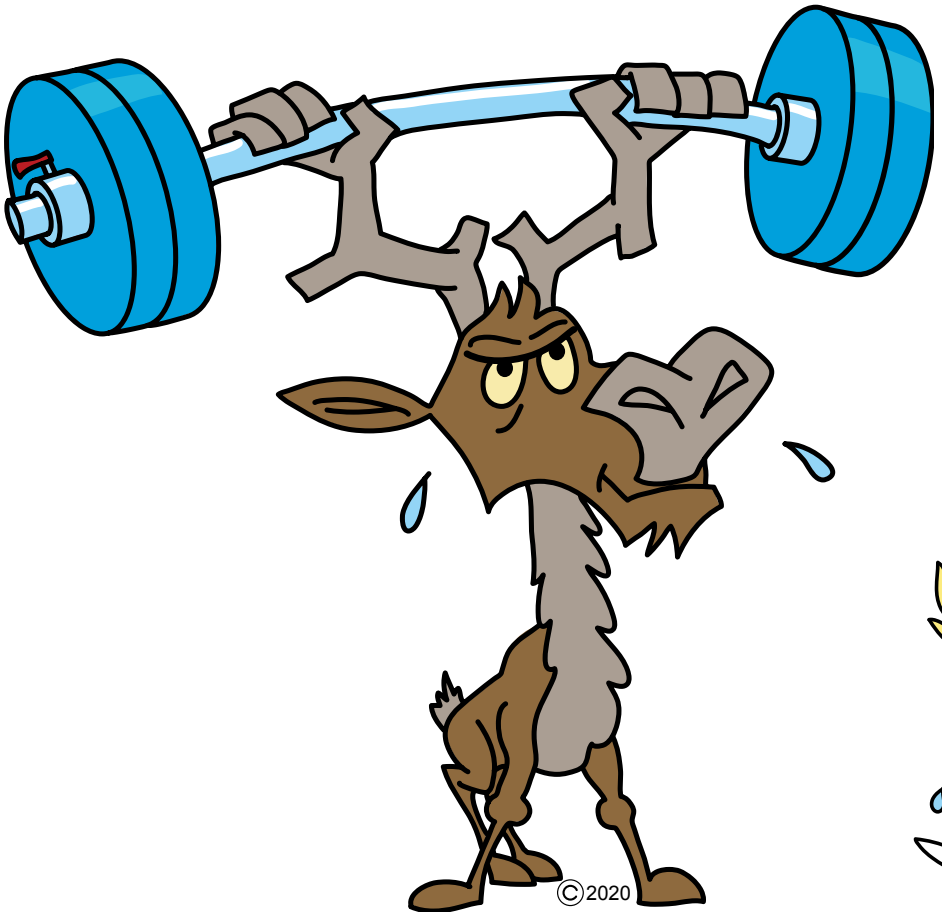
Colin and Coco's Daily Maths Workout

Workout 5.7

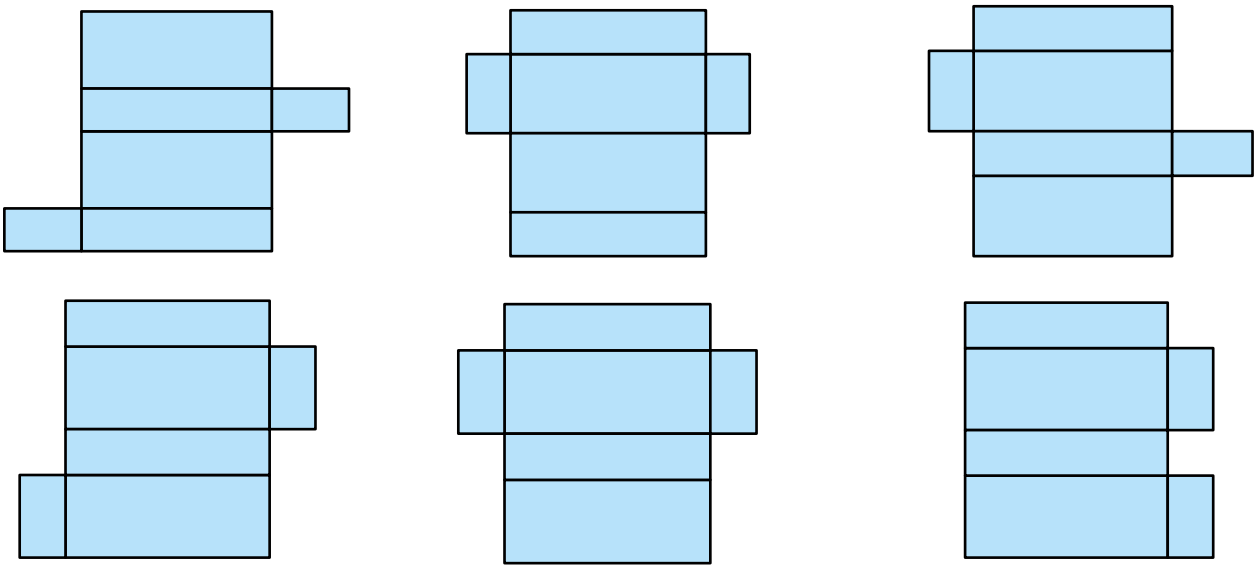
Properties of Shapes



Shape Workout

Workout A

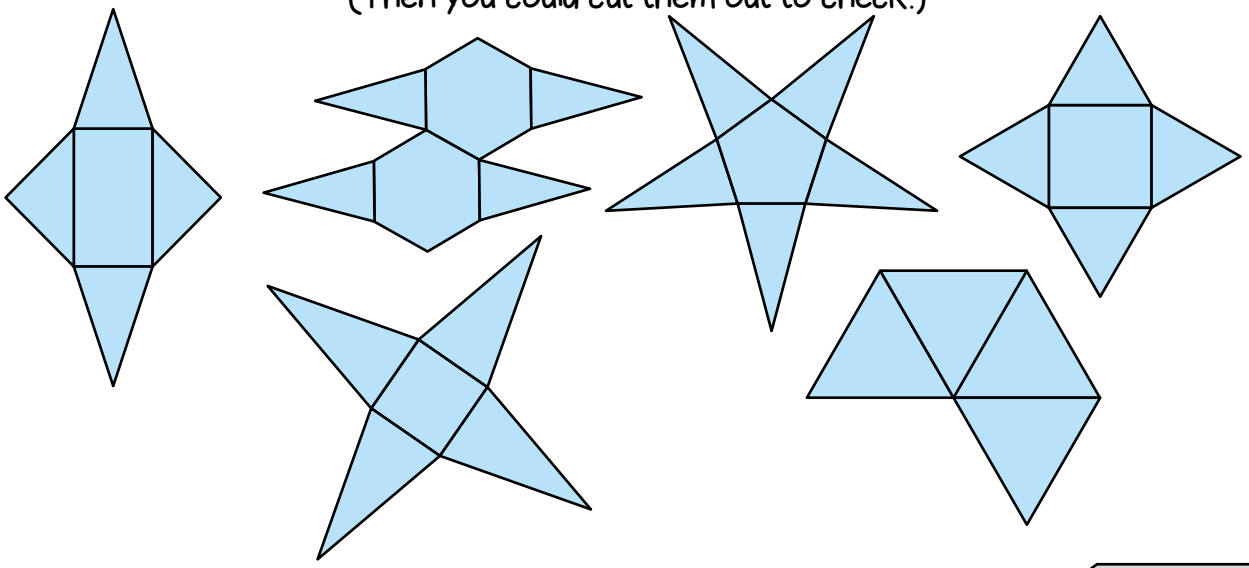
Tick the nets that would fold to make a cuboid.
(Then you could cut them out to check.)



Shape Workout

Workout B

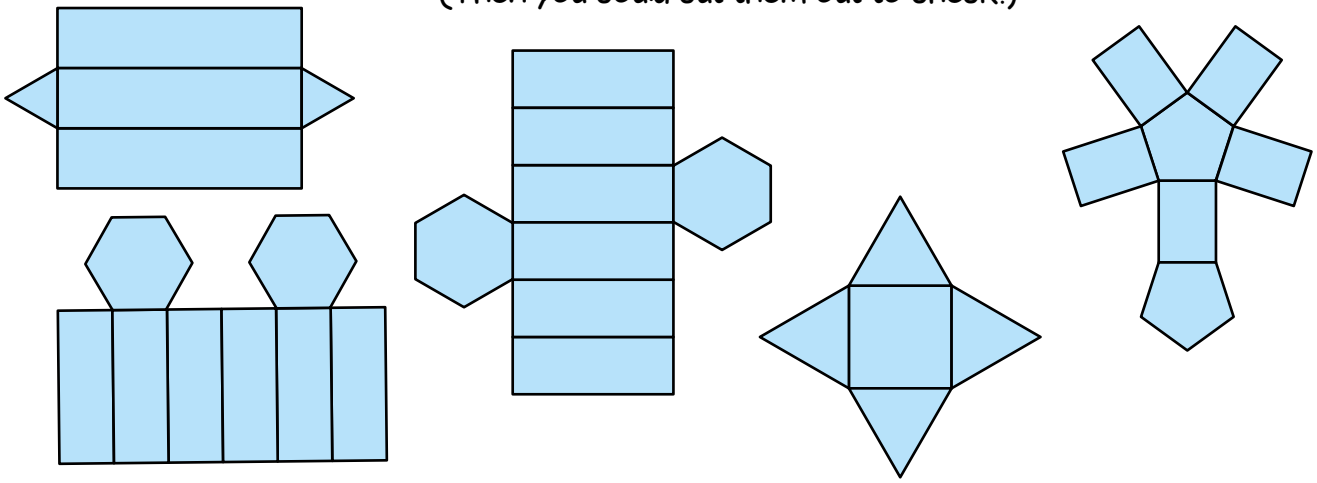
Tick the nets that would fold to make a pyramid.
(Then you could cut them out to check.)



Shape Workout

Workout C

Tick the nets that would fold to make a prism.
(Then you could cut them out to check.)



Build Nets Game

Workout D

You need:
Build Nets Board (on the next page.)
1-6 dice
Counter each

To play:
Take turns to throw the dice and move along the board.
Collect shapes as you go. Either make a sketch or jot them into a tally chart to keep track of what you collect.
If you land on the bottom of a pink line, climb to the top of it.
If you land on the top of a blue line slide down to the square at the bottom of it.

I have landed on the bottom of the pink line on square 24.
I climb up to square 59 and collect a square.

You are aiming to collect the faces of 3D shapes to construct nets.

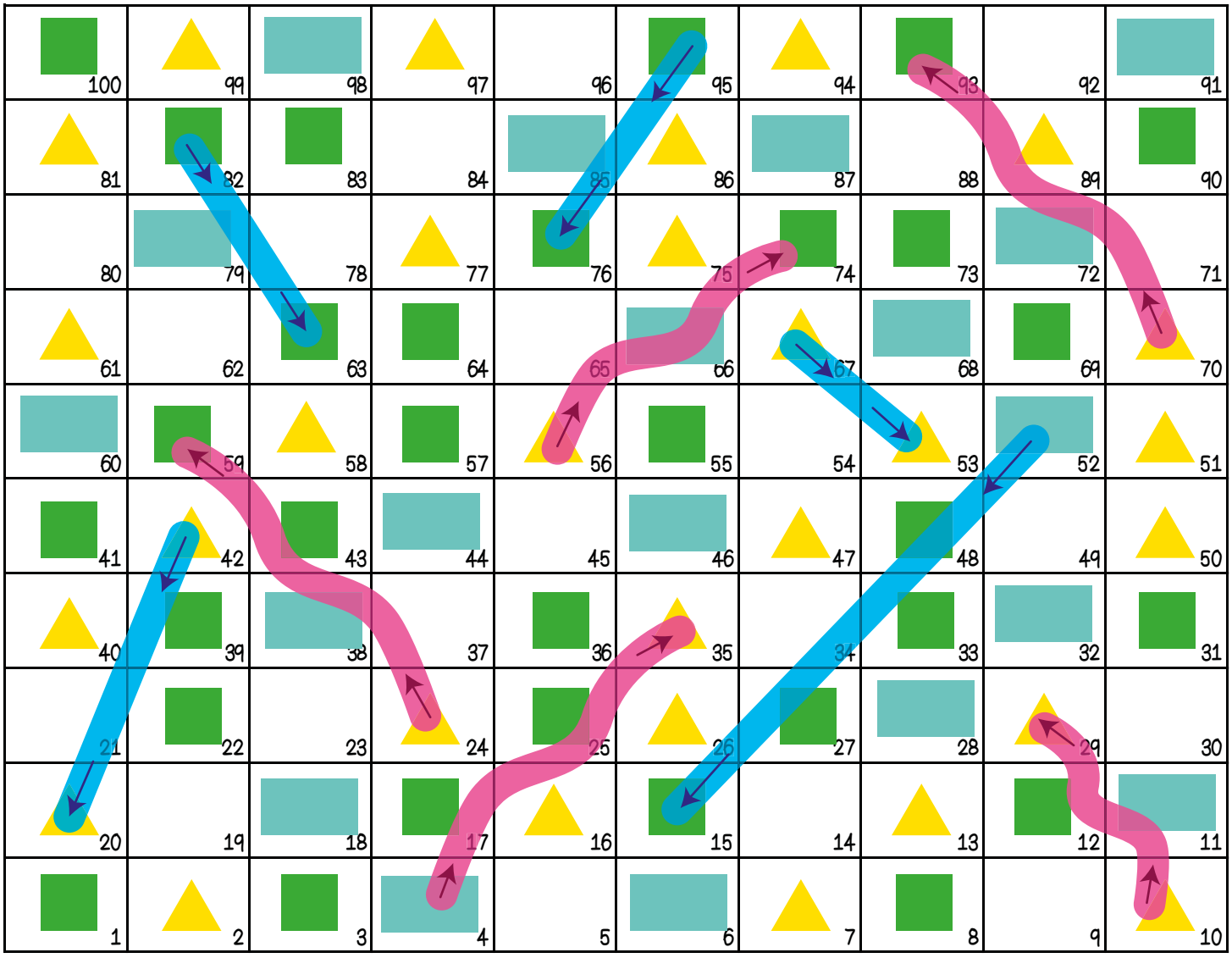
To win:
When the first player passes the finish all players try to construct nets from the shapes they have collected.
You score as follows:

- 2 points for the net of a tetrahedron (triangular based pyramid)
- 4 points for a square based pyramid or a triangular prism
- 6 points for a cube or cuboid
- 6 points for any other nets that fold into 3D shapes.

The winner is the player with the highest score.

Build Nets Board

Finish



Start

Missing Number Workout

Workout E

Colin is making 3-D shapes by making nets.
Place digits in the empty boxes to complete the nets
in several ways where possible.

Name of 3-D Shape

	☐ Squares	
	☐ Squares	☐ Rectangles
	☐ Polygon	☐ Triangles
	☐ Polygons	☐ Rectangles

Are there any boxes that it is impossible to put a 5 in?
Why?

Are there any boxes that could have any of the digits in them?

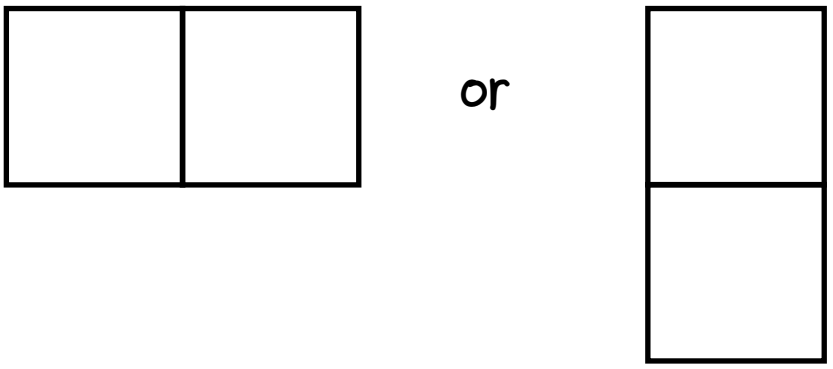
Now complete all the nets together using the digits
1, 2, 3, 4, 5 and 6 at least once each.

Cube Crazy

Workout F

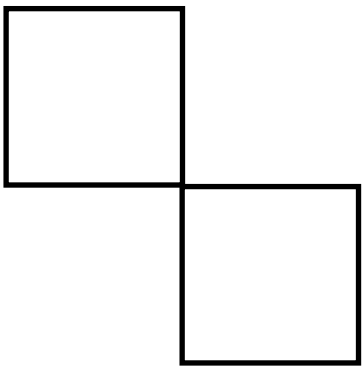
How many different ways can you join 6 squares together?

You can join them like this ....



or

... but not like this ....



How many of your combinations are a net of a cube?

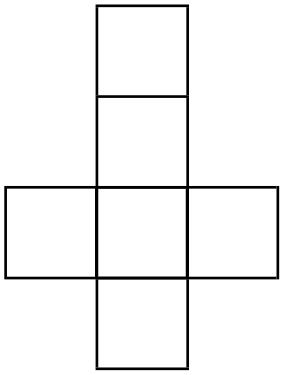
Word Problems

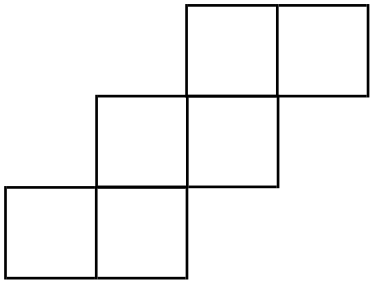
1. Colin has 20 squares. How many nets of a cube can he make?

2. Coco is making 4 triangular prisms. How many triangles and rectangles does she need?

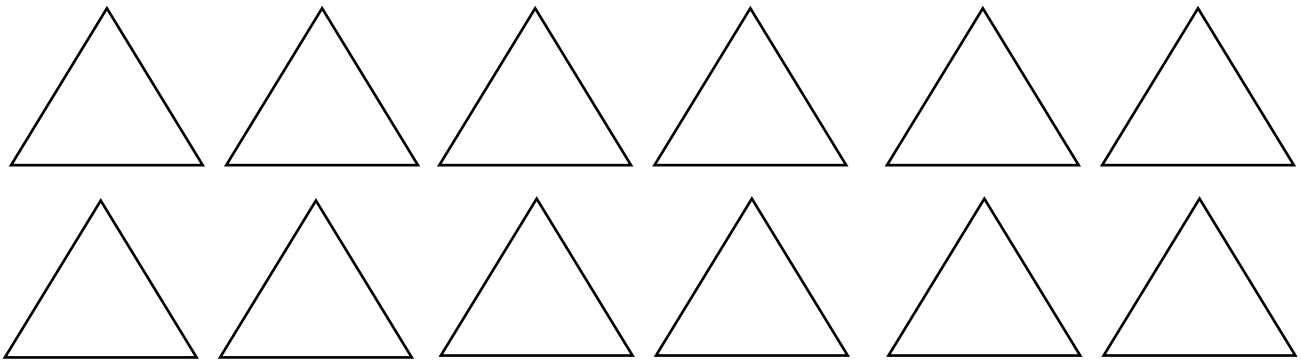
3. Colin has 4 squares. How many triangles does he need to make square-based pyramids?

4. The opposite faces of a dice add up to 7.
Complete the nets to make a dice.





5. Colin has 12 triangles.



How many nets of a tetrahedron can he make?

Workout H

Who am I?
Workout

Use the clues to work out Colin's mystery number.

You may want to cross numbers out on the 100 grid as you consider each clue.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1) I am not a multiple of 6
2) My tens digit is not a prime number
3) I am not a square number
4) I am a 2-digit number
5) I am not a multiple of 5
6) My tens digit is greater than my ones digit
7) I am not a multiple of 7
8) My digits are not square numbers
9) I am prime
10) The product of my digits is a multiple of 8

Colin's mystery number is ☐

Create your own 'Who am I?' puzzle

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Please share your puzzle with Colin @MathsCanDo