Year 6

Number Awareness
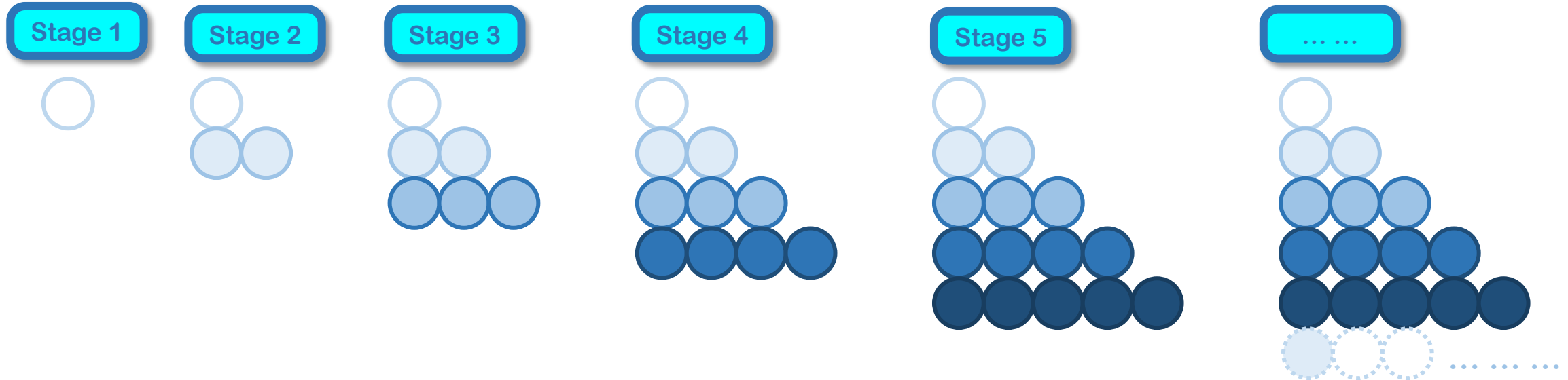
Week 4

Triangle Numbers

Triangle Numbers

Notes for teachers in school or at home:

- Describe and extend a growing sequence

- Explain patterns of odds and evens

- Consolidate understanding of multiples

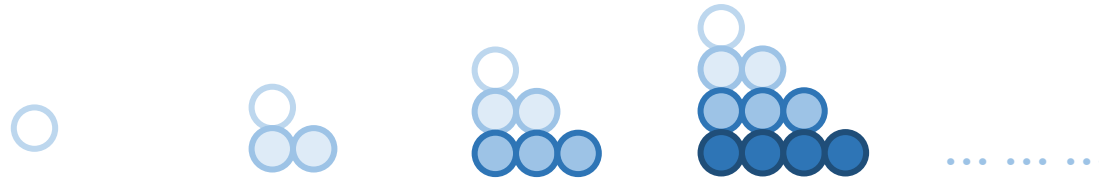- Explore patterns of square numbers

Triangles

Stage 1

Stage 2

Stage 3

Stage 4

Stage 5

... ...

Describe how the pattern grows.

Draw the next stage.

**How many circles for the tenth stage?
Predict first, then check**

Triangle Numbers...

Stage	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage ...	...	...
Calculation	1	1 + 2	1 + 2 + 3	...	...	...		
Triangle Number	1	3	...					

Predict how the triangle numbers will grow.

Calculate the triangle numbers for Stage 5 and beyond.

Do you think there will be more odd or more even triangle numbers?

Investigate the pattern of odds and evens in the triangle numbers.

Can you explain what you discover?

The 99ᵗʰ Triangle Number?

Hmm. Is there are way to make these calculations simpler?

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9$$

$$1 + 2 + 3 + \ldots \ldots \ldots \ldots \ldots + 18 + 19$$

$$1 + 2 + 3 + \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots + 98 + 99$$

Looking for links

Stage	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	...
Triangle Number	1	3	6	10	15	21	...

Which triangle numbers are multiples of 3?

**Divide each triangle number by 5.
Investigate the remainders.**

Are any triangle numbers also square numbers?

Try searching for your own patterns.

Looking for links

Stage	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	...
Triangle Number	1	3	6	10	15	21	...

Triangle Number	1	3	6	10	15	21	...

Triangle Number	1	3	6	10	15	21	...

Triangle Number	1	3	6	10	15	21	...

Choose two triangle numbers that are next to each other.

Find the total.

What do you notice?

You might be able to explain this with a picture…