

# Gr. 6 – Understanding Structures & Mechanisms

## Flight

### Twisting and Turning

<p><b>Specific Expectations:</b></p> <p>2.2 Use scientific inquiry/experimentation skills to investigate the properties of air.</p> <p>2.3 Investigate characteristics and adaptations that enable living things to fly.</p> <p>2.4 Use technological problem-solving skills to design, build and test a flying device.</p> <p>3.1 Identify the properties of air that make flight possible.</p>			
<p><b>Big Idea (for lesson):</b></p> <p>Students will investigate how plants interact with their environment, and specifically will explore how plants transport seeds by taking advantage of properties of air and flight.</p>			
<p><b>Accommodations:</b></p> <p><input checked="" type="checkbox"/> Increase time</p> <p><input checked="" type="checkbox"/> Visual Aids</p> <p><input checked="" type="checkbox"/> Manipulatives</p> <p><input checked="" type="checkbox"/> Chunking</p> <p><input checked="" type="checkbox"/> Step-by-Step</p> <p><input checked="" type="checkbox"/> Scaffolding</p> <p><input checked="" type="checkbox"/> Copy of Notes</p> <p><input checked="" type="checkbox"/> Student Grouping</p>		<p><b>Differentiated Instruction:</b></p> <p><input checked="" type="checkbox"/> Content: Use demo to show the content as you offer verbal descriptions.</p> <p><input checked="" type="checkbox"/> Process: Have students work in pairs and support each other if physical impediments exist.</p> <p><input checked="" type="checkbox"/> Product: Students may show their final product in pairs, and communicate their findings either verbally, visually, or through written means.</p> <p><input type="checkbox"/> Other: _____</p>	
<p><b>Bloom's Taxonomy:</b></p> <p><input checked="" type="checkbox"/> Knowledge</p> <p><input checked="" type="checkbox"/> Comprehension</p> <p><input checked="" type="checkbox"/> Application</p> <p><input checked="" type="checkbox"/> Analysis</p> <p><input type="checkbox"/> Synthesis</p> <p><input type="checkbox"/> Evaluation</p>		<p><b>Multiple Intelligence:</b></p> <p><input checked="" type="checkbox"/> Verbal/Linguistic</p> <p><input checked="" type="checkbox"/> Logical/Mathematical</p> <p><input checked="" type="checkbox"/> Visual/Spatial</p> <p><input checked="" type="checkbox"/> Bodily/Kinesthetic</p> <p><input checked="" type="checkbox"/> Naturalist</p> <p><input type="checkbox"/> Musical/Rhythmic</p> <p><input checked="" type="checkbox"/> Interpersonal</p> <p><input checked="" type="checkbox"/> Intrapersonal</p>	

### Delivering The Lesson:

Portion & Timing	Grouping:			Introduction:	Materials
<b>Minds On:</b> <b>5 mins</b>	W <input checked="" type="checkbox"/>	S <input type="checkbox"/>	I <input type="checkbox"/>	Teacher begins by doing a Predict, Observe, Explain demo with students showing Bernoulli's Principle: -Hold a strip of paper close to their lips	-Narrow strip of light paper

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				<p>and blow across the top.</p> <p>-Paper responds by moving up, towards the stream of moving air, which is often unexpected.</p> <p>Ask students the following questions:</p> <p>-Where is air moving faster, above or below the paper? (<i>Answer: above.</i>)</p> <p>-Based on your observations, does slower-moving or faster-moving air exert more pressure? (<i>Answer: slower-moving air, so it was able to push the sheet up.</i>)</p> <p>-How does this relate to aircraft design? (<i>Answer: Engineers use this property to give lift to airplanes and other crafts.</i>)</p>	
<p><b>Action:</b> 15 mins</p>	<p>W <input checked="" type="checkbox"/></p>	<p>S <input checked="" type="checkbox"/></p>	<p>I <input checked="" type="checkbox"/></p>	<p>Have students build their own Twisting &amp; Turning widgets according to the instructions on the handout.</p> <p>Teacher can circulate and ask questions of the different groups:</p> <p>-Why do you think some seeds have longer tails or double seeds? (<i>Answer: Perhaps to get a longer flight path so that the seeds get further from the parent plant; some seeds may be doubled to better the chances of one being successfully deposited and planted.</i>)</p> <p>-Do you see any similarities between a flying seed and a kite? What are some similarities and differences?</p>	<p>Twisting and Turning Handout (Materials listed)</p>
<p><b>Consolidate:</b> 20 mins</p>	<p>W <input checked="" type="checkbox"/></p>	<p>S <input type="checkbox"/></p>	<p>I <input type="checkbox"/></p>	<p>Explore the properties of air discussed in the hand-out with three different activities:</p> <p>See Activities 1, 2, and 3 on <a href="http://www.sciencenorth.ca/schoolnews/Flight.pdf">http://www.sciencenorth.ca/schoolnews/Flight.pdf</a></p> <p>Spend 5 minutes on each activity as a large group, then 5 minutes at the end discussing how these properties contribute to flight.</p>	<p>Balloons String Metre stick 2 L Pop bottle Baking soda Vinegar Newspaper Heavy books</p>