

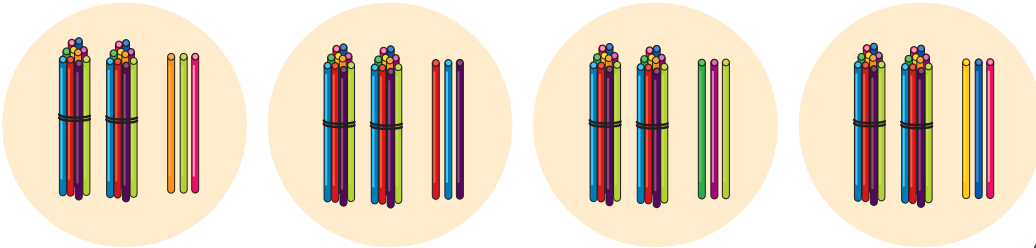
Sticking Together

You need sticks (optional)

a classmate

Activity

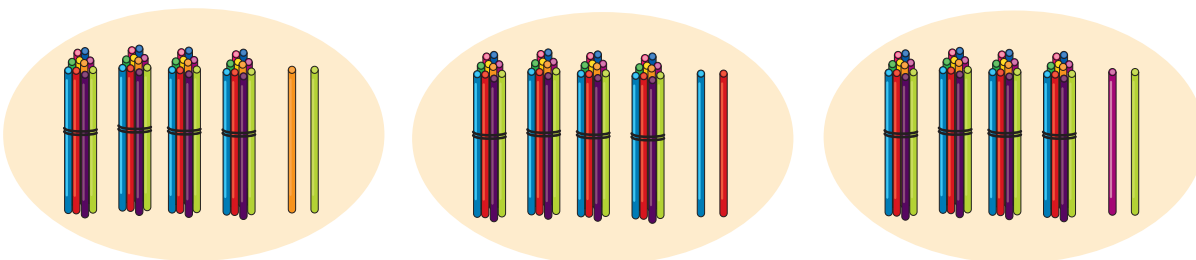
1. Paul is using bundles of sticks to help him solve $4 \times 23 = \square$. There are 10 sticks in each bundle. Paul works out how many sticks there are altogether by looking at the bundles and the single sticks separately.



$4 \times 2 = 8$. That's a start.

- How could Paul use $4 \times 2 = 8$ to work out how many sticks there are altogether in the bundles of 10?
- Which multiplication fact could Paul use to work out how many single sticks there are in all 4 groups?
- To find the answer to 4×23 , Paul adds the number of sticks in the bundles to the number of single sticks. How many sticks are there altogether?

2. Paul arranges some bundles and sticks like this.



Wow, check out those colours!

- What multiplication problem is he using the sticks to solve?
- How many sticks are there altogether in these bundles of 10?

3×4 tens is 12 tens. I know 10 tens is 100 ...

- How many single sticks are there?
- How many sticks are there altogether?
Show how you got your answer.

3. Now Paul is working out $5 \times 32 = \square$ using his bundles and singles strategy.

- Draw a picture or use sticks to show what Paul's 5 groups of 32 bundled sticks would look like.
- How many sticks are there altogether in the bundles?

$5 \times 3 = 15$. That will help me with 5×3 tens.

- How many single sticks are there?
- So what does 5×32 equal?

4. Use Paul's method to work out $8 \times 21 = \square$.

5. Without using sticks, use Paul's method to solve $3 \times 152 = \square$.

I don't need to use sticks any more. I can use the same strategy just by looking at the numbers in the problem.

6. a. Solve these problems using Paul's strategy:

i. $4 \times 2153 = \square$

ii. $4 \times 898 = \square$.

b. Which problem was Paul's strategy best for? Why?

c. What would be an easier way to solve the other problem?

7. Write another problem that would be suitable for Paul's strategy and solve it. Swap your problem with a classmate's.

