6th Grade Unit 2 - Energy and Motion

Content Area: **Science**
Course(s): **Science Grade 6**
Time Period: **MP2**
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NJSLS - Science

MS-PS2-1	Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.
MS-PS2-2	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
MS-PS2-3	Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
MS-PS2-4	Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.
MS-PS2-5	Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.
MS-PS3-1	Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.
MS-PS3-2	Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
MS-PS3-5	Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.
MS-ETS1-1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
MS-ETS1-3	Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
MS-ETS1-4	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

Science and Engineering Practices

Asking Questions and Defining Problems

Ask questions that can be investigated within the scope of the classroom, outdoor environment, and museums and other public facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles. (MS-PS2-3)

Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions.

(MS-ETS1-1)

Constructing Explanations and Designing Solutions

Apply scientific ideas or principles to design an object, tool, process or system. (MS-PS2-1)

Engaging in Argument from Evidence

Construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. (MS-PS2-4, MS-PS3-5)

Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2)

Developing and Using Models

Develop a model to describe unobservable mechanisms. (MS-PS3-2)

Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)

Analyzing and Interpreting Data

Construct and interpret graphical displays of data to identify linear and nonlinear relationships. (MS-PS3-1)

Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)

Disciplinary Core Ideas

PS2.A: Forces and Motion

For any pair of interacting objects, the force exerted by the first object on the second object is equal in strength to the force that the second object exerts on the first, but in the opposite direction (Newton’s third law). (MS-

PS2-1)

The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. The greater the mass of the object, the greater the force needed to achieve the same change in motion. For any given object, a larger force causes a larger change in motion. (MS-PS2-2)

All positions of objects and the directions of forces and motions must be described in an arbitrarily chosen reference frame and arbitrarily chosen units of size. In order to share information with other people, these choices must also be shared. (MS-PS2-2)

PS2.B: Types of Interactions

Electric and magnetic (electromagnetic) forces can be attractive or repulsive, and their sizes depend on the magnitudes of the charges, currents, or magnetic strengths involved and on the distances between the interacting objects. (MS-PS2-3)

Gravitational forces are always attractive. There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass - e.g., Earth and the sun. (MS-PS2-4)

Forces that act at a distance (electric, magnetic, and gravitational) can be explained by fields that extend through space and can be mapped by their effect on a test object (a charged object, or a ball, respectively). (MS-PS2-5)

PS3.A: Definitions of Energy

Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of its speed. (MS-PS3-1)

A system of objects may also contain stored (potential) energy, depending on their relative positions. (MS-PS3-2)

PS3.B: Conservation of Energy and Energy Transfer

When the motion energy of an object changes, there is inevitably some other change in energy at the same time. (MS-PS3-5)

PS3.C: Relationship Between Energy and Forces

When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the object. (MS-PS3-2)

ETS1.A: Defining and Delimiting Engineering Problems

The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. (MS-ETS1-1)

ETS1.B: Developing Possible Solutions

A solution needs to be tested, and then modified on the basis of the test results, in order to improve it. (MS-ETS1-4)

There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. (MS-ETS1-2, MS-ETS1-3)

Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. (MSETS1-3)

Models of all kinds are important for testing solutions. (MS-ETS1-4)

ETS1.C: Optimizing the Design Solution

Although one design may not perform the best across all tests, identifying the characteristics of the design that performed the best in each test can provide useful information for the redesign process—that is, some of those characteristics may be incorporated into the new design. (MS-ETS1-3)

The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test results leads to greater refinement and ultimately to an optimal solution. (MS-ETS1-4)

Crosscutting Concepts

Cause and Effect

Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-PS2-3, MS-PS2-5)

Systems and System Models

Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy and matter flows within systems. (MS-PS2-1, MS-PS2-4, MS-PS3-2)

Stability and Change

Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and forces at different scales. (MS-PS2-2)

Scale, Proportion, and Quantity

Proportional relationships (e.g, speed as the ratio of distance traveled to time taken) among different types of quantities provide information about the magnitude of properties and processes. (MS-PS3-1)

Energy and Matter

Energy may take different forms (e.g., energy in fields, thermal energy, energy of motion). (MS-PS3-5)

Scientific Knowledge is Based on Empirical Evidence

Science knowledge is based upon logical and conceptual connections between evidence and explanations. (MS-PS2-2, MS-PS2-4, MS-PS3-5)

Influence of Science, Engineering, and Technology on Society and the Natural World

All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS-ETS1-1)

The uses of technologies and limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. (MS-ETS1-1)

Rationale and Transfer Goals

Students investigate how to describe the position and motion of an object and how Newton's laws of motion describe the effects of force on motion. They will also explore kinetic and potential energy and how they are transferred. Students will gain an understanding of magnetic and electric forces, circuits, and electromagnetism. Students use the practices of analyzing and interpreting data, developing and using models, and engaging in argument from evidence to make sense of the relationship between energy and forces. Students develop their understanding of important qualitative ideas about the conservation of energy. Students understand that objects that are moving have kinetic energy and that objects may also contain stored (potential) energy, depending on their relative positions. The crosscutting concepts of system and system models and stability and change provide a framework for understanding the disciplinary core ideas. Students demonstrate proficiency in asking questions, planning and carrying out investigations, designing solutions, engaging in argument from evidence, developing and using models, and constructing explanations and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Enduring Understandings

Motion is caused by unbalanced forces.

The strength of a force is determined by a variety of factors.

Forces exist even when they can't be seen.

Essential Questions

How does a sailboat work?

Who can build the fastest sailboat?

Can you apply a force on something without touching it?

If I were able to eliminate air resistance and drop a feather and a hammer at the same time, which would land first?

Is it better to have an aluminum (baseball/softball) bat or a wooden bat?

What would give you a better chance of winning a bowling match, using a basketball that you can roll really fast, or a bowling ball that you can only roll slowly?

Who can design the best roller coaster?

Content - What will students know?

- For any pair of interacting objects, the force exerted by the first object on the second object is equal in strength to the force that the second object exerts on the first, but in the opposite direction (Newton's third law).
- Models can be used to represent the motion of objects in colliding systems and their interactions, such as inputs, processes, and outputs, as well as energy and matter flows within systems.
- The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values, by the findings of scientific research and by differences in such factors as climate, natural resources, and economic conditions.
- The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful.
- Specification of constraints includes consideration of scientific principles and other relevant knowledge, which are likely to limit possible solutions.
- The change in an object's motion depends on balanced (Newton's first law) and unbalanced forces in a system Evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object includes qualitative comparisons of forces, mass, and changes in motion (Newton's second law); frame of reference; and specification of units.
- The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change.
- The greater the mass of the object, the greater the force needed to achieve the same change in motion.

- For any given object, a larger force causes a larger change in motion.
- Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and forces at different scales.
- Fields exist between objects that exert forces on each other even though the objects are not in contact.
- The interactions of magnets, electrically charged strips of tape, and electrically charged pith balls are examples of fields that exist between objects exerting forces on each other, even though the objects are not in contact.
- Forces that act at a distance (electric, magnetic, and gravitational) can be explained by fields that extend through space and can be mapped by their effect on a test object (a charged object or a ball, respectively).
- Cause-and-effect relationships may be used to predict phenomena in natural or designed systems.
- Factors affect the strength of electric and magnetic forces.
- Devices that use electric and magnetic forces could include electromagnets, electric motors, and generators.
- Electric and magnetic (electromagnetic) forces can be attractive or repulsive.
- The size of an electric or magnetic (electromagnetic) force depends on the magnitudes of the charges, currents, or magnetic strengths involved and on the distances between the interacting objects.
- Cause-and-effect relationships may be used to predict the factors that affect the strength of electrical and magnetic forces in natural or designed systems.
- Gravitational interactions are always attractive and depend on the masses of interacting objects.
- There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass.
- Evidence supporting the claim that gravitational interactions are attractive and depend on the masses of interacting objects could include data generated from simulations or digital tools and charts displaying mass, strength of interaction, distance from the sun, and orbital periods of objects within the solar system.
- Kinetic energy is related to the mass of an object and to the speed of an object.
- Kinetic energy has a relationship to mass separate from its relationship to speed.
- Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of the object’s speed.
- Proportional relationships among different types of quantities provide information about the magnitude of properties and processes.
- When the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

- A system of objects may contain stored (potential) energy, depending on the objects' relative positions.
- When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the objects.
- Models that could include representations, diagrams, pictures, and written descriptions of systems can be used to represent systems and their interactions, such as inputs, processes, and outputs, and energy and matter flows within systems.
- When the kinetic energy of an object changes, energy is transferred to or from the object.
- When the motion energy of an object changes, there is inevitably some other change in energy at the same time.
- Kinetic energy may take different forms (e.g., energy in fields, thermal energy, energy of motion).

Skills - What will students be able to do?

- Apply Newton's third law to design a solution to a problem involving the motion of two colliding objects.
- Define a design problem involving the motion of two colliding objects that can be solved through the development of an object, tool, process, or system and that includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions.
- Evaluate competing design solutions involving the motion of two colliding objects based on jointly developed and agreed-upon design criteria.
- Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs.
- Analyze and interpret data to determine similarities and differences in findings.
- Plan an investigation individually and collaboratively to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
- Design an investigation and identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how much data is needed to support a claim.
- Make logical and conceptual connections between evidence and explanations.
- Examine the changes over time and forces at different scales to explain the stability and change in designed systems.
- Students will conduct an investigation and evaluate an experimental design to produce data that can serve as the basis for evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

- Students will identify the cause-and-effect relationships between fields that exist between objects and the behavior of the objects.
- Students will ask questions about data to determine the effect of the strength of electric and magnetic forces that can be investigated within the scope of the classroom, outdoor environment, and museums and other public facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles.
- Students will perform investigations using devices that use electromagnetic forces.
- Students will collect and analyze data that could include the effect of the number of turns of wire on the strength of an electromagnet or the effect of increasing the number or strength of magnets on the speed of an electric motor.
- Students construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.
- Students use models to represent the gravitational interactions between two masses.
- Develop a model to describe what happens to the amount of potential energy stored in the system when the arrangement of objects interacting at a distance changes.
- Use models to represent systems and their interactions, such as inputs, processes, and outputs, and energy and matter flows within systems. Models could include representations, diagrams, pictures, and written descriptions.
- Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.
- Conduct an inventory or other representation of the energy before and after the transfer in the form of temperature changes or motion of an object. Do not include calculations of energy.

Activities - How will we teach the content and skills?

- Inspire Science Physical Science Unit 1 Module 1: Lesson 1 Position and Motion
- Inspire Science Physical Science Unit 1 Module 1: Lesson 2 Force and Acceleration
- Inspire Science Physical Science Unit 1 Module 1: Lesson 3 Force Pairs
- Inspire Science Physical Science Unit 1 Module 1: Lesson 4 Gravitational Force
- Inspire Science Physical Science Unit 1 Module 2: Lesson 1 Kinetic Energy
- Inspire Science Physical Science Unit 1 Module 2: Lesson 2 Potential Energy

- Inspire Science Physical Science Unit 1 Module 2: Lesson 3 Conservation of Energy
- Inspire Science Physical Science Unit 1 Module 3: Lesson 1 Magnetic Forces
- Inspire Science Physical Science Unit 1 Module 3: Lesson 2 Electric Forces
- Inspire Science Physical Science Unit 1 Module 3: Lesson 3 Simple Circuits
- Inspire Science Physical Science Unit 1 Module 3: Lesson 4 Electromagnetism
- MS-PS2-1 Lesson Examples
- MS-PS2-2 Lesson Examples
- MS-PS2-3 Lesson Examples
- MS-PS2-4 Lesson Examples
- MS-PS2-5 Lesson Examples
- MS-PS3-1 Lesson Examples
- MS-PS3-2 Lesson Examples
- MS-PS3-5 Lesson Examples

Evidence/Assessments - How will we know what students have learned?

- Inspire Science Labs
- Inspire Science STEM Module Projects
- Inspire Science Physical Science Unit 1 Module 1 Assessment
- Inspire Science Physical Science Unit 1 Module 2 Assessment
- Inspire Science Physical Science Unit 1 Module 3 Assessment
- Daily Warm Ups
- Daily Exit Tickets
- Grade 6 Unit 2 Benchmark Assessment

Spiraling for Mastery

Content or Skill for this Unit	Spiral Focus from Previous Unit	Instructional Activity
• The change in an object's motion depends on balanced (Newton's first law) and unbalanced forces in a system Evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object includes qualitative comparisons of forces, mass, and changes in motion (Newton's second law); frame of reference; and specification of units. • The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. • Gravitational interactions are always attractive and depend on the masses of interacting objects. • Fields exist between objects that exert forces on each other even though the objects are not in contact.	By the end of Grade 5, students understand that: Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but these forces add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. The patterns of an object's motion in various situations can be observed and measured; when the past motion exhibits a regular pattern, future motion can be predicted from it. The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. Objects in contact exert forces on each other. Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their	5-PS2-1 Activities 4-PS3-2 Activities 4-PS-3-3 Activities 3-PS2-1 Activities 3-PS2-3 Activities

	distances apart and, for forces between two magnets, on their orientation relative to each other. The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another, thereby changing the objects' motion. In such collisions, some energy is typically also transferred to the surrounding air; as a result, the air gets heated and sound is produced. Light also transfers energy from place to place. Energy can also be transferred from place to place by electric currents, which can then be used locally to produce motion, sound, heat, or light. Transforming the energy of motion into electrical energy may have produced currents. When objects collide, the contact forces the transfer of energy so as to change the objects' motions.	

Key Resources

McGraw Hill Inspire Science

Gizmos (explorelearning.com)

Force and Motion

Seeing Motion

Electromagnetic Power

Inspector Detector Challenge

Energy Skate Park: PhET

Science of the NHL: Newton's Three Laws of Motion (This website helps model gravitational fields and electric fields in a simpler version for 6th graders)

http://www.physics4kids.com/files/elec_field.html

At the end of the unit, students could respond to some of these writing prompts on gravity, electricity and magnetism

https://www.teacherspayteachers.com/Product/Science-writing-prompts-Force-and-motion-1040648

Force & Motion Task Cards

Force and Motion Unit Creating a Comic Strip Project Name period 8th Grade Science

Brainpop Gravity

Brainpop Magnetism

Gravity Force Lab - Gravitational Force | Inverse Square Law | Force Pairs - PhET Interactive Simulations

Magnetism Lab (Gizmo)

Circuit Builder Lab (Gizmo)

Sled Wars - Collisions (Gizmo)

21st Century Life and Careers

9.2.8.CAP.8	Compare education and training requirements, income potential, and primary duties of at least two jobs of interest.

Career Readiness, Life Literacies, & Key Skills

9.4.8.CI.1	Assess data gathered on varying perspectives on causes of climate change (e.g., cross-cultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4).
9.4.8.CT.1	Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.
9.4.8.IML.3	Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g.,

	6.SP.B.4, 7.SP.B.8b).
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.
9.4.8.IML.5	Analyze and interpret local or public data sets to summarize and effectively communicate the data.
9.4.8.TL.1	Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.
9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.
9.4.8.TL.4	Synthesize and publish information about a local or global issue or event (e.g., MSLS4-5, 6.1.8.CivicsPI.3).

Interdisciplinary Connections/Companion Standards

L.SS.6.1	Demonstrate command of the system and structure of the English language when writing or speaking.
L.KL.6.2	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
L.VL.6.3	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.
L.VL.6.3.A	Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
L.VL.6.3.B	Determine the meaning of words and phrases as they are used, including figurative, connotative, and technical meanings.
L.VL.6.3.C	Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
L.VL.6.3.D	Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
RL.CR.6.1	Cite textual evidence and make relevant connections to support analysis of what a literary text says explicitly as well as inferences drawn from the text.
RI.CR.6.1	Cite textual evidence and make relevant connections to support analysis of what an informational text says explicitly as well as inferences drawn from the text.
RI.CI.6.2	Determine the central idea of an informational text and explain how it is supported by key details; provide a summary of the text distinct from personal opinions or judgments.
RL.IT.6.3	Describe how a particular text's structure unfolds in a series of episodes and use textual evidence to describe how the characters respond or change as the plot moves toward a resolution.
RL.CT.6.8	Compare and contrast literary texts in different forms, by different authors, or from different genres (e.g., stories and poems; historical novels and primary source documents, scientific journals and fantasy stories) in terms of their approaches to similar themes and topics.
RI.CT.6.8	Compare and contrast informational texts in different forms, by different authors, or from different genres (e.g., a memoir written by and a biography on the same person, historical novels and primary source documents, infographics and scientific journals) in terms of

	their approaches to similar themes and topics.
W.AW.6.1	Write arguments on discipline-specific content (e.g., social studies, science, math, technical subjects, English/Language Arts) to support claims with clear reasons and relevant evidence.
W.AW.6.1.A	Introduce claim(s) about a topic or issue and organize the reasons and evidence logically.
W.AW.6.1.B	Support claim(s) with logical reasoning and relevant, accurate data and evidence, that demonstrate an understanding of the topic or text, using credible sources.
W.AW.6.1.C	Use words, phrases, and clauses to link and clarify the relationships among claim(s), reasons and evidence.
W.IW.6.2.B	Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
W.IW.6.2.C	Use appropriate transitions to clarify the relationships among ideas and concepts.
W.IW.6.2.D	Use precise language and domain-specific vocabulary to inform about or explain the topic.
W.IW.6.2.E	Acknowledge and attempt a formal/academic style, approach, and form.
W.IW.6.2.F	Provide a concluding statement or section (e.g., sentence, part of a paragraph, paragraph, or multiple paragraphs) that follows from and supports the information or explanation presented.
6.SP.B	Summarize and describe distributions
6.SP.B.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
6.SP.B.5	Summarize numerical data sets in relation to their context, such as by:
6.SP.B.5.a	Reporting the number of observations.
6.SP.B.5.b	Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
6.SP.B.5.c	Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.