

Science force and motion

Grade: 3 rd		Subject: Science	
Materials: science notebooks, tubs, magnet, clothes pins, bell, quarter, paper clip, binder clip, staples, aluminum foil, marble, cube, video		Technology Needed: smartboard	
Instructional Strategies: <input type="checkbox"/> Direct instruction <input type="checkbox"/> Guided practice <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> Learning Centers <input type="checkbox"/> Lecture <input type="checkbox"/> Technology integration <input type="checkbox"/> Other (list)		Guided Practices and Concrete Application: <input type="checkbox"/> Large group activity <input type="checkbox"/> Independent activity <input type="checkbox"/> Pairing/collaboration <input type="checkbox"/> Simulations/Scenarios <input type="checkbox"/> Other (list) Explain:	
Standard(s) 3.PS.2.3 Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. ETS.1.2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.		Differentiation Below Proficiency: Have students work through a specific list of findings and circle if it attracted or repelled Above Proficiency: Have students write about their findings in a short paragraph Approaching/Emerging Proficiency: Have students work through a specific list and write if they attracted and repelled Modalities/Learning Preferences: hands-on	
Objective(s) By the end of the lesson the student will be able to identify what attracts and repels a magnetic force by creating investigations and writing their findings. Bloom's Taxonomy Cognitive Level: apply			
Classroom Management- (grouping(s), movement/transitions, etc.) Students will be grouped together at the rug for discussion they will use their thinking partners to share ideas and thoughts at a level 1 voice. Students will be working independently around the room investigating. Students will transition from large group, back to their desk to start investigation.		Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.) Students will be expected to keep a level 2 talking voice during large group discussion. During free investigation time, students will be expected to use a level 1 voice. Students will be expected to use the magnets appropriately and return all materials back to the tub when done.	
Minutes	Procedures		
5	Set-up/Prep: <ul style="list-style-type: none"> Prepare the investigation tubs Have glossary words on the board Have video ready 		
3	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) <ul style="list-style-type: none"> Ask students to turn and talk about what they know about magnets Have groups share their knowledge with the group Share the video to the class 		
10	Explain: (concepts, procedures, vocabulary, etc.) <ul style="list-style-type: none"> Tell students that they will be investigating the force magnets have. Show the magnets to the students and ask them “what they are and what they do?” have the students turn and talk about their ideas Bring the class back together and have students share their ideas. Before moving, talk about the expectations for the magnets. (these are not toys, these are meant for investigation, when finished with the magnets everything will be put away) Tell the students the expectations and what will happen if they do not follow those rules (magnets will be taken and a worksheet will be handed out). “First we will be taking our magnet and explore around the room with what our magnet attracts to and what it repels.” “We will be recording our findings in our science notebook” “After that we will be investigating with items located in our tubs at the learning centers, you will also record these findings.” Have the students return to the desk and take out their science notebooks and open to a blank page “you will be creating a t-chart on your paper” Draw one on the board for the students to see and have them copy it into their notebooks. “First we need to learn our key words and their definitions” Have the students use the books to find the definitions of key 		

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	<p>words and record them in their science notebook.</p> <ul style="list-style-type: none"> • “Once you are complete you may start your investigation around the room” • Have the students record their magnets attractions and repels in the notebook 	
<p>10</p>	<p>Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)</p> <ul style="list-style-type: none"> • Students will walk around the room investigating findings in their notebook • Students will walk around the room and try to find attractions and repels with their magnets for 5 minutes • Students will use the items in the tubs to find attractions and repels with their magnets for 5 minutes. • Once students have completed 10 minutes of investigation have them return to their desk • “In your notebook I want you to write your answer to this questions (“), write 2-3 sentences of your own thoughts about this. 	
<p>5</p>	<p>Review (wrap up and transition to next activity):</p> <ul style="list-style-type: none"> • Bring the students together at the front with their science notebooks • Have them share out their findings and record them on the board • Ask questions about magnets and forces • Have students ask questions they were thinking when investigating with the magnets 	
<p>Formative Assessment: (linked to objectives, during learning)</p> <ul style="list-style-type: none"> • Progress monitoring throughout lesson (how can you document your student’s learning?) <p>During investigation: Go around the room and engage in the investigation with the students. Ask... Why did you put the magnet on that? What happened when you put the magnet on that? Did you think the magnet was going to attract or repel? Engage students in trying new and interesting items around the room and have them think out of the box.</p>	<p>Summative Assessment (linked back to objectives, END of learning)</p> <p>Read through student’s answer to the focus question. Students will also complete a “What stuck with me card” on the lesson.</p>	
<p>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</p> <p>WHAT WENT WELL: Overall, I feel that the science lesson went really well. The students were actively engaged in the activities and enjoyed investigating with the magnets. The conversation among students around the room was about interesting facts and knowledge of magnets and what magnets attract and repel. I feel that this helped keep the students engaged. I also felt that the students were able to respond to my expectations very well. They used the magnets and supplies around the room in an appropriate way and I did not have to remind them about my expectations. At the end of our lesson during the review we came back together as a class. This was my favorite part because the engagement and questions coming from the students were all geared toward the idea of magnet’s attraction and repel. Students were asking questions about things they know and relate to in their lives which I was able to run with and spark new ideas in the student’s heads. One question in particular was about metal plates in human bodies. I personally have pins in my feet so I was able to in the moment show students the answer to that student’s question. I feel that this really helped the students understand better about different metals and also sparked the conversation on why doctors would use a metal that doesn’t attract magnets. Students remained excited about the lesson.</p> <p>CHANGES: Changes I would make is to find a more interesting magnet video for the students to watch. I feel that this would really help the students become interested and engaged in the beginning. I would also like to change the rotation of the students. I would half the students work on the investigation tubs at their desk and the other half is around the room investigating. I feel that this would help eliminate some of the noise around the room. During classroom investigation the students started to become excited about their findings and started to get a little louder than the expectations asked of them. The student’s noise level was easily changed but I do feel this would help the flow of the classroom. During our review I had students give me examples of their findings and I wrote them on the board. For this I would have changed the process. I would have the students talk to their thinking partner and select one finding together to say to the group. This would allow students to all have a voice. I could also have each student give one finding and put it on the board and make tally marks for things already written down. I feel that this would help the active not needed talking by the students when their classmates are giving examples.</p>		

