

Addition and subtraction using place values

introduction

1 Adding tens is just counting blocks of ten

Place 4 ten cards down, then 2 more ten cards joining them.

"Four tens, two more tens. How many tens altogether?"

Count the ten cards together to find the total.

"Four tens and two tens make six tens. Forty plus twenty is sixty."

Show the same idea with a number that has ones in it — $40 + 27$. Only the tens part changes; the ones stay the same.

"Forty plus twenty-seven. The ones — the seven — do not change. Only the tens move: four tens plus two tens is six tens, so sixty-seven."

Now show subtraction the same way — lay out 8 ten cards, then take 2 away.

"Eight tens, take away two tens. How many tens are left?"

Remove the two cards and count what remains.

"Eight tens take away two tens leaves six tens. Eighty take away twenty is sixty."

Show a common mistake: changing the ones digit by accident when only tens should move. Check it: did the ones digit need to change at all?

"I worked out 63 minus 20 and got 41. But the ones digit changed from three to one — taking away tens should never change the ones. Sixty minus twenty is forty, so the answer should be forty-three."

Ten cards — demonstration

