

Corwin International Magnet School

Mathematics, Level 4 – Assessment Criteria

Criterion A: Knowing and Understanding

Maximum: 8

At the end of year 4, students should be 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

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: <ol style="list-style-type: none">i. select appropriate mathematics when solving simple problems in familiar situationsii. apply the selected mathematics successfully when solving these problemsiii. generally solve these problems correctly
3 – 4	The student is able to: <ol style="list-style-type: none">i. select appropriate mathematics when solving more complex problems in familiar situationsii. apply the selected mathematics successfully when solving these problemsiii. generally solve these problems correctly
5 – 6	The student is able to: <ol style="list-style-type: none">i. select appropriate mathematics when solving challenging problems in familiar situationsii. apply the selected mathematics successfully when solving these problemsiii. generally solve these problems correctly
7 – 8	The student is able to: <ol style="list-style-type: none">i. select appropriate mathematics when solving challenging problems in both familiar and unfamiliar situationsii. apply the selected mathematics successfully when solving these problemsiii. generally solve these problems correctly

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Criterion B: Investigating Patterns

Maximum: 8

At the end of year 4, students should be able to:

- i. **select** and **apply** mathematical problem-solving techniques to discover **complex** patterns
- ii. **describe** patterns as general rules consistent with correct findings
- iii. **prove**, or **verify** and **justify**, these general rule

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: <ol style="list-style-type: none">i. apply, with teacher support, mathematical problem-solving techniques to discover simple patternsii. state predictions consistent with patterns
3 – 4	The student is able to: <ol style="list-style-type: none">i. apply mathematical problem-solving techniques to discover simple patternsii. suggest general rules consistent with findings
5 – 6	The student is able to: <ol style="list-style-type: none">i. select and apply mathematical problem-solving techniques to discover complex patternsii. describe general rules consistent with findingsiii. verify these general rules
7 – 8	The student is able to: <ol style="list-style-type: none">i. select and apply mathematical problem-solving techniques to discover complex patternsii. describe patterns as general rules consistent with correct findingsiii. prove, or verify and justify, these general rule

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Criterion C: Communicating

Maximum: 8

At the end of year 4, students should be able to:

- i. consistently **use** appropriate mathematical language
- ii. **use** appropriate 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, coherent and concise
- v. **present** work that is **consistently** organized 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> i. use some appropriate mathematical language ii. use appropriate forms of mathematical representation to present information adequately iii. communicate through lines of reasoning that are complete, although not always clear iv. adequately organize information using a logical structure
5 – 6	The student is able to: <ul style="list-style-type: none"> i. usually use appropriate mathematical language ii. usually use appropriate 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 complete and coherent v. present work that is usually organized using a logical structure
7 – 8	The student is able to: <ul style="list-style-type: none"> i. consistently use appropriate mathematical language ii. use appropriate 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, coherent and concise v. present work that is consistently organized using a logical structure

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Criterion D: Applying Mathematics in Real-life Contexts

Maximum: 8

At the end of year 4, students should be 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 to the authentic real-life situation
- iv. **explain** the degree of accuracy of the solution
- v. **justify** whether the 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: <ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> 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. discuss whether the solution makes sense in the context of the authentic real-life situation
5 – 6	The student is able to: <ol style="list-style-type: none"> 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 degree of accuracy of the solution v. explain whether the solution makes sense in the context of the authentic real-life situation
7 – 8	The student is able to: <ol style="list-style-type: none"> 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 to the authentic real-life situation iv. explain the degree of accuracy of the solution v. justify whether the solution makes sense in the context of the authentic real-life situation