

LESSON PLAN- Engineering Day 2

Fun Starts Belfast Extended School Day Program

Context	CONTEXT. Who are the students this lesson plan was designed for? How the lesson is situated in terms of what precedes the lesson, what follows it, etc.?	
	Kindergarten- 5 th grade	
Desired Results	OBJECTIVE. What will your students will be able to do by the end of class?	
	SWBAT:	
	<ol style="list-style-type: none"> 1. Design and build a structure using limited materials 2. Implement an experiment 3. Analyze results based on their experiment 4. Demonstrate problem solving skills 5. Work with a team 	
	ASSESSMENT. How will you know whether the desired outcomes were achieved? Describe how you will assess the specific objectives and understandings?	
	Informal Assessment: Teacher directed questions and class discussion Formal Assessment: completion of structure	
	NY STANDARDS.	KEY POINTS. What three to five main ideas or concepts will you emphasize in your lesson?
	T1.1 Describe objects, imaginary or real that might be modeled or made differently and suggest ways in which the objects can be changed, fixed, or improved. T1.1a Identify a simple/common object which might be improved and state the purpose of the improvement T1.1b Identify features of an object that help or hinder the performance of the object T1.1c Suggest ways the object can be made differently, fixed, or improved within given constraints T1.2 Investigate prior solutions and ideas from books, magazines, family, friends, neighbors, and community members. T1.2a Identify appropriate questions to ask about the design of an object T1.2b Identify the appropriate resources to use to find out about the design of an object T1.2c Describe prior designs of the object T1.3 Generate ideas for possible solutions, individually and	<ol style="list-style-type: none"> 1. What is the most stable way to build a structure 2. How can you build a sound structure with limited resources 3. Design and erect a structure 4. Work with team mates

	<p>through group activity; apply age-appropriate mathematics and science skills; evaluate the ideas and determine the best solution; and explain reasons for the choices.</p> <p>T1.3a List possible solutions, applying age-appropriate math and science skills</p> <p>T1.3b Develop and apply criteria to evaluate possible solutions</p> <p>T1.3c Select a solution consistent with given constraints and explain why it was chosen</p> <p>T1.4 Plan and build, under supervision, a model of the solution, using familiar materials, processes, and hand tools.</p> <p>T1.5 Discuss how best to test the solution; perform the test under teacher supervision; record and portray results through numerical and graphic means; discuss orally why things worked or didn't work; and summarize results in writing, suggesting ways to make the solution better.</p> <p>T1.5a Determine a way to test the finished solution or model</p> <p>T1.5b Perform the test and record the results, numerically and/or graphically</p> <ul style="list-style-type: none"> T1.5c Analyze results and suggest how to improve the solution or model, using oral, graphic, or written formats 	
<p>Learning Plan</p>	<p>OPENING. How will you focus, prepare, and engage students for the lesson's objective? (ESTIMATED TIME?)</p> <ol style="list-style-type: none"> Today we are going to build a structure out of a bunch of random objects <ol style="list-style-type: none"> Popsicle sticks Pipe cleaners Toothpicks String Construction paper Stapler/staples Paper clips Rubber bands scissors The purpose is to make a structure that will hold the most weight with ONLY these items, nothing else <p>(5 minutes)</p> <p>INTRODUCTION OF NEW MATERIAL. How will you convey the knowledge and/or skills of the lesson? What will your students be doing to process this information? (ESTIMATED TIME?)</p>	<p>MATERIALS & NOTES:</p> <ol style="list-style-type: none"> Popsicle sticks Pipe cleaners Tooth picks String Construction paper Stapler/staples Paper clips Rubber bands Scissors Pencils Heavy books

	<p>1. What are some things that would be good to include in your bridge?</p> <p>(5 minutes)</p>	
	<p>GUIDED PRACTICE. In what ways will your learners attempt to explain or do what you have outlined? How will you monitor and coach their performance? (ESTIMATED TIME?)</p>	
	<p>1. Have students draw out their design ‘blueprints’ for their structure, indicating the materials used</p> <p>(15 minutes)</p>	
	<p>INDEPENDENT PRACTICE. In what ways will your different learners attempt the objective on their own? How will you gauge mastery? (ESTIMATED TIME?)</p>	
	<p>1. Have students construct their structures using ONLY the materials provided</p> <p>(15 minutes)</p>	
	<p>CLOSING. How will you have students summarize what they’ve learned? How will reinforce the objective’s importance and its link to past and future learning? (ESTIMATED TIME?)</p>	
	<p>1. Test everyone’s structures to see who’s can hold the most weight</p> <p>2. Compile a list of positive attributes, and necessary qualities of a successful structure</p> <p>3. Compile a list of negative attributes, and harmful qualities of a faulty structure</p> <p>(15 minutes)</p>	
<p>DIFFERENTIATION, TECHNOLOGY, ACCOMODATIONS. How will you differentiate your instruction to reach the diversity of learners in your classroom?</p>		
<p>1. Using hand-on activities involves all types of learning</p> <p>2. Cooperative activities</p> <p>3. Allowing 7-10 seconds to answer questions</p>		