

# Modelling

## Example

The point A has the coordinates (2,5)

### We try: Step by step

The point A has the coordinates (2,5)

Firstly, find the midpoint of AB

The point A has the coordinates (3,8)

The point B has the coordinates (7,-2)

Find the equation of the perpendicular bisector to AB

Now write down your method

1) talk to your neighbour about what you did

2) do you need to change anything in your steps?

# Modelling

Mental multiplication methods...

How can I calculate  $2.5 \times 20$  in my head?



Flue

We have just looked at two methods for mental multiplication



**Using factors** and **Double and Halve**

**Using factors**

How else can I write  $\times 20$ ?

**Double and Halve**

$$\begin{array}{cc} 2.5 & \times & 20 \\ \downarrow \times 2 & & \downarrow \div 2 \end{array}$$

1) Which did you prefer? Why?

2) Can you think of any questions where one method would be better than the other? Why?



**1.5 × 20**

Fluency

**Using factors**

**Double and Halve**

Fluency

Task

Complete these multiplications. For each one think carefully which method would be most efficient

a)  $20 \times 6$

f)  $0.5 \times 46$

b)  $1.5 \times 40$

g)  $22 \times 0.5$

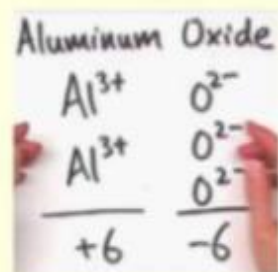
c)  $3.2 \times 20$

h)  $6.1 \times 30$

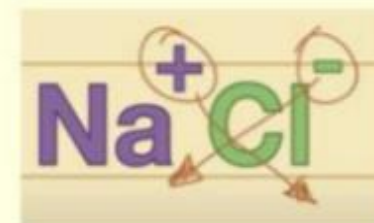


## Comparing Methods - Student Reflections

### A. Balancing charges



### B. Swap and drop



- Did you prefer Method A or Method B for working out the answer? *A*

- Why did you prefer this method?

Easier to understand the science behind it and for me that made it easier to understand why we were doing it, and how to do it.

- Would you use the same method again in the future or would you try something different? Why/ why not?

I would use method A

- If you had to choose your least preferred method, what 1 or 2 things would you do differently to try and make you feel more comfortable using it?

Learn why we swap and drop and the science behind it rather than swapping two numbers

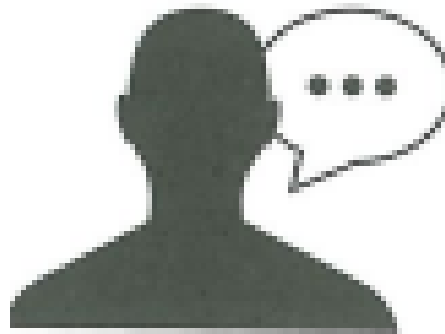
# Modelling Metacognitive Talk

EXTERNAL



Students' metacognitive talk is directed by an external agent, such as the teacher.

PRIVATE



Students will internalise the prompts of the external agent and speak out loud.

INTERNAL



Students' self-talk becomes silent and internal.