# Activity 6 Assessment
## Solving Problems with Whole Numbers

## Developing Fluency with Whole Number Operations

| Understands number relationships and properties and applies them to whole number operations. | Uses estimation to check reasonableness of solutions. | Uses mental math strategies to solve single-step equations with larger numbers. |
|---|---|---|

Understands number relationships and properties and applies them to whole number operations.

$? - 240 = 720$      $50 \times ? = 2000$

$720 + 240 = 960$      $2000 \div 50 = 40$

"I solved each equation using an operation I am comfortable with."

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Uses estimation to check reasonableness of solutions.

A forklift can carry 2000 kg. An operator is unloading boxes of shoes weighing 78 kg. How many boxes can the forklift safely carry at one time?

$78 \times ? = 2000$

"78 is close to 80. I know $80 \times 20 = 1600$ and $80 \times 5 = 400$. $1600 + 400 = 2000$. An estimate of 25 boxes seems reasonable."

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Uses mental math strategies to solve single-step equations with larger numbers.

$78 \times 25 = (70 + 8) \times (20 + 5)$
$= (70 \times 20) + (8 \times 20) + (70 \times 5) + (8 \times 5)$
$= 1400 + 160 + 350 + 40$
$= 1950$

```
    7 8
 ×  2 5
 1 4 0 0   (70 × 20)
   1 6 0   (20 × 8)
   3 5 0   (70 × 5)
 +   4 0   (8 × 5)
 1 9 5 0
```

|    | 70 | 8 |
|----|------|-----|
| 20 | 1400 | 160 |
| 5  | 350  | 40  |

"I decomposed the numbers to make multiplying easier."

## Observations/Documentation

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# Activity 6 Assessment
## Solving Problems with Whole Numbers

| Developing Fluency with Whole Number Operations (cont'd) | | |
|---|---|---|
| Solves multi-step equations using mental math strategies and properties of operations.<br><br>$1560 + 1682 - 440 - 602 = ?$<br>$1560 - 440 = $ **1120**<br>$1682 - 602 = $ **1080**<br>**1120** $+$ **1080** $= 2200$ | Uses order of operations to solve equations and explains the effect when order is not followed.<br><br>$9 \times 8 - 3 + 16 \div 4 = 72 - 3 + 4$<br>$= 73$<br><br>"I have to do multiplication and division first. If the order isn't followed and I perform the operations in the order in which they appear, I get 21 R1." | Flexibly selects mental math strategies and applies order of operations to solve multi-step equations/problems.<br><br>To claim the prize in a contest, you must answer this skill-testing question:<br>$19 + 11 \times 6 - 4 = ?$<br><br>$19 + 11 \times 6 - 4 = 19 + 66 - 4$<br>$= 20 - 1 + 66 - 4$<br>$= 20 + 66 - 1 - 4$<br>$= 86 - 5$<br>$= 81$ |
| **Observations/Documentation** | | |
| | | |

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