

Forces, Mass, and Motion Menu

Directions: Take a look at the different ways you can explore **forces, mass, and motion** on the choice board. Choose the ONE activity that you think will best help you show what you've learned and that you will enjoy working on!

Ask and Investigate 	Model It! 	Be a Data Detective 
Come up with a question about how forces affect motion. Plan a simple way to test your idea using different forces.	Create a model that shows how different amounts of force can change the motion of an object. Explain your model.	Observe what happens when you push or pull objects of different masses with the same amount of force. Record your observations and share what you learned about how mass affects motion.
Math Connections! 	Explain It! 	Solve a Problem! 
If you know the force applied to an object and its mass, how can you describe the change in its motion? Use numbers or simple equations to show the relationship.	Explain in your own words how force and mass are related to an object's motion. Use examples.	Imagine you need to move a heavy box. How could you use forces to make it easier to move or to change its motion? Describe your strategy.
Tell a Story! 	Create a Visual! 	Be the Teacher! 
Write a short story about an object being acted upon by different forces, and how its motion changes as a result.	Create a poster or diagram that visually explains the relationship between force, mass, and motion. Use arrows to represent forces.	Explain to someone how different forces can affect whether an object starts moving, stops moving, speeds up, slows down, or changes direction.

Ideas in Motion: Force, Mass, & More!

Explore the core concepts of forces, mass, and motion with these starting points. Remember, you can always come up with your own amazing projects too!

Ask and Investigate 	Model It! 	Be a Data Detective 
1. Does a bigger push make something go farther? 2. Do different sized balls roll the same way with the same push? 3. How does adding weight affect how easy it is to push?	1. Draw how different pushes change an object's movement. 2. Use a rubber band to show how force affects how things launch. 3. Use blocks to show how mass affects movement with the same push.	1. Compare light and hard pushes on an object's movement. 2. Compare pushing light and heavy objects gently. 3. Observe a rolling ball hitting different sized things.
Math Connections! 	Explain It! 	Solve a Problem! 
1. How does the same force affect smaller vs. larger objects? 2. Use numbers to compare big and small pushes. 3. How do different forces affect the speed of same-mass objects?	1. Why is it harder to stop a heavy rolling ball? 2. How do bike pedals make a bike move? What forces? 3. What makes a car speed up, slow down, or turn?	1. How to move a heavy box with less force? 2. How to stop a rolling ball? 3. Design a simple launcher for a specific distance.
Tell a Story! 	Create a Visual! 	Be the Teacher! 
1. A ball rolls down a hill with wind and bumps. 2. Two spaceships with different mass try to speed up the same. 3. A tug-of-war with changing rope movement.	1. Draw forces on a skateboarder and their changing motion. 2. Diagram how mass affects pulling a wagon. 3. Comic strip about Newton's First Law.	1. Make up simple comparisons to explain force and mass to someone. 2. Show how force affects a toy car's speed. 3. Show how mass affects starting movement.