Lesson Plan Template

Date: _____

Grade: 2	**Subject: Science: Force and Motion**
Materials: Force and Motion Big Book, Force and Motion Exit Slip, Paper, Pencil, Blocks, String, Rubber bands, Craft Sticks, Playdough	**Technology Needed: None**

Instructional Strategies:

- ☐ Direct instruction
- ☐ Guided practice
- ☐ Socratic Seminar
- ☐ Learning Centers
- ☐ Lecture
- ☐ Technology integration
- ☐ 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(s)

3-PS2-1: Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion on an object.

Objective(s)

By the end of the lesson, students will be able to demonstrate the effect of applying various pushes and pulls on an object by using a ramp and applying different forces.
By the end of the lesson, students will be able to identify observable forces in nature as pushes or pulls by using the big book.
By the end of the lesson, students will be able to identify a force as a push or a pull.
Bloom's Taxonomy Cognitive Level: Understanding, Applying

Differentiation

Below Proficiency: Repeat the definition after the teacher says it. Do the actions with the class. Start determining the different forces and vocabulary words towards the end of the lesson.

Above Proficiency: Determine if the force is a push or a pull. Use the correct actions without prompting. Help other students if necessary.

Approaching/Emerging Proficiency: Follow along with the teacher. Use the actions to help them determine the definitions and understand what they mean.

Modalities/Learning Preferences: Musical, Visual, Verbal, Interpersonal, Intrapersonal

Classroom Management- (grouping(s), movement/transitions, etc.)

The students will be excused by the color of the shirt to come to the carpet area. If students are not following instructions and messing around, the classroom management strategy used in the classroom is Love and Logic. Students will be given supplies at their tables. Students can get help from their table partners, but they will all make their own scenarios. Students should try to use different scenarios than the other students at their pod. If they use the same scenario, they have to use different materials to create them. I will use sticks to call on people if they are all eager to participate. When students go back to their desk, I will excuse them by boys and girls. Students will clean all of their materials before we move on to the next activity.

Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules, and expectations, etc.)

Students should keep their hands to themselves while they are sitting in the carpet area. Students should raise their hand if they have a question or have something to say. Students should pay attention throughout the lesson, or they may be asked to go back to their desk and not participate in the activity. Students will use appropriate voices when repeating the definitions. Students will do their action and sit back down to listen. Students will use the supplies appropriately. To get the students attention, I will use cues such as put your hands on your head or 1,2,3 eyes on me. Students should listen to the story, so they can follow the actions and participate in the activity at the end.

Minutes	Procedures
2	**Set-up/Prep:** **Get out Big Book (Forces and Motion), Paper, Pencil, Blocks, String, Rubber bands, Craft Sticks, Playdough**
5	**Engage: (opening activity/ anticipatory Set – access prior learning/stimulate interest /generate questions, etc.)** **1. The students will be excused to come to the carpet area by the color of their shirt.** **2. Show the students the first page of chapter one in the big book which shows a picture of a skier.** **3. Ask the students to turn and talk to a partner about their experiences with recreational activities that involve water and a boat.** **4. When the students come back together, I will read the title "What is a Force?" and direct the students' attention to the water skier.** **5. Have the students determine how the skier is moving through the water. What object is helping the skier move? Answer: boat** **6. Is the boat pushing or pulling the skier? Answer: Pulling** **7. A push and a pull are examples of what? Answer: A force** **8. Go over the actions with the students for each of the vocabulary words.** **9. Push- Students will present like they are pushing a giant rock every time they hear the word push** **10. Pull- Students will pretend like they are pulling a rope every time they hear the word pull** **11. Motion- Students will stand up and turn around when they hear the word motion** **12. Force- Students will either do the action for push or pull based off of which type of force they think is being applied** **13. Ramp- Students will pretend that they are going down a slide** **14. Lever- Students will pretend like they are using a lever**

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10-15	**Explain: (concepts, procedures, vocabulary, etc.)** **1. Read through chapter one of the big book** **2. The first page gives the definition of a push. When I say the definition, I will have students repeat it back to me as they are doing the action for push.** **3. The next page gives us the definition of a pull. When I say the definition, I will have the students repeat it back to me as they are doing the action for pull.** **4. Page 10 talks about motion. When I say the definition, I will have the students repeat it back to me as they are doing the action for motion.** **5. Page 12, uses the word force as the little boy is pushing a toy truck with and without sand. Students should do the action for pushing.** **6. If the boy uses the same amount of force to push both, which truck would go farther?** **7. The next page also talks about force there is a girl pulling a bag on a rough surface and a smooth surface. The students should do the action for pull.** **8. On which surface will the bag move more easily.** **9. Next, we are going to be talking about ramps have the students repeat the definition after you and do the action for the word ramp.** **10. Is it easier to push a box up a ramp or lift the box into the truck?** **11. The last word we have to go over is lever. The students will repeat the definition after me and do the action for the word lever.** **12. Is it easier to push up a rock with a lever or without?**
5-10	**Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)** **1. Bring out supplies and ask the students questions to create scenarios.** **2. How would you represent pulling?** **3. Have the students attach the string to an object at their desk and show how they would pull the object.** **4. How would you represent pushing by using a ramp?** **5. Create a ramp, push the block down the ramp.** **6. Use a pencil as a lever and have students see how a lever works.** **7. Allow students to create their own representation of one of the vocabulary words and explain to the class which vocabulary word they were trying to represent and how.** **8. Students can use any of the supplies that they have to represent their vocabulary word.**
3	**Review (wrap up and transition to the next activity):** **1. Go over actions for the vocabulary words again.** **2. Your dad is trying to get his snowblower up on his truck, how can he make it easier?** **3. Can you think of a time when you have pushed something today?** **4. What about a time when you have pulled something today?** **5. Did anyone use a ramp or lever this weekend? What did you use it for?**

Formative Assessment: (linked to objectives, during learning) • **Progress monitoring throughout lesson (how can you document your student's learning?)** **Force and Motion Exit Slip- Match the words with their definitions (Force, Motion, Pull, Push, Friction), What does Pauly Polar Bear need to win the race? Circle the answer and explain: Rough track, smooth track, flat track, a track with hills**	**Summative Assessment (linked back to objectives, END of learning)** **Students will complete a project by creating scenes where each of the vocabulary words is used. They would label each scene whether they are using push, pull, lever, ramp (motion and force should be in more than one)**

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):
The students learned a lot during this lesson and most of them did not even realize they were learning. I used this standard because they did not have one about forces in the second grade standards, but my cooperating teacher mentioned that they cannot just talk about force in Kindergarten and go back to it in third grade and expect the students to know exactly what they need to. When I was introducing the actions for their vocabulary words, the students were smiling and enjoying the lesson. They were still under control and able to follow instructions. This was a problem that I believe others could run into depending on the class that they have. Some classes may not be able to handle the excitement of the actions that were used. I did not realize that the students learned so much from the actions, but they summarized the definition in their own words before I even read it to the class. I really enjoyed the big book that went along with this lesson, and I think it adds more character to the classroom than just using a textbook. The students were standing and doing their actions very frequently, and I enjoyed watching them use the correct actions even without my help. When we talked about the first page, I had originally planned to just talk about the skier and how the boat pulled him through the water, but I quickly realized I was in a classroom where many of the students had never been skiing or tubing in the water. Some of them had never even been on a boat. I decided to start using different connections for these

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students so that they were able to connect it to their own lives. I talked about how they pulled out their chair and pushed it back in every day in class. This is something that I know all of the students have done and will continue to do throughout the year. You could continue the learning with the students by using the vocabulary in the classroom such as telling them to pull out their chair so that they are moving it towards them. I had the students look at the exit slip before we started the hands-on experience and had them write down their original answers on a separate piece of paper. I collected those first so that they could not go back and look at them. I compared the two at the end of the lesson, and it was amazing to see some students go from getting barely any right to the whole page. When we did the hands-on activity, I split the students into groups and provided each group with the materials that I wanted them to use to create their own ramp. The students really blew me away when they created their own ramps, and they were super excited to try them out. I had everyone gather around each ramp as it was tested. I was excited to see the students complement their friend's ramps and think of ideas that they could have used as well. We also used objects such as pencils, rulers, and the leg of a chair to create levers. We created scenarios for the students to pull on a string against one of their friends and feel the force between them. I would definitely do this again with the students. When I have my own classroom, I will know more of the materials that are available to me, so I think it would be fun to just put out a bunch of materials and have the students create their own ramps. I believe that some of the students would get super creative. It is important to do more lessons like this in your classroom to enhance the engagement and motivation of the students.