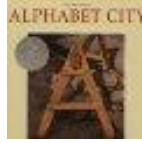# Alphabet City

1st Grade
Unit #1 – Alphabet Books and Children Who Read Them
Text Connection: *Alphabet City* by Stephen T. Johnson

Design Challenge Summary
Challenge: What will the students be required to do?
Letters can be found everywhere in locations like classroom, playgrounds and cities. Your challenge will be to work with a partner to construct two separate letters, a minimum of 12 unifix cubes or color tiles in height, using materials found at your desk.
Standards: What standards are addressed?

Science:

NS.1.1.1 Communicate observations orally, in writing and in graphic organizers

NS.1.1.2 Ask questions based on observations

NS.1.1.3 Conduct scientific investigations as a class and in teams

NS.1.1.4 Estimate and measure length and temperature

NS.1.1.5 Collect measurable empirical evidence as a class

NS.1.1.6 Make predictions as a class and in teams based upon empirical evidence

NS.1.1.7 Use age-appropriate equipment and tools in scientific investigations

NS.1.1.8 Apply appropriate rules of safety related to daily activities

NS.1.1.9 Apply lab safety rules as they relate to specific science lab activities

Math:

Mathematical Practice Standards

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

ELA:

W.1.3 Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.

SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups

SL.1.3 Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

SL.1.5 Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts or feelings

SL.1.6 Produce complete sentences when appropriate to task and situation.

Alphabet City

GT Process Skills: Deductive Logic/ Convergent   <mark>Inventive or Creative Thinking/Divergent</mark>   Analytic/Convergent   Communication   <mark>Visual Spatial/</mark>Perception   <mark>Evaluative Thinking</mark>

Result: What will students know, value, and be able to do as a result of the lesson? What's the big idea?
Know and apply the engineering design loop process.   Demonstrate ability to modify designs based on observations and predictions.   Work collaboratively on solving a problem.

Assessment: What evidence will be used to determine student learning?
Did they successfully create and accurately form 2 letters?   Did they follow the design loop process?   Did they work collaboratively?

Prior Knowledge/Experiences: What prior content knowledge and skills will the students need?
Experiences with the Engineering Design Loop process   Connections to the Mathematical Practices   Investigations/inquiry in Science

Summary/Connections: How will this design challenge connect with new/future learning, other content areas, real world experiences, etc.?
This lesson will help students develop problem solving skills and collaboration skills that are essential in succeeding in the 21st century. It will allow student the opportunity to transfer and apply skills from various content areas within one task.   As a summary activity, you could engage students in: <mark>W.1.3 Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.</mark>   <mark>SL.1.6 Produce complete sentences when appropriate to task and situation.</mark>   Extensions: Locate other objects around the room shaped like letters. Take a gallery walk or take digital shots to see the newly created letters.

Materials/Equipment/Preparation: What materials and equipment will students need to successfully complete this design challenge?
Each pair will need access to the items in their desks, 12 unifix cubes or color tiles.

Alphabet City
REACH STEM Lesson Plan

G	Goal: Students will be able to work collaboratively using the Engineering Design Loop to create letters.
A	Access Prior Knowledge: The students will view visuals that show that letters can be found anywhere.
N	New Information: Recognize how letters occur naturally in city surroundings. Notice that letters are everywhere if you look at them in a whole new way.
A	Application: Students will work collaboratively to construct two alphabet letters which are at least 12 unifix cubes or color tiles in height using materials found at their desks.
G	Generalize the Goal: Students will reflect on the goal by discussing their letters with their partner and sharing with another group.

Alphabet City

Letters can be found everywhere in locations like classrooms, playgrounds, and cities. Your classroom wants to build its own Alphabet City.

Your challenge will be to work with a partner to construct two separate letters, a minimum of 12 unifix cubes or color tiles in height, using materials at your desk.