Lesson Plan Template

Name	Lisa Oivanki
Grade Level	Grade 7
Subject	STEM
Lesson Standard(s) (State and Subject)	Follow precisely a multi-step procedure when taking measurements or performing technical tasks Literacy.rst6-8.3
Lesson Objective(s)	Student will use engineering principles and construction techniques to build a functioning scale model of a tractor and implements similar to those used in the sugar cane industry.
Intended Outcome (What is your ultimate intended outcome for this lesson?)	Students will use critical thinking skills and cooperative learning to master engineering techniques and use those techniques to construct and build other structures and master concepts associated with same.

Guiding Question: What is your guiding question(s) for your lesson/activities? Think about your outcome… what do you really want your students to learn?

I want the students to be able to learn to use the engineering and construction concepts they have applied to this project in other areas of our STEM class.

Instructional Activities: Sequence instructional activities in an order and describe each instructional activity and intended learning outcome(s). (Add any additional rows you will need.)

	Title of Instructional Activity	Description of Activity	Intended Outcome
1	History and Background of the Sugar Cane Industry	Students will learn about the development of farming and production of sugar	Student will get ideas and learn about the real life research /development which produced the improvements of the sugar industry.
2	Farm Tractor and Implement Design	Students will build their own working scale model of a tractor and implements	Students will successfully use

		using Lego motors, axles, wheels, Lego bricks, friction pins, etc.	engineering concepts and building techniques to be successful in completing their project.
3	Build a "field."	Students will use heavy cardboard and sand to build a working "field" on which to test their tractors and implements.	Students will gain knowledge of which aspects of their projects were successful and which were not. They will be able to correct mistakes and/or re-design in order to correct the unsuccessful aspects of their designs.

Technology Connection: Analyze the use of technology in your instructional activities outlined above. Make sure to discuss and outline how the technology is supporting the lesson. (Add any additional rows you will need.)

	Title of Instructional Activity	Instructional Technology Used (Include Supporting Links, etc.)	How does this technology support the lesson?
1	History of the Sugar Cane Industry	**https://www.nps.gov/nr/travel/louisiana/cin.htm** **https://aitcla.org** Ag in the Classroom	Gives students an overall view of the industry, the pioneers in the field and their inventions.
2	Farm Tractor and Implement design and construction	https://www.lego.com/en-us/support	Gives students a reference to use to build their specific projects.
3			

Evaluation Strategies: How will you evaluate these activities? Include any rubrics and/or assessment items that will be used in this lesson.

	Title of Instructional Activity	Evaluation or Assessment Method
1	History and Background of the Sugar Cane Industry	Students will explain how their tractor/implement design fits into the history of the sugar cane industry.
2	Farm Tractor and Implement design and construction	Students will demonstrate their design, including a detailed explanation of how it was built and what methods they used.
3	Build a "field."	Students will place their tractor and implements in the "field" and attempt to cultivate the field.

Please include any notes that might help to further explain your lesson/activities.