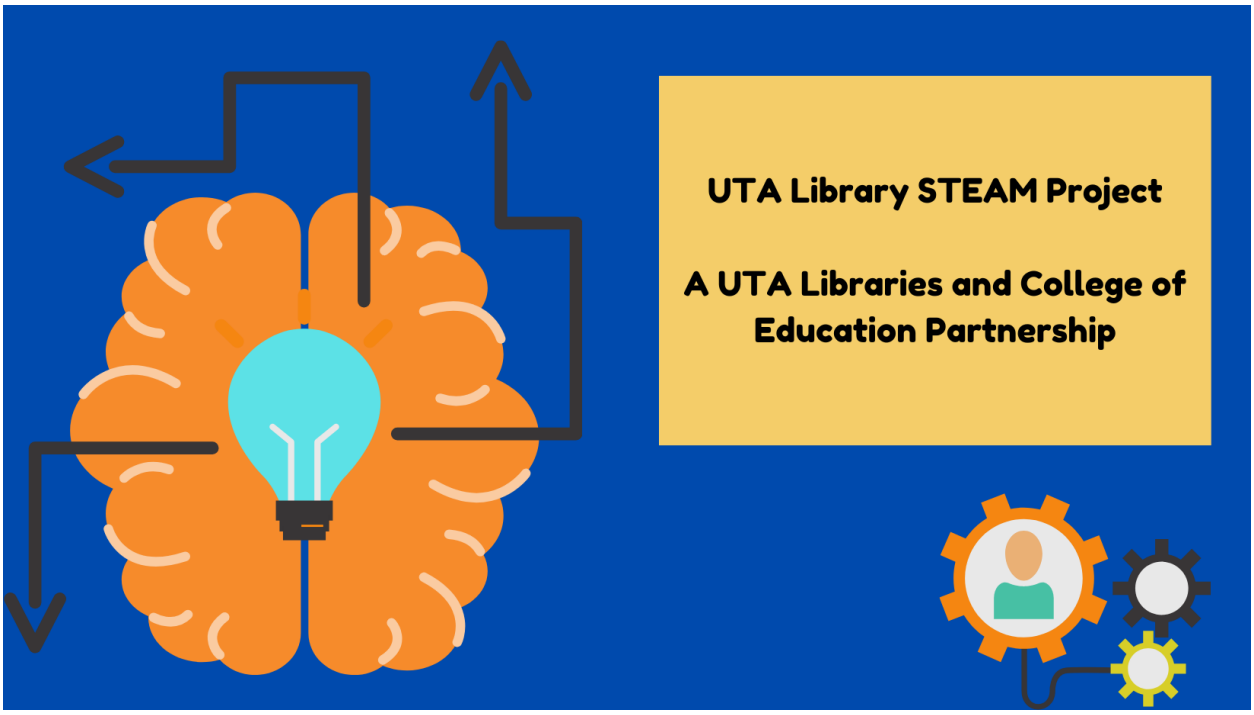

Candidate Names: Nevaeh Castillo, Alissa Darby, Reagan Huskin, Fredy Moreno, Omar Sanchez Subject: Science	Number of Minutes: 90
Enduring Understanding and/or Essential Question	What are the different forms of energy?
Content Standards (TEKS)	(5)(b)(2)(f) Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to: communicate valid conclusions in both written and verbal forms. (5)(6)(A) Force, motion, and energy. The student knows that energy occurs in many forms and can be observed in cycles, patterns, and systems. The student is expected to: explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy. 3.13E Demonstrate understanding of information gathered
English Language Proficiency Standards (ELPS)	c2D: Monitor understanding and seek clarification
Prior Learning/Prior Thinking	Students must know how to make predictions and observations.

Learning Objectives and Aligned Assessments			
Objectives	**Pre-Lesson Assessment**	**During-Lesson Assessment**	**Post-Lesson Assessment**
Objective #1: Students will be able to identify the different	Students will be asked to define energy and illustrate their definition.	During the lesson, students will be asked	Students will illustrate and explain a

forms of energy and give examples of how each type of energy works.		questions over the forms of energy while they work through the activities.	form of energy.
Objective #2: Students will be able to complete a worksheet explaining energy.	Students will write what they know about energy.	Students will make predictions before each activity and record their observations.	Students will illustrate and explain a form of energy.

Assessment and Instruction Accommodations for Students with IEP/504 plans

- Visuals/Videos will be available for students to understand each form of energy.
- Printed out instructions.
- Group work/partnered work.

Assessment and Instruction Accommodations for Multilingual Students

- Translated instructions.
- Visuals and pictures of each set up.
- Group work/partnered work.

Academic Language

Academic Language Demands and Supports

Demands (Vocabulary, Function, Discourse, Etc.)	Supports
- Energy (Thermal, Mechanical, Electrical, Sound, Light) - Protentional Energy - Kinetic Energy	Videos shown before each activity.

Instructional Procedures

Materials

Thermal Energy: Hand Boilers
Light Energy: Prisms, flashlights, and white paper
Sound Energy: Ziplock bags: 1 – water, 1 – air, 1 – sugar.
Electrical Energy: Makey Makey's, fruit, D8 batteries, electrical wire, small light bulbs, paper clips.
Mechanical: Large popsicle sticks, rubber bands, spoons, marshmallows.

Lesson Component	Activities/Teacher Actions	Instructional Support (Individuals/Groups)
Anticipatory Set/Opening:	Students will be asked to answer the question on their packet, "What is energy". Students will activate prior knowledge by watching videos over the different forms of energy. https://www.youtube.com/watch?v=CW0_S5YpYVo (Video for "What is energy", watch from 0:36-1:17)	Students will think-pair-share to answer the first question on the packet. This will allow individuals/groups to work with a partner to meet their learning needs because it will give them a comfortable space to share with a partner their ideas and thoughts.

Procedures	Students will work through the rotations and the packet. **Rotation 1**: Students will watch a short video about heat energy. https://kera.pbslearningmedia.org/resource/thermal-energy-101-heat-transfer-animation/unc-tv-science/ Next, they will make predictions and observe heat energy by holding a hand boiler. **Rotation 2**: Students will watch a short video about sound energy. https://www.youtube.com/watch?v=gdGyvGPZ1G0&t=41s Next, they will make predictions and observe sound energy by completing an activity with zip lock bags. Each Ziplock bag will be filled with something different – one with air, one with water and another with sugar. Students will hold each bag up to their ear and use a pencil to slap the bag to observe how each bag sounds different. **Rotation 3**: Students will watch a short video over light energy. https://kera.pbslearningmedia.org/resource/light-color-science-trek/light-color-science-trek/ Next, they will make predictions and observe light energy by using a flashlight and holding it up to a prism to observe how the light is refracted. **Rotation 4**: Students will watch a short video over electrical energy. https://www.youtube.com/watch?v=oB1v-wh7EGU Next, students will make predictions and observe electrical energy by creating a closed circuit with a battery, paper clip, electrical wire, and a light bulb. Students will also use Makey Makey's to observe closed circuits and electrical energy. **Rotation 5**: Students will watch a short video over Mechanical Energy. https://www.youtube.com/watch?v=28ngrrQkCBY&t=14s Next, students will make predictions and observe mechanical energy by building a catapult with popsicle sticks, rubber bands, a spoon and then launching marshmallows with it.	Students will be working in groups and will have multiple pre-service teachers to work one on one or with pairs of students to go through the rotations. Printed out packets will be provided for each student so they may work through each rotation and record their predictions and observations. Students will also watch a video over each form of energy so they can activate prior knowledge or learn about a form of energy to make connections to each activity they complete.
Closure	To wrap up the rotations, students will complete their packet by drawing their favorite activity they did. They will write a short reflection on why it was their favorite and what they learned.	Students can work in groups or in partners to draw and write their reflections.

Packet for Rotations:

Energy Forms

What is energy? Respond in words or drawings.

Station 1

1) What do you predict will happen?

2) Why did you observe happening?

Station 2:

Key
3 – loudest
2 – medium
1 – softest

Bag	Prediction	Observation
Water		
Air		
Sugar		

1) How do the three bags differ in your observations?

2) What led to these differences?

Station 3

3) What do you predict will happen?

4) Why did you observe happening?

Station 4

1) What do you predict will happen?

2) Why did you observe happening?

Station 5:

1) What do you predict will happen?

2) Why did you observe happening?

Reflection:

In the space below draw your favorite activity and write a short reflection (2-3 sentences) over why this activity was your favorite and what you learned from it: