



Marietta City Schools 2023-2024 District Unit Planner

Kindergarten

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| Topic Title: | <i>Unit #6 Applying Forces to Create Motion</i> | Unit Duration | <i>3 weeks</i> |
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Mastering content and skills through KNOWLEDGE-BUILDING (establishing the purpose of the unit):

What enduring understandings will students gain from this unit? Different forces and the physical attributes of an object create different types of motion.

GSE Standards

ELA

ELAGSEKRI2 With prompting and support, identify the main topic (main idea) and retell key details of a text (supporting details).

ELAGSEKRI3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

ELAGSEKRI7 With prompting and support, describe the relationship between illustrations and the text (how the illustrations support the text).

ELAGSEKL1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

b. Use frequently occurring nouns and verbs.

e. Use the most frequently occurring prepositions (e.g., to, from, in, out, on, off, for, of, by, with).

ELAGSEKL5c. Identify real-life connections between words and their use (e.g., note places at school that are colorful).

ELAGSEKRL1: With prompting and support, ask and answer questions about key details in a text.

ELAGSEKRL3: With prompting and support, identify characters, settings, and major events in a story.

ELAGSEKRL7: With prompting and support, describe the relationship between illustrations and the story (how illustrations support the text).

Science

SKP2. Obtain, evaluate, and communicate information to compare and describe different types of motion.

- a. Plan and carry out an investigation to determine the relationship between an object's physical attributes and its resulting motion (straight, circular, back and forth, fast and slow, and motionless) when a force is applied. (Examples could include toss, drop, push, and pull.)
- b. Construct an argument as to the best way to move an object based on its physical attributes.

Essential Questions

Factual—

How does pushing affect an object's motion?
How does pulling affect an object's motion?

Inferential—

Why do some objects roll and others slide?
Why do some surfaces make a moving object slow down?

Critical Thinking-

Which type of force do you use most during a day?
What is the easiest type of motion to cause?

Tier II Words- High Frequency Multiple Meaning

Tier III Words- Subject/ Content Related Words

force, motion, straight, direction, toss, drop, push, pull

circular, motionless

Assessments

Transfer of Integrated Skills:

Identifying Pushes and Pulls in a Text

1. Display the book *Move Your Body!* on Epic and provide students with a simple chart with space for two pushes and two pulls.

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| PUSH | PULL |
| PUSH | PULL |

2. Have students draw and label two pushes and two pulls that occur as you read the book aloud.

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ReadWorks “Will You Push or Pull?”

1. Provide students with a copy of the passage and read the text aloud.
2. In small groups or one-on-one, read the questions to students for them to answer. Differentiate support by having students use approximate spelling or dictation of the constructed response questions.

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Content-Specific GSE/Skills:

- Kinder Push and Pull Activity
- Push and Pull Venn Diagram Formative Assessment
- Push and Pull Sorting Formative Assessment

- Forces to Create Motion Summative Assessment

Writing Task and Rubric:

Kid Moves

1. Brainstorm different ways that the class pushes and pulls objects throughout the day.
2. Model using [Divided Writing Paper](#) to draw and write labels or words to describe one thing you push and pull that they do not--push key into ignition, pull food out of oven.
3. Provide students with Divided Writing Paper to draw and write simple sentences for an example of something they push and pull. Display a word bank for *push, pull, my*.

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ELAGSEKL5c. Identify real-life connections between words and their use (e.g., note places at school that are colorful).

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| Content | Accurately depicts a specific age-appropriate push and pull activity (push my car door, pull my shoelaces) | Accurately depicts a general age-appropriate push and pull activity (push a door, pull a string) | Accurately depicts a general push or pull activity | Does not depict a push or pull activity |
| Coherence | Phrases or labels align with and add to the drawing | Phrases or labels align with the drawing | Phrases or labels conflict with the drawing | Does not provide phrases or labels |
| Complexity | Writes in simple sentences with prepositions (I pull socks on my feet.) | Writes in simple sentences (I pull socks.) | Writes in single words or phrases (pull socks) | Does not write in words or phrases |

| Objective or Content | Learning Experiences | Differentiation Considerations |
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| Daily Lessons for Text Comprehension | 15-Day Plan: Applying Forces to Create Motion | |

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| <p>Connected Structured Literacy Activities</p> | <p>Oral Language Provide students with sentence stems from Tool 2 Oral Language strategies related to the content for partner and whole group discussions. Example include: When I ____ a ____ it ____. A ____ will ____ when it is on ____.</p> <p>Vocabulary During daily reading activities and discussions, help children distinguish between shades of meaning among verbs and adjectives related to force and motion. For example: Push <i>shove, tap, nudge</i> Pull <i>tug, drag, lift</i></p> <p>Background Knowledge</p> <ol style="list-style-type: none"> 1. Use the prompts at the end of <i>Oscar and the Cricket</i> to guide students' exploration of the classroom or outdoor area. 2. Provide students with a chart labeled Push, Pull, Change, Stop to record different objects and situations that they discover to produce those four effects. | |
| <p>Connected SS/Sci Experiences (omit this row if KBU does not contain SS or Sci connections)</p> | <p>Exploration I Materials for each group:</p> <ul style="list-style-type: none"> • 4-6 toy cars of varying sizes. • Two yard sticks or blocks • Two yard sticks, blocks or pieces of stiff cardboard (to form track) • Cardboard from the recycling bin or recycled cardboard. • Student activity sheet (Optional) <p>Have students first investigate the cars and talk about the differences between them, such as size, weight, and wheel size. Point out that these toy cars are models of actual cars, and have students describe how the models are different from cars that they see on the street.</p> <p>Communicating and Evaluating Discuss the cardboard material used for this investigation. Tell students that the cardboard was gathered from the recycling bin and that reusing it is an environmentally responsible use of materials. Reusing and recycling paper items helps reduce the</p> | |

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| | <p>number of trees that are cut down, conserving this resource. Use the Teacher Observation Checklist to take anecdotal notes that the students are using resources correctly.</p> <p>Then have them set up the track. Students should take the largest car and place the yard sticks, blocks, yard sticks, blocks, and or recycled cardboard on either side of the car. Then students should move the car back and forth on the track, making sure it does not bump into either side.</p> <p>Then have them investigate what happens when they try to push big cars and little cars down the track. Model asking wondering questions, such as “I wonder which car takes more pushes to get across?” or “I wonder which cars go farther on the track on their own?” or “I wonder how the way the car is pushed affects its movement?”</p> <p>Then have them investigate what happens when they push cars from each end of the track so that they crash. What do they notice about the crashes? In which direction do the cars go? Have students describe what happens. Assess and record student responses as anecdotal notes.</p> | |
| | <p>Exploration II</p> <p>In this activity, students will demonstrate the following Inquiry Skills:</p> <ul style="list-style-type: none"> • Identify Questions • Develop predictions/hypotheses that • state what may happen in an investigation based on prior knowledge or experience (prediction) <p>Materials for each group:</p> <ul style="list-style-type: none"> • Three balls of different sizes, materials, and types • Three small buckets • Sand or rice • Water • Safety goggles • Student activity sheet (Optional) <p>Tell students to put on safety goggles before starting the investigation. Discuss the importance of keeping the goggles on throughout the entire investigation in order to keep their eyes safe and healthy. Have students pour water into one bucket and sand into another. Leave the third bucket empty. Then ask students what they think will happen if they drop a ball in each cup (it will bounce out; it will land; it will splash).</p> | |

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| | <p>Communicating</p> <p>Place the empty bucket where students can see it. Pose this scenario: You are at a carnival playing a game. If the ball stays in the bucket, you win a prize. If it bounces out of the bucket, you don't win a prize. Model dropping the ball several times. The ball will bounce out almost every time, but do not acknowledge it. After several times, ask the students to identify and explain the problem in their own words. Ask the students what they predict will happen when they drop the ball into different buckets from the same height.</p> <p>Then have students drop the balls from a given height and record what happens when the balls land in the water, in the rice or sand, and in the empty bucket. As a safety precaution, remind students never to throw the sand, rice, or water and to clean up any spills immediately as this could pose a slipping hazard for others. Assess students' ability to use safe practices during the investigation. Do students keep their goggles on during the entire investigation?</p> <p>Evaluating</p> <p>Talk about the forces acting on the balls, including gravity and the forces from the buckets. Ask students why they think the balls act differently. For example: Why doesn't the ball bounce out of the bucket with the water? Why doesn't the ball bounce out of the bucket with the rice or sand? Why does the ball bounce out of the empty bucket? Accept all answers and encourage hypotheses. Wrap up the activity by asking the students to propose solutions to the problem of your ball bouncing out of the empty bucket, by asking "What do I need to do so I win a prize"</p> | |
| | <p>Exploration III</p> <p>Materials for each group:</p> <p>Table tennis ball</p> <p>Blocks and other building materials from construction centers in your classroom</p> <p>Scrap material that students can reuse as ramps and barriers, such as pieces of wood, or recycled cardboard, PVC tubes, or recyclable plastic bottles, cloth, and cookie sheets.</p> <p>Masking tape</p> <p>Timing devices, including timers</p> <p>Student activity sheet (Optional)</p> <p>Tell students that you will challenge them to move a table tennis ball from a starting point to an ending point. Also remind them to ask wondering questions as they perform the exploration. For example, I wonder what will happen if we use this material as a barrier? I wonder what will happen if we push the ball fast?</p> | |

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| | <p>For each group, set a starting point that is at least three feet above the ground and an ending point that is about ten feet from the starting point, but on the ground. Delimit these points using masking tape. Tell students that they will try to roll the ball from the starting point to the ending point using the materials they are given. They can use them in any way, in any order. They can use masking tape to connect the pieces together. Have each group use the timer or other device to time how long it takes them to get the ball from the starting line to the finish line. Record all of the groups’ times on the board.</p> <p><i>Communicating and Evaluating</i></p> <p>As they create their contraption, have students use words to describe the way they want the ball to move. Once students complete their task, discuss the ways they had to get the ball to move. As you are working on the activity, use the Teacher Observation Checklist to assess the students’ ability to describe how the ball moves. Students will also describe the movement of the ball on the student activity sheet.</p> <p>As students clean up, observe to make sure they are disposing of materials properly. Recyclables should be placed in the recycle bin. Reusable materials should be placed back in their proper places. Trash should be disposed of properly. Remind students to use the conservation checklist in their student activity sheet.</p> | | | |
| Connected Tier 1 Unit | <i>CKLA Pushes and Pulls</i> | | | |
| Connected Writing Activities | <p><i>The Writing Revolution</i> strategies embedded in 15-day plan</p> <ul style="list-style-type: none"><i>Scrambled sentences</i> | | | |
| Additional Planning Resources | | | | |
| MCS K-5 KBU Overview | KBU as a 15-day Plan (Template) | MCS Structured Literacy Repository | Berger Framework for Comprehension (Template) | The Writing Revolution (Templates) |
| Additional Instructional Resources | | | | |
| <p>Suggested High Quality Complex Texts</p> <p>And Everyone Shouted PULL! (District provided with previous transdisciplinary unit)</p> <p>MOVE (District provided with previous transdisciplinary unit)</p> <p>Newton and Me (District provided with previous transdisciplinary unit)</p> | | | | |

Oscar and the Cricket (District provided with previous transdisciplinary unit)

Suggested Experiential Resources