# Weighing for the post – Student work samples

Click on the link to see the assessment resource, Weighing for the post (NM1336)

The following samples of student work could be used to identify sources of evidence of students' understanding of addition of decimal numbers.

Additive strategies (with decimals): At curriculum level 4 (Year 8) – Note: some with simple calculation errors.

Place value partitioning

1.21 kg + 2.046 kg + 0.9 kg

```
1+2=3
0.2+0.9=1.1
0.0[+0.046=0.056
3+1.1+0.056=4.156
Total weight: 4.156 kg
```

#### 1.21 kg + 2.046 kg + 0.9 kg

```
0.00 + 0.006 + 0.0

0.01 + 0.04 + 0.0

0.2 + 0.0 + 0.4

1.0 + 2 + 0

0.006 + 0.04 + 1.1 + 3 = 4.146 Total weight: 4.146 kg
```

#### 2.96 kg + 3.57 kg + 1.04 kg

```
2+3+1:6

0.46+0.04:1

6+1:7

7+0.57=7.57

Total weight: 7-57 kg
```

Selective addition – finding compatible numbers

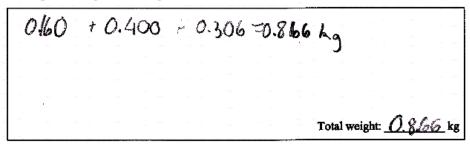
$$2.96 \text{ kg} + 3.57 \text{ kg} + 1.04 \text{ kg}$$

= 
$$2.96+3.57+1.04$$
  
 $2.96+1.04=4.0$   
 $4.0+3.57=4.57$   
Total weight:  $4.57$  kg

Additive strategies (with decimals): *Early curriculum level 4* (Year 7) – Vertical algorithm and writing in the zero place holders do not sufficiently indicate a "flexible" part-whole strategy. Some students made recombination errors around the *tenths* to *ones* – especially with decimals with different numbers of decimal places.

Writing out the decimals with zero place holders

0.16 kg + 0.4 kg + 0.306 kg



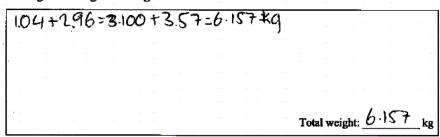
1.21 kg + 2.046 kg + 0.9 kg

Vertical algorithm

1.21 kg + 2.046 kg + 0.9 kg

Recombining error

2.96 kg + 3.57 kg + 1.04 kg



## 2.96 kg + 3.57 kg + 1.04 kg

### 1.21 kg + 2.046 kg + 0.9 kg

# 2.96 kg + 3.57 kg + 1.04 kg

odd 1.04 and 2.96 which = 3.00 or 3 then + 3.00 on 6 3.57 and that equals 6.57 Total weight: 6.57 kg Additive strategies (with decimals): *At curriculum level 3* (Year 6) – losing decimal place value, but indication of part-whole strategies. It is likely that students can add decimals with the same number of decimal places without recombination.

Loses place value of digits (Uses compensation and additive identity)

1.21 kg + 2.046 kg + 0.9 kg

1.21 kg + 2.046 kg + 0.9 kg

0.16 kg + 0.4 kg + 0.306 kg

Other part-whole strategy involving place value error

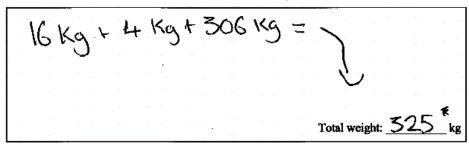
1.21 kg + 2.046 kg + 0.9 kg

0.16 kg + 0.4 kg + 0.306 kg

Additive strategies (not using decimals): Below curriculum level 3 (<Year 6)

Adding the decimals as whole numbers

0.16 kg + 0.4 kg + 0.306 kg



Adding only the decimal components as whole numbers

1.21 kg + 2.046 kg + 0.9 kg