

Force and Motion

When force is applied to an object, it causes it to move. For example, when a baseball bat hits a baseball that was traveling toward the batter, it puts force on it, causing it to change direction and travel away from the bat.

Force can also change the speed of an object. For example, when a player's cleat connects with a ball, it makes it through the field goal. The kick, the ball may make it or not, depending on how much more or less force is applied.

Force and Motion

What is Motion?

Motion is happening all around us. Try standing on the corner of a busy city street and observe what you see. Here are some things your eyes may hone in on: cars driving by honking their horns, people walking, people waiting up to a bus stop to unload passengers, and people hurrying to work or school. All of these things involve motion. Motion is something from one place to another, and it often consists of a change in position.

Force and Motion

Name: _____

6. What does the word applied mean?

- a. heard
- b. put near
- c. made
- d. placed on

7. What is the main idea of paragraph 1?

- a. things are pushed or pulled to move
- b. watching a busy city street can help you to understand motion
- c. we can see motion happening all around us
- d. buses unload passengers, which is a type of motion

8. Which of the following is NOT a way that force influences motion?

- a. change in shape
- b. change in speed
- c. ability to move
- d. ability to rest

9. What is the logical connection between motion and force?

- a. both are used to help an object stop
- b. motion and force both make an object move
- c. both are used while objects are moving
- d. There is no logical development.

word developed mean?

Name: _____

1. Select the word or phrase from the paragraph that DOES NOT help the reader understand the meaning of the word observe.

- a. what you see
- b. eyes may hone in
- c. look what's happening
- d. busy city street

2. What evidence does the author provide to support the idea that motion is everywhere?

- a. force can also change the speed of an object
- b. objects must be pushed or pulled to move
- c. when force is applied to an object, it moves
- d. objects can even change shape

3. Where in the text does the author show how force influences the speed at which something moves?

- a. Paragraph 2
- b. Paragraph 3
- c. Paragraph 4
- d. Paragraph 5

4. What is the main idea of paragraph 2?

- a. objects remain moving
- b. the law of inertia is
- c. the law of mass and

Annotate the Text

1 Number the paragraphs

2 Underline important statements

3 Circle unknown words

4 Question

This resource includes:

- Teacher Tips
- Questions to Ask Students
- Student Bookmarks:
 - Close Reading Steps
 - Annotate/Mark the Text
- 4 Informational Texts
- 40 Multiple Choice Questions – 10 questions for each text
- 7 Graphic Organizers
- Answer Key

Topics Included:

4 Informational Texts:

- Force and Motion
- Push and Pulls
- Magnetism
- Balanced and Unbalanced Forces

How Do Magnets Work?

What Objects Contain Magnets?

The most apparent form of magnets are the ones we see but did you know magnets are used in other ways for Magnets can be found in many of our electronic devices like a phone, for example. Did you know that it consists of magnets work together inside your phone to make the camera work. Magnets can also be found in computers, radios, and

use magnets too. Magnets power anything from your blender, toaster, washing machine, and vacuum. Vacuums use magnets in their motor. Magnets are used within a vacuum is to clean magnets that may get cleaner. Magnets are used in other magnets that may help power their motor, like a

giant magnet. It attracts other magnets, as we know them. Magnets can be traced back to ancient times. See magnetic field.

How Do Magnets Work?

You probably have magnets on your fridge. Maybe they're from a place you visited on vacation or a local business. You likely pass by them several times a day and pay them no mind, but the next time you pass them, you'll know how these magnets work.

In case you didn't know, a magnet is any object, usually a metal, that attracts other types of metal to itself. It wants to bring metals closer to itself, so it has something to stick to. Think about your fridge again. The magnet is attracted to your fridge, and as it gets closer, it attaches itself. In some cases, the magnet does the attracting, and in other cases, the other metal does the attracting. This all varies depending on the size of the objects. These materials can connect because of the magnetic field flowing around them.

Magnets have two ends called poles. These poles are referred to as the north pole and the south pole. Field lines start at the north pole of an magnet and end at the south pole. Field lines represent the magnetic field. If you have two magnets, one with a north pole and one with a south pole, they will attract each other. Opposing poles must face each other. For example, the north and south poles attract each other. This occurs because the field lines running between them attract. However, if you have two magnets with the same poles facing each other, they will repel each other. The field lines between them will push each other away.

Annotate the Text

1 Number the paragraphs

2 Underline important statements

3 Circle unknown words

4 Question? Confusing?

Non-Fiction Passage

How Do Magnets Work?

Name: _____

6. What does the word attach mean?
 - a. to move away from
 - b. to come together
 - c. to draw
 - d. to run away from
7. What is the main idea of paragraph 1?
 - a. magnets work in ways we don't think
 - b. your fridge might have magnets
 - c. you can get magnets on vacation
 - d. you will learn how magnets work
8. Which of the following does NOT contain magnets?
 - a. dryer
 - b. vacuum
 - c. blender
 - d. flashlight
9. What is the logical connection between magnets and metal?
 - a. magnets attract metal, like the magnet in the picture
 - b. magnets repel metal, so they will not be attracted to it
 - c. magnets attract metal but won't stick to it
 - d. magnets repel metal but will stick to it

How Do Magnets Work?

Name: _____

1. Select the word or phrase from the paragraph that helps the reader understand the meaning of the word attracts.
 - a. a metal
 - b. bring metals closer
 - c. has something to stick to
 - d. any object
2. What evidence does the author use to support the idea that opposites attract?
 - a. to make magnets attach, opposing poles must face each other
 - b. the field lines running between them attract
 - c. if you face two poles that are the same, they will repel each other
 - d. two north poles or two south poles will not attract one another
3. Where in the text does the author show evidence to support the claim that magnets can be found in many electronic devices?
 - a. Paragraph 2
 - b. Paragraph 3
 - c. Paragraph 4
 - d. Paragraph 5
4. What is the main idea of paragraph 6?
 - a. vacuums protect themselves from magnets
 - b. blenders, toasters, and washing machines have magnets
 - c. anything with an electric motor uses magnets
 - d. magnets in vacuums attract other magnets
5. Which of the following details is most important to the topic of how magnets can attach themselves to other objects?
 - a. as it gets closer, it attaches itself
 - b. able to connect because of the magnetic field flowing around them
 - c. the magnet is attracted to your fridge
 - d. this all varies depending on the size of the objects

10 Multiple
Choice
Questions

Pushes and Pulls

Push/Pull Experiment

Want to decide if an object is experiencing push or pull yourself? Try the following activities with your class. Each activity involves an object experiencing push or pull. Some are surprised by some of them!

- typing on a Chromebook
- hitting a ball with a bat
- stretching a rubber band
- playing tug of war
- bouncing a ball
- closing a door
- rolling a toy car down a ramp
- helping a friend up off the ground
- writing something on your notebook
- putting on your jacket

What did you discover? Which activities involved push motion? Which involved pull motion? Did any surprise you?

Push and pull motions are in everything we do. Pay attention to your peers' actions and you'll quickly see it's everywhere.

Pushes and Pulls

Push motion and pull motion exist in our everyday actions. For example, when we pull open the door to enter a store and push a cart through the store to put our upcoming purchases in, we have experienced both push and pull motions. So what are pushes and pulls?

Push motion moves an object away from you. For example, think about kicking a soccer ball. As your foot collides with the ball, it is pushed away from your body. Your foot hitting the ball is a push motion. Pull motion can be used as a means of protection. For example, to push a ball away from your face, or to pull your arm away from you, as hitting a volleyball with your hands.

The opposite of a push motion is a pull motion. Pull motion moves an object closer to you. For example, pulling a drawer to get a pair of socks. When you pull a rope, you move toward you. This is called pull motion. Pulling your pen from your desk is another example of pull motion.

Push and pull motions are a part of our everyday lives. They are found throughout our world. We use push and pull motions in textbooks, push doors, pull a cart, pull a rope, pull a chair, pull a rug, pull a carpet, pulling a rope, pulling a rope, pulling the trash out of the can, pulling the trash out of the can, you are away from home.

Annotate the Text

1 Number the paragraphs

Underline

circle unknown words

Non-Fiction Passage

Pushes and Pulls

Name: _____

1. Select the word or phrase from the paragraph that helps the reader understand the meaning of the word collides.

- a. creates
- b. pushed away
- c. hitting
- d. used

2. What evidence does the author provide to support the idea that it is safe to be at home?

- a. opening the fridge
- b. taking out the trash bag
- c. putting on our jackets
- d. pressing the buttons on the TV remote

3. Where in the text does the author show evidence of push motion to keep us safe?

- a. Paragraph 2
- b. Paragraph 3
- c. Paragraph 4
- d. Paragraph 5

Pushes and Pulls

Name: _____

6. What does the word opposite mean?

- a. wants
- b. begins
- c. the same as something else
- d. the reverse of something else

7. What is the main idea of paragraph 4?

- a. opening the fridge is a pull motion and pushing the vacuum is a push motion
- b. we experience push motions at home
- c. push and pull motions are a part of our everyday routines
- d. we experience pull motions at home

8. Which of the following is NOT a pull motion?

- a. taking out the trash bag
- b. opening a drawer
- c. opening a door
- d. rolling a bowling ball

9. What is the logical connection between push and pull motions?

- a. push motions bring something closer; pull motions take it farther
- b. push motions take something farther; pull motions bring something closer
- c. push motions allow you to carry things; pull motions allow you to protect yourself
- d. push motions allow you to protect yourself; pull motions allow you to kick a soccer ball

10. What does the word protection mean?

- a. the action of hurting something
- b. the action of gaining something
- c. the action of keeping something safe
- d. the action of disliking something

10 Multiple Choice Questions

Force and Motion

When force is applied to an object, it causes it to move. For example, when a baseball bat hits a baseball that was traveling toward the batter, it puts force on it, causing it to change direction and travel away from the bat.

Force can also change the speed of an object. When a player's cleat connects with a football, it makes it through the field goal. Due to the kick, the ball may make it or not, depending on more or less force is applied.

Objects can even change shape. When you push your hand on a blown-up balloon, it shifts and no longer is round.

Fun Facts

- Isaac Newton presented his work in Philosophiæ Naturalis Principia Mathematica Philosophiæ
- Force exists even when an object is at rest. A table has force, as does a chair.
- To determine the amount of force, we use the measurement of Newton.

Force and Motion

What is Motion?

Motion is happening all around us. Try standing on the corner of a busy city street and observe what you see. Here are some things your eyes may hone in on as they look at what's happening around them: cars driving by honking their horns, buses rolling up to a bus stop to unload passengers, and people hurrying quickly to their destinations. All of these things involve motion. Motion is defined as moving something from one place to another, and it often consists of things being pushed or pulled.

Laws of Motion

Sir Isaac Newton developed three laws that help us to understand how motion works.

The first law of motion is that an object at rest stays at rest and an object in motion stays in motion with the same speed and in the same direction unless acted upon by an unbalanced force. The only way to change an object's motion is to apply a force to it.

The second law of motion states that the acceleration of an object is directly proportional to the net force acting on it and is in the same direction as the net force. This law states that the acceleration of an object is directly proportional to the net force acting on it and is in the same direction as the net force.

The third law of motion states that for every action, there is an equal and opposite reaction. This law states that for every action, there is an equal and opposite reaction.

What is Force?

Force builds off of mass and acceleration. These are referred to as the three pillars of physics. Force can make an object move, stop, or change its shape. Below are some examples of force.

Close Reading Steps

1 Read the text

2 Annotate the text

3 Define unknown words

4 Read the text again

Non-Fiction Passage

Force and Motion

Name: _____

6. What does the word applied mean?
 - a. heard
 - b. put near
 - c. made
 - d. placed on
7. What is the main idea of paragraph 1?
 - a. things are pushed or pulled to move
 - b. watching g busy city streets can help you
 - c. we can see motion happening all around us
 - d. buses unload passengers, which is a type
8. Which of the following is NOT a way that force infl
 - a. change in shape
 - b. change in speed
 - c. ability to move
 - d. ability to rest

Force and Motion

Name: _____

1. Select the word or phrase from the paragraph that DOES NOT help the reader understand the meaning of the word observe.
 - a. what you see
 - b. eyes may hone in
 - c. look what's happening
 - d. busy city street
2. What evidence does the author provide to support the idea that force creates motion?
 - a. force can also change the speed of an object
 - b. objects must be pushed or pulled to have motion
 - c. when force is applied to an object, it causes that object to move
 - d. objects can even change shape due to force
3. Where in the text does the author show evidence to support the claim that weight and speed influence the speed at which something travels?
 - a. Paragraph 2
 - b. Paragraph 3
 - c. Paragraph 4
 - d. Paragraph 5
4. What is the main idea of paragraph 3?
 - a. objects remain moving or not moving unless force is applied
 - b. the law of inertia is the first law of motion
 - c. the law of mass and acceleration is the second law of motion
 - d. Newton developed three laws of motion.
5. Which of the following details is most important to the topic of how force can change the speed of an object?
 - a. depending on the amount of force put behind the kick, the ball may make it or may not
 - b. as more or less force is applied, an object's speed will change
 - c. when a football player's cleat connects with a football
 - d. it spirals through the air and hopefully makes it through the field goal

10 Multiple Choice Questions

Balanced and Unbalanced Forces

Unbalanced Force

An unbalanced force is the opposite of a balanced force. Consider the bike example again. When you've finished riding your bike, the bike is likely lying in the dirt. This position causes the forces on the bike to occur. One side is on the ground and the other is in the air. This causes forces to occur?

Similar to balanced forces, unbalanced forces are forces that act in opposite directions. The difference is that the forces are not equal in size. If a force is applied on one side than on the other, the speed and direction of the object. Consider the tug of war example. If the flag in the middle wasn't moving, it means the forces are balanced. If one team gets tired and stops pulling, the flag may move. If the tired team stops pulling, the flag may move even harder, the flag in the middle moves due to unbalanced forces. The team that is pulling harder than the other.

Example of an unbalanced force: A boat floats, but other forces like wind or water due to a current can move it. Think about examples of unbalanced forces in your life.

Balanced and Unbalanced Forces

When we consider how things move, it's important to discuss the forces that can be put on an unmoving object. There are two main types of these forces: balanced and unbalanced forces. Balanced and unbalanced forces surround us.

Balanced Force

What does it mean if something is balanced? Think about riding a bike. If the bike is upright and is not leaning to the left or right side, it is considered balanced. So, what is a balanced force?

Balanced forces are equal in size and have force in opposite directions. Have you ever played tug of war with your classmates on field day? If you haven't, tug of war consists of each half of a class holding tightly to a rope pulling as hard as they can to make a flag tied in the middle reach their side of the field. If each side of the rope is equally flanked or balanced, this may be a difficult feat! Because the number of students is equal in size and each team is pulling in opposite directions, a balanced force is formed. When this occurs, the flag stays in the middle. With balanced forces, the object remains stationary or continues to move at a constant speed in a straight line.

For a balanced force to exist, it must either continue moving with no change in speed or be immobile with no change. An example of a balanced force is a book sitting on a table. The forces acting on the book are the force of gravity pulling it down and the force of the table pushing it up. These forces are equal in size and opposite in direction, so the book remains stationary.

When the forces on an object are balanced, the object remains stationary or continues to move at a constant speed in a straight line. This is because the forces are equal in size and opposite in direction. For example, if a car is stopped at a red light, the forces acting on it are balanced. The engine is pushing it forward, but the brakes are pushing it back, so it remains stationary. Once the light turns green, the forces become unbalanced, and the car starts moving.

Annotate the Text

1 Number the paragraphs

2 Underline important statements

3 Circle unknown words

4 Question? Confusing?

5 Interesting!

Non-Fiction Passage

Balanced and Unbalanced Forces

Name: _____

6. What does the word flanked mean?
 - a. to be on each side of something
 - b. equal
 - c. to move away from something
 - d. far apart
7. What is the main idea of paragraph 1?
 - a. force surrounds us
 - b. unbalanced force exists
 - c. there are two types of forces
 - d. balanced force exists
8. Which of the following is NOT a balanced force?
 - a. two equal-sized, energetic tug-of-war
 - b. a parked car
 - c. a balanced bicycle
 - d. a sinking object
9. What is the logical connection between balanced and unbalanced forces?
 - a. balanced forces have equal strength and unbalanced forces have unequal strength
 - b. balanced forces have unequal strength and unbalanced forces have equal strength
 - c. balanced forces have equal strength and unbalanced forces have equal strength
 - d. balanced forces have unequal strength and unbalanced forces have unequal strength

10. What does the author mean by "tug of war"?

- a. when two teams pull on a rope to make it move

Balanced and Unbalanced Forces

Name: _____

1. Select the word or phrase from the paragraph helps the reader understand the meaning of the word energized.
 - a. than the other
 - b. stronger
 - c. unbalanced forces
 - d. move
2. What evidence does the author provide to support the idea that tug of war can be an unbalanced force?
 - a. if the tired team stops working as hard and the other team pulls even harder, the flag in the middle will likely move
 - b. an object that sinks is being pulled down toward the water due to force
 - c. the game had a balanced number of players and strength
 - d. the number of students is equal in size, and each team is pulling in opposite directions
3. Where in the text does the author show evidence to support the claim that laying your bike in mud makes it unbalanced?
 - a. Paragraph 2
 - b. Paragraph 3
 - c. Paragraph 4
 - d. Paragraph 5
4. What is the main idea of paragraph 3?
 - a. your team cannot give up in tug of war
 - b. you have to be strong to win at tug of war
 - c. balanced forces are equal in size and have forces moving in different directions
 - d. playing tug of war with equal teams is a balanced force
5. Which of the following details is most important to the topic of how force can affect a sinking object?
 - a. some objects float
 - b. others don't
 - c. an object that sinks is being pulled down toward the water
 - d. an unbalanced force is an object that sinks into the water

10 Multiple Choice Questions

Close Reading

Close Reading: A reading strategy that is used to comprehend and analyze a text closely. Students will typically read the text at least twice for comprehension, details, analysis, and deep questioning of the text's purpose and meaning.

Steps for Close Reading:

1. Read the Text
2. Mark Up the Text or Annotate the Text
3. Read the Text Again
4. Define Unknown Words
5. Read the Text Again
6. Respond to Reading

Includes:

- Teacher Tips
- Questions to Ask Students
- Close Reading Steps - Bookmark
 - Version with "Mark the text"
 - Version with "Annotate the text"
- Steps to "Mark the Text" Bookmark
- Steps to "Annotate the Text" Bookmark
- Informational Text: The
- 10 Multiple Choice Questions
- 7 Graphic Organizers

Teacher Tips & Suggestions

Questions to Ask Students

- What is the text mostly about?
- Who is the audience for this text?
- What's is the writer's purpose of this text?
- What's your favorite part of the passage?
- What words are new to you? What do you think the words mean?
- What detail stands out to you?
- What questions do you now have about the topic?
- If you can ask the author 2 questions, what would you ask them?
- In this paragraph, what is the author saying?
- What is the structure of the text? How does it help

Teacher Tips

Close reading: A reading strategy that is used to comprehend and analyze a text closely. Students will typically read the text at least twice for comprehension, details, analysis, and deep questioning of the text's purpose and meaning.

1. Read the Text: When students read the text for the first time, they are reading just to identify what the passage is mostly about. The first read is surface level and allows the students to understand the gist of the text.
2. Mark Up the Text or Annotate the Text: Encourage students to use their annotation bookmarks (provided below) to make notes directly on the text. Students can write in the margins, use sticky notes to make notes, use color coding. You can even slip the text inside a dry-erase pocket and encourage students to use dry-erase markers to mark up the text.
3. Read the Text Again: If the teacher is working with the students for this, the teacher can read the text aloud this time. Model think-alouds and use expression while you read. If students are working with partners in a station, encourage them to each read a paragraph then switch readers.
4. Define Unknown Words: During this step, invite students to circle any unknown or unfamiliar words. Use the provided graphic organizer to select 4-5 unknown words and work to identify the meaning of each word.
5. Read the Text Again: With this third time reading the text, encourage the students to read the passage independently.
6. Respond to Reading: Students will now use the text to answer the 10

Graphic Organizers

- Main Ideas with Text Evidence
- Central Ideas with Text Evidence
- Central Ideas with Details
- Main Idea, Details, Conclusion
- KWL: What I Know, What I Want to Know, What I Learned
- Overview: Topic, Author's Purpose, Key Vocabulary, Most Important Thing, I Wonder, Important Facts, Illustration
- Context Clues (3 Versions: 3 words, 4 words, 5 words)
- Arthropods

Name: _____

Unknown Word

Context Clue

Word Meaning

Name: _____

What I Know

What I Want to Know

What I Learned

Name: _____

Topic

Author's Purpose

Key Vocabulary

Most Important Thing

I Wonder...

Important Facts

Illustration

Graphic
Organizers

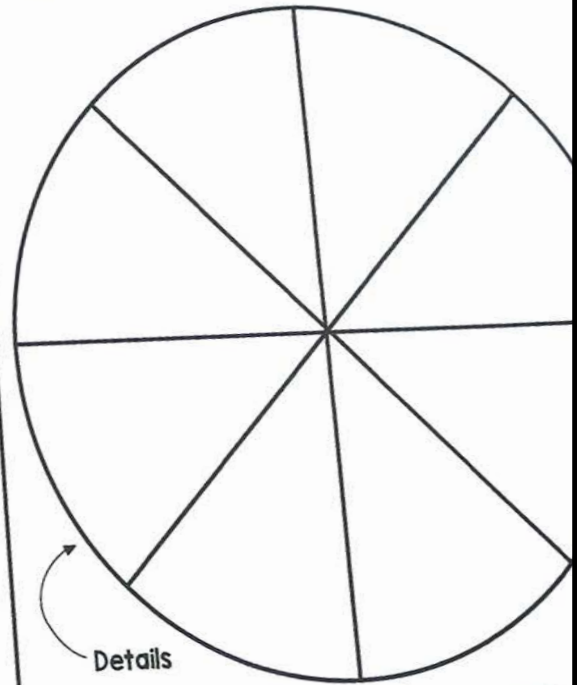
Ideas for Use

- Science or ELA Stations
- Whole Group Instruction
- Partner Practice
- Guided Reading Groups
- Substitute Plans
- Send home to practice
- ELA Work Stations or Centers
- Assessment

Unknown Word	Context Clue	Word

Name: _____

Central Idea



Details

Name: _____

Main Ideas

- 1
- 2
- 3

Text Evidence #1

Text Evidence #2

Text Evidence #3

Name: _____

Main Idea

Detail

Detail

Graphic Organizers

Purchase now to
connect science
and literacy
in your
classroom!