

Graduation Performance System (GPS)

Grade 10 Mathematics Performance Outcomes and “I Can” Statements

INVESTIGATE THE WORLD

Students use mathematics to investigate a global issue, situation, or event.

I can use mathematics to investigate a global issue, situation, or event.

- **MATH09-10.INV1. Develop a mathematical model that fits the given situation.**
 - I can develop a mathematical model that fits a particular situation. This means that I can use mathematics to create a representation, description, or quantification of some aspect of a situation. It also means that the model should use all the relevant data and information provided.
- **MATH09-10.INV2. Explain how some of the mathematical relationships in the model reflect the given situation.**
 - I can explain how the parameters of an issue, situation, or event are reflected in a model. This means I can describe in my own words how the characteristics of an issue, situation, or event are reflected in the mathematic model I create. It also means I should explain how I've used all the relevant information.
 - I can demonstrate how the parameters of an issue, situation, or event are reflected in a model. This means I can manipulate the model to show how the characteristics of an issue, situation, or event are reflected in the mathematic model I create. It also means I should demonstrate that I've used all the relevant information.
- **MATH09-10.INV3. Use some appropriate mathematical tools, procedures, and representations to explore the issue, situation, or event.**
 - I can use appropriate mathematical tools, procedures, and representations to explore an issue, situation, or event. This means I should use only appropriate mathematical tools, procedures, and representations to systematically view or understand aspects of an issue, situation, or event that would otherwise not be apparent without these tools, procedures, and representations.
- **MATH09-10.INV4. Select a reasonable initial solution strategy.**
 - I can determine which solution strategies are appropriate to use in producing mathematical solutions or analyses. This means that, in advance of actually using them, I can describe action plans that I could use to produce specific mathematical solutions or analyses.
 - I can use appropriate solution strategies to produce mathematical solutions or analyses. This means I should use the action plans I selected to achieve a correct mathematical solution or analyses.
- **MATH09-10.INV5. Select appropriate strategies to verify the solution with respect to the mathematics and the given context.**
 - I can determine which strategies are appropriate to use in verifying my solution. This means that, in advance of actually using them, I can describe action plans that I could use to verify my solutions both in mathematics and in relation to the context.
 - I can verify the correctness of solutions or analyses mathematically. This means I need to check my solutions or analyses mathematically.

- I can verify the correctness and reasonableness of my solutions or analyses contextually. This means my solutions or analyses needs to be correct and to make sense in terms of all the interrelated conditions associated with my solutions or analyses. It also means I should be able to explain in my own words why my solutions or analyses are correct in terms of those interrelated conditions.

RECOGNIZE PERSPECTIVES

Students understand that perspectives and mathematics influence each other.

I can understand that people's perspectives are influenced by mathematics and their use of mathematics is influenced by their perceptions.

- **MATH09-10.PERS1. Draw a conclusion, generate an argument, or make a decision that is partially supported by the mathematical data and analyses.**
 - I can use my mathematical data and analyses to draw a conclusion, generate an argument, or make a decision. This means I should be able to use my mathematical data and analyses to arrive at some definitive position about something that would have been impossible or difficult without that data or analyses.
- **MATH09-10.PERS2. Works with one or more partners, or verifies his/her work and outcomes with peers or an adult.**
 - I can collaborate with others to verify my mathematical operations. This means I should work with others to confirm the correctness and/or reasonableness of the mathematics associated with my models, tools, procedures, solutions, analyses, conclusions, arguments, and/or decisions. It also means that I should verify my work and outcomes with colleagues, adults, or external sources.
- **MATH09-10.PERS3. Evaluate some implications of the conclusion, decision, or arguments.**
 - I can evaluate the implications of my arguments and conclusions in a global context. This means I should be able to describe in my own words how my arguments and conclusions relate to the peoples and nations of the world, realizing that they are interdependent economically, socially, and politically and are closely connected by modern telecommunications.
- **MATH09-10.PERS4. Recognize and address some unintended consequences and different perspectives.**
 - I can recognize unintended consequences or different perspectives. This means I should be able to describe unexpected results of my arguments and conclusions or different perspectives on them that are based on other people's cultural, historical, political, social, or personal points of view.
 - I can address unintended consequences or different perspectives. This means I should be able to describe in my own words what to do about unexpected results of my arguments and conclusions or different perspectives on them that are based on other people's cultural, historical, political, social, or personal points of view.
- **MATH09-10.PERS5. Maintain a position that is partially consistent with the conclusions, arguments, or decisions supported by the mathematics.**
 - I can maintain a perspective that is consistent with my arguments and conclusions. This means I can describe a point of view that should agree with my arguments and conclusions, which are supported by mathematics.

COMMUNICATE IDEAS

Students communicate their mathematical thinking.

I can communicate my mathematical thinking.

- **MATH09-10.COMM1. Explain mathematical concepts, procedures, and relationships in a way that is mostly organized and sequenced.**
 - I can explain mathematical concepts, procedures, and relationships. This means I should be able to describe, mathematical concepts, procedures, and relationships in my own words in an organized and sequenced way.
 - I can justify mathematical concepts, procedures, and relationships. This means I should be able to prove the correctness of mathematical concepts, procedures, and relationships in my own words in an organized and sequenced way.
- **MATH09-10.COMM2. Defend a conclusion, decision, or argument with concepts, procedures, or data from the model.**
 - I can defend my mathematical conclusion, decision, or argument. This means that I should use relevant and accurate concepts, procedures, or data drawn directly from a model I have constructed.
- **MATH09-10.COMM3. Generally use mathematical terms, symbols, and conventions to express mathematical ideas.**
 - I can express mathematical ideas using mathematic terms, symbols, and conventions. This means I should be able to correctly and accurately use mathematic terms, symbols, and conventions to express mathematical ideas.
- **MATH09-10.COMM4. Generally use conventions of language – grammar, usage, and punctuation.**
 - I can use grammar accurately. This means my writing should be grammatically correct.
 - I can use language in a conventional way. This means my language usage should follow conventional usage and clearly indicate my intended meaning,
 - I can use punctuation accurately. This means my writing should use punctuation correctly.
- **MATH09-10.COMM5. Select appropriate media and use it in a somewhat effective way to communicate mathematical ideas.**
 - I can select appropriate media. This means I should be able to select the media that is most appropriate for communicating my mathematical ideas.
 - I can use media. This means I should be able to use the media I have selected to best communicate my mathematical idea and that my use of the media should be skillful and effective.

TAKE ACTION

Students translate the results of their mathematical study into appropriate actions.

I can take action based on my mathematical study.

- **MATH09-10.ACT1. Advocate for a course of action that is somewhat plausible, somewhat responsible, and partially supported by mathematics.**
 - I can advocate for one or more possible courses of action. This means I should be able to speak or write in support of one or more courses of action and that each course of action should be supported by mathematics, realistic in terms of the mathematics, and responsible.

- **MATH09-10.ACT2. Develop and engage in a plan of action that is somewhat viable, manageable, and/or responsible; the plan of action is largely consistent with the argument, conclusion, or decision supported by the mathematics.**
 - I can develop a plan an action that is consistent with my argument, conclusion, or decision. This means I should be able to describe in my own words a plan for an action that should be supported by mathematics, realistic, and responsible. It also means that I should be able to manage the plan.
 - I can engage in a plan of action that is consistent with my argument, conclusion, or decision. This means I should be able to perform the plan or manage it. It also means that the plan should be supported by mathematics, realistic, and responsible.

- **MATH09-10.ACT3. Describe the importance of the plan of action within the context of the global community.**
 - I can describe the importance of my plan of action. This means I should be able to explain in my own words why my plan of action is important relate to the peoples and nations of the world, realizing that they are interdependent economically, socially, and politically and are closely connected by modern telecommunications.