

Write each number in its correct place on the diagram.

RECALL

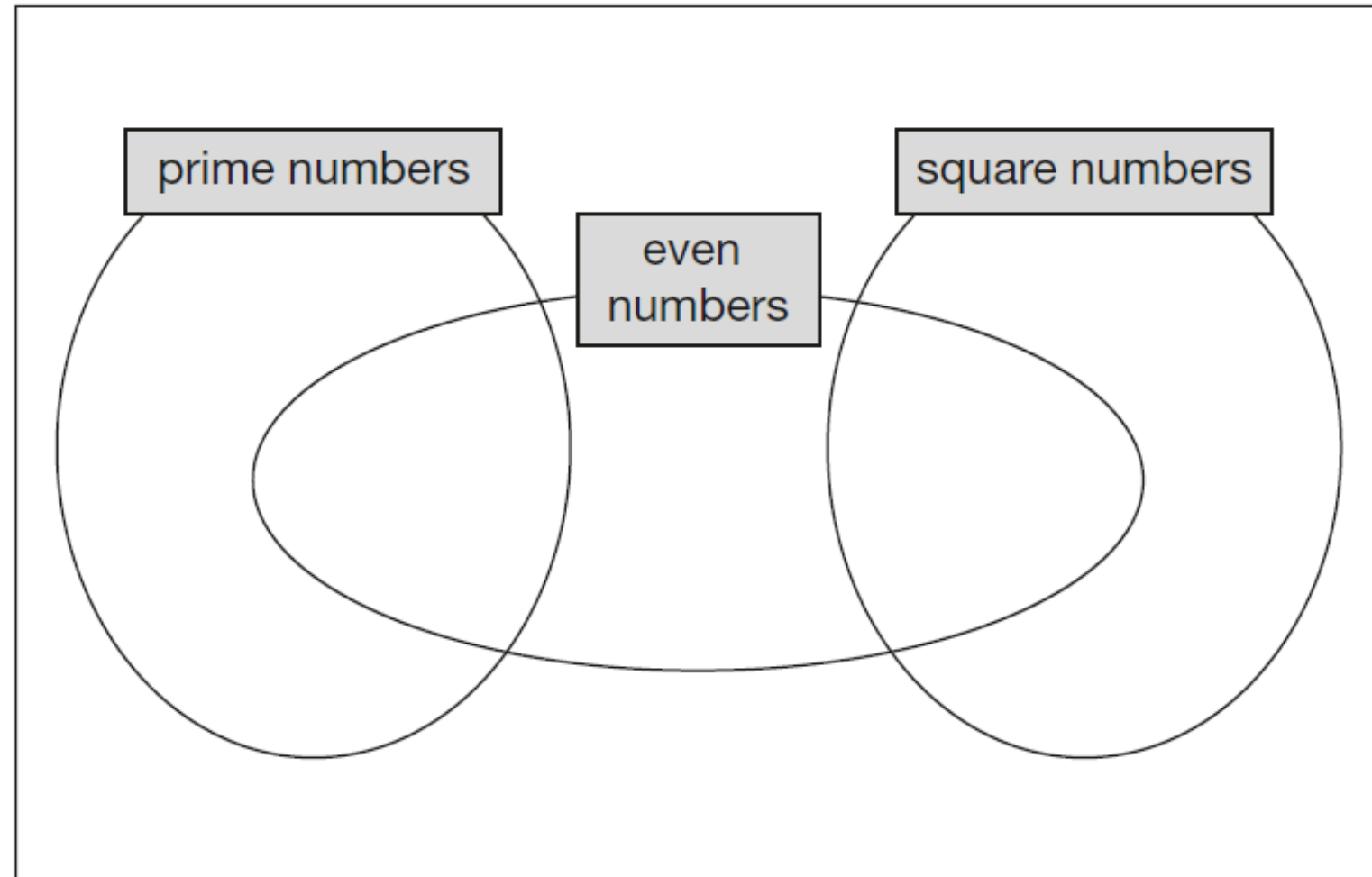


16

17

18

19





I can multiply and divide single-digit numbers by 10 and 100.

Work out

(a) 8×10

(b) 6×100

(c) 17×1000

(d) 3.4×10

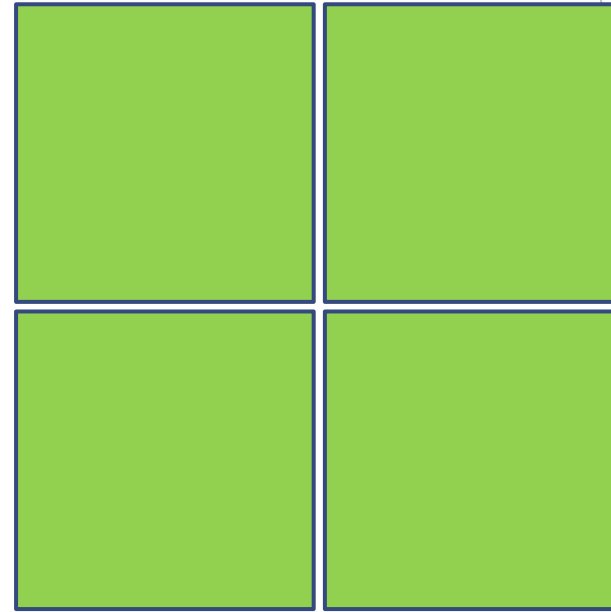
One Millions	Hundred Thousands	Ten Thousands	One Thousands	Hundreds	Tens	Ones	Decimal point	Tenths	Hundredths	One-Thousandths	Ten-Thousandths	Hundred-Thousandths
							.					

Guided Practice

- ▶ What is a squared number?
- ▶ Have you heard of this term before?
- ▶ Chat to your partner

Guided Practice - My Turn

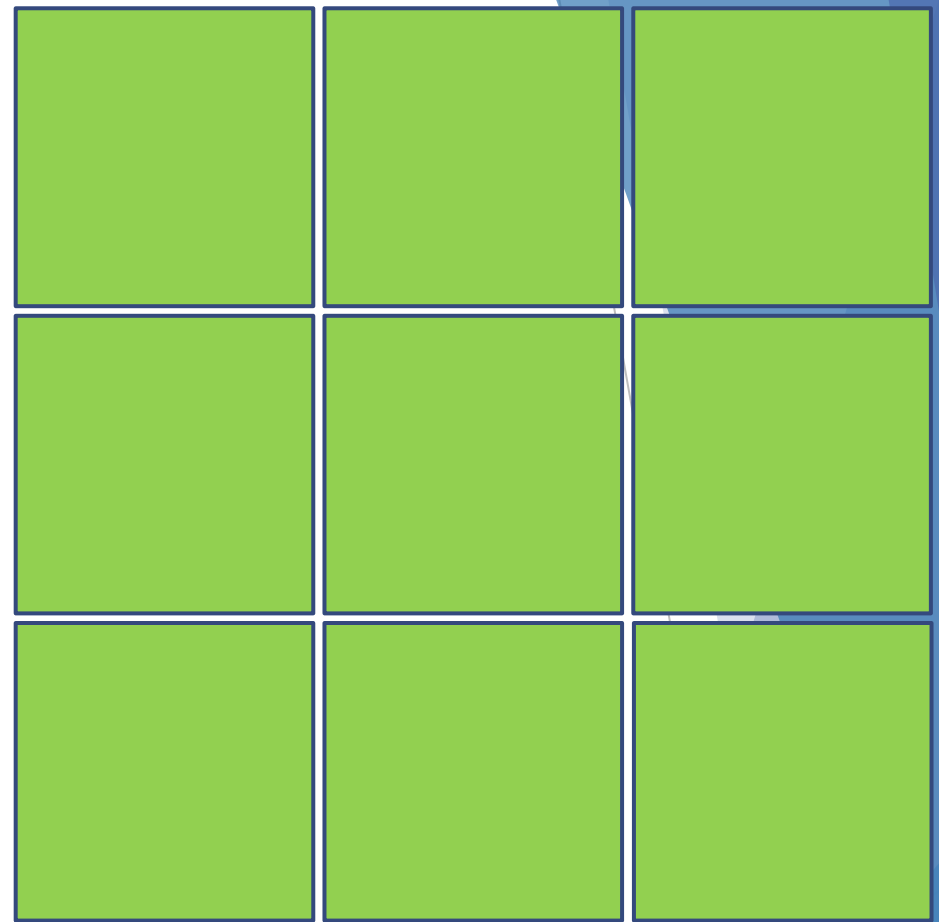
- ▶ Here is a square made out of 4 squares
- ▶ What is the arrays of this shape?
- ▶ Complete this number sentence:
- ▶ $2^2 = \underline{\quad} \times \underline{\quad} = \underline{\quad}$.
- ▶ Therefore, $\underline{\quad}$ is a square number.



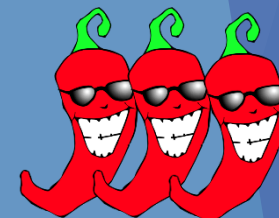
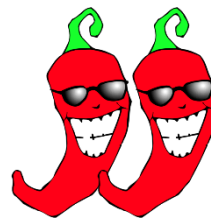
- ▶ Is 15 a squared number? Prove it using factors and arrays

Guided Practice - Your Turn

- ▶ Here is a square made out of 9 squares
- ▶ What is the arrays of this shape?
- ▶ Complete this number sentence:
- ▶ $3^2 = \underline{\quad} \times \underline{\quad} = \underline{\quad}$.
- ▶ Therefore, $\underline{\quad}$ is a square number.



- ▶ Is 17 a squared number? Prove it using factors and arrays



Draw an array to show these squared numbers

1. 4
2. 16
3. 25
4. 36
5. 49

Complete these number sentences.

$8^2 = \underline{\quad} \times \underline{\quad} = \underline{\quad}$
 . So, $\underline{\quad}$ is a square number.

$9^2 = \underline{\quad} \times \underline{\quad} = \underline{\quad}$
 . So, $\underline{\quad}$ is a square number.

$10^2 = \underline{\quad} \times \underline{\quad} = \underline{\quad}$
 . So, $\underline{\quad}$ is a square number.

Are these numbers square numbers? Prove that they can or cannot be using arrays.

1. 25
2. 35
3. 20
4. 16



Dive Deeper 1

a) Write the numbers in the table.

3 4 11 16 49

	Factor of 24	Not a factor of 24
Square number		
Prime number		

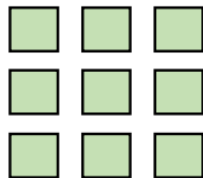
b) Write a different number in each part of the table.

1)

2)

3a. Drew says,

This array represents 9^2 .



Is Drew correct? Convince me.

3)

29 is the sum of two square numbers.

$$29 = 5^2 + 2^2$$

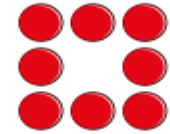
Using the example above, complete the following:

89 is the sum of two squared numbers.
What could they be?

193 is the sum of two squared numbers.
What could they be?

4)

Tiny is using counters to make square numbers.



I have made a square with 8 counters, so 8 is a square number.



Do you agree with Tiny?
Explain your answer.

5)

List the first six square numbers and find their factors.

How many factors does each square number have?

What do you notice about the number of factors that square numbers have?

Explain why this happens.



Dive Deeper 2

2)

Teddy says,



Factors come in pairs so all numbers must have an even number of factors.

Do you agree?
Explain your reasoning.

How many square numbers can you make by adding prime numbers together?

Here's one to get you started:

$$2 + 2 = 4$$

1)

Here is a sorting diagram for numbers.

Write a number **less than 100** in each space.

	even	not even
a square number		
not a square number		

3)

Some square numbers can be written as the sum of two prime numbers.



Here is an example.

$$2 + 2 = 4$$

Find some other square numbers that can be written as the sum of two prime numbers.

4)

Whitney thinks that 4^2 is equal to 16

Do you agree?
Convince me.

Amir thinks that 6^2 is equal to 12

Do you agree?
Explain what you have noticed.

Always, Sometimes, Never

A square number has an even number of factors.