Counting in Powers of Ten

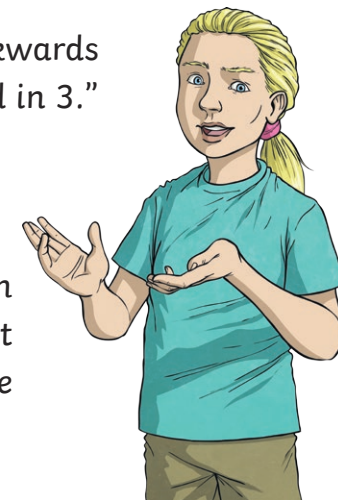## Challenge Cards

twinkl

Counting in 10s 1.

Lily counts forwards and backwards in 10s from 63.

She says, "As I count forwards and backwards from 63, all of the numbers I say will end in 3."

Jiang says that she is incorrect.
Why did he say this?

Write a number that you can count from in tens, forwards and backwards, that will always have the same digit in the ones place.

Counting in 100s 2.

Adam writes some numbers. From each number, count forwards and backwards in hundreds. Write down the 3rd and 7th number that you arrive at each way.

7th backward	3rd backward		3rd forward	7th forward
		319		
		1017		
		45 827		
		381 934		

Can you see any relationships between the numbers in each row? Explain what the relationship is.

Counting in 1000s 3.

Adam and Jiang work together to count in thousands.

First, Adam chooses the number 5926. Each of them will take it in turns to count forwards in thousands.
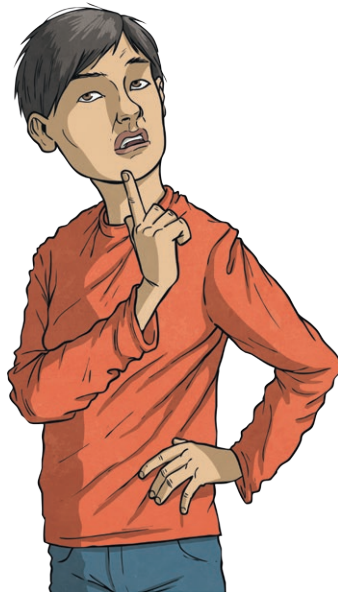
5926

7926

6926

Work with a partner and try this activity.
How far can you and your partner get in one minute?

Counting in 10 000s   4.

Jiang says: "When you count in ten thousands, the last four digits of a number stay the same."

Explain when Jiang would be correct, and when he would be incorrect.

Counting in 100 000s   5.

Lily writes down some numbers. How many times will she count in 100 000s from each number to exceed 1 000 000?

92 472   **592 310**

267 109   **311 003**

810 672   **991 726**

Can you identify a pattern between the starting number and the number of 100 000s needed?

Counting in 1 000 000s   6.

Adam counts backwards in millions from 4 572 921. What is the first negative number he will come to?

Explain how you could calculate this for any number.

Explain your method to a partner. Did they use the same method as you?
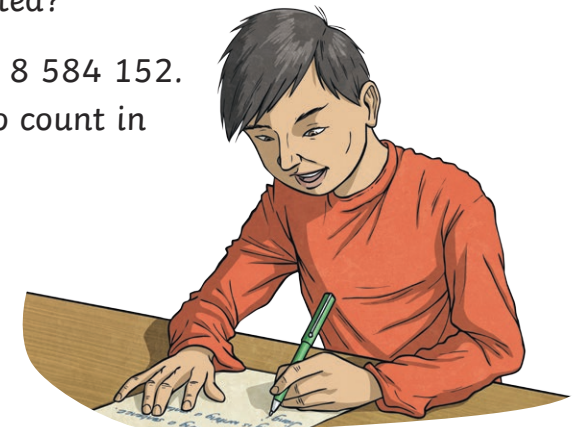
Combined counting   7.

Jiang writes the number 2 937 840.

He counted backwards in different powers of 10 to get to 0. How could he have counted?

Jiang writes the number 8 584 152. Why will he be unable to count in powers of 10 back to 0?