

Gr. 1 - Understanding Structures & Mechanisms

Materials, Objects, and Everyday Structures

Lazy Susan

Specific Expectations:

- 2.1 Follow established safety procedures during science and technology investigations.
- 2.2 Investigate characteristics of various objects and structures, using their sense.
- 2.3 Investigate, through experimentation, the properties of various materials.
- 2.4 Use technological problem-solving skills, and knowledge acquired from previous investigations, to design, build, and test a structure for a specific purpose.
- 3.2 Describe structures as supporting frameworks.
- 3.3 Describe materials as the substances from which something is made.
- 3.4 Describe the function/purpose of the observable characteristics of various objects and structures, using information gathered through their senses.

Big Idea (for lesson):

Students investigate different materials and bring them together to build a Lazy Susan structure with a purpose. Students are also able to describe the function and movement of the structure, as well as its composite materials.

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

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Delivering The Lesson:

Portion & Timing	Grouping:			Introduction:	Materials
Minds On: 10 mins	W <input checked="" type="checkbox"/>	S <input type="checkbox"/>	I <input type="checkbox"/>	<p>Teacher can do a demonstration to introduce friction and its effect on movement for the lesson; either watch the video or do the demo in-person.</p> <p>Ask students (without showing the whole video) why they think the bottle did or didn't move? <i>(Answer: there was more rice in one bottle to rub against the chopstick and prevent it from sliding.)</i></p> <p>Ask students if they think friction is useful, and if they can come up with any situations where friction would be bad.</p>	<p>Jitter-Critters – Floating Rice Trick – Cool Science Experiment. mp4</p> <p>2 – Plastic bottles 2 – Chopsticks Rice 2 – Beakers</p>
Action: 15 mins	W <input checked="" type="checkbox"/>	S <input checked="" type="checkbox"/>	I <input checked="" type="checkbox"/>	<p>Have students build their own Lazy Susan according to the instructions on the handout. Teacher can circulate and ask questions of the different groups:</p> <p>-Do you think friction is involved with this situation as well? <i>(Answer: Yes, friction stops the Lazy Susan from spinning around forever.)</i></p> <p>-How do the marbles help the Lazy Susan spin? <i>(Answer: They allow the plate to roll over the marbles, an easier motion to complete that just sliding things across.)</i></p> <p>-Why do you think rolling is easier than sliding? <i>(Answer: Because less of the two objects are actually touching, hence less friction.)</i></p>	<p>Lazy Susan Handout (Materials listed)</p>
Consolidate: 10 mins	W <input checked="" type="checkbox"/>	S <input checked="" type="checkbox"/>	I <input type="checkbox"/>	<p>Have students rub their hands together really quickly for a few seconds. What do they notice? They should notice that their arms will get tired over time and that their hands were getting hotter.</p> <p>Ask students if they think heat is an issue in machines whose parts rub together. Then ask them what they could put on their hands to make them rub more smoothly. <i>(Answer: soap, or oil!)</i>.</p>	<p>Hand Soap</p>

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			<p>Explain to them that machines use things called lubricants which are slipper substances that fill the spaces between bumps that make a surface “rough”. Instead of parts rubbing against each other, they rub against a smooth lubricant.</p> <p>Ask students why their bones don’t heat up when they rub against each other? (<i>Answer: their joints have a special lubricant too, called synovial fluid, allow bones to slide comfortably across each other.</i>)</p>	
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