

Lesson	Activity	@Home Lesson	Activity Description	Suggested Modality	Reasoning	Teacher/Student Provided Materials	Consumable Materials	Non-Consumable Materials	LAUSD Replacement Materials
1.2	2	2	Students use blocks and everyday materials to explore different ways that one object can push or pull on another object.	hands-on	Objects can start moving when they are pushed or pulled on by a second object.	1 bag, plastic, gallon, self-sealing 1-2 wooden blocks with hooks 1 balloon 1 rubber band* 1 paper clip 1 domino 1 clothespin 1 index card, (can be replaced by any small objects found in the home)	<i>Student Investigation Notebook</i> (pg. 2)	wooden blocks with hooks	
1.4	1		Students use materials to create their own chain reactions and record the objects involved and the evidence of a force for two of the forces in their chain reaction.	hands-on	A force acts between two objects and an object starting to move is evidence of a force. There must be some force acting between the train and another object to make the train rise.	1 self-sealing plastic bag 2 wooden blocks, with hooks 1 balloon 1 rubber band* 1 paper clip 1 domino 1 clothespin 1 index card 1 rubber ball, (can be replaced by any small objects found in the home)	<i>Student Investigation Notebook</i> (pg. 8)	wooden blocks with hooks	
2.1, 2.2	1	5	Students try to find evidence of a force (magnets) making an object start moving without anything touching the object. They predict and then test their predictions about what objects magnetic forces act on.	hands-on (if no magnets, go to video)	Some forces can act without objects touching. A force can be exerted between two objects without the objects touching. This can happen between magnets and some other objects. When the train starts moving as it rises off the track, it does so because of a non-touching force: magnetic force.	1 bag, plastic, gallon or quart self-sealing 2 ring magnets 1 small steel paper clip 1 steel spoon 1 plastic spoon* 1 washer 1 piece of wood (craft stick) 1 balloon 1 penny*		magnets	
2.3	1	6	Students gather evidence about ways that magnetic forces can make objects move by developing magnet tricks.	hands-on (if no magnets, go to video)	Objects were attracted by magnetic force. That magnetic force can be a pull. Magnetic force also be a push force. When the train rises off the track, it does so of a non-touching magnetic push force.	2 ring magnets, 1 small paper clip, 2 sticky notes		magnets	
3.1	2	9	Students drop and hold up objects to observe evidence of a downward force (gravity).	hands-on	Forces always act between two objects. The force of gravity is acting between the train and Earth. Earth attracts the train, and the train moves toward it.	1 paper clip 1 domino 1 heavy book*	<i>Student Investigation Notebook</i> (pg. 26),		
4.1	2,3	12	*Students observe one way to keep an object from falling. Students use two magnets and decide whether to make the magnets attract or repel. Students choose one of the magnets and cause another force to be exerted on it. Students will focus on making a second force act on just one of the magnets.	hands-on (if no magnets, go to video)	Two forces can be exerted on an object at the same time. More than one force can act on an object, even an object that is not moving. More than one force can be exerted on the train at a time. The force of gravity is pulling the train toward Earth, and magnetic force is pushing the train up away from the tracks. Those forces work in opposite directions so when the forces are balanced, the train floats and stays in the air.	2 ring magnets 1 pencil* 1 piece of string (8 inches long) 4 pieces of masking tape (1 inch each). 1 hardcover book*			
4.2	1	13	Students cause a paper clip to float by using magnetic force to balance the force of gravity acting on the paper clip	hands-on (if no magnets, go to video)	When gravity and another force on an object are balanced, the object won't fall. An object that is not moving may have balanced forces acting on it. When the train floats, it has balancing forces acting on it.	2 ring magnets 1 large pieces of cardboard (7"x 3.5") 1 small pieces of cardboard (3.5" x 2") 1 plastic cup 1 paper clip with a piece of string (about 8" long) tied to it several pieces of masking tape 4 sticky notes	<i>Student Investigation Notebook</i> (pg.43)	magnets	
5.1	1	15	Students make the floating paper clip fall without touching it	hands-on	When the track's electromagnet is turned off, magnetic force is no longer exerted and the forces are no longer balanced. When gravity is the only acting force, the forces on the train become unbalanced, and the train falls.	1 Floating Paper Clip Device, with 2 ring magnets (from Lesson 4.2) 1 ruler*	<i>Student Investigation Notebook</i> (pg. 55-56)	magnets	
5.4	1	17	Students create models of each stage of the floating train	hands-on (if no magnets, go to video)	Students create physical models as evidence of how the train could work	2 ring magnets 1 pencil* 1 small piece of cardboard with a hole in the middle		magnets	