

Saint Andrew's RC Secondary School



Putting Young People First

PRACTICAL NUMERACY ASSESSMENT MARKING GUIDELINES (RAG) NUMERACY SKILLS

Practical Numeracy
Assessment Guidelines for Numeracy Skills.

Pupils will be assessed on each individual numeracy skill at the end of each batch of lessons on said numeracy skill.

They will be graded red, amber or green based on Traffic Light Standards below and issued feedback on how to make the green standard. Each guideline is ranked according to difficulty (2 to 5). Mark allocations are shown in the table.

Pupil mark and colour should be recorded in the class tracking document. Note pupils should not be issued with a mark, only RAG colour and feedback should be given to pupils.

Where a pupil does not meet the green standard they will be given another opportunity to do so (a “resit”) at a time that is convenient to them. Pupils should be given as many opportunities as required to meet the green standard. Resits can be found in the Assessment Documents folder as describe in the Teacher Guide.

Pupils will also receive a summative assessment at the end of each unit. (Note individual questions in the summative test can also be used to allow a pupil to achieve a green numeracy skill at this point if they have not yet achieved it)

Working Levels for Numeracy Skills.

Overall Working Level: Achieving Level 3:

Each skill is weighted according to difficulty (2 to 5 marks). The total available weighting for all level 3 skills is 52

- If a pupils achieves a weighting of 38 or more they can be said to be **Green**.
- If a pupil achieves a weighting of between 21 and 37 they can be said to be **Amber**.
- If a pupil achieves a weighting of below 21 they can be said to be **Red**.

Overall Working Level: Achieving Level 4:

Each skill is weighted according to difficulty (2 to 5 marks). The total available weighting for all level 4 skills is 22

- If a pupils achieves a weighting of 15 or more they can be said to be **Green**.
- If a pupil achieves a weighting of between 9 and 14 they can be said to be **Amber**.
- If a pupil achieves a weighting of below 9 they can be said to be **Red**.

Traffic Light Standards for Numeracy Skills.

Numeracy Skill	E&O	Success Guidelines	Green	Amber	Red
Identifying different types of data (2 marks)	MTH 3.21a	<ol style="list-style-type: none"> 1. Identifies all data that cannot be assigned a numerical value as qualitative. 2. Identifies all data that can be assigned a numerical value as quantitative. 3. Identifies that quantitative data that can only hold a whole number value as discrete. 4. Identifies that quantitative data that can have a decimal range of values as continuous. 	<p>All 4 guidelines met (2 marks)</p> <p>Mark Allocation: 2</p>	<p>2 of 4 guidelines met (1 mark for each guideline)</p> <p>OR</p> <p>50% of all types of data issued correctly identified</p> <p>Mark Allocation: 1</p>	<p>Less than 2 guidelines met)</p> <p>OR</p> <p>Less than 50% of all types of data correctly identified. (0 marks)</p> <p>Mark Allocation: 0</p>
Simple Unit Conversion (2 marks)	MNU 3.11a	<ol style="list-style-type: none"> 1. Identify the prefix to change to 2. Identify the prefix of the current unit. 3. Correctly makes unit conversion (using flow chart). 	<p>All 3 guidelines met</p> <p>Mark Allocation: 2</p>	<p>2 of 3 guidelines met</p> <p>OR</p> <p>50% of all unit conversions made correctly</p> <p>Mark Allocation: 1</p>	<p>Less than 2 guidelines met)</p> <p>OR</p> <p>Less than 50% of all unit conversions made correctly</p> <p>Mark Allocation: 0</p>

Numeracy Skill	E&O	Success Guidelines	Green	Amber	Red
Selecting information from a table (2 marks)	MTH 3.21a	<ol style="list-style-type: none"> 1. Uses correct column and row 2. Selects correct Value from table 	<p>Both guidelines met</p> <p>Mark Allocation: 2</p>	<p>1 guideline met</p> <p>Mark Allocation: 1</p>	<p>No guidelines met</p> <p>Mark Allocation: 0</p>
Constructing a table (4 marks)	MTH 3.21a	<ol style="list-style-type: none"> 1. Correctly identifies the number of columns and rows required 2. Draw an outline of the table using a ruler 3. Complete column headings with units columns) 4. Populates table with matching sets of data 	<p>Meets all 4 Guidelines</p> <p>Mark Allocation: 4</p>	<p>Meets 2 or 3 guidelines</p> <p>Mark Allocation: 3 or 2</p>	<p>Meets 1 guideline Mark Allocation = 1</p> <p>OR</p> <p>Meets no guidelines Mark Allocation: 0</p>
Calculating an average (2 marks)	MTH 3.21a MTH 3.20B	<ol style="list-style-type: none"> 1. Adds all data up correctly 2. Divides by the number of values correctly 3. Remembers units at end 	<p>Meets all guidelines</p> <p>Mark Allocation: 2</p>	<p>Meets 1 or 2 guidelines</p> <p>Mark Allocation: 1</p>	<p>Meets no guidelines</p> <p>Mark Allocation: 0</p>
Calculating a range (2 marks)	MTH 3.21A MTH 3.20B	<ol style="list-style-type: none"> 1. Correctly selects highest and smallest value 2. States range with units. 	<p>Meets both guidelines</p> <p>Mark Allocation: 2</p>	<p>Meets 1 guideline</p> <p>Mark Allocation: 1</p>	<p>Meets no guidelines</p> <p>Mark Allocation: 0</p>

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Creating a percentage (3 marks)	MNU 3.07a MNU 3.08A	<ol style="list-style-type: none"> 1. Correctly identifies the whole and part 2. Divides the whole by the part 3. Multiplies answer above by 100 4. States with % 	<p>Meets all 4 guidelines</p> <p>Mark Allocation: 3</p>	<p>Meets 2 or 3 guidelines</p> <p>Mark Allocation: 2</p>	<p>Meets 1 guideline Mark Allocation: 1</p> <p>OR</p> <p>Meets no guidelines Mark Allocation: 0</p>
Plot a bar graph (4 marks)	MTH 3.21a	<ol style="list-style-type: none"> 1. Axis is correctly labelled and contains units 2. Each axis has a suitable scale where each division is worth the same value 3. Bars are plotted accurately 4. Graph has a sensible title detailing what is its showing. 	<p>Meets 4 Guidelines Mark Allocation: 4</p>	<p>Meets 2 Guidelines Mark Allocation: 2</p> <p>OR</p> <p>Meets 3 Guidelines Mark Allocation: 3</p>	<p>Meets 1 Guidelines Mark Allocation: 1</p> <p>OR</p> <p>Meets no Guidelines Mark Allocation: 0</p>
Plot a line graph (5 marks)	MTH 3.21a	<ol style="list-style-type: none"> 1. Axis is correctly labelled and contains units. 2. Each axis has a suitable scale where each division is worth the same value 3. Points are plotted accurately 4. Best fit line OR connect points (if biology or geography) 5. Graph has a sensible title detailing what is its showing. 	<p>Meets 4 Guidelines Mark Allocation: 4</p> <p>OR</p> <p>Meets 5 Guidelines Mark Allocation: 5</p>	<p>Meets 3 Guidelines Mark Allocation: 3</p> <p>OR</p> <p>Meets 2 Guidelines Mark Allocation: 2</p>	<p>Meets 1 Guidelines Mark Allocation: 1</p> <p>OR</p> <p>Meets no Guidelines Mark Allocation: 0</p>

Numeracy Skill	E&O	Success Guidelines	Green	Amber	Red
Basic graph conclusions (3 marks)	MNU 3.08a MTH 3.18a	<ol style="list-style-type: none"> Identifies correctly a linearly proportional (do not need to use term proportional; As X increases Y increases is sufficient) Identifies correctly an inversely proportional (do not need to use term proportional; As X increases Y decreases is sufficient) Identifies when there is no obvious relationship between measurements. 	<p>Meets all 4 guidelines</p> <p>Mark Allocation: 3</p>	<p>Meets 2 or 3 guidelines</p> <p>Mark Allocation: 2</p>	<p>Meets 1 guideline Mark Allocation: 1</p> <p>OR</p> <p>Meets no guidelines Mark Allocation: 0</p>
Pie Charts (4 marks)	MTH 3.21a	<ol style="list-style-type: none"> Correctly divides circle into the correct number of segments Using a protractor correctly ensures all segments are worth the correct number of degrees Each Segment is labelled/there is a key The chart has a title. . 	<p>Meets all 4 guidelines</p> <p>Mark Allocation: 4</p>	<p>Meets 2 or 3 guidelines (1 mark each)</p> <p>Mark Allocation: 3/4 to 2/4</p>	<p>1 guideline met Mark Allocation: 1</p> <p>OR</p> <p>No guideline met Mark Allocation: 0</p>

Numeracy Skill	E&O	Success Guidelines	Green	Amber	Red
Batch graphs (5 marks)	MNU 4.21a	<ol style="list-style-type: none"> 1. Axis is correctly labelled and contains units. 2. Each axis has a suitable scale where each division is worth the same value 3. Points are plotted accurately (1 mark) 4. Best fit line OR dots joined OR bars drawn correctly 5. Graph clearly distinguishes between different data sets 	<p>All 5 guidelines met (1 mark for each guideline met)</p> <p>Mark Allocation: 5</p>	<p>3 or 4 of success guidelines met (1 mark for each guideline met)</p> <p>OR</p> <ol style="list-style-type: none"> 1. Each axis has a suitable scale where each division is worth same (1 mark) 2. Axis is correctly labelled (may not have units) (1/2 mark) 3. Attempt made to plot points accurately (within 20% margin of error) (1/2 mark) 4. Attempts to distinguish between data sets (1/2) 5. Line attempted (1 mark) <p>Mark Allocation: 3/5 to 4/5</p>	<p>Less than 3 of green standard bullet points met. (1 mark for each guideline met)</p> <p>Mark Allocation: 0/5 to 2/5</p>

Numeracy Skill	E&O	Success Guidelines	Green	Amber	Red
Grid lines (3 marks)	MTH 3.18a	<ol style="list-style-type: none"> 1. Correctly selects Eastings 2. Correctly selects northing 3. States value together as Easting Northing 	<p>Meets all guidelines</p> <p>Mark Allocation: 3</p>	<p>Meets 2 guidelines</p> <p>Mark Allocation: 2</p>	<p>Meets 1 guideline</p> <p>Mark Allocation: 1</p> <p>OR</p> <p>Meets no guidelines</p> <p>Mark Allocation: 0</p>
Estimates from graphs (2 marks)	MTH 3.18a	<ol style="list-style-type: none"> 1. Correctly finds given co-ordinate on graph 2. Correctly finds other coordinate of this from line 	<p>Meets both guidelines</p> <p>OR</p> <p>Greater than 70% of all estimates correctly identified</p> <p>Mark Allocation: 2</p>	<p>Meets 1 guideline</p> <p>OR</p> <p>70 - 40% of all estimates correctly identified</p> <p>Mark Allocation: 1</p>	<p>Meets no guidelines</p> <p>OR</p> <p>Less than 40% of all estimates correctly identified</p> <p>Mark Allocation: 0</p>
Rounding with Significant figures (2 marks)	MNU 3.01a	<ol style="list-style-type: none"> 1. Correctly identifies the number of significant figures to round too (smallest value in question) 2. Rounds answer to the number of significant figures above 	<p>Answer is correctly rounded to the correct number of significant figures</p> <p>Mark Allocation: 2 marks</p>	<p>Answer is between 1 significant figure less or 2 significant figures more than guideline 1.</p> <p>Mark Allocation: 1 mark</p>	<p>Answer is not rounded appropriately</p> <p>Mark Allocation:0</p>

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Using Equations (4 marks)	MTH 3.15a MTH 3.15b	<ol style="list-style-type: none"> 1. Selects the correct formulae 2. Substitutes into formula correctly 3. Correctly calculates the numerical value 4. Uses appropriate units on answer. 	<p>Meets all 4 guidelines</p> <p>Mark Allocation: 4</p>	<p>Meets 3 guidelines Mark Allocation: 3</p> <p>OR</p> <p>Meets 2 guidelines Mark Allocation: 2</p>	<p>Meets 1 guideline Mark Allocation: 1</p> <p>OR</p> <p>Meets no guidelines Mark Allocation: 0</p>
Converting between decimal and scientific notation (2 marks)	MTH 4.06a	<ol style="list-style-type: none"> 1. Correctly converts decimal to scientific notation 2. Correctly converts scientific notation to decimal. 	<p>Meets all guidelines</p> <p>Mark Allocation: 2</p>	<p>Meets 1 guideline Mark Allocation: 1</p>	<p>Meets no guidelines Mark Allocation: 0</p>
Using prefixes (2 marks)	MTH 4.06a	<ol style="list-style-type: none"> 1. Correctly identifies multiplication factor of prefix from SI 2. Correctly changes from prefix to SI units 	<p>Meets all guidelines</p> <p>Mark Allocation: 2</p>	<p>Meets 1 guideline Mark Allocation: 1</p>	<p>Meets no guidelines Mark Allocation: 0</p>

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Re-arranging Equations (5 marks)	MNU 4.03a MTH 4.13a	<ol style="list-style-type: none"> 1. Selects the correct formulae 2. Substitutes into formula correctly 3. Rearranges correctly (this step is interchangeable with step 2) 4. Correctly calculates the numerical value 5. Uses appropriate units on answer. 	<p>Meets 4 Guidelines Mark Allocation: 4</p> <p>OR</p> <p>Meets 5 Guidelines Mark Allocation: 5</p>	<p>Meets 3 Guidelines Mark Allocation: 3</p> <p>OR</p> <p>Meets 2 Guidelines Mark Allocation: 2</p>	<p>Meets 1 Guidelines Mark Allocation: 1</p> <p>OR</p> <p>Meets no Guidelines Mark Allocation: 0</p>
Proportionality (3 marks)	MNU 3.08a mth 3.18a	<ol style="list-style-type: none"> 1. Correctly identifies directly proportional relationships 2. Correctly identifies inversely proportional relationships 3. Correctly identifies relationships that are proportional but not in a direct or inverse way 	<p>Meets all guidelines Mark Allocation: 3</p>	<p>Meets 2 guidelines Mark Allocation: 2</p>	<p>Meets 1 guideline Mark Allocation: 1</p> <p>OR</p> <p>Meets no guidelines Mark Allocation: 0</p>

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Gradients from graphs (3 marks)	MTH 4.13a-d	<ol style="list-style-type: none"> 1. Selects appropriate pair of coordinates from the line 2. Calculates gradient using $m = (y_2 - y_1) / (x_2 - x_1)$ correctly 3. Ensures units are include in final answer (y/x) 	<p>Meets all guidelines Mark Allocation: 3</p>	<p>Meets 2 guidelines Mark Allocation: 2</p>	<p>Meets 1 guideline Mark Allocation: 1</p> <p>OR</p> <p>Meets no guidelines Mark Allocation: 0</p>
Equation of line graph (5 marks)	MTH 4.13a-d	<ol style="list-style-type: none"> 1. Identifies the measurement of y 2. Identifies the measurement of x 3. Calculates the gradient 4. Identifies where the line cut y-axis (c) 5. Expresses as $y = mx + c$ 	<p>Meets 4 Guidelines Mark Allocation: 4</p> <p>OR</p> <p>Meets 5 Guidelines Mark Allocation: 5</p>	<p>Meets 3 Guidelines Mark Allocation: 3</p> <p>OR</p> <p>Meets 2 Guidelines Mark Allocation: 2</p>	<p>Meets 1 Guidelines Mark Allocation: 1</p> <p>OR</p> <p>Meets no Guidelines Mark Allocation: 0</p>
Ratios (5marks)	MNU 3.07a MNU 3.08A	<ol style="list-style-type: none"> 1. Correctly states the values to be compared 2. Correctly identifies multiplication factor 3. Applies multiplication factor correctly 4. States simplified ratio 	<p>Meets 4 Guidelines Mark Allocation: 4</p> <p>OR</p> <p>Meets 5 Guidelines Mark Allocation: 5</p>	<p>Meets 3 Guidelines Mark Allocation: 3</p> <p>OR</p> <p>Meets 2 Guidelines Mark Allocation: 2</p>	<p>Meets 1 Guidelines Mark Allocation: 1</p> <p>OR</p> <p>Meets no Guidelines Mark Allocation: 0</p>

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		5. Correctly applies simplified ratio			