Mathematics assessment criteria: Year 3

Criterion A: Knowing and understanding

Maximum: 8

At the end of year 3, students should be able to:

i. **select** appropriate mathematics when solving problems in both familiar and unfamiliar situations

ii. **apply** the selected mathematics successfully when solving problems

iii. **solve** problems correctly in a variety of contexts.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student is able to: i. **select** appropriate mathematics when solving simple problems in familiar situations ii. **apply** the selected mathematics successfully when solving these problems iii. generally **solve** these problems correctly.
3–4	The student is able to: i. **select** appropriate mathematics when solving more complex problems in familiar situations ii. **apply** the selected mathematics successfully when solving these problems iii. generally **solve** these problems correctly.
5–6	The student is able to: i. **select** appropriate mathematics when solving challenging problems in familiar situations ii. **apply** the selected mathematics successfully when solving these problems iii. generally **solve** these problems correctly.
7–8	The student is able to: i. **select** appropriate mathematics when solving challenging problems in both familiar and unfamiliar situations ii. **apply** the selected mathematics successfully when solving these problems iii. generally **solve** these problems correctly.

Criterion B: Investigating patterns

Maximum: 8

At the end of year 3, students should be able to:

i. **select** and **apply** mathematical problem-solving techniques to discover complex patterns

ii. **describe** patterns as relationships and/or general rules consistent with findings

iii. **verify** and **justify** relationships and/or general rules.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student is able to: i. **apply**, with teacher support, mathematical problem-solving techniques to discover simple patterns ii. **state** predictions consistent with patterns.
3–4	The student is able to: i. **apply** mathematical problem-solving techniques to discover simple patterns ii. **suggest** relationships and/or general rules consistent with findings.
5–6	The student is able to: i. **select** and apply mathematical problem-solving techniques to discover complex patterns ii. **describe** patterns as relationships and/or general rules consistent with findings iii. **verify** these relationships and/or general rules.
7–8	The student is able to: i. **select** and apply mathematical problem-solving techniques to discover complex patterns ii. **describe** patterns as relationships and/or general rules consistent with correct findings iii. **verify** and **justify** these relationships and/or general rules.

Note: A task that does not allow students to select a problem-solving technique is too guided and should result in students earning a maximum achievement level of 4 (year 3 and higher). However, teachers should give enough direction to ensure that all students can begin the investigation.

For year 3 and higher, a student who describes a general rule consistent with incorrect findings will be able to achieve a maximum achievement level of 6, provided that the rule is of an equivalent level of complexity.

Criterion C: Communicating

Maximum: 8

At the end of year 3, students should be able to:

i. **use** appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations

ii. **use** different forms of mathematical representation to present information

iii. **move** between different forms of mathematical representation

iv. **communicate** complete and coherent mathematical lines of reasoning

v. **organize** information using a logical structure.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student is able to: i. **use** limited mathematical language ii. **use** limited forms of mathematical representation to present information iii. **communicate** through lines of reasoning that are difficult to interpret.
3–4	The student is able to: i. **use** some appropriate mathematical language ii. **use** different forms of mathematical representation to present information adequately iii. **communicate** through lines of reasoning that are able to be understood, although these are not always clear iv. adequately **organize** information using a logical structure.
5–6	The student is able to: i. usually **use** appropriate mathematical language ii. usually **use** different forms of mathematical representation to present information correctly iii. move between different forms of mathematical representation with some success iv. **communicate** through lines of reasoning that are clear although not always coherent or complete v. present work that is usually **organized** using a logical structure.
7–8	The student is able to: i. consistently **use** appropriate mathematical language ii. **use** different forms of mathematical representation to consistently present information correctly iii. move effectively between different forms of mathematical representation iv. **communicate** through lines of reasoning that are complete and coherent v. present work that is consistently **organized** using a logical structure.

Criterion D: Applying mathematics in real-life contexts

Maximum: 8

At the end of year 3, students should be able to:

i. **identify** relevant elements of authentic real-life situations

ii. **select** appropriate mathematical strategies when solving authentic real-life situations

iii. **apply** the selected mathematical strategies successfully to reach a solution

iv. **explain** the degree of accuracy of a solution

v. **explain** whether a solution makes sense in the context of the authentic real-life situation.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student is able to: i. **identify** some of the elements of the authentic real-life situation ii. **apply** mathematical strategies to find a solution to the authentic real-life situation, with limited success.
3–4	The student is able to: i. **identify** the relevant elements of the authentic real-life situation ii. **select**, with some success, adequate mathematical strategies to model the authentic real-life situation iii. **apply** mathematical strategies to reach a solution to the authentic real-life situation iv. **describe** whether the solution makes sense in the context of the authentic real-life situation.
5–6	The student is able to: i. **identify** the relevant elements of the authentic real-life situation ii. **select** adequate mathematical strategies to model the authentic real-life situation iii. **apply** the selected mathematical strategies to reach a valid solution to the authentic real-life situation iv. **describe** the degree of accuracy of the solution v. **discuss** whether the solution makes sense in the context of the authentic real-life situation.

Achievement level	Level descriptor
7–8	The student is able to: i. **identify** the relevant elements of the authentic real-life situation ii. **select** appropriate mathematical strategies to model the authentic real-life situation iii. **apply** the selected mathematical strategies to reach a correct solution iv. **explain** the degree of accuracy of the solution v. **explain** whether the solution makes sense in the context of the authentic real-life situation.

Mathematics RVMS - IB MYP

Objective: Through knowledge, understanding,investigating patterns, communicating about math, and applying math in familiar and unfamiliar contexts students will strive to improve their mathematical skills in our ever changing global society.

Math Homework: Requires students to practice math every night.

IB Grading scale (IC conversion)	Work Habits	Content Grade
4 = Exceeds Expectations (A) 3 = Meets Expectations (B) 2 = Inconsistently meets Expectations (C) 1 = Rarely meets expectations (U) 0= Insufficient Evidence (U)	**Based upon P.A.C.K.-** **P**repared, **A**ctively Engaged, **C**ooperative, **K**ind and Safe Homework attempted/completed	**Based upon IB Criterions (A,B,C,D):** A: Knowing and Understanding, B: Investigating Patterns C: Communicating, D: Application of math in real life contexts **Tasks Based on CO Academic Standards(1,2, 3,4):** Number Sense, Patterns, and Operations, Patterns, Functions, and Algebraic Structures, Analysis, Statistics and Probability, Shape, Dimension, and Geometric Relationships

Parents should know that work habit grades are given as 4, 3, 2, 0. Content knowledge follows the IB grading rubric as prescribed by the programme.

End of the Quarter Grading (Final)

RVMS P.A.C.K.	Work Habits Grade (IC conversion):	IB	Content Knowledge Grade (IC conversion):
4	**Majority** weekly grades **exceeded expectations** by scoring perfectly on PACK (Never earned below a 4)(A)	8-7	8-**All** interim and summative assessments **exceeded expectations** (A) 7-**The majority** of interim and summative assessments **exceeded expectations** (A)
3	**Usually** weekly grades **met expectations** (B)	6-5	6-**The majority** of interim and summative assessments **met expectations** (B) 5-**Most** of the interim and summative assessments **met expectations** (B)
2	**Sometimes** the weekly grades **met expectations** but most were inconsistently meeting expectations * (C)	4-3	4-**Some** of the interim and summative assessments **met expectations** (C) 3-A few of the interim and summative assessments **met expectations** (C)
1	**Rarely** did the weekly grades meet expectations * (U)	2-1	2-**Occasionally** the interim and summative assessments **met expectations, (most were inconsistent or below** didn't earn a 4 or 3) (D) 1-**Rarely** the interim and summative assessments **met expectations,** (the **majority were inconsistent or below** a 4 or 3) (D)
0	**Made** no effort towards expected work habits behavior * (U) ***Avoid:** Late homework, tardiness, uncooperative behavior, talking during class instruction, not following class expectations, not portraying PACK behavior, etc.*		