

### Multiplication Prior Learning Assessment Question 1:

**Objective:** I can multiply by 0 and 1.

I can multiply 3 numbers by each other.

**NC:** NMD 2 use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together

### Assessment Question 1:

Prior Learning:

 Multiplication + Division	<b>Question 1:</b> I can multiply by 0 and 1 .	I feel
Fill in the missing boxes		
a) $6 \times 1 =$ <input type="text"/>	d) $1 \times 1 \times 4 =$ <input type="text"/>	
b) $7 \times 0 =$ <input type="text"/>	e) $150$ <input type="text"/> $0 = 150$	
c) $35 \times$ <input type="text"/> $= 35$	f) $54$ <input type="text"/> $1 = 54$	

Prior Learning:

 Multiplication + Division	<b>Question 2:</b> I can multiply 3 numbers by each other.	I feel
Work out the answer to each sum.		
a) $3 \times 1 \times 2 =$ <input type="text"/>	b) $4 \times 2 \times 3 =$ <input type="text"/>	

### **Teacher Input Ideas:**

Arrange the children in to pairs. Ask one child to say a 3 or 4 digit amount and their partner to record this down in figures. Each pair is then to check that they have recorded the amount down accurately using their place value knowledge and learning.

Repeat, taking it in turns until 6 numbers have been created. Once each pair have six numbers, ask the children to multiply each amount by 1 and 0. Ask the children to discuss their answers with the class/ in groups. Establish that when something is multiplied by 1, what the answer will be. Why? How do we know this? What if something is multiplied by zero? Why is the answer zero?

When the children show confidence, model a sum with three digits that we want to multiply (such as  $2 \times 2 \times 3$ ). How will we approach this. What will we need to multiply first? Then what do we need to multiply? Model with objects or images what is happening when 3 amounts are multiplied by each other. Include some that contain a zero and a 1 (such as  $2 \times 3 \times 1$  or  $2 \times 0 \times 3$ ).

### **Practice Activities**

**Purple Practice:** Most suited for children who show difficulty in answering Question 1a,b,c, and d of the prior learning assessment and will benefit from exploring numbers multiplied by 0 and 1 .

For this activity the children are presented with 12 sums that require the children to use their knowledge of  $\times$  by 1 and 0. The children are to explore the sums to work out if the answer they are provided with is correct or incorrect. The children are to tick the correct sums only. They may want to use objects or drawings to help them to understand what the sum looks like.

**Green Practice:** Most suited for children who made errors in Question 1 e and f and will benefit from exploring sums where they have to decide which operation has been used and to secure their knowledge of multiplying by 1 and 0.

The children are presented with number sentences that have missing boxes to fill in with a calculation symbol or a number 0 or 1. The children have to decide which symbol or number needs to be placed in each box to make the sum correct. To support the children, they are provided with 9 blocks that contain the correct symbols or number. They can only use each block once and they have to decide where each block needs placing. Encourage the children to discuss their ideas in partners or groups. The children may use trial and improvement as there is more than one option for some of the sums. They will need to look at all of the blocks provided, exploring the combinations and make changes where necessary.

**Yellow Practice:** Most suited for children who demonstrate misconceptions in Question 2 of the prior learning and will benefit from exploring when 3 numbers are multiplied by each other.

The children are provided with blocks with amounts on. The children are required to multiply the blocks in each set to find the answer. The children are provided with 3 amounts to multiply by each other. If some children are finding this hard, they may want to use counters, objects or drawings to explore how 3 digits are multiplied by each other.

### **Mastery : Fluency**

For this mastery task, the children will need 3 dice. They are to roll each dice and create a sum in the boxes provided. The children should then work out the answer to each sum. Some children may notice that the amounts can be placed in any order/box and the answer will still be the same. Discuss why with the children. The lesson for Question 3 will also focus on commutativity, therefore you may want to discuss this further then or provide this activity after the lesson to consolidate commutativity knowledge too.

As a further challenge, the children are asked to create sums when one dice is always a number 5. Encourage the children to create around 6 sums with one digit being a 5. Once the children have done so, encourage them to look for any patterns. What do they notice about the digit in the ones place? How can they apply their knowledge of the 5 times table? What do all numbers multiplied by 5 end in?

**Answers :**

**Purple:**

$1 \times 9 = 9$ <input checked="" type="checkbox"/>	$0 \times 4 = 4$ <input type="checkbox"/>	$1 \times 5 = 5$ <input checked="" type="checkbox"/>
$6 \times 0 = 0$ <input checked="" type="checkbox"/>	$5 \times 1 = 16$ <input type="checkbox"/>	$34 \times 0 = 0$ <input checked="" type="checkbox"/>
$17 + 1 \times 1 = 19$ <input type="checkbox"/>	$4 \times 1 + 3 = 7$ <input checked="" type="checkbox"/>	$1 \times 1 \times 1 \times 1 = 4$ <input type="checkbox"/>
$1 \times 2 \times 1 = 2$ <input checked="" type="checkbox"/>	$2 \times 0 \times 0 = 0$ <input checked="" type="checkbox"/>	$1 \times 1 \times 1 \times 1 \times 1 = 1$ <input checked="" type="checkbox"/>

**Green:**

$9 \times 0 = 0$	$18 - 0 = 18$	$17 \times 1 \times 1 = 17$
$56 + 1 = 57$	$150 \times 0 = 0$	$121 \times 1 = 121$
$5 \times 5 \times 1 = 25$	$2 \times 0 \times 0 = 0$	$1 \times 1 \times 1 \times 1 \times 1 = 1$

**Yellow:**

- |       |       |       |       |
|-------|-------|-------|-------|
| 1) 2  | 2) 4  | 3) 8  | 4) 18 |
| 5) 27 | 6) 16 | 7) 32 | 8) 30 |

Use drawings to show what each sum looks like. Tick the correct answers only.

$1 \times 9 = 9$

$0 \times 4 = 4$

$1 \times 5 = 5$

$6 \times 0 = 0$

$5 \times 1 = 16$

$34 \times 0 = 0$

$17 + 1 \times 1 = 19$

$4 \times 1 + 3 = 7$

$1 \times 1 \times 1 \times 1 = 4$

$1 \times 2 \times 1 = 2$

$2 \times 0 \times 0 = 0$

$1 \times 1 \times 1 \times 1 \times 1 = 1$

Place a purple block into the correct empty box to make each sum correct. Use each purple block only once.



$9 \square 0 = 0$

$18 \square 0 = 18$

$17 \times \square \times 1 = 17$

$56 \square 1 = 57$

$150 \times 0 = \square$

$121 \square 1 = 121$

$5 \times 5 \times \square = 25$

$2 \times 0 \times \square = 0$

$1 \times 1 \times 1 \times 1 \times 1 = \square$

**Yellow Activity**

LO: I can multiply 3 numbers by each other.

Work out the answer to each sum.

1)  ×  ×  =

2)  ×  ×  =

3)  ×  ×  =

4)  ×  ×  =

5)  ×  ×  =

6)  ×  ×  =

7)  ×  ×  =

8)  ×  ×  =

You will need 3 dice. Roll each dice once to create your own sums below.



$$\square \times \square \times \square = \square$$

**Challenge**

One of your dice must always be a 5. Create 6 new sums. What do you notice about the digit in the units place?