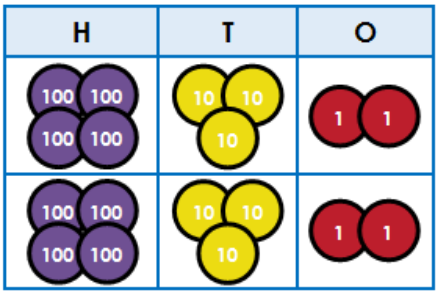
# DEEPENING UNDERSTANDING ANSWER SHEET

## YEAR 6 PIM – MULTIPLY 3-DIGITS BY 1-DIGIT

### Fluency 1




| | | | |
|---|---|---|---|
| | 4 | 3 | 2 |
| × | | | 2 |
| | 8 | 6 | 4 |

Start with the **1s** to exchange to **10s** if needed.

If there are **10** or more 1s, exchange for a **10**.

If there are **10** or more 10s, exchange for a **100**.

If there are **10** or more 10s, exchange for a **1,000**.

243 x 3 = 729

128 x 4 = 512

### Fluency 2

Answers will vary. For example:

A train can carry 305 passengers. How many passengers can 3 trains carry?

| | | | |
|---|---|---|---|
| | 3 | 0 | 5 |
| × | | | 3 |
| | 9 | 1 | 5 |
| | | 1 | |

## Fluency 3

Ranjit and his friends climbed 920 feet in total.

## Reasoning 1

Pupil responses should show that Anita has calculated the tens column incorrectly.

### Modelled DAB Reasoning Responses

**D** – Anita has made a mistake

**A** – Anita has not calculated the tens column correctly. There are 0 tens in 605 and 0 x 4 = 0. Anita thinks 0 x 4 = 4.

**B** –

| | 6 | 0 | 5 |
|---|---|---|---|
| × | | | 4 |
| 2 | 4 | 2 | 0 |

2

## Reasoning 2

Pupil responses should show that the statement is sometimes true.

### Modelled DAB Reasoning Response

**D** – Sometimes

**A** – Some 3-digit numbers multiplied by 1-digit numbers will result in a product that goes into the thousands but not all will.

**B** – If no exchanging needs to take place, then the product will not go into the thousands, for example: 111 x 2 = 222. If exchanging is needed in the hundreds column, then the product will go into the thousands, for example: 999 x 2 = 1,998.

## Reasoning 3

Pupil responses should show that the sticker is covering the number 1,652.

### Modelled DAB Reasoning Response

**D** – I can work out the missing number

**A** – Jerry has covered the number 1,652 with the sticker. 1,652 ÷ 7 = 236

**B** – I can use the inverse operation and my knowledge of fact families to find the missing number. 236 x 7 = 1,652 so 1,652 ÷ 7 = 236

## Reasoning 4

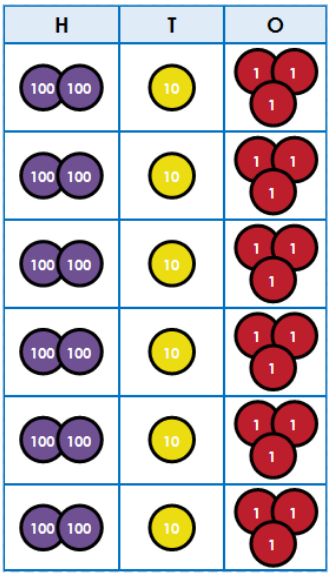
Pupil responses should show that the calculation has been solved correctly.

### Modelled DAB Reasoning Response

**D** – The calculation has been solved correctly.

**A** – 213 x 6 = 1,278

**B** –




### Download our 'DAB' posters to support reasoning in your classroom:

*https://www.deepeningunderstanding.co.uk/product/dab-reasoning-posters/*

## Problem Solving 1

Answers will vary, for example:

Player A

| | | | |
|---|---|---|---|
| | 4 | 6 | 5 |
| × | | | 2 |
| | 9 | 3 | 0 |
| | 1 | 1 | |

Player B

| | | | |
|---|---|---|---|
| | 1 | 6 | 3 |
| × | | | 6 |
| | 9 | 7 | 8 |
| | 3 | 1 | |

Player B is the winner.