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| **Grade: 2** | | | **Subject: Science** | |
| **Materials: test kit, science notebooks, glue, scissors, materials sheet** | | | **Technology Needed: N/A** | |
| **Instructional Strategies:**   * Direct instruction * Guided practice * Socratic Seminar * Learning Centers * Lecture * Other (list) | | * Peer teaching/collaboration/   cooperative learning   * Visuals/Graphic organizers * PBL * Discussion/Debate * Modeling | **Guided Practices and Concrete Application:** | |
| * Large group activity * Independent activity * Pairing/collaboration * Simulations/Scenarios * Other (list)  |  | | --- | | Explain: | | * Hands-on * Technology integration * Imitation/Repeat/Mimic |
| **Standard**  **2.PSI.1 – Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.** | | | **Universal Design for Learning**  **Below Proficiency:**  **Those students who are below proficiency will be mixed in groups with students who are at or above proficiency. These students will help model the activity for the lower students, as well as helping them place the objects under the correct tab.**  **Above Proficiency:**  **Those students who are above proficiency will be mixed in groups with students who are at or below proficiency. They will help model the activity for other students.**  **Modalities/Learning Preferences:**   * **Visual: These learners will benefit from this activity because they will be able to see how the magnet affects the different materials.** * **Auditory: These learners will benefit from this activity because they will verbally hear me giving directions. They will also be able to communicate and collaborate with other students throughout the activity.** * **Kinesthetic & Tactile: These learners will benefit from this activity because they get to move around the classroom while also being able to engage in hands-on work when using the magnets with the materials.** | |
| **Objective**  **By the end of the lesson, students will demonstrate their understanding of magnetism and which materials it does or does not affect.**  **Bloom’s Taxonomy Cognitive Level: Application** | | |
| **Classroom Management- (grouping(s), movement/transitions, etc.)**  **\*Students will listen to the teacher when they are talking (voice level 0). If someone needs to speak, they may raise their hand and wait to be called on.**  **\*Students will be respectful of others by staying on task, not interrupting, and by keeping their bodies to themselves.**  **\*To transition, the teacher will either do a clap and response or verbal call and response to grab the students’ attention.**  **\*During turn and talks, students will be respectful of their neighbors by not talking while someone else is talking, and by keeping their bodies calm. Students may use a voice level 1-2 during this time.**  **\*If students have to move during transitions, they will do so quickly, respectfully, and without talking (voice level 0).**  **\*Students will worry about themselves if another student starts to act up. Students are expected to remain on task. If students need more than 3 reminders to stay on task, they will be asked to put their materials away and look on with a partner, or may be asked to give me a minute or take a break/leave the room.** | | | **Behavior Expectations- (procedures/expectations specific to the lesson, rules and expectations, etc.)**  **\*Students will not talk while the teacher or another student is talking**  **\*Students will use kind words towards each other**  **\*Students will show respect towards their classmates, be responsible for their actions, and show that they can be safe in the classroom**  **\*Students will transition with a voice level 0**  **\*Students will be respectful of their materials, otherwise they will be taken away** | |
| **Minutes** | **Procedures** | | | |
| **5 min.** | **Set-up/Prep before lesson:**   * **Have test kits out and ready to go** * **Have the sheets cut out and ready to hand out** | | | |
|  | **Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)**   * **Class class** * Yes yes * **Thank you for giving me your attention so quickly 2nd graders! So I have a question for you… who here has ever played with magnets? What exactly do magnets do?** * Let students throw out different answers or experiences with magnets. * **I heard some pretty interesting answers from quite a few of you! So now I want to ask you another question… Did you know that magnets have this really cool thing called a magnetic field? And that we can’t see what it looks like because it’s invisible? This magnetic field is what helps magnets attract different objects. Are all objects magnetic?** * Let students throw out their answers/ideas | | | |
| **5 – 7 min.** | **Explain: (teacher-led)**   * **In this activity that we are going to do, you get to experiment with different materials to see which ones are magnetic. But first, I want you to take out your science notebooks and open to the next clean page. I want X and Y to come up and grab the “Is It Magnetic?” worksheets from me and hand one out to everybody. Once you get your worksheet, you may cut it out and glue it into your notebooks. I’ll know everybody has done this when they are sitting with their thumbs up in the air, and then I will give everybody directions for our next part.** * Give the students a few minutes to cut out and glue in their worksheets. Walk around to make sure that everyone is cutting and pasting correctly. | | | |
| **15 min.** | **Elaborate: (concreate practice/application with relevant learning task -connections from content to real-life experiences)**   * **So it looks like everyone has their sheets cut and glued in their notebooks. Now for the next part, we are going to do an experiment with magnets. Magnets are really special, in that they can form a bond with some objects, but not others. In this experiment, you will find out which objects magnets can stick to. I want you to break up into groups of 3-4 people and spread out around the room. Everyone will need to bring their science notebooks, glue sticks, and scissors with them. Try to be with people that you aren’t normally with! Once everyone has spread out, I will walk around and hand out your experiment kits, along with a sheet with the materials you will be testing. Your job is to cut out the squares with the materials on them, and as you experiment with each object, you will place it under the Yes or No categories in your science notebooks. Does this make sense so far?** * Allow time for students to ask questions if need be * **Alright! When everyone is done with their experiment kits, I want you to pack everything up and place the kits on my desk. We will go over the results from our experiment as a class.** * During the activity, I will walk around to make sure that everyone is using their materials appropriately and that they are following along with the directions. Once everyone has finished and placed their experiment kits on my desk, we will go over the results of the experiment. I want students to compare their results and discuss reasons some materials would stick or not. * **It looks like everyone is almost done around here! When you finish up, please move back to your desks, and I will know that you are ready to move on.** * **Now that everyone is done with their experiments, let’s go over our results. What objects did stick to the magnet? Do you know why this is?** * Allow students to explain which objects did stick to the magnet, and why they think that is. * **Now what about the objects that didn’t stick? Why do you think they didn’t?** * Allow students to explain which objects didn’t stick, and why they thought that was. * If there are any discrepancies among the students, allow them to talk about their reasoning. | | | |
| **5 min** | **Closure (wrap up and transition to next activity):**   * **Awesome job, second graders! Thank you for following directions and for all of the great experimenting you did. Now it is time to clean up and move on to our next subject, so please put your experiment kits on my desk if you haven’t already, clean up and throw away your scraps from cutting paper, and put your science notebooks away. I will know we are ready to move on when I see that desks are cleared off and eyes are on me.** | | | |
| **Formative Assessment: (linked to objective, during learning)**   * **Progress monitoring throughout lesson (document of student learning, data collection)** * **Thumbs up thumbs down** * **Walking around the classroom and monitoring student behaviors and understanding of concepts** * **Gathering as a group to talk about what did and didn’t stick to make sure students understand the concept of magnetism.** | | | **Summative Assessment (linked back to standard, END of learning)**   * **I would give a test closer to the end of the trimester once the students would have more time to learn about magnets and how they operate. To assess them on this skill, I would have them write out 3 objects that would stick to a magnet and 3 objects that wouldn’t stick. I would then ask if they would know why that is, and by this point, they would have a firm understanding of how magnetism affects certain objects.** | |
| **Teacher Reflection (What went well? What did the students learn? How do you know? What changes would you make?):**  **The students had mixed reviews about this lesson. At the beginning, we went through the concept of the magnetic field, and how certain objects or materials are attracted to the magnetic field. The students were excited to participate in group, hands-on work, and it was fun to see them figure out which materials were attracted to magnets, and which ones weren’t. It was also really nice to see the below-proficiency students being matched up with the at/above-proficiency students, and seeing how they would help model the activity for them. While this activity went relatively smooth for the students, there was one group in particular that had trouble with staying on task. It took a few reminders for them to follow directions, but they eventually got the hang of it. The more I get to learn about this group of students, the more I can see which students can and cannot be around each other, which is something I will take into account in future group activities. When I asked the students for feedback, the general answer was that they liked the hands on aspect of it, but they also thought it was boring. The next time I teach this lesson, I will have to think about different ways in which I can incorporate magnets in a more interesting and engaging way which will make them want to ask questions and find answers to their questions.** | | | | |