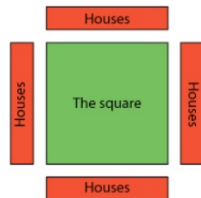# Investigations

Neighbours

Age 7 to 11
Challenge Level ★★

In a square in which the houses are evenly spaced around the outside, numbers **3** and **10** are opposite each other.

	Houses	
Houses	The square	Houses
	Houses	

What is the smallest number of houses in the square?

What is the largest possible number of houses in the square?

If the houses are evenly spaced, what do you know about the total number of houses?
Where could house number **1** go?
Have you thought of drawing a picture?

Top Tip

Neighbours

Key points
- 4 on each side was found easily.
- Need to be able to move the number1 house along 1 edge.
- No need to have more than 6 along each edge.
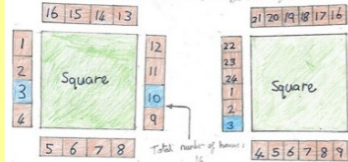- An odd number of houses along one edge doesn't work.

There are 4 houses in a row.

There are 6 houses...

Neighbours

The highest possible number of houses on a fence is 6
The lowest is 4

There is no point having more than 6 houses a side because otherwise 3 and 10 would be on the same side.

We needed to move number 1 house along one edge.

Any odd number of houses along one edge doesn't work.

There is no need to have less than 6 along one edge.
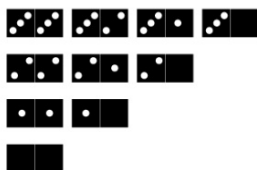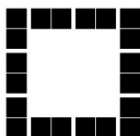
Metacognition

Domino Square

Age 7 to 11
Challenge Level ★★

These are the 'double-3 down' dominoes.

Use these dominoes to make this square so that each side has eight dots.

This task is designed to test your thinking! Do you have the resilience and the strategies to solve it?
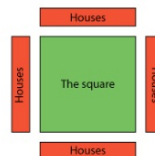
Investigations

Neighbours

Age 7 to 11
Challenge Level ★★

In a square in which the houses are evenly spaced around the outside, numbers 3 and 10 are opposite each other.
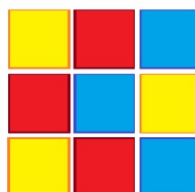

What is the smallest number of houses in the square?

What is the largest possible number of houses in the square?

Three Way Mix Up

Age 5 to 11
Challenge Level ★★

Jack has three blue tiles, three yellow tiles and three red tiles.
He put them together like this to make a square.

He made the rule that you could not put two tiles of the same colour beside each other.

Can you find another way to do it?
Can you find ALL the ways to do it?

Choose one

Share good examples

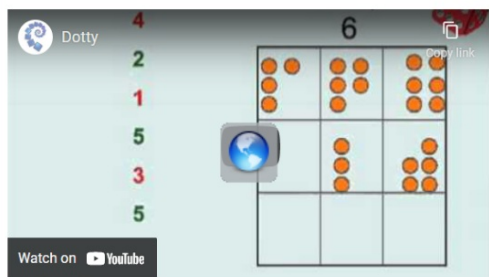What was your
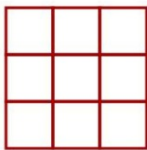biggest challenge?

How did you over
come this?

Games

Dotty Six

Age 5 to 11
Challenge Level ★

Watch this video to see the game being played.
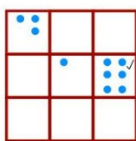Can you work out the rules?

You need a partner, a **1-6** dice and a grid like this;

Take turns to throw the dice and draw that number of dots in one of the boxes on the grid.

Put *all* of your dots in one of the boxes. You can't split them up and you can't have more than six dots in a box.

When a box is full, you could put a tick in the corner like this:

Keep going until there are three ticks in a row or column or diagonal. The winner is the person who puts the last tick.

Now, can you change the game to make your own version?

Have You Got It?

Age 11 to 14
Challenge Level ★

Have You Got It? is an adding game for two players. You can play against the computer or with a friend. It is a version of a well known game called Nim.

Start with a target of 23.

The first player chooses a whole number from 1 to 4 .

Players take turns to add a whole number from 1 to 4 to the running total.

The player who hits the target of 23 wins the game.

Play the game several times.
Can you find a winning strategy?
Can you always win?

Does your strategy depend on whether or not you go first?

Factors and Multiples Game

Age 7 to 16
Challenge Level ★

This is a game for two players.

The first player chooses a positive even number that is less than 50, and crosses it out on the grid.

The second player chooses a number to cross out. The number must be a factor or multiple of the first number.

Players continue to take it in turns to cross out numbers, at each stage choosing a number that is a factor or multiple of the number just crossed out by the other player.

The first person who is unable to cross out a number loses.
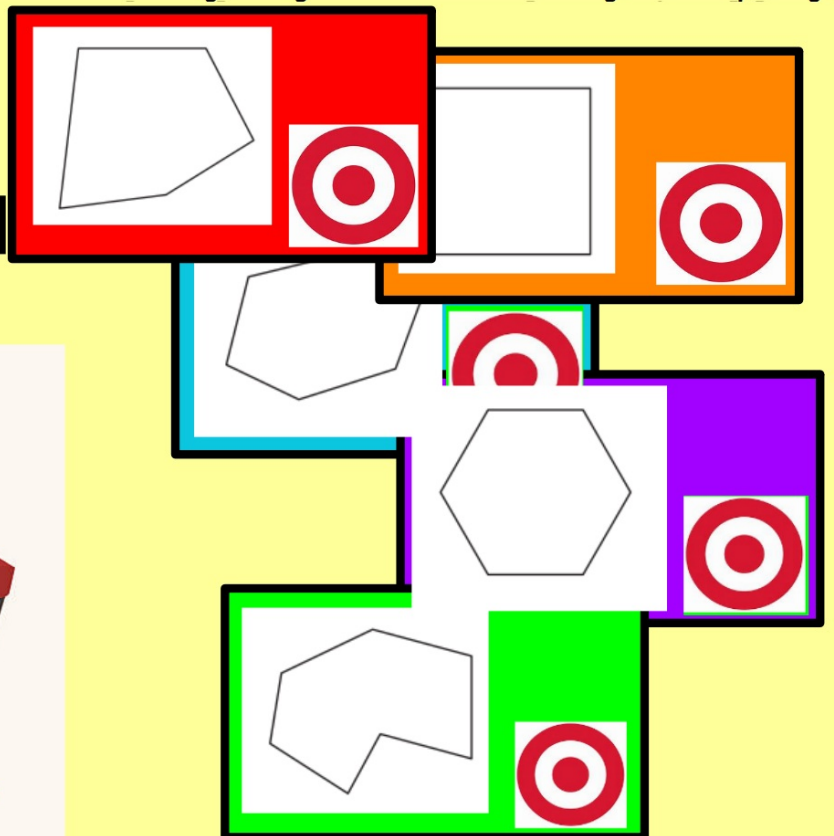
Play a few times to get a feel for the game.

Games

Pick a card.
Any card!

Regular or Irregular?

HIT or MISS

CARNIVAL GAMES

WALT identify and find the perimeter of regular and irregular polygons.

5hp OR 5hp	1. What is the name of this shape? Is it regular or irregular?
4hp	2. What are adjacent sides?
3hp	3. What is an irregular polygon?
2hp	4. What is a regular polygon?
1hp	5. What is a polygon?

What can you remember?

TIME

Answer using the words:
greater than
less than
equal to

1 week	◯	7 days
15 days	◯	2 weeks
15 days	◯	1 month
360 days	◯	1 year
360 weeks	◯	1 year
12 months	◯	1 year
20 months	◯	2 years
40 months	◯	3 years

WALT: tell time

Matching Pairs
Time

Analogue to Analogue	o'clock	o'clock half hour	o'clock half hour quarter hour	5 minute intervals
Analogue to Digital	o'clock	o'clock half hour	o'clock half hour quarter hour	5 minute intervals
Analogue to Words	o'clock	o'clock half hour	o'clock half hour quarter hour	5 minute intervals
Digital to Words	o'clock	o'clock half hour	o'clock half hour quarter hour	5 minute intervals

WALT : use and understand fraction notation

We've learnt lots today on fractions.
Let's take a minute to remember everything!

Pick a card.
Any card!

What is a
fraction?

mean?

WHO WANTS TO BE A

HUNDREDAIRE

WHO WANTS TO BE A

Directions

Let's Play!

33

Menu

2×4	2×6	2×10	11×3
9×5	7×7	5×11	6×10
9×7	6×12	11×7	11×9

Times Tables up to 12
Hit the Question - Mixed Tables

Timer: 0:01   Score: 5/5

Topmarks