Name: _____ Date: _____

Learning Goal 1.2	I can multiply and divide integers.

Integer 1 × Integer 2

- +/− add remove groups
- # tells you how many groups to remove/add

- +/− +ve or −ve counters
- # tells you how big the groups will be

Always start at zero counters

Example Find the following **product** by modelling the equation.

a. $(+2) \times (+3)$

+ve counters

add groups ↑ 2 groups ↑ 3 per group = 6

⊕ ⊕ ⊕ ← one group of 3 +ve counters
⊕ ⊕ ⊕

b. $(+3) \times (-2) = -6$

of

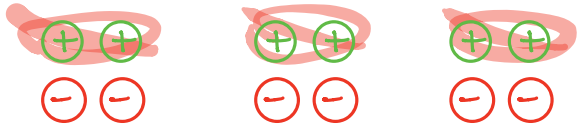
add ↑ 3 groups of 2 −ve counters

⊖ ⊖ ← one group of 2 −ve counters.
⊖ ⊖
⊖ ⊖

c. $(-3) \times (+2) = -6$

of

remove 3 groups 2 +ve counters



1 group of 2 zero pairs

Multiplying Integers

When multiplying using **counters**, start with a value of zero counters.

- The first integer tells how many groups to add or remove
- The second integer tells us - the size of the group
  - whether the counters are +ve or -ve.

Yet again, models are time consuming inconsistent

Example Find the following **products** without modelling.

- if the signs are the same, the product is positive.
- if the signs are different, the product is negative

a. $3 \times 4 = 12$

b. $2 \times (-9) = -18$

c. $(-5) \times 6 = -30$

d. $(-6) \times (-4) = 24$

e. $4 \times 7 = 28$

f. $3 \times (-10) = -30$

Example Tina supports her favourite charity with an automatic deduction of $35 per month from her bank account. Calculate her total deductions in a year.

$-35 \times 12 = -420$ $12 \times -35 = -420$

Tina is going to deduct $420 in a year.

Assignment p.290 #1 – 4, 9 – 14, 17, 19 Quiz Next Day!

$(-3) \times (-2) = +6$

of

2 -ve counters.

remove 3 groups