**Mathematics**



**What strategies can I use to multiply 2- and**

**3-digit numbers by a 1-digit number?**

**Mathematics**

|  |  |
| --- | --- |
| **What you will need** | * Grey lead pencil, eraser and paper
* A computer is useful if you have one, because there may be interactive activities in some lessons.
* A calculator is sometimes used and is useful to check your answers.
 |
| **The activities** | * Learning tasks
* Games
* A fortnightly test
* A fortnightly reflection
 |
| **Check your answers with your supervisor** | Check your answers after each activity to see how well you are going and how your skills are developing. Checking your answers also prepares you for the tests and reflections.  |
| **When to use your calculator** | Generally, you **won’t** need your calculator. The Maths activities develop skills; ways of working with numbers, mental arithmetic, estimating and using times tables.Please only use your calculator when it’s part of the activity. |
| **Asking for help…** | There may be times when you are not sure about an example or an exercise.When this happens, ask for help from:* Your supervisor/parent/carer
* Your teacher
 |

**Guidelines for the Supervisor**

***Working with your child***

|  |  |
| --- | --- |
| **Assisting your child** | Please go through the explanation and examples of mathematical concepts and ensure that your child understands the tasks before beginning. Your child can work independently but you will need to monitor their progress and offer assistance if and when difficulties arise. Encourage your child to double- check his or her answers to each activity. Please schedule time to **correct your child’s work** using the Maths Solutions booklet provided. If your child has made an error, discuss how and why the error was made and encourage him or her to have another go. Always provide **positive feedback** on progress made. If your child experiences **difficulty,** c**ontact the teacher as soon as possible** for extra help. |
| **The fortnightly test** | We would like your child to complete the skills test **without any assistance** (although help with reading instructions may be required).This will allow the teacher to assess your child’s understanding and recall of the concepts taught in each lesson. |
| **Reflections** | There is an opportunity for students to reflect on their learning and whether or not they understood the concepts or need to consolidate their understanding further.  |
| **Your feedback** | Please feel free to write comments on your child’s work in terms of their progress, attitude, difficulties etc.  |
| **Your child’s teacher** | When the teacher receives your child’s work he or she will provide feedback, positive reinforcement and assistance.If you have any questions it is important to contact your child’s teacher. The teacher can help you and adjust the work to best suit your child’s individual needs. |

***Learning Intention***

***Recall and extend multiplication facts to develop efficient mental strategies for computation.***

|  |  |
| --- | --- |
| Screen bean character with a light bulb over its head | ***Multiplication facts can be extended.*** |

*For example:*

|  |  |
| --- | --- |
| *2 × 3 = 6*  | *2 × 3 ones = 6 ones* |
| ***2 × 30 = 60***  | ***2 × 3 tens = 6 tens*** |
| *2 × 300 = 600*  | *2 × 3 hundreds = 6 hundreds*  |
| ***2 × 3 000 = 6 000*** | ***2 × 3 thousands = 6 thousands*** |
| *2 × 30 000 = 60 000* | *2 × 3 tens of thousands = 6 tens of thousands* |

1. *Use your knowledge of multiplication facts to extend the following.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 | *×*  | 4 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 | *×*  | 40 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 | *×*  | 400 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 | *×*  | 4 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 | *×*  | 40 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×*  | 3 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×*  | 30 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×*  | 300 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×*  | 3 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×*  | 30 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | *×*  | 5 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | *×*  | 50 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | *×*  | 500 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | *×*  | 5 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | *×*  | 50 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×*  | 8 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×*  | 80 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×*  | 800 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×*  | 8 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×*  | 80 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | *×*  | 9 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | *×*  | 90 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | *×*  | 900 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | *×*  | 9 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | *×*  | 90 000 | = |  |

1. *Using your knowledge of multiplication facts answer the following questions.*
2. *3 × 70 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
3. *9 × 400 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
4. *6 × 3 000 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
5. *3 × 20 000 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
6. *5 × 50 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
7. *6 × 40 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
8. *2 × 200 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
9. *4 × 60 000 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
10. *8 × 500 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

Please ask your supervisor to correct today’s work with you.

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***Learning Intention***

***Use repeated addition to solve multiplication problems.***

|  |  |
| --- | --- |
| Screen bean character with a light bulb over its head | ***Multiplication is repeated addition.*** |

*You can multiply groups of 10, 100, 1 000 or 10 000 using* ***repeated addition****. For example,*

***20 + 20 + 20 + 20 = 80***

*is the same as*

***4 groups of 20 = 80***

*or*

***4 × 20 = 80***

***500 + 500 + 500 + 500 + 500 + 500 + 500 + 500 + 500 = 4 500***

*is the same as*

***9 groups of 500 = 4 500***

*or*

***9 × 500 = 4 500***

***6 000 + 6 000 + 6 000 = 18 000***

*is the same as*

***3 groups of 6 000 = 18 000***

*or*

***3 × 6 000 = 18 000***

1. *Use repeated addition to find the answers to these questions.*
2. *3 × 40 =*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | + |  | + |  | = |  |

1. *3 × 200 =*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | + |  | + |  | = |  |

1. *4 × 50 =*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | + |  | + |  | + |  | = |  |

1. *4 × 300 =*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | + |  | + |  | + |  | = |  |

1. *5 × 20 =*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | + |  | + |  | + |  | + |  | = |  |

1. *3 × 400 =*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | + |  | + |  | = |  |

1. *Use repeated addition to find the answers to your own questions.*
2. *­­­­\_\_\_ × \_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
3. *\_\_\_ × \_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
4. *\_\_\_ × \_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
5. *\_\_\_ × \_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
6. *\_\_\_ × \_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
7. *\_\_\_ × \_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
8. *\_\_\_ × \_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
9. *\_\_\_ × \_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

Please ask your supervisor to correct today’s work with you.

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***Learning Intention***

***Recall multiplication facts up to 10 × 10.***

*Multiplication facts can be built up from other multiplication facts. For example, we know that*

*5 × 7 = 35*

*or*

*7 + 7 + 7 + 7 + 7 = 35*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |

 *so*

 *6 × 7 = 42*

 *or*

 *35 + 7 = 42*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** | **O** | **O** | **O** |

1. *Build other multiplication facts up from the ones given.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 | *×* | 7 | = | 14 |

 so

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×* | 7 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×* | 6 | = | 18 |

 so

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | *×* | 6 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×* | 3 | = | 24 |

 so

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 9 | *×* | 3 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×* | 4 | = | 20 |

 so

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×* | 4 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | *×* | 9 | = | 63 |

 so

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×* | 9 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 10 | *×* | 10 | = | 100 |

 so

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11 | *×* | 10 | = |  |

*Multiplication facts can also be built down from other multiplication facts. For example, we know that*

*5 × 4 = 20*

*or*

*4 + 4+ 4 + 4 + 4 =20*

|  |  |  |  |
| --- | --- | --- | --- |
| **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** |

 *so*

*4 × 4 = 16*

*or*

*20 – 4 = 16*

|  |  |  |  |
| --- | --- | --- | --- |
| **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** |
| **O** | **O** | **O** | **O** |

1. *Build other multiplication facts down from the ones given.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×* | 6 | = | 36 |

36 – 6 = \_\_\_\_ *so*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×* | 6 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 9 | *×* | 5 | = | 45 |

 45 – 5 = \_\_\_\_ *so*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×* | 5 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×* | 7 | = | 21 |

 21 – 7 = \_\_\_\_ *so*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 | *×* | 7 | = |  |

*d.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | *×* | 4 | = | 16 |

16 – 4 = \_\_\_\_ *so*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | *×* | 4 | = |  |

*e.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | *×* | 8 | = | 56 |

56 – 8 = \_\_\_\_ *so*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×* | 8 | = |  |

*f.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 12 | *×* | 10 | = | 120 |

120 – 10 = \_\_\_\_ *so*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11 | *×* | 10 | = |  |

Please ask your supervisor to correct today’s work with you.

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***Learning Intention***

***Develop efficient mental and written strategies for multiplication.***

*Known multiplication facts can be used to find unknown facts. For example, to work out*

***12 × 6***

 *think*

***10 × 6 = 60***

*and*

***60 + 6 + 6 = 72***

*or for*

***12 × 8***

 *think*

***10 × 8 = 80***

*and*

***80 + 8 + 8 = 96***

1. *Work out the answers to the following questions mentally based on your knowledge of multiplication facts.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11 | *×* | 6 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11 | *×* | 5 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11 | *×* | 7 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11 | *×* | 8 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 12 | *×* | 4 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 12 | *×* | 5 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 12 | *×* | 6 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 12 | *×* | 7 | = |  |

*h.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 12 | *×* | 8 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 13 | *×* | 4 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 13 | *×* | 5 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 13 | *×* | 6 | = |  |

*l.*

*m.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 14 | *×* | 4 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 14 | *×* | 5 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 14 | *×* | 6 | = |  |

*To double means to make twice as big. You can double a number by adding it to itself or by multiplying the number by two. For example,*

*double 4 is 8.*

*4 + 4 = 8*

*4 × 2 = 8*

*A strategy to use when multiplying by 4 is to double and then double again. For example, to work out*

***8 × 4***

*think*

***double*** *8 = 16*

*then* ***double*** *16 = 32*

***8 × 4 = 32***

*or*

***23 × 4***

*think*

***double*** *23 = 46*

*then* ***double*** *46 = 92*

***23 × 4 = 92***

1. *Use the ‘double and double again’ strategy to multiply by 4.*
2. *6 × 4*

*Double 6 = \_\_\_\_\_*

*Double \_\_\_\_\_ = \_\_\_\_\_*

*6 × 4 = \_\_\_\_\_*

1. *12 × 4*

*Double 12 = \_\_\_\_\_*

*Double \_\_\_\_\_ = \_\_\_\_\_*

*12 × 4 = \_\_\_\_\_*

1. *14 × 4*

*Double 14 = \_\_\_\_\_*

*Double \_\_\_\_\_ = \_\_\_\_\_*

1. *× 4 = \_\_\_\_\_*
2. *22 × 4*

*Double 22 = \_\_\_\_\_*

*Double \_\_\_\_\_ = \_\_\_\_\_*

*22 × 4 = \_\_\_\_\_*

*A strategy for multiplying by 6 is to multiply by 3 and then double the answer. For example, to work out*

***5 × 6***

*think*

***5 × 3 = 15***

***double 15*** *= 30*

***5 × 6 = 30***

1. *Use the strategy above to answer the following questions.*
2. *6 × 6*

*6 × 3 = \_\_\_\_\_*

*double \_\_\_\_\_ = \_\_\_\_\_*

1. *× 6 = \_\_\_\_\_*
2. *9 × 6*

*9 × 3 = \_\_\_\_\_*

*double \_\_\_\_\_ = \_\_\_\_\_*

*9 × 6 = \_\_\_\_\_*

*A strategy for multiplying by 5 is to multiply by 10 and then halve the answer. For example, to work out*

***16 × 5***

*think*

***16 × 10 = 160***

***half of 160*** *= 80*

***16 × 5 = 80***

1. *Use the strategy above to answer the following questions.*
2. *12 × 5*
3. *× 10 = \_\_\_\_\_*

*halve \_\_\_\_\_ = \_\_\_\_\_*

1. *× 5 = \_\_\_\_\_*
2. *14 × 5*

*14 × 10 = \_\_\_\_\_*

*halve \_\_\_\_\_ = \_\_\_\_\_*

*14 × 5 = \_\_\_\_\_*

Please ask your supervisor to correct today’s work with you.

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***Learning Intention***

***Revise automatic recall of times tables.***

1. *Practise your times tables by completing the grid below. Please do not use a calculator. You can time yourself if you wish.*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **×** | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| **0** |  |  |  |  |  |  |  |  |  |  |  |
| **1** |  |  |  |  |  |  |  |  |  |  |  |
| **2** |  |  |  |  |  |  |  |  |  |  |  |
| **3** |  |  |  |  |  |  |  |  |  |  |  |
| **4** |  |  |  |  |  |  |  |  |  |  |  |
| **5** |  |  |  |  |  |  |  |  |  |  |  |
| **6** |  |  |  |  |  |  |  |  |  |  |  |
| **7** |  |  |  |  |  |  |  |  |  |  |  |
| **8** |  |  |  |  |  |  |  |  |  |  |  |
| **9** |  |  |  |  |  |  |  |  |  |  |  |
| **10** |  |  |  |  |  |  |  |  |  |  |  |

***Time: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

Please ask your supervisor to correct today’s work with you.

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***Learning Intention***

***Develop efficient mental and written strategies for multiplying 2- digit numbers by a 1-digit number.***

*Multiplying a 2- or 3-digit number by a 1-digit number requires an understanding of place value. To solve 25 × 3 we need to think of 25 as 2 tens and 5 ones. Here is one way we can find the answer to this question. Go through these steps with your supervisor.*

*Step 1: Multiply 3 by 5 ones (3 × 5 = 15).*

*Step 2: Multiply 3 ones by 2 tens (3 × 20 = 60).*

*Step 3: Add the tens and ones (60 + 15 = 75).*

*Step 4: 25 × 3 = 75*

 ***Hundreds Tens Ones***

|  |  |  |
| --- | --- | --- |
|  | *2* | *5* |
| *×* |  | *3* |
|  | *1* | *5* |
| *+* | *6* | *0* |
|  | *7* | *5* |

= 3 x 5 + 3 x 20 = 3 x 25 = 75!

= the answer to 3 x 5

= the answer to 3 x 5

*1. Multiply the 1-digit number by the ones and then the tens to solve these multiplication problems. Ask your supervisor to check your first two answers.*

*a****.***  *Hundreds Tens Ones b. Hundreds Tens Ones*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 3 |
|  | *×* |  | 3 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 6 |
|  | *×* |  | 2 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

*c. Hundreds Tens Ones d. Hundreds Tens Ones*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 3 | 4 |
|  | *×* |  | 2 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 7 |
|  | *×* |  | 3 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

*e. Hundreds Tens Ones f. Hundreds Tens Ones*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 8 |
|  | *×* |  | 4 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 6 |
|  | *×* |  | 4 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

*g.* ***Hundreds Tens Ones*** *h.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 8 |
|  | *×* |  | 5 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 3 | 6 |
|  | *×* |  | 5 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

*i.* ***Hundreds Tens Ones*** *j.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 7 |
|  | *×* |  | 6 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 1 | 9 |
|  | *×* |  | 6 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

*k.* ***Hundreds Tens Ones*** *l.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 5 |
|  | *×* |  | 6 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 1 | 8 |
|  | *×* |  | 6 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

Please ask your supervisor to correct today’s work with you.

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***Learning Intention***

***Develop efficient mental and written strategies for multiplying 2- digit numbers by a 1-digit number including trading.***

*Now we are going to use another strategy for multiplying numbers - trading. Let’s look at 25 × 3 again. Go through each step with your supervisor.*

*Step 1: Multiply 3 by 5 ones (3 × 5 = 15).*

*Step 2: Write the 5 in the ones column and trade the 1 (which is really 10) to the tens column.*

*Step 3: Multiply 3 by 2 tens (3 × 2 tens = 6 tens)*

*Step 3: Add the 6 tens plus the 1 in the tens column that was traded. This now adds up to 7 tens.*

*Step 4: Write 7 in the tens column.*

*Step 5: 25 × 3 = 75*

 ***Hundreds Tens Ones***

 ***+ 1***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | *2* | *5* |
| *×* |  |  | *3* |
|  |  | *7* | *5* |
|  |  |  |  |

*1.**Complete these 2-digit by 1-digit multiplication problems. The first one has been done for you. \*Don’t forget to trade. Ask your supervisor to check your first two answers.*

*a****. Hundreds Tens Ones*** *b.* ***Hundreds Tens Ones***

 ***+ 4***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 8 |
| *×* |  |  | 5 |
|  | 1 | 4 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 5 |
| *×* |  |  | 3 |
|  |  |  |  |

*c.*  ***Hundreds Tens Ones*** *d.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 4 | 3 |
| *×* |  |  | 5 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 3 | 7 |
| *×* |  |  | 8 |
|  |  |  |  |

*e.* ***Hundreds Tens Ones*** *f.*  ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 9 |
| *×* |  |  | 4 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 4 |
| *×* |  |  | 9 |
|  |  |  |  |

*g.* ***Hundreds Tens Ones*** *h.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 4 | 3 |
| *×* |  |  | 8 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 8 | 2 |
| *×* |  |  | 7 |
|  |  |  |  |

*i.* ***Hundreds Tens Ones*** *j.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 6 | 3 |
| *×* |  |  | 6 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 3 | 4 |
| *×* |  |  | 5 |
|  |  |  |  |

*k.* ***Hundreds Tens Ones*** *l.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 9 |
| *×* |  |  | 8 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 4 | 8 |
| *×* |  |  | 6 |
|  |  |  |  |

Please ask your supervisor to correct today’s work with you.

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***Learning Intention***

***Develop efficient mental and written strategies for multiplying 3- digit numbers by a 1-digit number including trading.***

*Now you are going to extend your knowledge of multiplication by multiplying 3-digit numbers by 1-digit numbers. Trading will most likely be required. Let’s look at 124 × 4.*

*Step 1: Multiply 4 ones by 4 (4 × 4 = 16).*

*Step 2: The 6 in the ones column and trade the 1 (which is really 10) to the tens column.*

*Step 3: Multiply 2 tens by 4 (2 tens by 4 = 8 tens).*

*Step 3: Add the 8 tens to the 1 ten that was traded to the tens column. This now adds up to 9 tens.*

*Step 4: Write 9 in the tens column in the answer*

*Step 5: Multiply 4 ones by the hundreds (4 × 1 = 4).*

*Step 6: 124 × 4 = 496*

 ***Hundreds Tens Ones***

***+ 1***

|  |  |  |  |
| --- | --- | --- | --- |
|  | *1* | *2* | *4* |
| *×* |  |  | *4* |
|  | *4* | *9* | *6* |
|  |  |  |  |

*1. Complete these 3-digit by 1-digit multiplication problems. The first one has been done for you. \*Don’t forget to trade. Ask your supervisor to check your first two answers.*

*a.* ***Hundreds Tens Ones*** *b.*  ***Hundreds Tens Ones***

 ***+ 1***

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 2 | 6 |
| *×* |  |  | 2 |
|  | 2 | 5 | 2 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 2 | 8 |
| *×* |  |  | 3 |
|  |  |  |  |

*c.*  ***Hundreds Tens Ones***  *d.*  ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2 | 3 | 2 |
| *×* |  |  | 4 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2 | 4 | 7 |
| *×* |  |  | 5 |
|  |  |  |  |

*e.* ***Hundreds Tens Ones*** *f.*  ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2 | 5 | 3 |
| *×* |  |  | 4 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 3 | 8 |
| *×* |  |  | 5 |
|  |  |  |  |

*g.* ***Hundreds Tens Ones*** *h.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2 | 5 | 4 |
| *×* |  |  | 6 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 3 | 2 | 3 |
| *×* |  |  | 7 |
|  |  |  |  |

*i.* ***Hundreds Tens Ones*** *j.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  | 4 | 2 | 0 |
| *×* |  |  | 8 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 3 | 7 |
| *×* |  |  | 6 |
|  |  |  |  |

*k.* ***Hundreds Tens Ones*** *l.* ***Hundreds Tens Ones***

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2 | 1 | 6 |
| *×* |  |  | 6 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 3 | 2 | 5 |
| *×* |  |  | 4 |
|  |  |  |  |

Please ask your supervisor to correct today’s work with you.

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***Learning Intention***

***Solve word problems using number sentences involving multiplication.***

*Now you are going to solve some multiplication word problems using any mental or written strategies of your choice. Please do not use a calculator. If you get stuck please look back at previous examples and/or ask your supervisor for assistance. The first one is done for you.*

1. *Solve these problems using any strategy you wish.*
2. *How many children were at the carnival if there were 8 schools with 54 competitors each?*

 ***Hundreds Tens Ones***

 *+ 3*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 5 | 4 |
| *×* |  |  | 8 |
|  | 4 | 3 | 2 |

1. *During the 9 games of the netball tournament Mandy averaged 28 points per game. What was her total number of points?*
2. *How much has David saved if he has made 8 deposits of $78 into his bank account?*
3. *What is the distance around the outside of the square garden bed if the sides are 23 metres long?*
4. *How far does Violet swim per fortnight if she trains 6 days a week and completes 4 kilometres each session?*
5. *Write your own multiplication word problem and then solve it in the box below.*

|  |
| --- |
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Please ask your supervisor to correct today’s work with you.

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**ASSESSMENT TASKS – MULTIPLICATION**

***Students:*** *Please complete this section without looking back through the work or assistance from your supervisor. Please do not use a calculator.*

***Supervisors:*** *Please* ***do not*** *correct the student’s work.*

1. *Use your knowledge of multiplication facts to extend the following.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×*  | 5 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×*  | 50 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×*  | 500 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×*  | 5 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×*  | 50 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×*  | 4 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×*  | 40 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×*  | 400 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×*  | 4 000 | = |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×*  | 40 000 | = |  |

1. *Use repeated addition to find the answers to these questions.*
2. *3 × 70 =*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | + |  | + |  | = |  |

1. *3 × 300 =*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | + |  | + |  | = |  |

1. *Build other multiplication facts up from the ones given.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | *×* | 9 | = | 36 |

 so

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×* | 9 | = |  |

*b.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | *×* | 6 | = | 42 |

 so

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×* | 6 | = |  |

1. *Build other multiplication facts down from the ones given.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | *×* | 8 | = | 48 |

48 – 8 = \_\_\_\_ *so*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | *×* | 8 | = |  |

*b.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 9 | *×* | 6 | = | 54 |

 54 – 6 = \_\_\_\_ *so*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | *×* | 6 | = |  |

1. *Use the ‘double and double again’ strategy to multiply by 4.*
2. *9 × 4*

*Double 9 =\_\_\_\_\_*

*Double \_\_\_\_\_ = \_\_\_\_\_*

1. *× 4 = \_\_\_\_\_*
2. *11 × 4*

*Double 11 =\_\_\_\_\_*

*Double \_\_\_\_\_ = \_\_\_\_\_*

1. *× 4 = \_\_\_\_\_*
2. *Multiply the ones and then the tens to complete these 2-digit by 1-digit multiplication problems.*

*a. Hundreds Tens Ones b. Hundreds Tens Ones*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 2 | 5 |
|  | *×* |  | 3 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 3 | 2 |
|  | *×* |  | 2 |
|  |  |  |  |
| + |  |  |  |
|  |  |  |  |

1. *Complete these 2-digit by 1-digit multiplication problems that involve trading.*

*a. Hundreds Tens Ones b. Hundreds Tens Ones*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 3 | 6 |
| *×* |  |  | 5 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 4 | 5 |
| *×* |  |  | 3 |
|  |  |  |  |

1. *Complete these 3-digit by 1-digit multiplication problems that involve trading.*

*a. Hundreds Tens Ones b. Hundreds Tens Ones*

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2 | 3 | 7 |
| *×* |  |  | 3 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| *b.* | 4 | 1 | 6 |
| *×* |  |  | 5 |
|  |  |  |  |

1. *Solve these problems using any strategy you wish.*
2. *How many metres did Ebony swim if she completed 8 laps of the 49-metre pool?*

**REFLECTION**

*What strategies can I use to multiply 2- and 3-digit numbers by a 1-digit number?*

**Please think about what you’ve learnt. Place a tick or smiley face in each of the rows below.**

|  |  |  |
| --- | --- | --- |
| **LEARNING INTENTION**  | **I CAN DO THIS** | **I NEED MORE PRACTICE** |
| *Extend multiplication facts* |  |  |
| *Use repeated addition to solve multiplication problems* |  |  |
| *Use the ‘double and double again’ strategy to multiply by 4.* |  |  |
| *Work out 2-digit by 1-digit multiplication problems* |  |  |
| *Work out 3-digit by 1-digit multiplication problems* |  |  |
| *Solve word problems using number sentences involving multiplication* |  |  |

*In your own words, please list at least 3 strategies things that you have learnt for multiplying 2- and 3-digit numbers with 1-digit numbers. You may look back through the work to refresh your memory.*

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**TEACHER ASSESSMENT**

*What strategies can I use to multiply 2- and 3-digit numbers by a 1-digit number?*

Student: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Level 4**

|  |  |  |
| --- | --- | --- |
| **Number and Algebra** | Demonstrated | Needs further opportunity |
| Recall multiplication facts up to 10 × 10 and related division facts  |  |  |
| Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder |  |  |
| Solve word problems by using number sentences involving multiplication or division where there is no remainder  |  |  |