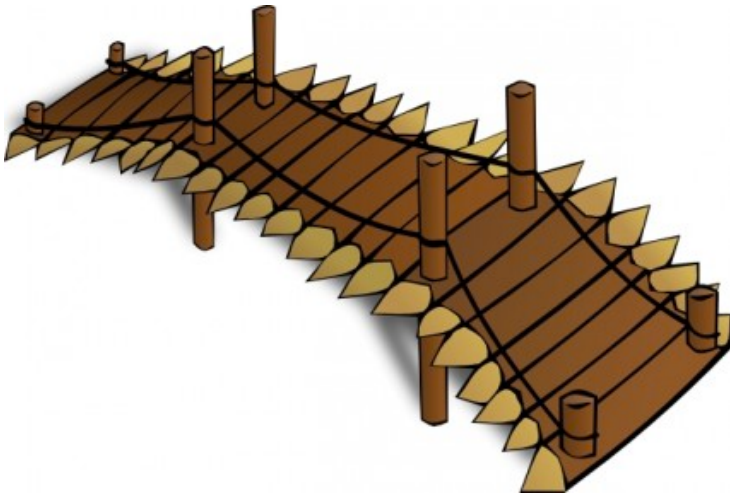
Bridge PBL Assignment



A pedestrian bridge is being built across the St. Lawrence Seaway to connect Canada to the United States. They want you to create and name the bridge after the most influential person from the War of 1812.

The Assignment:

- Research a minimum of (3) different types of bridges.
- Write a proposal for the type of bridge you would like to create.
- Create a Blue Print to estimate the amount of materials you will need for your bridge.
- Construct a bridge that resembles your blue print and will span over a gap of 30cm that can hold a 355ml pop can for 10 seconds.
- Write a proposal justifying the name of your bridge
- You will need to get your assignment tracking sheet signed by the teacher before moving onto the next section of the activity.

Name:_____
_____

Building a Bridge: Tracking Sheet

	Step	Description	Teacher's Signature
1	**Bridge Research**	You and your partner have each researched (3) different types of bridges	
2	**Bridge Proposal**	You and your partner have each written up a proposal for the type of bridge you want to create.	
3	**Blueprint**	You and your partner have each created a blueprint you will follow for your bridge.	
4	**Materials Needed**	You and your partner have created a shopping list for the bridge supplies.	
5	**Building The Bridge**	You and your partner together create one bridge.	
6	**Testing the Bridge**	You and your partner test the bridge successfully with the teacher witnessing the test.	
7	**Naming the Bridge**	You and your partner have each written up your own separate essay defending the name you chose for your bridge.	

Research (3) Different Bridges

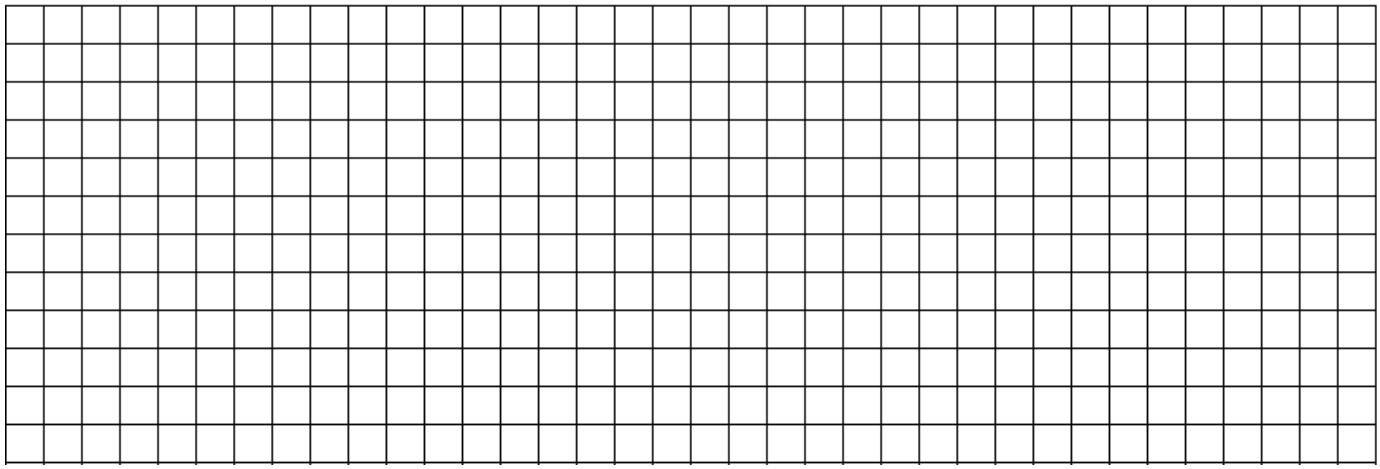
Type of Bridge	Key Features	Strengths of Bridge	Weaknesses of Bridge
_____	•	•	•
_____	•	•	•
_____	•	•	•

Bridge Proposal

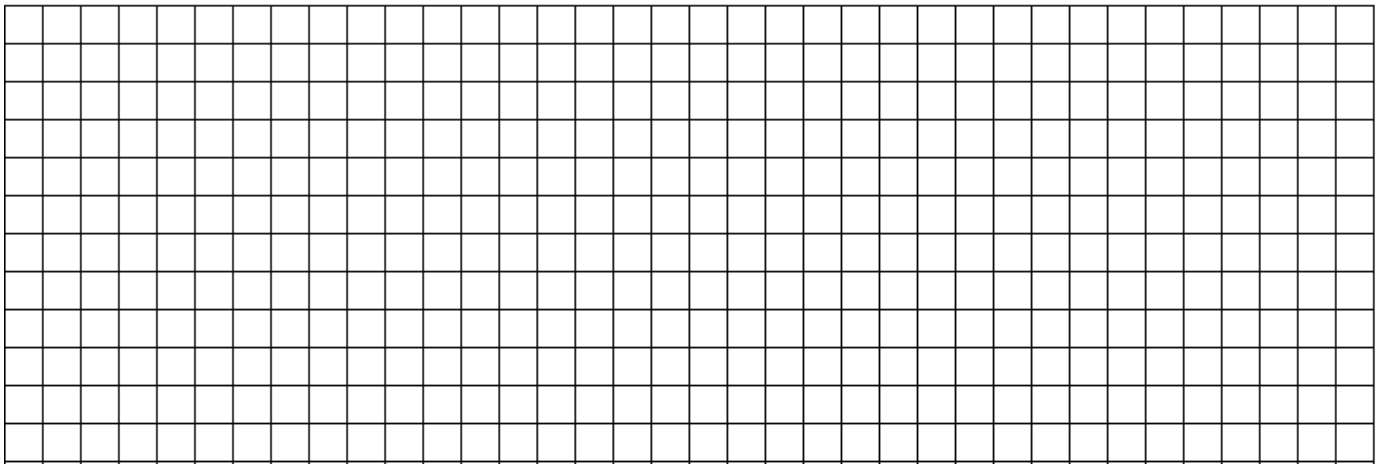
Sketch out a draft of what you plan your bridge to look like. Include the supplies you will be using for your bridge.

The Bridge Blueprint

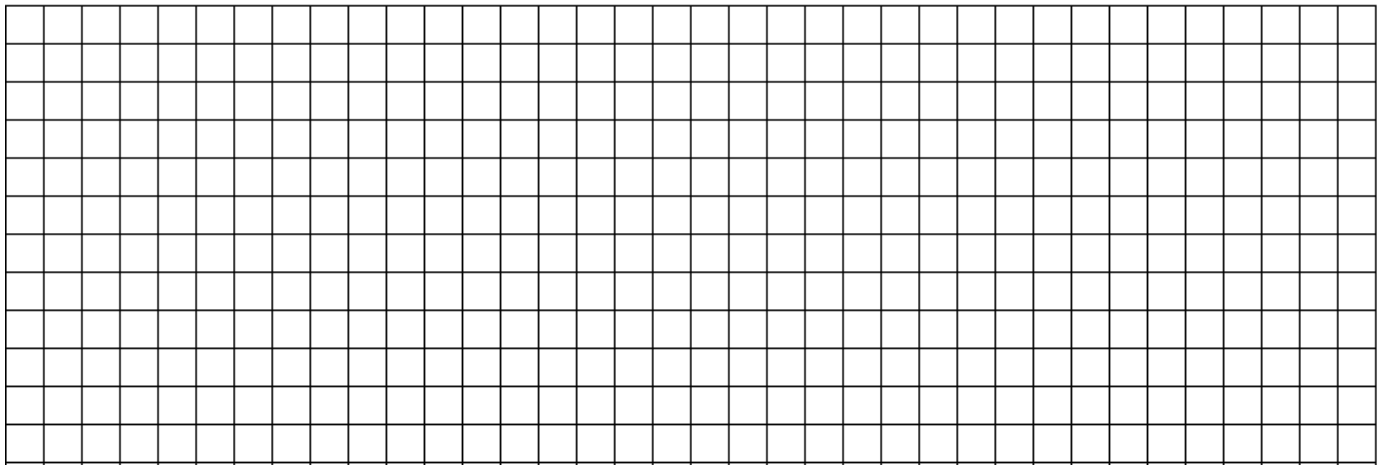
View from the side (x2)



View from the top



View from the bottom



□ = 1cm^2

Materials Needed

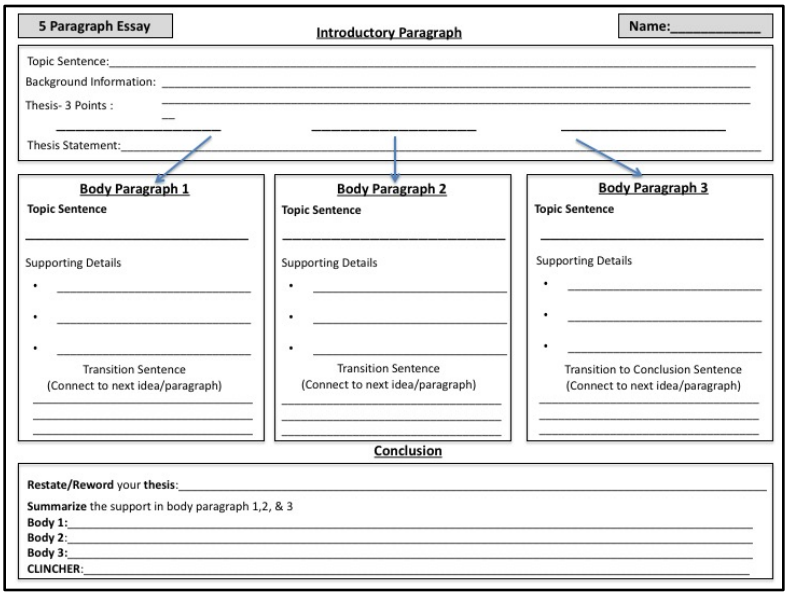
Materials	Amount Needed	Purpose for Material

Your materials must meet the following guidelines:

- The materials spanning the gap cannot be longer than 8cm each (Except String)
- Hot glue, model cement, Styrofoam and duct tape are not permitted.
- Each material must be able to be “broken down” or ”cut” with scissors.

Naming Your Bridge

As mentioned before, your bridge will need to be named after who you felt was the most influential person from the War of 1812. You are required to research (2) different people who played a large role in the war and write a 5 paragraph essay comparing and contrasting the two figures from the war. Before you start writing out your essay, you will be required to complete the template with all your information.



5 Paragraph Essay

Introductory Paragraph

Name:_____

Topic Sentence:_____

Background Information: _____

Thesis- 3 Points : _____

_____ _____ _____

Thesis Statement:_____

Body Paragraph 1

Topic Sentence

_____

Supporting Details

- _____
- _____
- _____

Transition Sentence
(Connect to next idea/paragraph)

_____

_____

_____

Body Paragraph 2

Topic Sentence

_____

Supporting Details

- _____
- _____
- _____

Transition Sentence
(Connect to next idea/paragraph)

_____

_____

_____

Body Paragraph 3

Topic Sentence

_____

Supporting Details

- _____
- _____
- _____

Transition to Conclusion Sentence
(Connect to next idea/paragraph)

_____

_____

_____

Conclusion

Restate/Reword your **thesis**:_____

Summarize the support in body paragraph 1,2, & 3

Body 1:_____

Body 2:_____

Body 3:_____

CLINCHER:_____

Research for Essay

CONTINUUM:

A Problem Solver...	Beginning (with direction)	Emerging (with guidance)	Progressing (with support)	Advancing (with prompts)	Mastering (self-directed)
IDENTIFIES *Recognizes and defines a problem*	Student is learning to identify a problem.	Student identifies certain elements of a problem.	Student identifies multiple elements of a problem.	Student identifies the relevant elements of a problem.	Student identifies the relevant elements of a problem and the possibility for solutions.
UNDERSTANDS *Reflects on problem and plots possible course of action*	Student is beginning to recognize his/her own point of view as it relates to a problem.	Student recognizes that more than one point of view exists.	Student reflects how points of view can affect the solution to a problem.	Student considers various points of view in generating possible solutions.	Student understands the ramifications of possible solutions.
STRATEGIZES *Identifies and initiates steps to solve problem*	Student is learning that problem solving is a process.	Student identifies possible steps in solving a problem.	Student identifies logical steps in solving the problem.	Student identifies the risks and benefits of each step in the problem solving process.	Student demonstrates thoughtful judgment as to best course of action.
EVALUATES *Evaluates results*	Student is learning the importance of using data to analyze a problem.	Student makes inferences, drawing from simple data to formulate a potential solution.	Student makes inferences, drawing from multiple data sources to formulate a potential solution.	Student makes inferences, drawing from complex data sources to formulate potential solutions.	Student uses relevant data to formulate potential solutions.
ACTS *Implements or recommends appropriate course of action*	Student is learning to plan a course of action.	Student outlines simple steps in a plan.	Student outlines comprehensive steps in a plan.	Student provides an evaluation of the potential outcomes.	Student recommends appropriate course of action, based on comprehensive evaluation of potential outcomes.

CONTINUUM:

An Innovator...	Beginning (with direction)	Emerging (with guidance)	Progressing (with support)	Advancing (with prompts)	Mastering (self-directed)
CREATES *Constructs knowledge in new and inventive ways*	Student is beginning to understand that elements can be combined in new ways.	Student explores combining elements in new ways.	Student combines and begins to organize elements in new ways.	Student reflects and seeks to find solutions and realize new patterns and structures.	Student synthesizes elements from a variety of sources in original, functional, or artful ways.
ADAPTS *Adapts to change and new information*	Student is beginning to learn that elements can change based on new developments.	Student reconsiders elements to adapt to new developments.	Student revises elements to adapt to new developments.	Student evaluates elements to adapt to new developments.	Student embraces change, adapting to new developments.
RISKS *Takes intellectual risks*	Student is considering new approaches to knowledge construction.	Student considers new approaches that diverge from conventional thinking.	Student incorporates new approaches that diverge from conventional thinking.	Student seeks out and follows untested approaches to new patterns of thinking	Student evaluates conventional and divergent thinking when taking risks in the construction of new knowledge.
PERSISTS *Persists in building a deep understanding*	Student is beginning to demonstrate a curiosity towards a topic.	Student feeds curiosity by formulating questions around a topic.	Student researches to answer questions surrounding a topic.	Student persists to acquire a thorough understanding of a topic.	Student demonstrates an intrinsic desire for deep understanding of a topic.
ADVOCATES *Advocates for innovation*	Student is learning to appreciate new ideas and constructs.	Student shares and discusses new ideas with others.	Student considers feedback from multiple perspectives and reflects on the value of the innovation.	Student defends perspective.	Student provides a supported and convincing argument that influences others.