Board Approved August 2017
GRADE: Kindergarten   **COURSE**: Science Curriculum 2017 NGSS Aligned

Suggested alignment by units. (Correlations are cross-referenced with Wonders Units)

WEATHER & CLIMATE: 7 Weeks
Wonders Unit 6

LIFE SCIENCE: 10 Weeks
Wonders Unit 5 & 7

- PLANTS (Unit 5-1, 5-2, 5-3, 9-3)
- ANIMALS (Unit 1-2, 2-3, 7-1, 7-2, 7-3, 10-3)
- HUMANS (10-3)

PUSHES & PULLS: 3 Weeks
Not a part of Wonders curriculum

Time Frame	7 Weeks

Course
Earth and Space Science

Title of Unit
Weather and Climate

Essential Questions
1. What is the weather like today and how is it different from yesterday?
2. What are the weather patterns in local weather?
3. What is the purpose of forecasting the weather?
4. How do you protect yourself in severe weather?

Enduring Understandings
Students will understand that…

➔ Weather forecasting is important to prepare for and respond to severe weather
➔ Structures including umbrellas, canopies, and tents minimize the warming effect of the sun
➔ Weather has different patterns (ex. cooler in the mornings)
➔ The temperature of Earth's surface (sand, soil, rocks, and water) can be warmer or cooler in relation to the sun's effect
➔ There are different types of weather (sunny, windy, rainy, snowy) and quantify the number of each in a month.
➔ A structure can reduce

Key Knowledge
Students will know…

➔ Weather is the combination of sunlight, wind, snow and rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and notice patterns over time.
➔ Some kinds of weather severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that communities can prepare for and respond to these events.
➔ Sunlight warms Earth's surfaces

Concepts and Skills
Students will be able to…..

➔ Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather
➔ Make observations to determine the effects of sunlight on Earth's surfaces.
➔ Use and share observations of local weather conditions to describe patterns over time
➔ Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.

Learning Activities
Mystery Science
❖ Weather Watching-
https://mysteryscience.com/watching/weather-conditions-instruments-seasons

BrainPop JR
- ❖ Seasons- https://jr.brainpop.com/science/weather/seasons/
- ❖ Fall- https://jr.brainpop.com/science/weather/fall/
- ❖ Winter- https://jr.brainpop.com/science/weather/winter/
- ❖ Spring- https://jr.brainpop.com/science/weather/spring/
- ❖ Summer-https://jr.brainpop.com/science/weather/summer/

PebbleGo
- ❖ About Weather - https://pebblego.com/modules/2/categories/2980
- ❖ Wet Weather - https://pebblego.com/modules/2/categories/2974
- ❖ Cold Weather - https://pebblego.com/modules/2/categories/2979
- ❖ Hot Weather - https://pebblego.com/modules/2/categories/2995/articles/2021
- ❖ Extreme Weather - https://pebblego.com/modules/2/categories/2977
- ❖ Weather Science - https://pebblego.com/modules/2/categories/2975

Video Resources
- ❖ What's the Weather Like? - https://www.youtube.com/watch?v=UbfsQgiqD9M
- ❖ Weather vs. Climate - https://www.youtube.com/watch?v=RK5WUlVxv50
- ❖ Weather Videos - http://www.sciencekids.co.nz/videos/weather.html
- ❖ Franklin: Four Seasons - https://www.youtube.com/watch?v=GrGpw4ra5HE
- ❖ Seasons - https://www.youtube.com/watch?v=7UckUHeWXD0
- ❖ Sid the Science Kid Clips - http://pbskids.org/sid/videoplayer.html
    - ➢ Super Sun
    - ➢ Temperature Investigation
    - ➢ Rain Observation
    - ➢ I'm gonna be a big rain cloud!
    - ➢ Where does rain come from?
    - ➢ Wind Investigation
    - ➢ I am the wind.
- ❖ Check Out the Weather - https://www.youtube.com/watch?v=RmSKsyJ15yg
- ❖ Grover the Weather Monster - https://www.youtube.com/watch?v=tmO9cjsj1zc
- ❖ Nat Geo Wonder About the Weather - https://www.youtube.com/watch?v=QZVtgOK8uTw
- ❖ Different Seasons - https://www.youtube.com/watch?v=vqlyx9zpgCs
- ❖ Peep & the Big Wide World: Stormy Weather - https://www.youtube.com/watch?v=7Li59FFilYQ
- ❖ Peep & the Big Wide World: Snow Daze - https://www.youtube.com/watch?v=YjVtnXSCnho

Interactive Games and Activities
- ❖ Sid the Science Kid: Temperature- http://pbskids.org/sid/fablab_weathersurprise.html
- ❖ Sid the Science Kid: Snow Search- http://pbskids.org/sid/fablab_snowsearch.html
- ❖ Sid the Science Kid: Weather Wheel- http://pbskids.org/sid/weatherwheel.html

Literature Connections:
- ❖ If Frogs Made the Weather By Marion Dane Bauer

- ❖ Weather: Poems for All Seasons By Lee Bennett Hopkins and Melanie Hall
- ❖ The Cloud Book by Tomie DePaola
- ❖ Little Cloud By Eric Carle
- ❖ Cloud Dance By Thomas Locker
- ❖ *Mama, Is It Summer Yet* (Wonders Unit 6 Week 1)
- ❖ *A Tour of the Seasons* (Wonders Unit 6 Week 1)
- ❖ *Rain* (Wonders Unit 6 Week 2)
- ❖ *Waiting Out the Storm* (Wonders Unit 6 Week 3)
- ❖ *Rainbow Crow* (Wonders Unit 6 Week 3)

Hands On Activities:

- ❖ Rain Jar http://onelittleproject.com/shaving-cream-rain-clouds/
- ❖ DIY Rain Guage https://www.education.com/science-fair/article/DIY-rain-gauge/
- ❖ Make Your Own Rainbow http://www.sciencekids.co.nz/experiments/makearainbow.html
- ❖ Tornado in a Bottle https://www.stevespanglerscience.com/lab/experiments/soda-bottle-tornado/
- ❖ Weather Wheel- https://teachables.scholastic.com/teachables/books/My-Weather-Wheel-March-Monthly-Idea-Book-9780439503723_034.html
- ❖ Day and Night Experiment- Need a globe and a flashlight
    - ➢ Mark where we are on globe. Have one student hold flashlight still, another student holds the globe, have students record observations. Spin the globe, show that the light is moving, but the flashlight (the sun) is not. Discuss light and warmth coming from the sun during the day, night is cooler and dark.
    - ➢ Observation sheet is in the teachers drive in a folder labeled NGSS Kindergarten

Assessments

- ❖ Weather Quiz
- ❖ Spring Weather Assessment
- ❖ Summer Weather Assessment
- ❖ Winter Weather Assessment
- ❖ Fall Weather Assessment

NGSS and NJSLS

Standards: (Note: Include reference to relevant standards in the Core Content Area as well as technology and 21st-century life and careers.)

- ➔ **NGSS**:
    - ◆ **K-PS3-1 -** Make observations to determine the effect of sunlight on Earth's surface.
    - ◆ **K-PS3-2 -**Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
    - ◆ **K-ESS2-1 -** Use and share observations of local weather conditions to describe patterns over time
    - ◆ **K-ESS2-2 -** Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
    - ◆ **K-ESS3-1 -** Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
    - ◆ **K-ESS3-2 -** Ask questions to obtain information about the purpose of weather

forecasting to prepare for, and respond to, severe weather.
  ◆ **K-ESS3-3 -** Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

➔ <u>**NJSLS: ELA**</u>
  ◆ **W.K.7 -** Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).
  ◆ **SL.K.3 -** Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

➔ <u>**NJSLS**</u>: **Math**
  ◆ **SMP.2 -** Reason abstractly and quantitatively.
  ◆ **SMP.4 -** Model with mathematics.
  ◆ **K.CC.A1 -** Count to 100 by ones and by tens.
  ◆ **K.CC.A2 -** Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
  ◆ **K.MD.B3 -** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

➔ <u>**Technology**</u>:
  ◆ **TECH.8.1.2.A.CS2** - Select and use applications effectively and productively

Modifications

Modifications: (ELLs, Special Education, Gifted and Talented)

➔ Follow all IEP modifications and 504 plans
➔ Provide differentiated instruction as needed.
➔ Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
➔ Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
➔ Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
➔ Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings.
➔ Use project-based science learning to connect science with observable phenomena.
➔ Structure the learning around explaining or solving a social or community-based issue.
➔ Provide ELL students with multiple literacy strategies.

Time Frame	10 Weeks

Course
Life Science

Title of Unit
Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

Essential Questions
1. Where do animals live and why do they live there?
2. What do animals (including humans) need to survive?
3. What do plants need to survive?
4. How do plants and animals (including humans) interact with the environment to meet their needs?
5. What is the influence of humans on their environmental footprint?

Enduring Understandings
Students will understand that…

➔ animals need to take in food but plants do not.
➔ different types of food is needed by different types of animals.
➔ plants need light.
➔ all living things need water.
➔ plants and animals change their environment according to their needs
➔ humans have an impact on their environment.

Key Knowledge
Students will know…

➔ all animals need food in order to live and grow. They obtain their food from plants or from animals. Plants need water and light to live and grow.
➔ plants and animals can change their environment.
➔ actions that humans take to live comfortably can affect the world around them. However, people can make choices that reduce their impacts on the land, water, air, and other living things.
➔ living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.

Concepts and Skills
Students will be able to…

➔ use observations to describe what plants and animals (including humans) need to survive, including the idea that animals need to take in food and plants do not.
➔ communicate solutions using evidence from observations to explain how plants and animals (including humans) can change the environment to meet their needs.
➔ use a model (ex. hands-on activity, mentor text, diagram, picture, student drawing) to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
➔ communicate solutions that will reduce the impact of humans on the land, water, air and/or other living things in the local environment.

Learning Activities
PLANTS

- ❖ **BrainPop Jr:**
  - ➢ Parts of a Plant-https://jr.brainpop.com/science/plants/partsofaplant/
  - ➢ Plant Life Cycle- https://jr.brainpop.com/science/plants/plantlifecycle/
  - ➢ Plant Adaptations- https://jr.brainpop.com/science/plants/plantadaptations/

- ❖ **PebbleGo:**
  - ➢ What are plants? -https://pebblego.com/modules/2/articles/2127

- ❖ **Hands On Activities:**
  - ➢ Seed Sprouts in a Bag http://lifeovercs.com/germinating-seeds-bag-science-experiment-kids/
  - ➢ How Plants Absorb Water http://pagingfunmums.com/2013/07/09/fun-science-experiment-learning-how-plants-absorb-water/
  - ➢ Do Seeds Need Light? http://www.pre-kpages.com/science-kids-growing-plants-experiment/

- ❖ **Video Resources/Interactive Games:**
  - ➢ PBS Kids Plum Landing- Videos and Games
  - ➢ http://www.pbslearningmedia.org/search/?q=*&selected_facets=brand_exact%3APLUM%20LANDING
  - ➢ Peep & the Big Wide World: Peep Plants a Seed https://www.youtube.com/watch?v=Yxs7P7LWzDg
  - ➢ Sid the Science Kid Clips - http://pbskids.org/sid/videoplayer.html
    - ■ All about leaves
    - ■ The Decayed Pumpkin
    - ■ Sid examines leaves
    - ■ Leaf investigation
    - ■ Growing plants
    - ■ The buzz with bees

- ❖ **Literature Connections**
  - ➢ *Growing Plants* (Wonders Unit 5 Week 1)
  - ➢ *My Garden* (Wonders Unit 5 Week 1)
  - ➢ *The Pine Tree* (Wonders Unit 5 Week 2)
  - ➢ *A Grand Old Tree* (Wonders Unit 5 Week 2)
  - ➢ *Farms Around the World* (Wonders Unit 5 Week 3)
  - ➢ *An Orange in January* (Wonders Unit 5 Week 3)

ANIMALS

- ❖ **Mystery Science:**
  - ➢ Animal Secrets MS1 &2
    https://mysteryscience.com/secrets/animal-needs

- ❖ **BrainPop Jr:**

➢ Mammals-https://jr.brainpop.com/science/animals/mammals/
   Insects- https://jr.brainpop.com/science/animals/insects/
   Fish- https://jr.brainpop.com/science/animals/fish/
➢ Caring for Pets- https://jr.brainpop.com/health/beresponsible/caringforpets/

❖ **PebbleGo:**
   ➢ What are animals? - https://pebblego.com/modules/2/categories/2985/articles/2144
      About Birds - https://pebblego.com/modules/2/categories/2954/articles/2147
      About Reptiles - https://pebblego.com/modules/2/categories/2954/articles/2152
      About Insects - https://pebblego.com/modules/2/categories/2954/articles/2149
      About Fish - https://pebblego.com/modules/2/categories/2954/articles/2148
      About Mammals - https://pebblego.com/modules/2/categories/2954/articles/2151

❖ **Hands On Activities:**
   ➢ How Do Penguins Stay Dry - http://raisinglittlesuperheroes.com/penguin-feathers-science-experiment/
   ➢ How Do Arctic Animals Stay Warm - http://www.sciencekiddo.com/how-arctic-animals-stay-warm/

❖ **Video Resources/Interactive Games:**
   ➢ Smithsonian: Animals- https://ssec.si.edu/showbiz-safari
   ➢ PBS Kids Plum Landing- Videos and Games
   ➢ http://www.pbslearningmedia.org/search/?q=*&selected_facets=brand_exact%3APLUM%20LANDING
   ➢ Smithsonian National Zoo Web Cams- https://nationalzoo.si.edu/webcams
   ➢ Houston Zoo Web Cams- https://www.houstonzoo.org/meet-the-animals/animal-webcams/
   ➢ San Diego- http://animals.sandiegozoo.org/live-cams
   ➢ Animal Groups Song -https://www.youtube.com/watch?v=EHAn3zi5Epw
   ➢ Sid the Science Kid Clips - http://pbskids.org/sid/videoplayer.html
      ■ Animals-
      ■ Sid and Gerald wildlife watch
      ■ Love your pet
      ■ Bird nest investigation
      ■ Bird nests
   ➢ Wild Kratts Animal Videos - http://pbskids.org/wildkratts/videos/

❖ **Literature Connections:**
   ➢ *Pouch!* (Wonders Unit 1 Week 2)
   ➢ *From Caterpillar to Butterfly* (Wonders Unit 2 Week 3)
   ➢ *I Love Bugs!* (Wonders Unit 2 Week 3)
   ➢ *Baby Farm Animals* (Wonders Unit 7 Week 1)
   ➢ *Zoo Borns!* (Wonders Unit 7 Week 1)
   ➢ *The Family Pet* (Wonders Unit 7 Week 2)

➢ *The Birthday Pet* (Wonders Unit 7 week 2)
➢ *Anansi: An African Tale* (Wonders Unit 7 Week 3)
➢ *Bear Snores On* (Wonders Unit 7 Week 3)

HUMANS/CONSERVATION

❖ **BrainPop Jr:**
   ➢ Extinct and Endangered Species -
   ttps://jr.brainpop.com/science/conservation/extinctandendangeredspecies/
   ➢ Natural Resources- https://jr.brainpop.com/science/conservation/naturalresources/
   ➢ Reduce, Reuse, Recylce -
   https://jr.brainpop.com/science/conservation/reducereuserecycle/

❖ **PebbleGo:**
   ➢ What are Humans? - https://pebblego.com/modules/2/articles/2167
   ➢ Endangered and Threatened Animals - https://pebblego.com/modules/2/articles/2145
   ➢ What Are Natural Resources?
   https://pebblego.com/modules/2/categories/2949/articles/2193
   ➢ Humans and Earth - https://pebblego.com/modules/2/categories/2949/articles/2194

❖ **Hands On Activities:**
   ➢ Recycled Bird Feeders http://www.craftcreatecook.com/birdhouse-crafts-kids/
   ➢ Water Pollution Experiment http://jdaniel4smom.com/2017/01/water-pollution-experiments-kids.html
   ➢ Recycling Old Crayons https://enjoyingourdays.com/a-fun-way-to-recycle-broken-crayons/

❖ **Video Resources/Interactive Games:**
   ➢ PBS Kids Plum Landing- Videos and Games
   http://www.pbslearningmedia.org/search/?q=*&selected_facets=brand_exact%3APLUM%20LANDING
   ➢ Sid the Science Kid Clips - http://pbskids.org/sid/videoplayer.html
      ■ Humans-
      ■ Ways we can not waste water
      ■ Recycling
      ■ Earth Day tips
      ■ The delicious and nutritious bad
      ■ Muscle investigation
      ■ Healthy Foods
   ➢ 5 Senses Game - http://pbskids.org/sid/isense.html
   ➢ Gabriella Cleans Up - http://pbskids.org/sid/cleansup.html

❖ **Literature Connections**
   ➢ The Lorax Read Aloud - https://www.youtube.com/watch?v=xzf6dQyNN7s
   ➢ *Protect the Environment!* (Wonders Unit 10 Week 3)
   ➢ *Panda Kindergarten* (Wonders Unit 10 3)

Assessments

- ❖ Animal Needs Assessment
- ❖ Human Impact Assessment
- ❖ Plant Quiz

NGSS and NJSLS

Standards: (Note: Include reference to relevant standards in the Core Content Area as well as technology and 21st-century life and careers.)

➔ **NGSS**:
- ◆ **K-LS1-1** Use observations to describe patterns of what plants and animals (including humans) need to survive.
- ◆ **K-ESS2-2** Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
- ◆ **K-ESS3-1** Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
- ◆ **K-ESS3-3** Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

➔ **NJSLS: ELA**
- ◆ **RI.K.1** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
- ◆ **W.K.1** Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., *My favorite book is...*).
- ◆ **W.K.2** Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
- ◆ **W.K.7** Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).
- ◆ **SL.K.5** Add drawings or other visual displays to descriptions as desired to provide additional detail.

➔ **NJSLS**: **Math**
- ◆ **SMP.2** Reason abstractly and quantitatively.
- ◆ **SMP.4** Model with mathematics.
- ◆ **K.CC** Counting and Cardinality
- ◆ **K.MD.A.2** Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

➔ **Technology**:
- ◆ **TECH.8.1.2.A.CS2** - Select and use applications effectively and productively

Modifications

Modifications: (ELLs, Special Education, Gifted and Talented)

➔ Follow all IEP modifications and 504 plans
➔ Provide differentiated instruction as needed.

- ➔ Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- ➔ Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
- ➔ Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- ➔ Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings.
- ➔ Use project-based science learning to connect science with observable phenomena.
- ➔ Structure the learning around explaining or solving a social or community-based issue.
- ➔ Provide ELL students with multiple literacy strategies.

Time Frame	3 Weeks

Course

Physical Sciences

Title of Unit

Motion and Stability: Forces and Interactions

Essential Questions

What happens if you push or pull an object harder?

Enduring Understandings

Students will understand that…

- ➔ forces are pushes or pulls
- ➔ forces can cause motion
- ➔ forces can stop motion

Key Knowledge

Students will know…

- ➔ pushes and pulls can have different strengths and directions
- ➔ pushing or pulling on an object can change the speed or direction of its motion and can start and stop it.
- ➔ when objects touch or collide, they push one another and can change motion
- ➔ a bigger push or pull makes things speed up or slow down more quickly.

Concepts and Skills

Students will be able to…

- ➔ analyze data and develop an understanding of the effects of different directions of pushes and pulls on the motion of an object to determine if a design solution works as intended to change the speed or direction of an object with a push or pull
- ➔ analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or pull
- ➔ plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object

Learning Activities

- ❖ **Mystery Science:**

➤ Force Olympics MS 1&2 - https://mysteryscience.com/pushes/forces-machines-engineering

❖ **BrainPop Jr:**
  ➤ Pushes and Pulls- https://jr.brainpop.com/science/forces/pushesandpulls/
  ➤ Simple Machines- https://jr.brainpop.com/science/forces/simplemachines/

❖ **PebbleGo:**
  ➤ Kinds of Forces- https://pebblego.com/modules/2/articles/2094

❖ **Video Resources:**
  ➤ A Push or a Pull (song) - https://www.youtube.com/watch?v=FOcY37oGhj8
  ➤ Forces Can Push or Pull (song) - https://www.youtube.com/watch?v=AKUgWLCNb68
  ➤ Push & Pull Experiment - https://www.youtube.com/watch?v=0ZuYUCdWT_s
  ➤ Sid the Science Kid Clips - http://pbskids.org/sid/videoplayer.html

❖ **Interactive Games:**
  ➤ Piggy Push - http://www.coolmath-games.com/0-piggy-push
  ➤ Push & Pull Tic-Tac-Toe - http://www.learningliftoff.com/kindergarten-science-learning-game-push-pull/#.WUv4ZlH_oqN
  ➤ School of Dragons - http://www.schoolofdragons.com/hiccups-science-workshop/ngss/kindergarten
  ➤ Caveman Push & Pull - http://www.bbc.co.uk/bitesize/ks1/science/forces/play/popup.shtml

❖ **Literature Connections:**
  ➤ Motion, by Darlene R. Stille
  ➤ How Things Move, by Don L. Curry
  ➤ Give it a Push! Give it a Pull!, by Jennifer Boothroyd
  ➤ And Everyone Shouted, "PULL!", by Claire Llewellyn
  ➤ Push and Pull, by Lola M. Schaefer
  ➤ Push and Pull, by Patricia Murphy
  ➤ Push and Pull, by Charlotte Guillain

Assessments

❖ Forces-Race Car Ramp
❖ Pulls
❖ Pushes

NGSS and NJSLS

Standards: (Note: Include reference to relevant standards in the Core Content Area as well as technology and 21st-century life and careers.)

➔ **NGSS**:
  ◆ **K-PS2-1** Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
  ◆ **K-PS2-2** Analyze data to determine if a design solution works as intended to change the

speed or direction of an object with a push or a pull.
- ◆ **ETS1-A** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

➔ **NJSLS: ELA**
- ◆ **RI.K.1** With prompting and support, ask and answer questions about key details in a text.
- ◆ **W.K.7** Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).
- ◆ **SL.K.3** Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

➔ **NJSLS**: **Math**
- ◆ **SMP.2** Reason abstractly and quantitatively.
- ◆ **K.MD.A.1** Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- ◆ **K.MD.A.2** Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

➔ **Technology**:
- ◆ **TECH.8.1.2.A.CS2** Select and use applications effectively and productively

Modifications

Modifications: (ELLs, Special Education, Gifted and Talented)

➔ Follow all IEP modifications and 504 plans
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➔ Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
➔ Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
➔ Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings.
➔ Use project-based science learning to connect science with observable phenomena.
➔ Structure the learning around explaining or solving a social or community-based issue.
➔ Provide ELL students with multiple literacy strategies.