	Activity: Description of Activities and setting: STEM Challenge-Tea Bag	Materials and time Grades 3rd-5th 30 minutes
	Focus and Review: We have been talking about events that led up to the Revolutionary War. Today in honor of the tea tax we are going to have a STEM challenge to see which group can complete the task of keeping the tea bag dry when submerged in water for 30 seconds. Teacher Notes: Place materials on tables Read and explain the assignment	 (4 students per table) 1 tea bag per table 2-1 inch square pieces of aluminum foil per table 1-12 inch strip of masking tape 4 plastic straws per table 1-small bowl of water per table 1-ipad or stopwatch per table (Student challenge is to use material to keep tea bag from getting wet when submerged in water for 30 seconds)
	Statement or Essential Question: How can you keep a tea bag dry when submerged in water for 30 seconds?	Short funny clip about Boston Tea Party <u>https://www.youtube.com/watch?v=-</u> <u>h5Nh7mggx0</u> . The Boston Tea Party Song (Parody of Pharrell Williams- Happy)

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Teacher Input: Students today you will be given some materials and you will need to design an invention that will keep a tea bag dry when submerged for 30 seconds.	NC Standards: 3.TT.1Use technology tools and skills to reinforce classroom concepts and activities. 4.TT.1Use technology tools and skills to reinforce classroom concepts and activities. 5.TT.1Use technology tools and skills to reinforce and extend classroom concepts and activities.3.P.2 Understand the structure and properties of matter before and after they undergo a change 4.P.2 Understand the composition and properties of matter before and after they undergo a change or interaction. 5.P.2 Understand the interactions of matter and energy and the changes that occur. NC.3.MD.2 Solve problems involving customary measurement. NC.4.MD.1Know relative sizes of measurement units. Solve problems involving metric measurement. Engineering-students will design an invention to keep a tea bag dry.
Guided Practice: Read students the instructions of the assignment and handout supplies	
Independent Practice: Students as a group will come up with a hypothesis on whether they think they can keep the tea bag dry. Students will complete assignment task and discuss as a group, before sharing their experiment with other groups.	

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Closure: Students will walk around and view each others experiments and discuss why some designs worked and some designs did not work.	
Differentiation: Students will work as a group	
Assessment: Assessment can be made by success of their experiment.	

Tea Bag Challenge

(Use iPad-Pages to type your answer to questions)

You have just received word that tonight the British are going to take your tea and dump it into the Delaware River to let George Washington know that the British will never forget the Boston Tea Party. You have been given a top secret assignment by George Washington to come up with a design that will keep the tea from getting wet in case they manage to steal the tea.

Assignment: You may use all or some of the materials given to your table to design an apparatus to keep your tea bag dry for 30 seconds when submerged in water.

- 1. Hypothesis-
- 2. Weaknesses of your design-
- 3. Strengths of your design-
- 4. Was your hypothesis correct?