Gr. 2 - Understanding Structures & Mechanisms

Movement

Lazy Susan

Specific Expectations:

2.1 Follow established safety procedures during science and technology investigations.

2.2 Investigate and describe different kinds of movement.

3.1 Describe different ways in which objects move.

3.2 Identify ways in which the position of an object can be changed.

Big Idea (for lesson):

Students investigate different materials to design and build a testable top that spins as long as possible.

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 can do a demonstration to introduce everyday structures for the lesson. For this, using some sort of small structure that can "power itself" is ideal, so that students can	Balloon Powered Helicopter (WBPH-

				observe and try to explain how each part contributes to the motion of the whole object. Two options are described under "Materials". Ask students how the air seems to move, why the blades of the helicopter turn/why the hovercraft CD floats, and how they think it was put together. Specifically, have students try to explain what kind of movement they see the object doing.	400) Or Hovercraft according to the Widget Workshop Handout.
Action: **15 mins**	W ☒	S ☒	I ☒	Have students build their own tops according to the instructions on the handout. Teacher can circulate and ask questions of the different groups: -What designs do you notice are working well? -Does the shape of the disk change how the top moves? (*Answer: yes, it shouldn't spin as well.*) -Compare how your hand or string moves to how the top spins after you set it in motion. (*Answer: it spins in the same direction it was pushed/pulled in*) -Does the top only spin? Does it move around as well? Why do you think that is? (*Answer: if your hand/string was pulled in a certain direction, the top might have felt some of that force as well. Some grooves/etches/etc. in the table would affect its motion as well.*)	Terrific Torque Handout (Materials listed)
Consolidate: **15 mins**	W ☒	S ☒	I ☐	Have a list made on the board or on chart paper of all the different parts of the top. Once students are finished their experimenting, have them sit as a whole class and observe each part as the top spins. Which parts seem to spin differently than the others (ie: faster or slower). Order the fastest to the slowest spinners and show students that even though the whole top spins the same, the larger objects have to spin faster to keep up with the smaller.	Chart Paper Markers