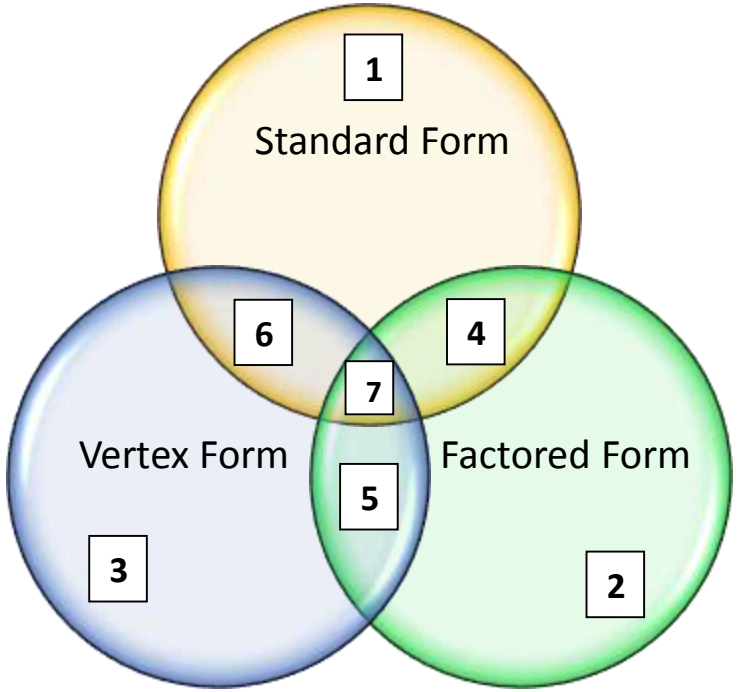
MPM 2D **Project: Communicating my Understanding of Quadratic Relations**

In this unit of study, you have been learning about a new type of relationship between two variables (*x* and *y*) called a *quadratic relation*.

Much like linear relations, quadratic relations have their own properties and characteristics and can also be represented using tables, graphs and equations.

For this project, you are required to communicate your understanding of quadratic relations and their various forms. The format for how you demonstrate your knowledge is up to you but needs to take into consideration all of the requirements detailed in the diagram provided (legend, below).

Requirements



Legend

1-What is the standard form: $y = ax^2 + bx + c$? Describe the impact of the parameters—a, b, and c—on the graph of a quadratic relation. Provide an example where you have used the standard form to solve a problem.

2-What is the factored form: $y = a(x – r)(x – s)$? Describe the significance of the parameters—a, r and s. Provide an example where you have used the factored form to solve a problem.

3-What is the vertex form: $y = a(x – h)^2 + k$? Describe the significance of the parameters—a, h and k. Provide an example where you have used the vertex form to solve a problem.

4-How are the standard and factored forms connected? Provide an example.

5-How are the factored and vertex forms connected? Provide an example.

6-How are the standard and vertex forms connected? Provide an example.

7-In general, what can you say about all quadratic relations? Describe any characteristics and properties that you may not have already mentioned.

Feedback Opportunities

To provide you with formal feedback about your progress with your project, two dates have been built in to the completion time-line—Fri., Jan. 8th and Jan. 15th. On these dates, you can submit what you have been working on thus far for a critique. The feedback you receive can then be used to improve your final product.

The due date for your completed project is Friday, Jan. 22nd.

Assessment & Evaluation

KU 1 2 3 4 COMM 1 2 3 4

Name: _____

Assessment (feedback) and evaluation of your project will be completed using the following forms. Please hand in these forms for scheduled feedback opportunities and with your completed, final product.

Knowledge & Understanding (KU)-Rubric (Legend Items, 1 to 7)

Working Towards Standard (Levels 1 and 2)	**Requirement-At Standard (Level 3)**	**Above Standard (Level 4)**
	1	
	2	
	3	
	4	
	5	
	6	
	7	

(Over for Communication →)

Communication (COMM)-Rubric (Overall Communication)

Working Towards Standard (Levels 1 and 2)	At Standard (Level 3)	Exceeding Standard (Level 4)
	Correctly interprets mathematical information—language, graphs, equations—and makes reasonable statements	
	Consistently uses mathematical symbols, labels and conventions correctly	
	Consistently uses mathematical symbols, labels and conventions correctly	
	Both mathematical and narrative forms are present and integrated	
	Explanations and justifications are clear for a range of audiences	