Name: Teacher: Class:

**9.1 Calculating**

|  |  |  |
| --- | --- | --- |
| **You need to learn to:** | **Pre-learning assessment** | **Post-learning assessment** |
| 1. Calculate with positive powers and roots | *1,2,3* | *1,2,3* |
| 2. Calculate with negative indices | *1,2,3* | *1,2,3* |
| 3. Convert numbers into and out of standard form | *1,2,3* | *1,2,3* |
| 4. Add / Subtract in standard form | *1,2,3* | *1,2,3* |
| 5. Multiply/ Divide in standard form | *1,2,3* | *1,2,3* |
| 6. Be able to truncate and round numbers | *1,2,3* | *1,2,3* |
| 7. **Recall** **ALL** multiplication and division facts up to 12 x 12 | *1,2,3* | *1,2,3* |
| 8. Identify minimum and maximum values of a number that has been rounded | *1,2,3* | *1,2,3* |
| 9. Use inequalities to describe the range of values for a rounded value | *1,2,3* | *1,2,3* |
| 10. Solve problems including the minimum and maximum value of an amount that has been rounded | *1,2,3* | *1,2,3* |

**Assessments**

|  |  |  |
| --- | --- | --- |
| Assessment | What score **I think** I’ll get out of 40  (complete **before** assessment) | What score **I did** get out of 40  (complete **after** assessment) |
| Diagnosis assessment | /40 = % | /40 = % |
| Test assessment | /40 = % | /40 = % |

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Mental arithmetic questions “Diagnosis”

To be read to students

7) Times table questions (to be read at a pace of one every 2 seconds – explicitly tell the students we are testing recall not calculation)

9 x 7

4 x 8

3 x 9

12 x 8

6 x 8

11 x 3

7 x 8

9 x 6

7 x 6

8 x 8

Mental arithmetic questions “Test”

To be read to students

7) Times table questions (to be read at a pace of one every 2 seconds – explicitly tell the students we are testing recall not calculation)

9 x 7

4 x 8

3 x 9

12 x 8

6 x 8

11 x 3

7 x 8

9 x 6

7 x 6

8 x 8

**9.1 Calculating** Date:

**Diagnosis (to be taken before the topic is taught)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Question n.o.** | **Question** | **Workings and answer** | Macintosh HD:private:var:folders:65:l364j7q962v4_xf3302b347w0000gn:T:TemporaryItems:imgres.jpg |
| 1 | Calculate the following  a) 33  b) 26  c) 73  d) √169  e) ∛125  f) ∜81 | a)  b)  c)  d)  e)  f) | (6) |
| 2 | Calculate the following  a) 5-2  b) 3-3  c) 7-2  d) 36½  e) 8 1/3  f) 25 -½ | a)  b)  c)  d)  e)  f) | (6) |
| 3 | Convert the following into standard form   1. 23400000 2. 570000000 3. 0.00000456 4. 34.6 x 105 | a)  b)  c)  d) | (4) |
| 4 | Calculate the following   1. 3.6 x 107  + 2.3 x 107 2. 5.6 x 107 - 3.8 x 106 3. 4.7 x 105 + 8.96 x 106   d) 3.6 x 10-4 - 2.8 x10-5 | a)  b)  c)  d) | (4) |
| 5 | Calculate the following   1. 3.6 x 107  x 2.0 x 107 2. 5.0 x 107 x 2.4 x 106 3. 6.3 x 105 ÷ 2.1 x 103   d) 3.6 x 10-4 ÷ 1.2 x10-5 | a)  b)  c)  d) | (4) |
| 6 | Explain the difference between truncating and rounding a value. Give at least one example. |  | (1) |
| 7 | Number Dash  Complete the following ‘quick fire’ times table questions.  a)  b)  c)  d)  e)  f)  g)  h)  i)  j) | a)  b)  c)  d)  e)  f)  g)  h)  i)  j) | (10) |
| 8 | A plank of wood is 5m long (rounded to the nearest metre).  What is   1. The shortest length that the plank could be? 2. The longest length the plank could be? | a)  b) | (2) |
| 9 | 1. For the question above using y to represent the length of the plank. Write an inequality to show the range of values for y. 2. List all the integers that satisfy the inequality   -3 ≥ t > 5 | a)  b) | (2) |
| 10 | 1. A book shelf needs to be able to hold 12 books. All the books are 6cm think (rounded to the nearest cm). What is the shortest length the shelf needs to be to ensure it can always hold 12 books. |  | (1) |

**9.1 Calculating** Date:

**Test (to be taken after the topic is taught)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Question n.o.** | **Question** | **Workings and answer** | Macintosh HD:private:var:folders:65:l364j7q962v4_xf3302b347w0000gn:T:TemporaryItems:imgres.jpg |
| 1 | Calculate the following  a) 53  b) 28  c) 73  d) √196  e) ∛27  f) ∜16 | a)  b)  c)  d)  e)  f) | (6) |
| 2 | Calculate the following  a) 7-2  b) 2-3  c) 11-2  d) 49½  e) 64 1/3  f) 81 -½ | a)  b)  c)  d)  e)  f) | (6) |
| 3 | Convert the following into standard form   1. 57600000 2. 470000000 3. 0.00000376 4. 28.6 x 108 | a)  b)  c)  d) | (4) |
| 4 | Calculate the following   1. 5.2 x 107  + 3.6 x 107 2. 4.7 x 107 - 3.7 x 106 3. 5.2 x 105 + 8.96 x 106   d) 2.1 x 10-4 - 5.6 x10-5 | a)  b)  c)  d) | (4) |
| 5 | Calculate the following   1. 2.7 x 105  x 2.0 x 105 2. 3.0 x 107 x 3.2 x 106 3. 5.1 x 105 ÷ 1.7 x 103   d) 3.6 x 10-4 ÷ 1.8 x10-5 | a)  b)  c)  d) | (4) |
| 6 | Explain the difference between truncating and rounding a value. Give at least one example. |  | (1) |
| 7 | Number Dash  Complete the following ‘quick fire’ times table questions.  a)  b)  c)  d)  e)  f)  g)  h)  i)  j) | a)  b)  c)  d)  e)  f)  g)  h)  i)  j) | (10) |
| 8 | A factory makes picture frames that have dimensions 12cm x 6 cm (rounded to the nearest cm).   1. What is the size of the largest possible frame that the factory will make? 2. What is the size of the smallest possible frame that the factory will make? | a)  b) | (2) |
| 9 | 1. For the question above using y to represent the height (6cm) of the frame. Write an inequality to show the range of values for y. 2. List all the integers that satisfy the inequality   -4 ≥ t > 2 | a)  b) | (2) |
| 10 | A medium pizza has a diameter of 24cm (to the nearest cm). What is the width of the smallest possible box that will always hold a medium pizza? |  | (1) |