**Math 8: Integer Investigation**

**Integer Order of Operations Project: *What’s YOUR number?***

**Objective:** To explain and apply the order of operations to positive and negative numbers.

 ***My integer is:***

**You will design and create a paper cut-out of your integer that has the following written on it:**

* **Two interesting facts** about your integer.
* **Four different equations** that equal your integer.
* You must use all six BEDMAS operations at least once in each equation.
	+ - *brackets, exponent, division, multiplication, adding, subtracting*
* Each equation must have at least one negative number.
* Each equation must be significantly different than the other expressions (i.e. do not use + 1 in every expression).
* All the work required to calculate the integer is clearly shown.

**Draft:**

This is a sketch of your integer on paper. It should include the two interesting facts and the four unique equations with all calculations shown.

*This is your chance to get your work corrected before you make a good copy!*

***Due date of draft:***

**Final Copy:**

Your good copy will include the two interesting facts and the four unique equations with all calculations shown on the **paper cut-out** of your integer.

***Due date of final copy:***



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| **Criterion B: Investigation Patterns** |
| **(0)** | **Beginning (1-2)** | **Developing (3-4)** | **Accomplished (5-6)** | **Exemplary (7-8)** |
| *I have not achieved a standard described by any of the descriptors to the right*. | *I am able to:***apply**, with teacher support, mathematical problem-solving techniques to discover simple patterns **state** predictions consistent with patterns.  | *I am able to:***apply** mathematical problem-solving techniques to discover simple patterns **suggest** relationships and/or general rules consistent with findings.  | *I am able to:***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.  | *I am able to:***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** |
| **(0)** | **Beginning (1-2)** | **Developing (3-4)** | **Accomplished (5-6)** | **Exemplary (7-8)** |
| *I have not achieved a standard described by any of the descriptors to the right*. | *I am able to:***use** limited mathematical language **use** limited forms of mathematical representation to present information **communicate** through lines of reasoning that are difficult to interpret.  | *I am able to:***use** some appropriate mathematical language **use** different forms of mathematical representation to present information adequately**communicate** through lines of reasoning that are able to be understood, although these are not always clear adequately **organize** information using a logical structure.  | *I am able to:*usually **use** appropriate mathematical language usually **use** different forms of mathematical representation to present information correctly move between different forms of mathematical representation with some success **communicate** through lines of reasoning that are clear although not always coherent or complete present work that is usually **organized** using a logical structure.  | *I am able to:*consistently **use** appropriate mathematical language **use** different 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 and coherent present work that is consistently **organized** using a logical structure.\* |
|  | *\*For this assignment, work that is organized using a logical structure must contain*  | * Boxed final answer in simplest form
* Vertical format
* Line up equal signs
* Calculations showing all steps.
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*Command Terms for Mathematics*

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| **Apply -** Use knowledge and understanding in response to a given situation or real circumstances. Use an idea, equation, principle, theory or law in relation to a given problem or issue. **Communicate** - Express oneself in such a way that one is readily and clearly understood. Convey information about the exchange of thoughts, messages, or information through, for example, speech, signals, writing or behaviour. **Demonstrate** - Prove or make clear by reasoning or evidence, illustrating with examples or practical application. **Describe** - Give a detailed account or picture of a situation, event, pattern or process. **Discuss** - Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.  | **Explain** - Give a detailed account including reasons or causes. **Identify** - Provide an answer from a number of possibilities. Recognize and state briefly a distinguishing fact or feature. **Justify** - Give valid reasons or evidence to support an answer or conclusion. **Prove** - Use a sequence of logical steps to obtain the required result in a formal way. **Select** - Choose from a list or group. **Solve** - Obtain the answer(s) using algebraic and/or numerical and/or graphical methods. **State** - Give a specific name, value or other brief answer without explanation or calculation. **Suggest** - Propose a solution, hypothesis or other possible answer. **Use** - Apply knowledge or rules to put theory into practice. **Verify** - Provide evidence that validates the result |