



<b>Unit Title:</b>	Forces & Motion
<b>Unit Vocabulary:</b>	Frame of reference, Balanced forces, Unbalanced forces, Force Diagram, Contact Forces, Non-Contact Forces, Net Force, Vector, Magnitude, Applied Force, Normal Force, Friction, Gravity, Normal Force, Magnetism, Newton, Inertia, Mass, Acceleration, Gravity, Mass, Weight, Air Resistance, Speed, Velocity, Acceleration, Distance, Time, Newton's Laws
<b>Upcoming Common Assessments (MasteryConnect):</b>	Forces Quiz (Mastery Connect)

	<b>Standard(s) + Learning Objective</b>	<b>Activating Experience</b>  (Opening, may include "Scholar Starter")	<b>Learning Experience</b>  (Work Time: SB Materials and Resources, Vocab, Scaffolds/Supports, SWRL, Costas)	<b>Formative or Summative Assessment(s)</b>	<b>Summarizing Experience</b>  (Closing)	<b>WICOR, AVID and/or ELlevation Strategies</b>  (aligned with learning objective)
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M O N D A Y	<p><b>Standard</b> (write out):  <b>8.PS2.2</b> Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.</p> <p><b>Learning Objective</b>  Skill (what), Content (why), Product (how):</p> <p>The scholars will be able to identify the differences between balanced and unbalanced forces and contact and non-contact forces by observing and citing real-life examples</p>	<p><a href="#">Activity: The Human Force Scale</a></p> <p><b>Balanced Force:</b>  -Two students of similar size push their palms against each other with equal effort.</p> <p><b>Unbalanced Force:</b>  -A larger student pushes palms with a smaller student. The smaller student will move backward.</p>	<p><b>Standards Based Materials &amp; Resources:</b></p> <p>Forces Graphic Organizer  w/slide show (2 different ones in forces &amp; motion folder)  What is Force?  <a href="https://www.youtube.com/watch?v=LlwqZQOnMKc">https://www.youtube.com/watch?v=LlwqZQOnMKc</a>  Balanced and Unbalanced Forces  <a href="https://www.youtube.com/watch?v=FnjeXqwKbbU">https://www.youtube.com/watch?v=FnjeXqwKbbU</a>  Contact Force  <a href="https://www.youtube.com/watch?v=nk35aGqJ-F8">https://www.youtube.com/watch?v=nk35aGqJ-F8</a>  <a href="https://www.youtube.com/watch?v=kUVZIRz7PKs">https://www.youtube.com/watch?v=kUVZIRz7PKs</a>  Non-contact Force  <a href="https://www.youtube.com/watch?v=SybIX2nEn1E">https://www.youtube.com/watch?v=SybIX2nEn1E</a>  <a href="https://www.youtube.com/watch?v=eTuiLNYz7JM">https://www.youtube.com/watch?v=eTuiLNYz7JM</a></p> <p><b>Content/Academic Vocabulary:</b></p> <p>Balanced forces  Unbalanced forces  Net Force  Vector  Contact Force  Non-Contact Force  Net Force</p> <p><b>ILAP/IEP/504 Scaffolds &amp; Supports:</b></p> <p>ILAP - Access to videos ahead of time -uploaded in google classroom  IEP - using of Videos for discussion  504 - Visual cues/highlights on key points during video playback</p> <p><b>Opportunities to SWRL:</b></p> <p>S - Activating Experience  W - Learning/Summarizing Experience  R - Formative Assessment  L - Video Presentation/Peer Discussion</p> <p><b>Costa's Levels of Thinking/Questioning:</b></p> <p><b>Level 1:</b> When forces are balanced, what is the net force?  <b>Level 2:</b> How are balanced and unbalanced forces different?  <b>Level 3:</b> What would happen if friction didn't exist?</p>	Formative  <a href="#">Exit Ticket</a>	<p><a href="#">Activity: Introduction to Forces</a></p> <p><a href="#">Forces Graphic Organizer</a></p>	W - Activity Sheet I - Activating Experience C - Think-Pair-Share (Activity Sheet Discussion) O - Avid Binder R - Review graphic organizer
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T U E S D A Y	<p><b>Standard</b> (write out):</p> <p><b>8.PS2.2</b> Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.</p> <p><u><b>Learning Objective</b></u>  <b>Skill (what), Content (why), Product (how):</b></p> <p>The scholars will be able to predict how an object will move by drawing a free-body diagram and then calculating the net force acting on it.</p>	<p>Starter:</p> <p>Liveworksheets</p> <p><a href="#">Balanced or Unbalanced Forces</a></p>	<p><b><u>Standards Based Materials &amp; Resources:</u></b></p> <ol style="list-style-type: none"> <li>1. Use graphic <a href="#">organizer</a> and <a href="#">slideshow</a> (*emphasizing vectors, net force, and force diagrams) - to learn how to calculate net force.</li> <li>2. <a href="#">PhET Net Force Interactive</a> With <a href="#">graphic organizer</a></li> <li>3. <a href="#">Net Forces Practice</a> <ol style="list-style-type: none"> <li>a. Gradual release for problems 1-4</li> <li>b. For 6-10, each scholar completes at least 2 problems.</li> <li>c. Give 1 - Get 1: Scholars have 3 minutes to give 1 answer and get 1 answer from classmates.</li> </ol> </li> </ol> <p><b><u>Content/Academic Vocabulary:</u></b></p> <p>Balanced forces  Unbalanced forces  Net Force  Vector  Friction  Gravity  Magnetism</p> <p><b><u>ILAP/IEP/504 Scaffolds &amp; Supports:</u></b></p> <p>ILAP - Access to videos ahead of time -uploaded in google classroom  IEP - using of Videos for discussion  504 - Visual cues/highlights on key points during video playback</p> <p><b><u>Opportunities to SWRL:</u></b></p> <p>S - Net Forces Practice  W - Net Forces Practice  R - Net Forces Practice  L - Think-Pair-Share (Net Force Computation)</p> <p><b><u>Costa's Levels of Thinking/Questioning:</u></b></p> <p><b>Level 1:</b> What is a free-body diagram?  <b>Level 2:</b> Draw a free-body diagram for a book resting on a table. What forces are acting on the book?  <b>Level 3:</b> You see a ball rolling and slowing down. What forces might be acting on it?</p>	<p><a href="#">Net Forces Practice</a> - formative questions at end</p> <p>(turn these into sentence stems)</p>	<p>Liveworksheets</p> <p><a href="#">Net Force   Free Interactive Worksheets   1662414</a></p> <p><a href="#">Calculate the net force</a></p>	<p>W - graphic organizer  I - formative assessment/level of thinking/questions  C - problem solving/liveworksheet  O - avid binder  R - formative assessment</p>
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W E D N E S D A Y	<p><b>Standard</b> (write out):</p> <p><b>8.PS2.2</b> Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.</p> <p><u><b>Learning Objective</b></u>  <b>Skill (what), Content (why), Product (how):</b></p> <p>Scholars will predict the motion of an object by analyzing the forces acting on the object.</p>	<p>Liveworksheet</p> <p><a href="#">Balanced and unbalanced forces</a></p>	<p><b><u>Standards Based Materials &amp; Resources:</u></b></p> <ol style="list-style-type: none"> <li>1. Use <a href="#">slideshow</a> or video to present types of contact and non-contact forces. Use <a href="#">graphic organizer</a>.</li> <li>2. Learner experiences: magnetism activity, applied and normal force activities, friction and gravity activity</li> </ol> <p><b><u>Content/Academic Vocabulary:</u></b></p> <p>Contact forces  Normal force  Applied force  Friction  Non-contact forces  Gravity  Magnetism  Electric force</p> <p><b><u>ILAP/IEP/504 Scaffolds &amp; Supports:</u></b></p> <p>ILAP - Access to videos ahead of time -uploaded in google classroom  IEP - using of Videos for discussion  504 - Visual cues/highlights on key points during video playback</p> <p><b><u>Opportunities to SWRL:</u></b></p> <p>S - Activating Experience  W - graphic organizer  R - Net Force Practice  L - Peer Discussion (Net Force Practice)</p> <p><b><u>Costa's Levels of Thinking/Questioning:</u></b></p> <p><b>Level 1:</b> What does it mean when forces are balanced?  <b>Level 2:</b> If two people push a box from opposite sides, how can you tell which way it will go?  <b>Level 3:</b> If you change one of the forces, how will the object's motion change?</p>	<p><a href="#">Net Forces Practice</a> - Check for Understanding sentence stems with word bank - MINOR GRADE</p> <p>(turn these into sentence stems)</p>	<p>Gradual release for problems 1-4</p>	<p>W/R/O - graphic organizers, word problems on practice I - predictions on PhET forces</p>
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T H U R S D A Y	<p><b>Standard</b> (write out):</p> <p><b>8.PS2.2</b> Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.</p> <p><u><b>Learning Objective</b></u>  <b>Skill (what), Content (why), Product (how):</b></p> <p>The scholars will be able to do an investigation to show that how much an object moves depends on what the forces are acting on the object and the object's mass.</p>	<p>Starter: Force, Mass, and Change in Motion  <a href="https://www.youtube.com/watch?v=wjYwbHw4GpU">https://www.youtube.com/watch?v=wjYwbHw4GpU</a></p> <p>Questions:  1. What are the two things that affect change in motion?  Sentence stem: Two things that affect a change in motion are _____.  2. What effect does a greater force have on the change in motion?  Sentence stem:  When a bigger force is used, the object will _____.  3. How does mass affect motion?  Sentence stem:  When an object has more mass, it _____.</p>	<p><b><u>Standards Based Materials &amp; Resources:</u></b>  <u>Experiment: How Force and Mass Affect Motion</u></p> <p><b><u>Content/Academic Vocabulary:</u></b>  Force  Motion  Mass</p> <p><b><u>ILAP/IEP/504 Scaffolds &amp; Supports:</u></b>  Manipulatives, peer support/collaboration, word banks</p> <p><b><u>Opportunities to SWRL:</u></b>  Reading &amp; listening to lab directions, collaboration S/L</p> <p><b><u>Costa's Levels of Thinking/Questioning:</u></b>  <b>Level 1:</b> What happened when you pushed the toy car harder?  <b>Level 2:</b> How did adding more weight affect the car's movement?  <b>Level 3:</b> What would happen if you used a heavier object? Why?</p>	<p>Lab Conclusion</p> <p>1.What have you learned about adding mass changes how far an object moves?</p> <p>I learned that when you add more mass to an object, it moves _____</p> <p>because _____</p> <p>2. How force (a push or pull) and mass both matter when it comes to how things move.</p> <p>When you push or pull harder, objects move _____,</p> <p>but if they are heavier, they move _____.</p>	<p>Lab Conclusion - which forces required contact and which did not require contact?</p>	<p>W/R/I/C - forces labs</p>
F R I D A Y	<p><b>Standard</b> (write out):</p> <p><b>8.PS2.2</b> Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of</p>	<p>Classroom Quiz Bowl</p>	<p><b><u>Standards Based Materials &amp; Resources:</u></b></p> <ol style="list-style-type: none"> <li><a href="#">Wordwall Activity</a> (5)</li> <li>Quizlet Live - vocabulary practice (20)</li> <li>Quizizz for Review &amp; Practice (20)</li> </ol> <p><b><u>ILAP/IEP/504 Scaffolds &amp; Supports:</u></b>  Visuals, peer support, vocabulary development</p> <p><b><u>Opportunities to SWRL:</u></b></p>	<p>Formative: Quizizz</p>	<p>Quizlet Live</p>	<p>R - Quizizz C - Quizlet Live</p>

	<p>the object.</p> <p><b><u>Learning Objective</u></b>  <b>Skill (what), Content (why), Product (how):</b></p> <p><b>Review for the quiz on Tuesday (Forces)</b>  Students will be able to <b>review and reinforce their understanding of key concepts</b> related to forces (including types of forces, balanced and unbalanced forces) by <b>actively participating in a team-based quiz bowl</b>, demonstrating their ability to recall, explain, and apply scientific principles in a competitive and collaborative setting.</p>		<p>Quizlet Live</p> <p><b><u>Costa's Levels of Thinking/Questioning:</u></b>  <b>Level 1:</b> Identify the net force acting on an object when two equal forces are applied in opposite directions.  <b>Level 2:</b> Classify the forces acting on a soccer ball that is being kicked.  <b>Level 3 :</b>Design an experiment to test the relationship between net force and acceleration using different weights and surface types.</p>			
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