Mathematics assessment criteria: Year 1

Criterion A: Knowing and understanding

Maximum: 8

At the end of year 1, 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 in a variety of contexts.
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 in a variety of contexts.
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 in a variety of contexts.
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 in a variety of contexts.

Criterion B: Investigating patterns

Maximum: 8

At the end of year 1, students should be able to:

i. apply mathematical problem-solving techniques to recognize patterns

ii. describe patterns as relationships or general rules consistent with correct findings

iii. verify whether the pattern works for other examples.

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 recognize **simple patterns** ii. **state** predictions consistent with simple patterns.
3–4	The student is able to: i. **apply** mathematical problem-solving techniques to recognize **patterns** ii. **suggest** how these patterns work.
5–6	The student is able to: i. **apply** mathematical problem-solving techniques to recognize **patterns** ii. **suggest relationships** or general rules consistent with findings iii. verify whether patterns work for **another example**.
7–8	The student is able to: i. **select** and **apply** mathematical problem-solving techniques to recognize **correct patterns** ii. **describe patterns as relationships** or general rules consistent with **correct findings** iii. verify whether patterns work for **other examples**.

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 6 (for years 1 and 2).

Criterion C: Communicating

Maximum: 8

At the end of year 1, students should be able to:

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

ii. use appropriate forms of mathematical representation to present information

iii. communicate coherent mathematical lines of reasoning

iv. 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 understand**.
3–4	The student is able to: 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 **able to be understood**, although these are **not always coherent** iv. **adequately organize** information using a logical structure.
5–6	The student is able to: i. **usually** use **appropriate** mathematical language ii. **usually** use **appropriate forms** of mathematical representation to present information **correctly** iii. communicate through lines of reasoning that are **usually coherent** iv. **present** work that is **usually organized** using a logical structure.
7–8	The student is able to: i. **consistently** use **appropriate** mathematical language ii. **consistently** use **appropriate forms** of mathematical representation to present information **correctly** iii. communicate **clearly** through **coherent** lines of reasoning iv. 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 1, 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. describe 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. apply mathematical strategies to **reach a solution** to the authentic real-life situation iii. **state**, **but not always correctly**, 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. **state correctly** whether the solution makes sense in the context of the authentic real-life situation.
7–8	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 correct solution** to the authentic real-life situation iv. **explain** the degree of accuracy of the solution v. **describe correctly** whether the solution makes sense in the context of the authentic real-life situation.