

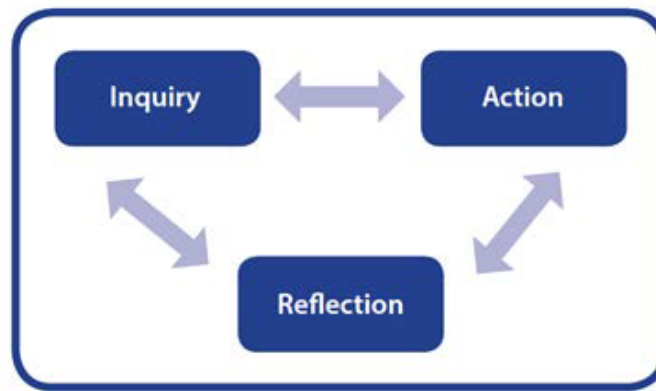
COURSE OUTLINE – MYP YEAR 4 MATHEMATICS

At Carson Graham, we strive for excellence in all endeavours, encourage personal and social responsibility, respect diversity and work to develop a life long commitment to learning.

Our aim is to develop inquiring, knowledgeable, confident and caring students who create a better world through intercultural understanding and respect.

UNITS OF STUDY

MYP units foster student inquiry and are conceptually based. Concepts have an essential place in the structure of knowledge. They require students to demonstrate levels of thinking that reach beyond facts or topics. Concepts are used to formulate the understanding that students should retain in the future; they become principles and generalizations that students can use to understand the world and to succeed in further study and in life beyond school.



(Developing an MYP Unit, 2014)

Mathematics Key Concepts:

- Form
- Relationships
- Logic

Mathematics Related Concepts:

- | | | |
|------------------|---------------|------------------|
| • Change | • Equivalence | • Generalization |
| • Justification | • Measurement | • Model |
| • Pattern | • Quantity | • Representation |
| • Simplification | • Space | • System |

MYP Global Contexts guide classroom inquiries and encourage an international perspective

- Identities and relationships
- Orientation in space and time
- Personal and cultural expression
- Scientific and technical innovation
- Globalization and sustainability
- Fairness and development

Approaches to Learning

All MYP units of work offer opportunities for students to develop and practice ATL skills. These skills provide valuable support for students working to meet the subject groups aims and objectives.

These skills will be the focus in Mathematics:

| Category | Skill indicator |
|------------------------|--|
| Thinking skills | Use prioritization and order of precedence in problem-solving |
| Social skills | Help others to create success for themselves during group work |
| Communication skills | Organize and interpret data using both analogue and digital tools |
| Self-management skills | Practice focus and concentration while solving multiple problems |
| Research skills | Use a variety of technologies and media platforms, including social media and online networks, to source information |

The MYP Mathematics course will focus on developing skills related to 4 criteria based objectives.

- Knowing and understanding
- Investigating patterns
- Communicating
- Applying Mathematics in real life contexts

Students will be assessed based on the criteria detailed below and MYP assessment will be both formally (report cards) and informally (feedback on assignments) reported. MYP levels will be used to calculate a student's overall standing in a course.



Criterion A: Knowing and understanding

| Achievement level | Level descriptor |
|-------------------|---|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1-2 | The student: <ul style="list-style-type: none">• select appropriate mathematics when solving simple problems in familiar situations• apply the selected mathematics successfully when solving these problems• generally solve these problems correctly. |
| 3-4 | The student: <ul style="list-style-type: none">• select appropriate mathematics when solving more complex problems in familiar situations• apply the selected mathematics successfully when solving these problems• generally solve these problems correctly. |
| 5-6 | The student: <ul style="list-style-type: none">• select appropriate mathematics when solving challenging problems in familiar situations• apply the selected mathematics successfully when solving these problems• generally solve these problems correctly. |
| 7-8 | The student: <ul style="list-style-type: none">• select appropriate mathematics when solving challenging problems in both familiar and unfamiliar situations• apply the selected mathematics successfully when solving these problems• generally solve these problems correctly. |

Criterion B: Investigating patterns

| Achievement level | Level descriptor |
|-------------------|---|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1-2 | The student: <ul style="list-style-type: none">• apply, with teacher support, mathematical problem-solving techniques to discover simple patterns• state predictions consistent with patterns. |
| 3-4 | The student: <ul style="list-style-type: none">• apply mathematical problem-solving techniques to discover simple patterns• suggest relationships and/or general rules consistent with findings |
| 5-6 | The student: <ul style="list-style-type: none">• select and apply mathematical problem-solving techniques to discover complex patterns• describe patterns as relationships and/or general rules consistent with findings• verify these relationships and/or general rules. |
| 7-8 | The student: <ul style="list-style-type: none">• select and apply mathematical problem-solving techniques to discover complex patterns• describe patterns as relationships and/or general rules consistent with correct findings• verify and justify these relationships and/or general rules. |



Criterion C: Communicating

| Achievement level | Level descriptor |
|-------------------|--|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1-2 | The student: <ul style="list-style-type: none">• use limited mathematical language• use limited forms of mathematical representation to present information• communicate through lines of reasoning that are difficult to interpret. |
| 3-4 | The student: <ul style="list-style-type: none">• use some appropriate mathematical language• use appropriate forms of mathematical representation to present information adequately• communicate through lines of reasoning that are complete• adequately organize information using a logical structure. |
| 5-6 | The student: <ul style="list-style-type: none">• usually use appropriate mathematical language• usually use different forms of mathematical representation to present information correctly• move between different forms of mathematical representation with increased success• communicate through lines of reasoning that are complete and coherent• present work that is usually organized using a logical structure. |
| 7-8 | The student: <ul style="list-style-type: none">• consistently use appropriate mathematical language• use appropriate forms of mathematical representation to consistently present information correctly• move effectively between different forms of mathematical representation• communicate through lines of reasoning that are complete, coherent and concise• present work that is consistently organized using a logical structure. |



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Criterion D: Applying Mathematics in real life contexts

| Achievement level | Level descriptor |
|-------------------|---|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1-2 | The student: <ul style="list-style-type: none">• identify some of the elements of the authentic real-life situation• apply mathematical strategies to find a solution to the authentic real-life situation, with limited success. |
| 3-4 | The student: <ul style="list-style-type: none">• identify the relevant elements of the authentic real-life situation• select, with some success, adequate mathematical strategies to model the authentic real-life situation• apply mathematical strategies to reach a solution to the authentic real-life situation• describe whether the solution makes sense in the context of the authentic real-life situation. |
| 5-6 | The student: <ul style="list-style-type: none">• identify the relevant elements of the authentic real-life situation• select adequate mathematical strategies to model the authentic real-life situation• apply the selected mathematical strategies to reach a valid solution to the authentic real-life situation• explain the degree of accuracy of the solution• explain whether the solution makes sense in the context of the authentic real-life situation. |
| 7-8 | The student: <ul style="list-style-type: none">• identify the relevant elements of the authentic real-life situation• select appropriate mathematical strategies to model the authentic real-life situation• apply the selected mathematical strategies to reach a correct solution to the authentic real-life situation• justify the degree of accuracy of the solution• justify whether the solution makes sense in the context of the authentic real-life situation |

