



# Grade K Science - Unit 2 - Pushes & Pulls

## Unit Focus

In this unit, students explore the concepts of force and motion through hands-on investigations. The focus is on how different strengths and directions of pushes and pulls affect the movement of objects. Young learners will engage in simple experiments to compare these effects and analyze whether their designed solutions successfully change the speed or direction of an object. This foundational knowledge supports their understanding of cause and effect in the physical world.

## Stage 1: Desired Results - Key Understandings

Standard(s)	Transfer	
<p><b>Next Generation Science Standards</b>            Cross Cutting Concepts: K</p> <ul style="list-style-type: none"> <li>Simple tests can be designed to gather evidence to support or refute student ideas about causes. (K-PS2- 1),(K-PS2-2) (K.FI.CC.1.1)</li> </ul> <p>Disciplinary Core Ideas: K</p> <ul style="list-style-type: none"> <li>Pushes and pulls can have different strengths and directions. (KPS2-1),(K-PS2-2) (K.PS2.A.1)</li> <li>Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-1),(K-PS2-2) (K.PS2.A.2)</li> <li>A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. (secondary to KPS2-2) (K.ETS1.A.1)</li> </ul> <p>Performance Expectations: K</p> <ul style="list-style-type: none"> <li>Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. (K-PS2-1)</li> <li>Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. (K-PS2-2)</li> </ul> <p>Science and Engineering Practices: K</p> <ul style="list-style-type: none"> <li>With guidance, plan and conduct an investigation in collaboration with peers. (K-PS2-1) (K.FI.SEP.1.1)</li> <li>Analyze data from tests of an object or tool to determine if it works as intended. (KPS2-2) (K.FI.SEP.2.1)</li> <li>Scientists use different ways to study the world. (K-PS2-1) (K.FI.SEP.3.1)</li> </ul> <p><b>Madison Public Schools Profile of a Graduate</b></p> <ul style="list-style-type: none"> <li>Design: Engaging in a process to refine a product for an intended audience and purpose. (POG.2.2)</li> </ul>	<p><i>Students will be able to independently use their learning to...</i>  <b>T1</b> Create models to explore complex systems, show mastery of key science concepts, and/or develop solutions through creation of a product open to testing and redesign.</p>	
	<b>Meaning</b>	
	<b>Understanding(s)</b>	<b>Essential Question(s)</b>
	<p><i>Students will understand that...</i>  <b>U1</b> Pushes and pulls can have different strengths and directions, which affect how objects move.  <b>U2</b> Designing solutions can help us control or change the movement of objects.</p>	<p><i>Students will keep considering...</i>  <b>Q1</b> What happens when we push or pull an object?  <b>Q2</b> How can we make objects move faster or slower?  <b>Q3</b> How can we change the direction of an object’s motion?</p>
	<b>Acquisition of Knowledge and Skill</b>	
<b>Knowledge</b>	<b>Skill(s)</b>	
<p><i>Students will know...</i>  <b>K1</b> The difference between a push and a pull.  <b>K2</b> How forces can make objects start moving, stop moving, or change direction.  <b>K3</b> Tools and structures can be used to change how objects move.  <b>K4</b> Vocabulary: Force, Push, Pull, Motion, Direction, Strength, Investigate, Design.</p>	<p><i>Students will be skilled at...</i>  <b>S1</b> Plan and conduct investigations to compare the effects of pushes and pulls on objects.  <b>S2</b> Collect and analyze data to determine if design solutions work as intended.  <b>S3</b> Communicate findings using drawings, words, and models.</p>	