Gr. 1 – Understanding Matter & Energy

Energy in Our Lives

Button Spinner

Specific Expectations:

2.1 Follow established safety procedures during science and technology investigations.

2.3 Design and construct a device that uses energy to perform a task.

2.7 Use appropriate science and technology vocabulary, including *explore, investigate, design, energy,* and *survival*, in oral and written communication.

3.1 Demonstrate an understanding that energy is what makes the things they do or see happen.

3.3 Identify food as a source of energy for themselves and other living things.

Big Idea (for lesson):

Students will build and observe the motion of a button spinner. Students will describe the types of motion they see, and identify how it is affected by external forces.

Accommodations:

- ☒ Increase time
- ☒ Visual Aids
- ☒ Manipulatives
- ☒ Chunking
- ☒ Step-by-Step
- ☒ Scaffolding
- ☒ Copy of Notes
- ☒ Student Grouping

Differentiated Instruction:

- ☒ Content: Use demo to show the content as you offer verbal descriptions.
- ☒ Process: Have students work in pairs and support each other if physical impediments exist.
- ☒ Product: Students may show their final product in pairs, and communicate their findings either verbally, visually, or through written means.
- ☐ Other: _____

Bloom's Taxonomy:

- ☒ Knowledge
- ☒ Comprehension
- ☒ Application
- ☒ Analysis
- ☐ Synthesis
- ☐ Evaluation

Multiple Intelligence:

- ☒ Verbal/Linguistic
- ☒ Logical/Mathematical
- ☒ Visual/Spatial
- ☒ Bodily/Kinesthetic
- ☒ Naturalist
- ☐ Musical/Rhythmic
- ☒ Interpersonal
- ☒ Intrapersonal

Delivering The Lesson:

Portion & Timing	Grouping:			Introduction:	Materials
Minds On: 10 mins	W ☒	S ☐	I ☐	Teacher starts off by asking students to take 10 minutes and draw a picture that shows all of the	White sheets of

				following sentences: 1. There is a house in the middle of the box. 2. There is a tree to the left of the house. 3. There are three flowers to the right of the house. 4. There are two clouds above the house. 5. The front of the house has a door between two windows. 6. There is a road in front of the house. 7. There is a car on the road. The teacher can ask them how they knew where to draw things, and what instructions were confusing for them. -Ask students why does position matter when we are talking about movement? (*Answer: it tells us where we are starting, and gives us an idea of how long it will take to get from point A to point B, and how fast you should go*.)	paper with a large square in its centre.
Action: **15 mins**	W ☒	S ☒	I ☒	Have students build their own button spinners according to the instructions on the handout. Teacher can circulate and ask questions of the different groups: -Watch the button; where does it get its energy from when you spin it? (*Answer: the energy comes from the potential energy you put in it when winding it up.*) -Do you think the spinner would work well with other shapes, like squares, triangles or stars? Why or why not? Try cutting them out and replacing the button with them. -Why does the spinner start to go slower over time? (*Answer: if you listen, the spinner likely makes some noise and the strings probably feel a little warm. Some of the potential and kinetic energy is being lost to heat and sound.*)	Button Spinners Handout (Materials listed)
Consolidate: **10 mins**	W ☒	S ☒	I ☐	Show the students a hand-crank flashlight, and ask them if anyone can explain how it generates energy? (*Answer: A little electric generator is activated by the cranking motion, and this electricity can power the lightbulb. A small rechargeable battery stores this energy temporarily so you*	Hand-crank flashlight

				don't have to keep turning it.) What type of energy do we put into it?/ What is the energy of motion called? (*Answer: kinetic energy, which comes from us applying a force*) What type of energy do we get out at the end? (*Answer: electrical, then light!*). Can the students think of anything else in their lives that stores energy? (*Answer: Solar-powered vehicles/lights, batteries, etc.*)	