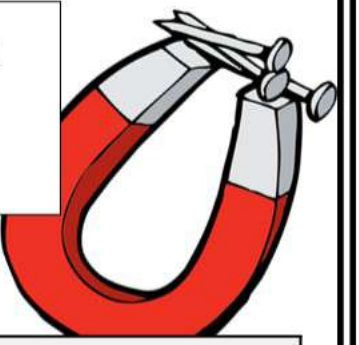
Workbook Preview

© Super Simple Sheets



Grade 3 Science – 2022 Curriculum

Forces and Motion



	Curriculum Expectations	Pages
C1.1	assess the effects of the action of forces from natural phenomena on natural and built environments, and identify ways in which human activities can reduce or enhance these effects	145-150
C1.2	assess harmful effects of forces that may result from	51-155
C2.1		1-59, -93, 7-121,
C2.2	describe different ways a force can be exerted on an object	33-45, 51-52, 65-80, 83-88, 92-93, 97-98, 114, 120, 124-125, 141-144
C2.3	describe how different forces applied to an object, including forces of varying magnitude, can cause the object to start, stop, or change its direction, speed, or shape	126-135, 141-144
C2.4	identify ways in which forces are used in their daily lives	82, 84-88, 99-102, 114, 120, 136-139, 141-150

Preview of 100 pages from this product that contains 235 pages total.



© Super Simple Sheets

Grade 3 Science Unit

Strand A - STEM Investigation and Communication Skills

	Curriculum Expectations	Pages That Cover the Expectations
A1.1	use a scientific research process and associated skills to conduct investigations	95-96
A1.2	use a scientific experimentation process and associated skills to conduct investigations	17-18, 81, 115-116, 156-158
A1.3	use an engineering design process and associated skills to design, build, and test devices, models, structures, and/or systems	60-61, 110-113, 122-123
A1.4	follow established health and safety procedures during science and technology investigations, including wearing appropriate protective equipment and clothing and safely using tools, instruments, and materials	17-18, 60-61, 81, 110-113, 115-116, 122-123
A1.5	communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes	17-18, 60-61, 81, 110-113, 115-116, 122-123
A2.1	write and execute code in investigations and when modelling concepts, with a focus on decomposing problems into smaller steps	64-64, 94, 103-104, 105-109
A2.2	identify and describe impacts of coding and of emerging technologies on everyday life	64-64, 94, 103-104
A3.1	describe practical applications of science and technology concepts in their home and community, and how these applications address real-world problems	64-64, 94-96, 103-104, 140
A3.2	investigate how science and technology can be used with other subject areas to address real-world problems	64-64, 94-96, 103-104, 140
A3.3	analyse contributions to science and technology from various communities	95-96

© Super Simple Sheets

NAME: _____

FORCES AND MOTION



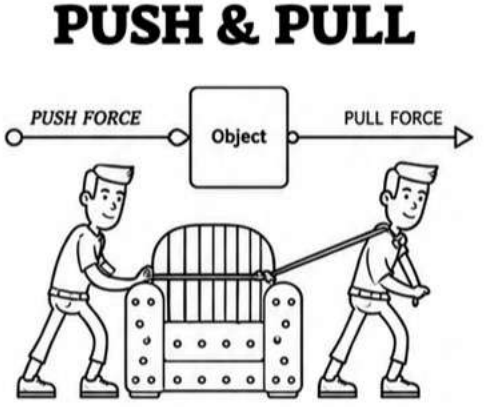
© Super Simple Sheets

Name: _____ 8

Curriculum Connection
C2.1

Forces – Push and Pull

What is a Force



A **force** is any push or pull that causes an object to move. Think about it, if an object moves, a force must have acted on the object.

A fr[illegible]ay have pushed a book across a desk to slide [illegible]or [illegible]aybe they pulled a pencil out of your [illegible].

PREVIEW

Pushing Forc[illegible]



A **push force** happ[illegible]when [illegible]es an object away.

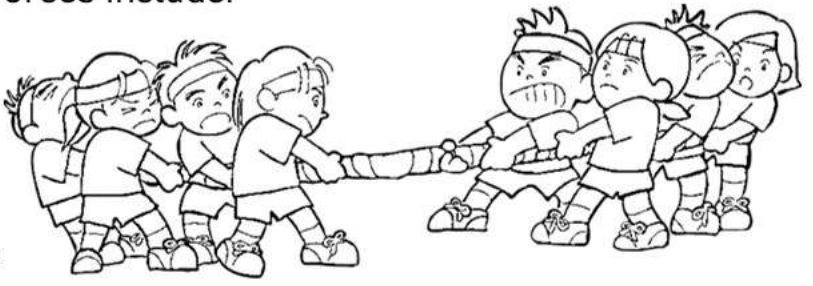
Examples of pushing for[illegible]cl[illegible]de:

- Kicking a soccer ball
- Pushing a cart in a grocery store
- Plugging something into a wall

In the picture, the child on this swing is the obj[illegible]ein[illegible]from the man. The man is pushing the child away using a pushing f[illegible]e ma[illegible]sn't apply enough pushing force, the child won't have much fun, as t[illegible]y wo[illegible]!

Pulling Force

A **pulling force** happens when a force brings an object closer. It is the [illegible]pposite of a pushing force. Examples of pulling forces include:



- Pulling the curtains closed
- Pulling or dragging your chair
- Opening a door

A fun game of tug of war is an example of two teams using pulling forces. They are each trying to pull the other team closer to them. The team that uses the most pulling force will win.

© Super Simple Sheets

Name: _____ 9

Curriculum Connection
C2.1

Question

Use information from the text to support your answer.

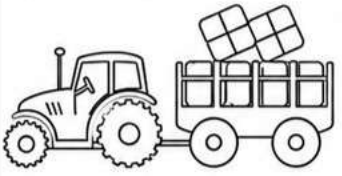
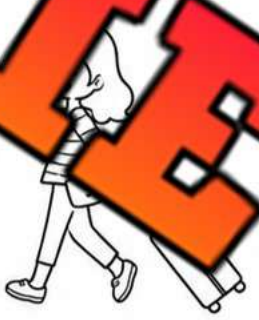
1) What is a force?

2) What f[illegible]working during a game of tug-of-war?

PREVIEW

Push or Pull

D[illegible]ict[illegible]push or pull force?

			
Push Pull	Push Pull	Push Pull	[illegible]h Pull

Examples

Write 2 examples of a push and a pull force.

Push Force	
Pull Force	

© Super Simple Sheets

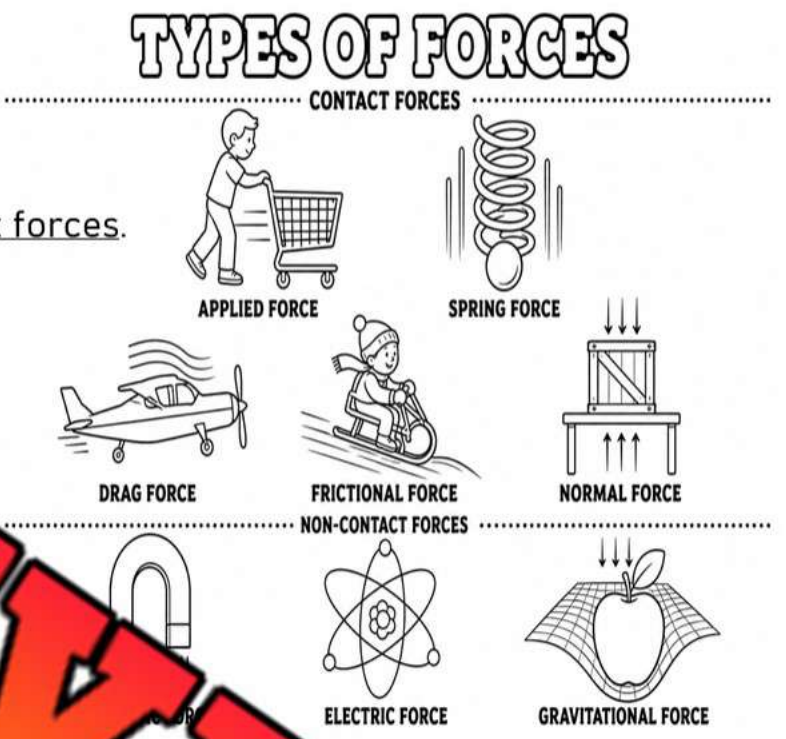
Name: _____ 12

Curriculum Connection
C2.1

Non-Contact Forces

Contact and Non-Contact Forces

Forces are a push or a pull that causes the movement of an object. Forces can be non-contact or contact forces.



Non-Co[illegible]

A **no[illegible]tact** fo[illegible]n an object wit[illegible]g it. Examples of non[illegible]ct fo[illegible] are gravitational force, [illegible]atic force, and magnetic force.

When an object moves without [illegible] being touched, a non-contact force has acte[illegible]e obj[illegible]

Gravity is the most common non-contac[illegible]ce [illegible] all of us right now! **Gravity** is the pulling force that keeps us on th[illegible] A **n**[illegible] can also push or pull an object towards it or away from it. Magnets use [illegible]d. Lastly, electric forces are non-contact. An example is static ele[illegible]ic [illegible] might move your hair on a trampoline without touching it!



Contact Forces

A **contact force** is any force that uses contact to move an object. If you see something move, was it touched by something else? Perhaps it was the wind moving a tree branch, or someone kicking a soccer ball. Either way, these are contact forces as something touched the object to make it move.

PREVIEW

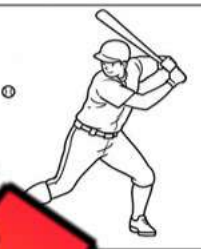
Name: _____ 13

Curriculum Connection
C2.1

Definition Is the statement true or false?

Non-Contact Force	
Contac	

Push or Pull [illegible] the pi[illegible]ow a push or pull force?

Leaves Falling	Na[illegible]	Baseball Moving
		
Contact Non-Contact	Contact Non-Contac[illegible]	[illegible]nta[illegible] Non-Contact

Making Connections Give an example of when you have seen the [illegible] below.

Non-Contact Force	
Contact Force	

PREVIEW

Name: _____ 14

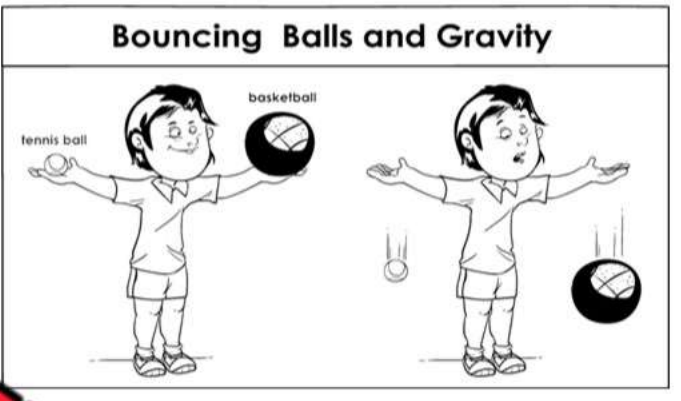
Curriculum Connection
C2.1, C2.2

Gravity – A Pulling Force

What is Gravity?

Gravity is the force that pulls objects to the centre of the Earth. Without gravity pulling us, we would fall right off the Earth's surface and float away!

Gravity is also the reason why when you throw [illegible] into the air, it comes back [illegible]. When you throw a ball, you are applying a pushing force by pushing it into the air. [illegible] force [illegible] stronger than your [illegible] which [illegible] ball will come back down [illegible] of gravity and higher.



Gravity and our Weight

Our weight is based on gravity. Weight is the measurement of the force of gravity pulling us down. This means our **weight** is how much gravity is pulling us towards the Earth's surface.

On other planets or on the moon, we weigh a different amount because their gravitational pull is stronger or weaker. Someone weighing 100 pounds on earth would weigh only 16 pounds on the moon.

This means that gravity's force is not very strong on the moon. If you applied a pushing force into the ground by jumping, you would go a lot higher on the moon because there is less pulling force bringing you back to the moon's surface.

Gravity in our Lives

When you spill a drink, gravity pulls the liquid as far towards the centre of the Earth as it can. The same with a pencil that fell off a desk. Gravity is a non-contact force that never stops!



PREVIEW

© Super Simple Sheets

Name: _____ 15

Curriculum Connection
C2.1, C2.2

Making Connections

What does this remind you of in your life?

Ques[illegible] questions below using evidence from the text.

1) What is gra[illegible]es it

2) How is the force of gravity different on the E[illegible]an on

PREVIEW

Word Scramble

Unscramble the words below using the word bank.

Gravity	Force	Non	Contact	Pulling	Spill	Drop	Fall

ACOCTNT		NLULPIG	
LLFA		ITYARVG	
OECFR		PODR	
LSLIP		ONN	

© Super Simple Sheets

Name: _____ 23

Curriculum Connection
C2.1, C2.2

Activity – Exploring Gravity and Orbit

Objective What are we learning about?

To help students understand how gravity functions on a cosmic scale and influences the orbits of planets around the Sun. This activity simulates the Earth's orbit around the Sun, making an abstract concept tangible and interactive.

Materials [illegible]hat will you need for the activity?



- A [illegible]um-si[illegible]epresenting the Earth)
- A long str[illegible]me[illegible]ng), a metre stick
- A heavy ob[illegible]resen[illegible]Sun; this can be a large book o[illegible]ckn[illegible]
- An open space (em[illegible]ss[illegible]oom [illegible]oor area)

Instructions How will you compl[illegible]activ[illegible]

1) Attach one end of the string to the ball [illegible]e oth[illegible]the metre stick.
2) Place the heavy object (Sun) in the center o[illegible]space [illegible] prepared.
3) Gather the students around the "Sun" and explain [illegible]oda[illegible] learning about how the Earth orbits the Sun due to gravity[illegible]
4) Hold the end of the metre stick and demonstrate by gently swi[illegible]the ball in a circular path around the heavy object. Explain that this motion simulates the Earth's orbit around the Sun.
5) Encourage each student to take a turn swinging the "Earth" around the "Sun." Guide them to start slowly and then gradually increase the speed, observing how they need to exert more force to maintain the orbit.
6) Lead a discussion about how the speed of the orbit and the force applied simulate the gravitational pull between the Earth and the Sun.
7) To deepen understanding, encourage students to experiment with swinging the ball at different speeds and discuss the effects on the orbit.

PREVIEW

Name: _____ 24

Curriculum Connection
C2.1, C2.2

Experiment: Exploring Gravity and Orbit

Result What did you observe during the activity?

Your Name: _____

Observe what happens when you swing the ball (representing Earth) around a stationary object) at different speeds. Fill out the table below with your observations,.

Speed of Swing	Observation	Required Force to Maintain Orbit (More, Less, The Same)
Slow		
Medium		
Fast		

PREVIEW

© Super Simple Sheets

Name: _____ 25

Curriculum Connection
C2.1, C2.2

Reflection Answer the questions below.

1) How did changing the speed of the 'Earth' affect its orbit around the 'Sun'?

2) How d activity help you understand the role of gravity in keeping planets in orbit

3) If we used a longer string for the , how d think that would change its orbit? Why?

4) Why do planets not fly off into space or crash into the Sun in our solar system?

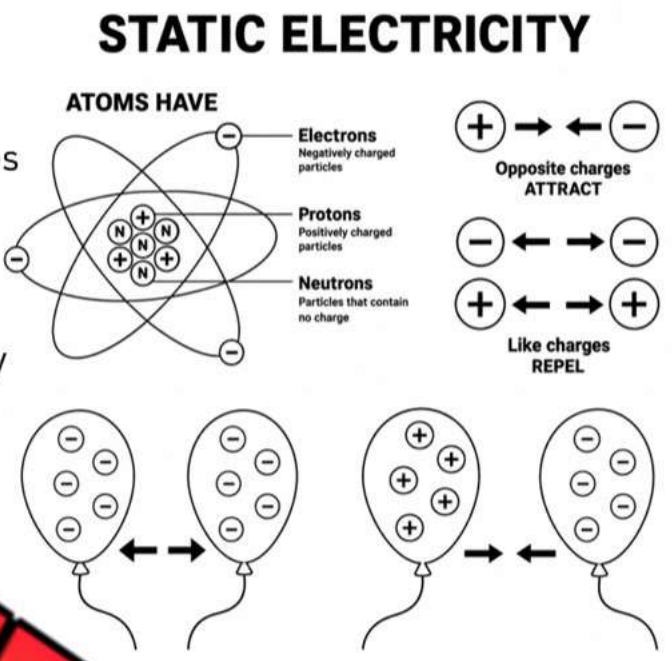
PREVIEW

Name: _____ 28

Curriculum Connection
C2.1, C2.2

Electrostatic Force

Electrostatic Force

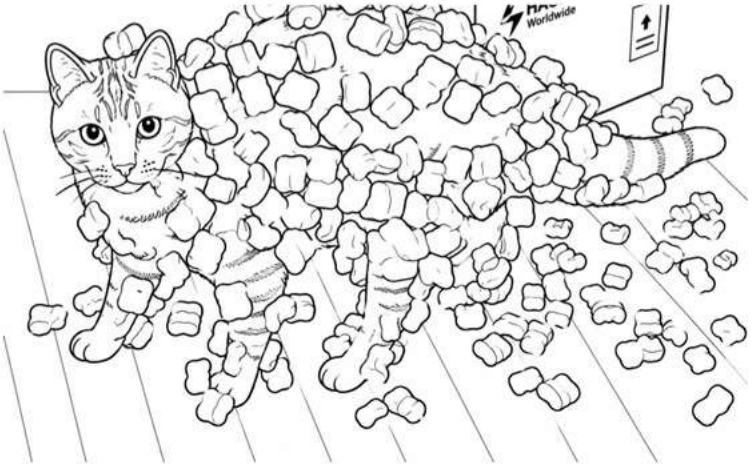


Everything is made up of tiny particles that are too small to be seen. These tiny particles can have an electrical charge, either positive o tive.

W les are the same, they repe h away) er. If they are opposite, the t s) each other.

Most objects are meanin they have the same number sitiv charges. When two objects touch or nearly touch, charged parti n mo ne object to the other and can affect whether the object will repel or at other When objects move due to their charge, it is called an electi tic

PREVIEW



The Cat

This poor cat has uck to it. This is an example o electrostatic force. The styrofoam and cat have opposite charges, which means they are attracted to each other.

This is a non-contact force because the styrofoam is moving without being touched. The styrofoam is being pulled towards the cat's body. You may have experienced this on a trampoline when your hair moves and sticks straight up.

© Super Simple Sheets

Name: _____ 29

Curriculum Connection
C2.1, C2.2

Questions Answer the questions below using evidence from the text.

1) What does electrostatic force mean?

2) What is happening with the cat in the photo? Explain.

3) What do the terms repel and attract mean?

Repel	
Attract	

PREVIEW

Word Search Find the words in the wordsearch.

Static	Repel
Attract	Object
Positive	Negative
Cat	Charge
Pull	Particles

C H A R G E R X O I Q G U N
J P U L L G H A Q Q J C N K E
N V I R E E P O S I T I V E G
S T A T I C X G H C A T H V A
O B J E C T O G O R E P E L T
F V B A A I P U Z P N N D M I
D X W E F E K A T T R A C T V
P A R T I C L E S Q S M V N E

© Super Simple Sheets

Curriculum Connection
C2.1, C2.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark

Is the statement true or false?

1) Electrostatic force can cause objects to attract or repel each other.	True / False
2) Positive and negative charges repel each other.	True / False
3) Objects with the same charge push away from each other.	True / False
4) Electrostatic force is a contact force that only works when objects touch.	True / False
5) A balloon can stick to a wall because of electrostatic force.	True / False

Name: _____ Mark

Is the statement true or false?

1) Electrostatic force can cause objects to attract or repel each other.	True / False
2) Positive and negative charges repel each other.	True / False
3) Objects with the same charge push away from each other.	True / False
4) Electrostatic force is a contact force that only works when objects touch.	True / False
5) A balloon can stick to a wall because of electrostatic force.	True / False

Name: _____ Mark

Is the statement true or false?

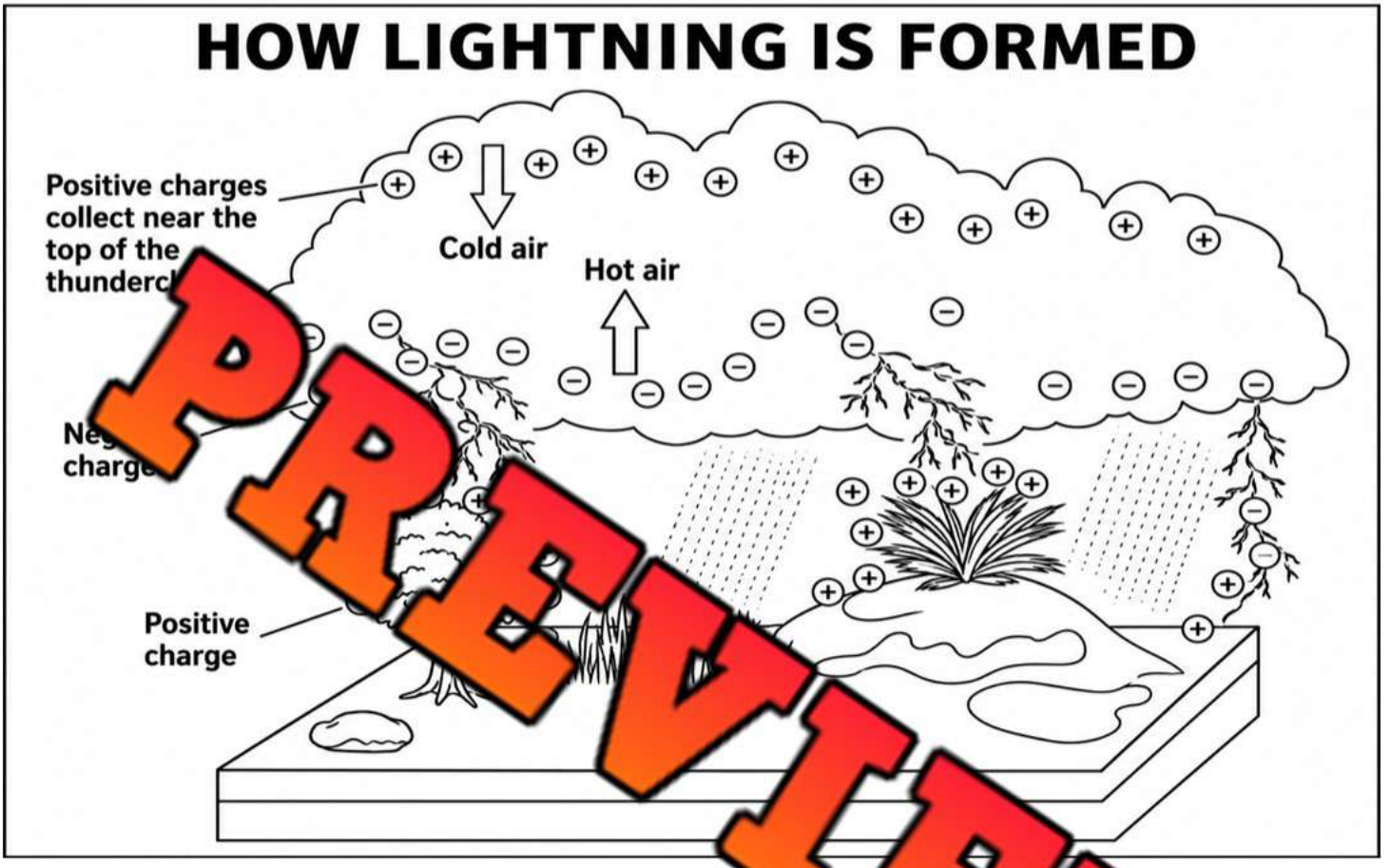
1) Electrostatic force can cause objects to attract or repel each other.	True / False
2) Positive and negative charges repel each other.	True / False
3) Objects with the same charge push away from each other.	True / False
4) Electrostatic force is a contact force that only works when objects touch.	True / False
5) A balloon can stick to a wall because of electrostatic force.	True / False

PREVIEW

Name: _____ 31

Curriculum Connection
C2.1

Lightning – Electrostatic Force



PREVIEW

How Lightning Is Formed

Lightning is an electrostatic current that travels from one electrically charged object to another. When a thundercloud forms, raindrops bump into each other causing a static electric charge.

In the diagram, you can see the thundercloud is becoming negatively charged at the bottom. When this happens, the positively charged objects on the earth's surface will become attracted to the negatively charged thundercloud. Once the charge is strong enough, their attraction will cause lightning, which is an electrical current between the two objects that are oppositely charged.

The diagram shows the thundercloud making lightning strikes with a tree, shrub, and the ground because they are positively charged.

© Super Simple Sheets

Name: _____ 32

Curriculum Connection
C2.1

Questions Answer the questions below using evidence from the text.

1) What is lightning?

2) How does lightning form?

Visualizing Draw what you [illegible] you were reading. Explain the picture.

True or False Is the statement true or false?

1) Lightning forms because of magnetic forces.	True	False
2) Lightning forms when thunderclouds change their charge.	True	False
3) Opposite charges attract which makes electrostatic currents.	True	False
4) Lightning is an electrostatic current.	True	False
5) Lightning happens when objects have the same charge.	True	False

PREVIEW

© Super Simple Sheets

Name: _____ 33

Curriculum Connection
C2.1, C2.2

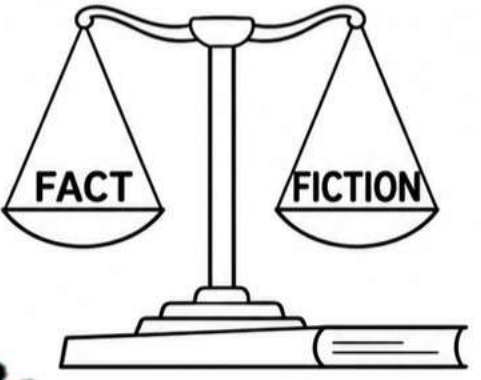
Fact or Fiction? The Force Edition

Objective — What are we learning about?

To help students improve their critical thinking skills and learn more about forces, such as gravitational and electrostatic forces.

Materials — What will you need for the activity?

- A [illegible] of statements about forces
- A 'Fact' sign and a 'Fiction' sign to distinguish the two sides of the room
- Designated areas in the classroom for the 'Fact' and 'Fiction' signs, allowing students to move to either side



Instructions — How will you complete the activity?

1) Your teacher will read statements. Pay close attention as each statement is shared.
2) Consider carefully whether you think the statement is true or false.
3) If you decide the statement is true, walk to the 'Fact' side of the room.
4) If your guess is that it's not true, move to the 'Fiction' side of the room.
5) Stay on your chosen side and listen attentively for the correct answer to be revealed.
6) When the right answer is announced, return to your seat, ready for the next round.
7) Have fun getting up and moving!

PREVIEW

Name: _____ 34

Curriculum Connection
C2.1, C2.2

Fact or Fiction Read the statements to the class.

#	Statement	Fact or Fiction
1	Gravity only works on Earth.	Fiction
2	Magnets can attract metal objects even through water.	Fact
3	All o fall at the same speed.	Fiction
4	Yo etic forces with your eyes.	Fiction
5	an ma et stronger by putting it in the freezer.	Fiction
6	The Eart keep oon in orbit.	Fact
7	Magnets have	Fact
8	Static electricity can	Fact
9	Only heavy objects are affecte avity.	Fiction
10	Rubbing your shoes on carpet can create c ele	Fact
11	Metal is the only material that a magnet att	Fiction
12	Gravity is a force that pulls things together.	Fact
13	A paperclip can be picked up with a plastic magnet.	ion
14	Objects with more mass have more gravity.	Fact
15	You weigh less on the Moon than on Earth because the Moon has less mass.	Fact
16	Balloons stick to walls because of magic.	Fiction
17	Wood can be attracted by a magnet.	Fiction
18	Magnets work best when they are hot.	Fiction
19	Lightning is a form of static electricity.	Fact
20	A feather and a coin will fall at the same speed.	Fiction

PREVIEW

© Super Simple Sheets

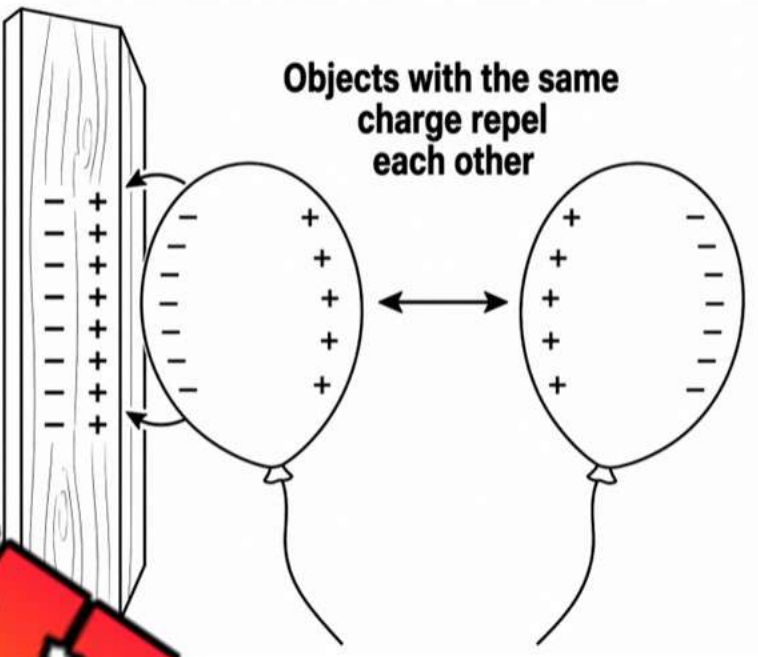
Name: _____ 36

Curriculum Connection
C2.1, C2.2

Static Electricity

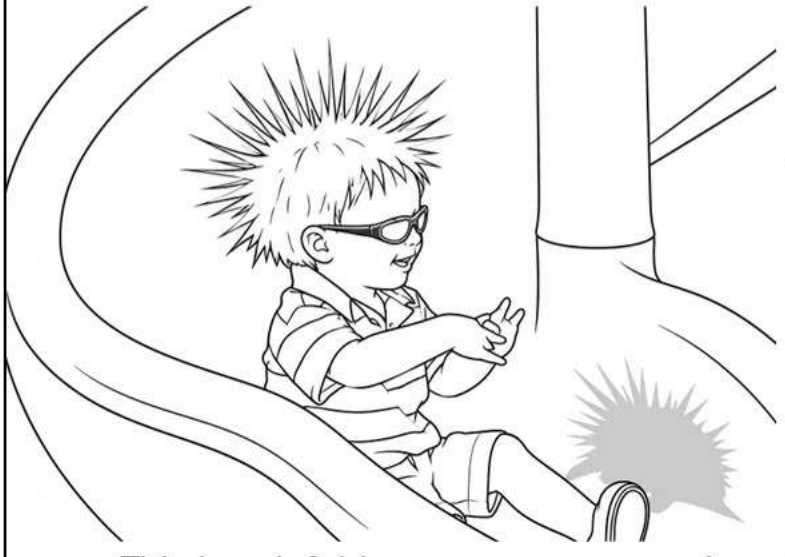
Static Electricity

When electrical charges move from one object to another, they can cause static electricity. Picture this, you rub your hair against a balloon. The negative charges in your hair move to the balloon causing negative charges in the hair.



The extra negative charges in the balloon create what is called a buildup of negative charges.

You can't see the extra negative charges but you can feel them by bringing that balloon near a wall. The extra negative charges in the balloon become attracted to the positive charges in the wall and they will stick together.



Zap – Static Electricity

When you shake hands with a friend, or touch a door handle, you may feel a zap or a shock due to static electricity.

This happens because the electrical charges are jumping from one object to the other. Ouch!

This is painful because our nerves do not like the electricity passing through us. You might feel pain, tingling, numbness, or weakness when you get a shock.



PREVIEW

© Super Simple Sheets

Name: _____ 37

Curriculum Connection
C2.1, C2.2

Questions Answer the questions below using evidence from the text.

1) Why does static electricity happen?

2) What h[illegible]with the electrical charges when you feel a zap?

PREVIEW

Visualizing Draw what you [illegible]turi[illegible]u were reading. Explain the picture.

Multiple Choice Circle the correct answer.

1) Objects with the same charge will	Attract	Repel
2) Objects with difference charges will	Attract	Repel
3) We sometimes feel a shock because of static	Electricity	Movement
4) Which will stick to your hair because of static?	Rock	Balloon
5) When we feel a shock, electric charges are	Staying	Jumping

© Super Simple Sheets

Name: _____ 38

Curriculum Connection
C2.1, C2.2

Experiment – Magic Spoon

Research Question — What are we learning about?

Can I pick up salt and pepper grains using static electricity? Do I need to touch the salt and pepper, or can I move the grains using a non-contact force?

PREVIEW

Mate… …need to do the experiment?

- ✓ 1 Teaspo…
- ✓ 1 Teaspoon pep…
- ✓ Plastic spoon
- ✓ Dish cloth
- ✓ Black piece of paper (optional)



Method — How do we complete the experiment?

1) Put the salt and pepper on the black piece of paper
2) Rub the spoon on a dish cloth for about 10 seconds
3) Hold the round part of the spoon up to the salt and pepper mixture
4) Watch for the particles to jump from the paper up to the spoon



© Super Simple Sheets

Name: _____ 39

Curriculum Connection
C2.1, C2.2

Observations | What did you notice?

1) What happened to the salt and pepper when you put the spoon over the mixture?

2) Did m[illegible] salt or pepper cling to the spoon? Why might that be the case?

3) How could you use this m[illegible]o s[illegible]tures?

PREVIEW

Draw | Draw a diagram of what happened. Label the spoo[illegible]pper.

Name: _____ 40

Curriculum Connection
C2.1, C2.2

Experiment – Bending Water

Research Question — What are we learning about?

Can I bend water using static electricity? Will the non-contact force be able to move the water without touching it?

Materials — What do I need to do the experiment?



- ✓ 1 balloon
- ✓ Sink with faucet



Method — How do we complete the experiment?

1) Rub your hair with the balloon

2) Run a small stream of water. The smaller the better, but it needs to be a full stream, not just drips.

3) Hold the balloon near the stream but not touching it.

4) Watch the stream of water bend



PREVIEW

Name: _____ 41

Curriculum Connection
C2.1, C2.2

Observations | What did you notice?

1) What happened when the balloon went near the stream of water?

2) Why di[illegible]ter bend?

3) Did the water move clos[illegible] ba[illegible]ther away? Explain.

PREVIEW

Draw | Draw a diagram of what happened. Label the [illegible]ater.

© Super Simple Sheets

Name: _____ 42

Curriculum Connection
C2.1, C2.2

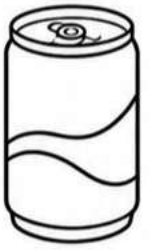
Experiment – Rolling a Can

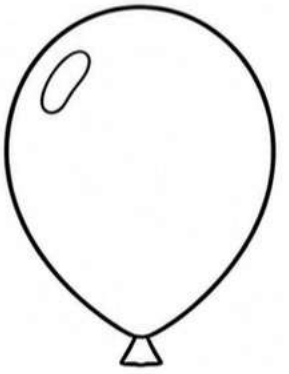
Research Question — What are we learning about?

To learn about static electricity by making a can roll without touching it.

Materials — What do I need to do the experiment?

- ✓ An e[illegible]da can
- ✓ A[illegible]
- ✓ [illegible]len clo[illegible]r hair
- ✓ Time[illegible] - opt[illegible]
- ✓ Tape - o[illegible]al

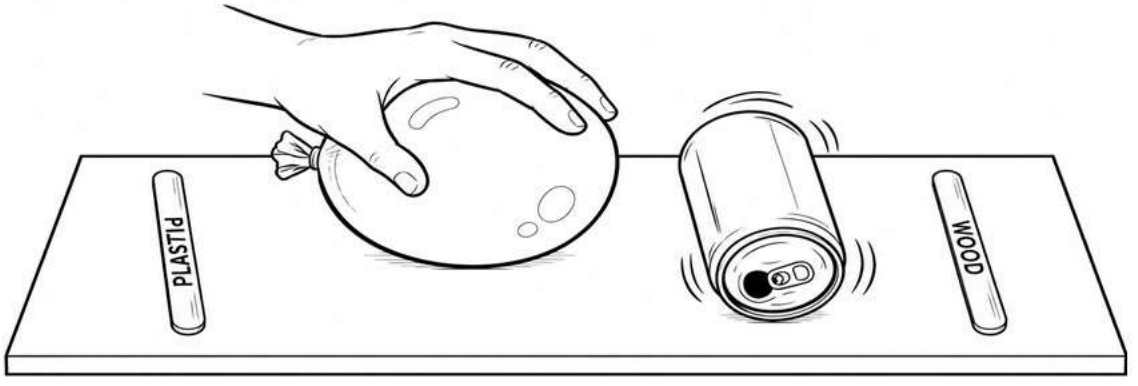




PREVIEW

Method — How do w[illegible]plete th[illegible]iment?

1) Make sure the soda can is empty[illegible].
2) Place the soda can on its side on a flat tab[illegible]
3) Blow up the balloon and tie it closed.
4) Rub the balloon quickly back and forth on the w[illegible]th [illegible]r hair. This will create static electricity!
5) Hold the balloon close to the soda can without touching it. [illegible]ato[illegible] happens!
6) Optional: create a start and finish line using tape. Then have students time how long it takes for them to get the can from the starting line to the finish line.



© Super Simple Sheets

Name: _____ 43

Curriculum Connection
C2.1, C2.2

Observations | What did you notice?

1) What happened to the can when you brought the balloon near it?

2) Why do you think the can moved without being touched?

3) What happens if you touch the can with the balloon?

4) How can we make the can move faster or slower?

5) What do you think would happen if we used a bigger or smaller can? Would it move the same way?

PREVIEW

Name: _____ 46

Curriculum Connection
C1.2

Danger of Static Electricity

Problems of Static Electricity

Static electricity can be problematic and dangerous in our day to day lives. Static can be a nuisance when dust and dirt are attracted to insulators such as computer monitors or TV screens.

It can also be a problem when our clothes cling to each other or to our hair. Often clothes become static after they've been in a tumble dryer.

You can use anti-static sprays, dryer sheets, or adding a damp wash cloth to prevent the build up of charge. They work by allowing the charges in the clothing to jump to the spray or liquid which neutralizes the charge in the clothing.

PREVIEW

Dangers of Static Electricity

The most dangerous example of static electricity is in the form of lightning. **Lightning** is caused when static electricity builds up in clouds and causes a huge spark that forms between the ground and the clouds. The result is a lightning strike that is really just the flow of charges through the air.



Examples of the Dangers of Static Electricity

Some objects will have a large electric charge on it, like a live wire with electricity flowing through it. If you touch a live wire, the charge will flow through your body causing an electric shock.

Most of the time, static electric shocks result in a small zap that doesn't hurt too bad. But sometimes, this can cause burns or even stop your heart. People have died from static electric shocks!

© Super Simple Sheets

Name: _____ 47

Curriculum Connection
C1.2

Questions Answer the questions below using evidence from the text.

1) Why is static electricity dangerous?

2) How ca op static electricity?

Visualizing Draw what yo sturi ou were reading. Explain the picture.

PREVIEW

Word Scramble Unscramble the words below using the word bank.

STATIC	DANGER	SAFE	LIGHTNING	CLING	CLOTHING

GLIINTGHN		EGDRAN	
TASCTI		HGTNOCIL	
LNCIG		EFSA	

© Super Simple Sheets

Curriculum Connection
C1.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Put a checkmark (✓) on the correct answer!

Mark

The most dangerous example of static electricity?	
	○ Toy rolling on the floor
○ Balloon sticking to a wall	○ Magnetizing a paper clip
Static electricity is most often felt as...	
○ A loud explosion	○ A bright rainbow
○ A small zap	○ A strong smell

Name: _____

Put a checkmark (✓) on the correct answer!

Mark

The most dangerous example of static electricity?	
○ Lightning	○ Toy rolling on the floor
○ Balloon sticking to a wall	○ Magnetizing a paper clip
Static electricity is most often felt as...	
○ A loud explosion	○ A bright rainbow
○ A small zap	○ A strong smell

Name: _____

Put a checkmark (✓) on the correct answer!

Mark

The most dangerous example of static electricity?	
○ Lightning	○ Toy rolling on the floor
○ Balloon sticking to a wall	○ Magnetizing a paper clip
Static electricity is most often felt as...	
○ A loud explosion	○ A bright rainbow
○ A small zap	○ A strong smell

Name: _____

Put a checkmark (✓) on the correct answer!

Mark

The most dangerous example of static electricity?	
○ Lightning	○ Toy rolling on the floor
○ Balloon sticking to a wall	○ Magnetizing a paper clip
Static electricity is most often felt as...	
○ A loud explosion	○ A bright rainbow
○ A small zap	○ A strong smell

PREVIEW

© Super Simple Sheets

Name: _____ 53

Curriculum Connection
C2.1

Magnetic Force

Magnetism

You've seen magnets and how helpful they can be. We use them for many purposes, including sticking things on our fridge. They work because of magnetism.

Magnetism is an invisible force that happens when magnets either attract or repel eac[illegible].

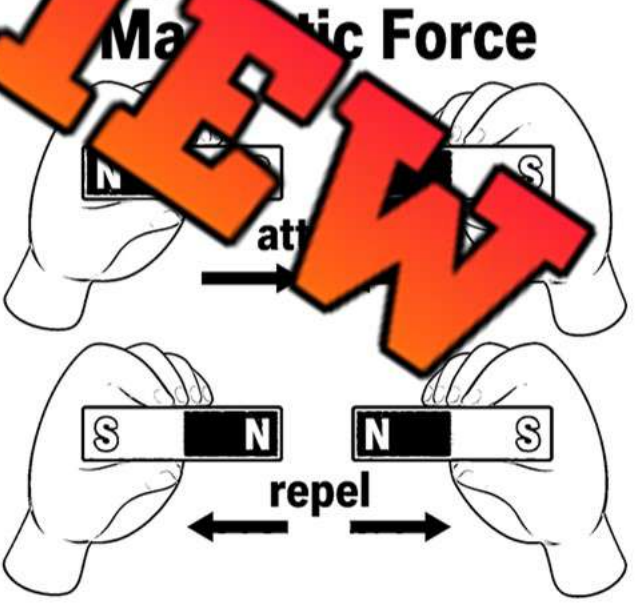
M[illegible]s force because it pulls or pushes objects if they are made of a magn[illegible] material[illegible]ic materials are metals made from iron, nickel, cobalt and many mo[illegible].

If you try to [illegible] mag[illegible]dge that is not made of a magnetic material, it will not have any forc[illegible] will jus[illegible] Magnetic materials have tiny particles called electrons. When these [illegible]tron[illegible] in way, they will attract or repel other magnets depending on how th[illegible] positi[illegible].

PREVIEW

Magnets

Magnets use magnetism, which is a non-contact force. A magnet can pull something towards it or push something away from it without touching it. This means magnets can create a force that moves another object.



A **magnet** is an object that can attract or repel other magnets. We sometimes say someone is magnetic if they attract a lot of friends.

Magnets have a north and a south pole. You can attach two magnets by putting opposite poles together. If you try to put the same poles together, they will repel each other.

© Super Simple Sheets

Name: _____ 54

Curriculum Connection
C2.1

Questions

Answer the questions below using evidence from the text.

1) Why is magnetism an example of a non-contact force?

2) What is [illegible]net? Which materials are magnetic?

PREVIEW

True or False

Is the [illegible]nt tr[illegible]e?

1) Magnets are made from plastic ma[illegible]	True	False
2) The south pole of a magnet will be attracted t[illegible]ther [illegible]ole.	True	False
3) Magnetism is an invisible force that pushes a[illegible]lls [illegible]	True	False
4) Iron is a metal that has magnetic properties.	Tru[illegible]	False
5) Magnets have 2 poles – a north and south pole.	[illegible]	alse

Word Search

Find the words in the wordsearch.

Magnetic	Repel
Attract	Poles
North	South
Fridge	Force
Metal	Iron

W V Q H P I Q E G M E T A L
X F R I D G E F O R C E H D
D R W B P W Y J L N A Q S G
M A G N E T I C E O X A E W
A T T R A C T G P R N B L R
X O I H Q G U J E T G H O A
Q Q J C I R O N R H N K P V
S O U T H I R E E X G H H V

© Super Simple Sheets

Name: _____ 55

Curriculum Connection
C2.1

Attract or Repel

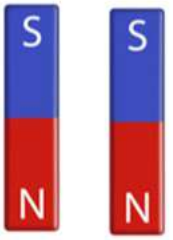
Magnets Will the magnets attract or repel each other?

1)



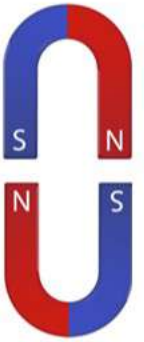
Attract	Repel

2)



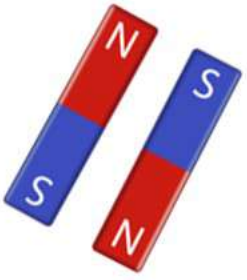
Attract	Repel

3)



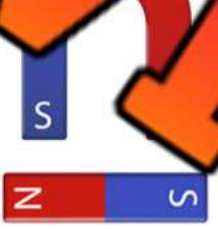
Attract	Repel

4)



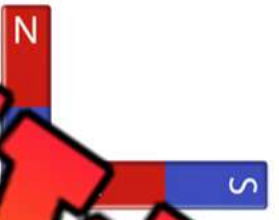
Attract	Repel

5)



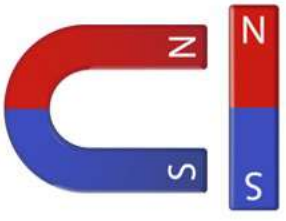
Attract	Repel

6)



Attract	Repel

7)



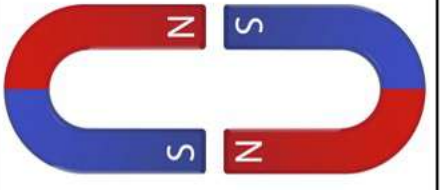
Attract	Repel

8)



Attract	Repel

9)



Attract	Repel

PREVIEW

© Super Simple Sheets

Name: _____ 56

Curriculum Connection
C2.1

Maglev Cars: Zooming into the Future!

What are Maglev Cars?

Have you ever seen a car floating in the air? Sounds like something from a science fiction movie, right? But guess what? It's real! There are cars called 'Maglev cars' that can do just that. Maglev is short for "Magnetic Levitation," which means these cars float above the track instead of rolling on wheels.



How [illegible]?

Maglev [illegible]s work[illegible]ciple of magnets. Remember how two like p[illegible]of [illegible]agnet[illegible]ach other? That's exactly how Maglev cars work! They have magnets [illegible]e bo[illegible]a[illegible]racks they run on have magnets too. These magnets are set so the sa[illegible]e face e[illegible]r, and as you might remember, similar poles repel. This repulsion lifts [illegible]ar a[illegible]d, making it float in the air.

PREVIEW

Benefits of Maglev Cars

- Speedy: Maglev cars are really fast because t[illegible]ave[illegible]o[illegible]w them down
- Smooth Ride: No wheels also mean no bumps. So, ri[illegible]per[illegible]oth!
- Less Noise: Since there's no contact with the track, Maglev cars[illegible]
- Eco-friendly: They use electricity instead of fuel, so they are better fo[illegible]r planet.

Drawbacks of Maglev Cars

- Expensive: Building tracks for Maglev cars is pricey
- Limited Use: They can only go where tracks have been built. You can't just drive one anywhere like a regular car.
- Power Hungry: They use a lot of electricity, which can be a problem if there isn't a strong enough power supply.

Name: _____ 57

Curriculum Connection
C2.1

Questions

Answer the questions below using evidence from the text.

1) What is a Maglev Car? How does it work?

2) What a[illegible] benefits and drawbacks of a Maglev Car?

PREVIEW

Draw

Look up pictu[illegible]ferent[illegible] cars online and draw your own.

Multiple Choice

Circle the correct answer.

1) Maglev cars are _____.	Expensive	Inexpensive
2) Maglev cars are _____.	Fast	Slow
3) Maglev cars use _____.	Gravity	Magnets
4) The car magnets _____ the track's magnets.	Repel	Attract
5) A maglev car has no friction, so it is _____.	Loud	Quiet

© Super Simple Sheets

Name: _____ 58

Curriculum Connection
C2.1

Fact or Fiction? Magnetism Myths

Objective — What are we learning about?

To enhance students' understanding of magnetism by differentiating between accurate statements and common myths.

Materials — What will you need for the activity?

- A [illegible] of statements with facts and myths about magnetism
- A 'Fact' sign and 'Fiction' sign to distinguish the two sides of the room
- Designated areas in the classroom for the 'Fact' and 'Fiction' signs, allowing students to move to either side



PREVIEW

Instructions — How will you complete the activity?

1) Your teacher will read statements. Pay close attention as each statement is shared.
2) Consider carefully whether you think the statement is true or false.
3) If you decide the statement is true, walk to the 'Fact' side of the room.
4) If your guess is that it's not true, move to the 'Fiction' side of the room.
5) Stay on your chosen side and listen attentively for the correct answer to be revealed.
6) When the right answer is announced, return to your seat, ready for the next round.
7) Have fun getting up and moving!

© Super Simple Sheets

Name: _____ 59

Curriculum Connection
C2.1

Fact or Fiction Read the statements to the class.

#	Statement	Fact or Fiction
1	Magnets can work in water.	Fact
2	All metals are attracted to magnets.	Fiction
3	Mag[illegible] have an invisible force field around them.	Fact
4	Th[illegible] st part of a magnet is in the middle.	Fiction
5	[illegible]nets can [illegible]r repel other magnets.	Fact
6	Only big[illegible] [illegible]n p[illegible] heavy objects.	Fiction
7	A magnet's f[illegible] can [illegible] terials like paper or plastic.	Fact
8	Every magnet has a [illegible] and a [illegible]	Fact
9	Magnets can stick to glass.	Fiction
10	Magnets can lose their magnetism if heat[illegible]	Fact
11	Earth is like a giant magnet.	Fact
12	Magnets work by magic.	Fiction
13	You can make a non-magnetic material like a paperclip m[illegible] by rubbing a magnet on it.	[illegible]ct
14	Magnets can only pull objects, not push them.	Fiction
15	Refrigerator magnets only work on one side.	Fact
16	All coins are attracted to magnets.	Fiction
17	Magnets can work in space.	Fact
18	If you break a magnet in half, you get two smaller magnets.	Fact
19	Magnets can erase computer data.	Fact
20	Wood and plastic can be magnetized just like metal.	Fiction

PREVIEW

© Super Simple Sheets

Name: _____ 60

Curriculum Connection
A1.3, A1.4, A1.5

Experiment – Magnetic Car

Research Question — What are we learning about?

Can I create a car that I can move using magnets?



Materials — What do we need?

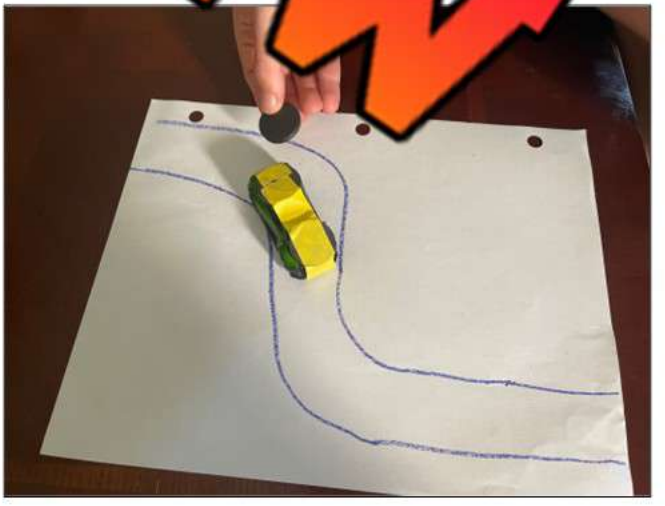
- ✓ 2 magnets – one bar magnet and another strong magnet
- ✓ A toy car
- ✓ Tape
- ✓ A racetrack – you can use the one provided or make your own

Method — How do we complete the experiment?

1) Tape the bar magnet to the toy car

2) Use the other magnet to pull the car. You will need to adjust how far your hold the magnet away from the car

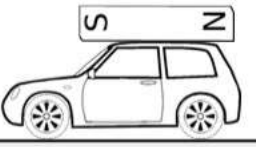
3) Now that you know how to move your car, try moving it around the racetrack. You may need to flip the magnet to repel or attract the car. We found it easier to repel the car around the track.



PREVIEW

Name: _____ 61

Curriculum Connection
A1.3, A1.4, A1.5



Results | What happened?

1) What force is moving the car?

_____

_____

2) Is the force contacting the car or is it a non-contact force?

Contact Force	Non-Contact Force

3) Did you push or attract it with the magnet? Explain.

_____

_____

_____

4) If you repelled the car, did you line the north side of your magnet to the south pole of the car's magnet? Or did you flip the south pole?

Same Pole	Opposite Pole

5) Draw a car that is powered by magnetism.

PREVIEW

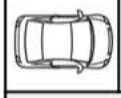
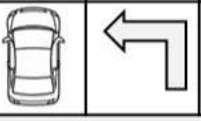
© Super Simple Sheets

Name: _____ 63

Curriculum Connection
A2.1, A2.2, A3.1, A3.2

Coding – Maglev Cars

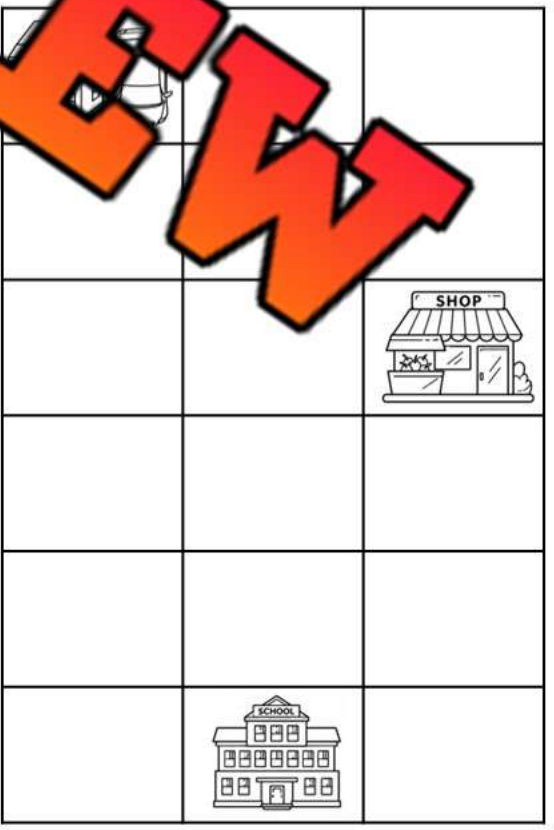
Maglev cars can be self-driving. The driver enters where they want to go, and the car moves to that location. The car interacts with the track to pull it to where it needs to go. If the car needs to go forward, the magnets in the track in front of the car turn on, attracting it. If it needs to go backwards, the magnets behind the car turn on.

This is a self-driving maglev	Right makes it turn right	Left makes it turn left	Forward makes it move forward by the number shown
			
It understands 3 commands	Right	Left	Forward 2

PREVIEW

Directions Write code to get the car from school to the store, and then back home.

Codes – Forward, Turn Left, Turn Right	
Line 1	
Line 2	
Line 3	
Line 4	
Line 5	
Line 6	
Line 7	
Line 8	
Line 9	



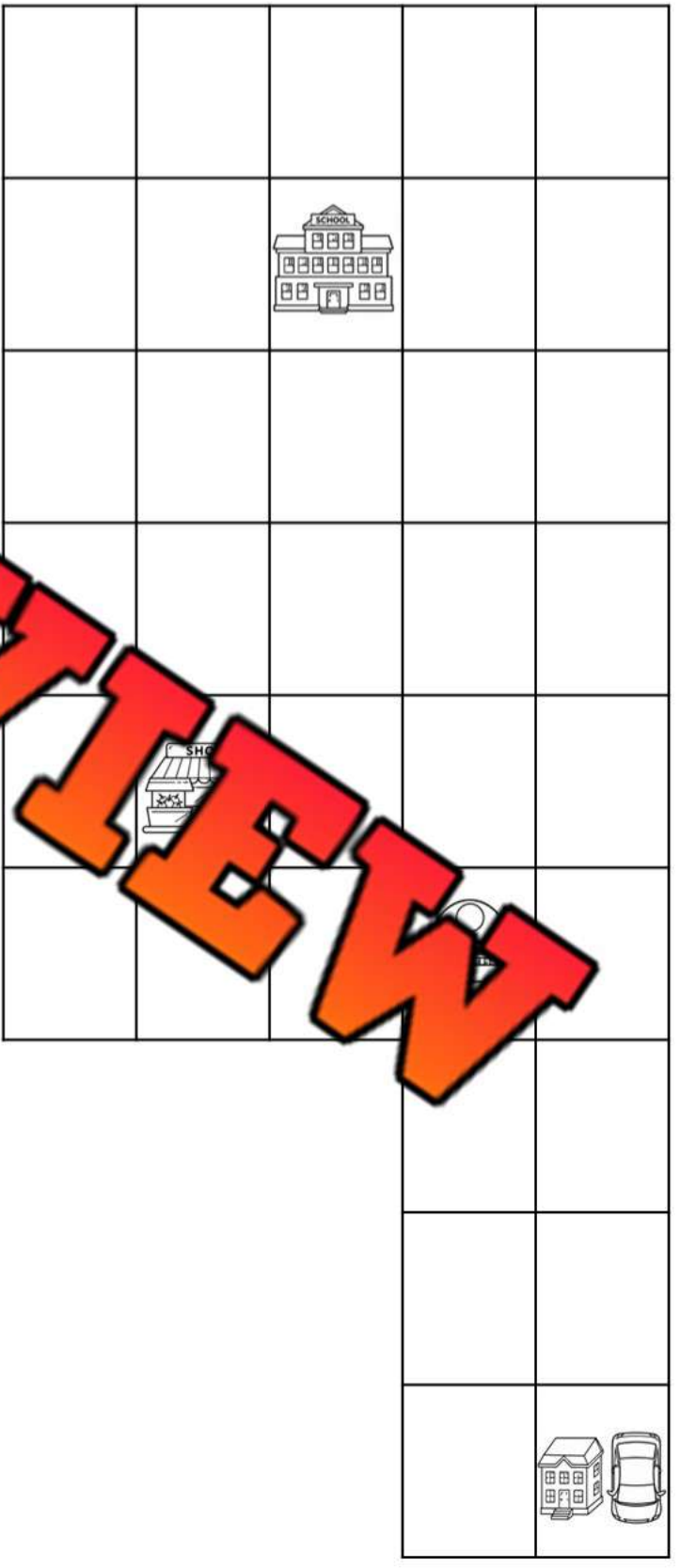
© Super Simple Sheets

Name: _____ 64

Curriculum Connection
A2.1, A2.2, A3.1, A3.2

Directions Write code to get the car to the school, to the arena, to the store, and then back home.

Codes – Forward, Turn Left, Turn Right	
Line 1	
Line 2	
Line 3	
Line 4	
Line 5	
Line 6	
Line 7	
Line 8	
Line 9	
Line 10	
Line 11	
Line 12	
Line 13	
Line 14	
Line 15	
Line 16	



PREVIEW

© Super Simple Sheets

Curriculum Connection
C2.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Circle the word that fits on the blank.

1) Earth has a magnetic _____ around it.	Storm / Field
2) A _____ points toward Earth's Magnetic North Pole.	Compass / Telescope
3) Earth acts like a giant _____.	Magnet / Battery
4) The northern lights are also called _____.	Eclipse / Aurora Borealis
5) Earth's magnetic field helps protect us from _____ winds.	Solar / Ocean

Name: _____

Circle the word that fits on the blank.

1) Earth has a magnetic _____ around it.	Storm / Field
2) A _____ points toward Earth's Magnetic North Pole.	Compass / Telescope
3) Earth acts like a giant _____.	Magnet / Battery
4) The northern lights are also called _____.	Eclipse / Aurora Borealis
5) Earth's magnetic field helps protect us from _____ winds.	Solar / Ocean

Name: _____

Circle the word that fits on the blank.

1) Earth has a magnetic _____ around it.	Storm / Field
2) A _____ points toward Earth's Magnetic North Pole.	Compass / Telescope
3) Earth acts like a giant _____.	Magnet / Battery
4) The northern lights are also called _____.	Eclipse / Aurora Borealis
5) Earth's magnetic field helps protect us from _____ winds.	Solar / Ocean

PREVIEW

© Super Simple Sheets

Name: _____ 70

Curriculum Connection
C2.1

Magnetic or Not?

A magnetic material will be strongly attracted to a magnet. A magnet is a material or object that produces a magnetic field with a north and south pole. Test to see if the following materials are magnetic or not. If the material is magnetic, it will be attracted or repelled by the magnet.



Procedure | What to do

1) Gath[illegible]erials in the table below and a magnet.
2) M[illegible] guess whether the material will be magnetic or not.
3) [illegible]the mat[illegible]e magnet and fill in whether it was magnetic or not.

Materia[illegible]	Esti[illegible](Magnetic or Not)	Magnetic or Not
Pencil		
Coin		
Paper		
Cardboard		
Paperclip		
Eraser		
Popsicle Stick		
Rubber Band		
Brad Nail		
Scissors		

PREVIEW

Questions | Use information from the text to support your answe[illegible]

1) From the experiment you just did, what types of materials are magnetic?

_____

_____

2) Did any of the results surprise you or were all your estimates correct? Explain.

_____

_____

© Super Simple Sheets

Name: _____ 71

Curriculum Connection
C2.1

Choose the Magnetic Objects Maze

Instruction	Help the magnet reach the treasure box. Along the way, collect ONLY the objects that a magnet can attract. Avoid objects that are not magnetic.



© Super Simple Sheets

Name: _____ 72

Curriculum Connection
C2.1

Forceful Pairs – Vocabulary Memory Game

Objective What are we learning about?

To help students reinforce understanding and retention of force-related vocabulary by matching terms with their corresponding definitions or illustrations through a fun and engaging memory game.

Materials What will you need for the activity.

- Memory game cards (provided) with the terms on one set and definitions on another set.
- A flat surface like a table or floor to lay out the cards.



Instructions How will you complete the activity.

1) Divide the class into groups of 3 or 4. Give each group a set of Memory Game cards. (Provided)
2) Have each group lay all the cards face down in a grid on a flat surface.
3) The students take turns flipping over two cards at a time, trying to find a matching term and its definition.
4) If a student finds a match, they remove those cards from the grid and keep them.
5) If the cards do not match, they are turned back over, and the next student takes a turn.
6) The game continues until all the cards have been matched.
7) After the game, review the terms and definitions with the class.
8) Discuss why these terms are important to understand and how they relate to the concepts of force they have been studying.

PREVIEW

Name: _____ 73

Curriculum Connection
C2.1

Cards | List of force-related vocabulary

Type of Farm	Definition
Force	A push or pull on something
Gravity	The force that makes things fall to the ground
Spin	To turn around and around quickly
Push	To move something away from you
Pull	To bring something closer to you

PREVIEW

Name: _____ 74

Curriculum Connection
C2.1

Cards | List of force-related vocabulary

Type of Farm	Definition
Weight	How heavy something is because of gravity
Motion	Moving from one place to another
Direction	Where something is going
Lift	The force that makes something move upward
Pressure	Pushing hard on something

PREVIEW

Name: _____ 75

Curriculum Connection
C2.1

Cards | List of force-related vocabulary

Type of Farm	Definition
Tension	The stretch in something pulled tight
[illegible]e	When an object comes back up after hitting something
Roll	mov[illegible]turning over [illegible]nd [illegible]surface
Float	To rest on the su[illegible]ace of liquid without sinking
Sink	To go down below the surface of water

PREVIEW

© Super Simple Sheets

Name: _____ 76

Curriculum Connection
C2.1

Cards | List of force-related vocabulary

Type of Farm	Definition
Slide	To move smoothly along a surface
[illegible]g	To move back and forth hanging from a point
Twist	[illegible]urn [illegible]thing around [illegible]xis
Stretch	To make something longer or wider by pulling on it
Squeeze	To press things together tightly

PREVIEW

Name: _____ 81

Curriculum Connection
A1.2, A1.4, A1.5

Strength of Magnets

Strength of Magnets
You can affect the strength of a magnet in a number of different ways. You can change the distance between the magnet and the magnetic material. You can also place a non-magnetic material between the magnet and the magnetic material.



Inference Make a prediction.

1) If you t up a screw with a magnet, should you move the magnet closer o e screw?

Answer Read the inf tio belo

The further you move a magnet away fr other tic material, the weaker the force will be. As you move the magnet r to the ial, the force will strengthen as the two objects will either attract el eac

Inference Make a prediction.

2) Predict what will happen if you put the following things betwee and a magnetic material: piece of paper, glass, water, and metal.

Paper	
Glass	
Water	
Metal	

Answer Read the information below.

The thickness of the paper will affect the magnet's force because the distance between the magnet and the magnetic material will be further. Glass will only affect it if it is thick. Water has little effect on magnets. Hot water makes the force a bit weaker and cold water doesn't change the force. Metal could strengthen the force if it is magnetic.

PREVIEW

© Super Simple Sheets

Name: _____ 83

Curriculum Connection
C2.1, C2.2

Static or Magnetic?

Instruction Read the description and check off if its static or magnetic force.

1	Patty pulled off her wool hat after recess and her hair was standing up! Static ☐ Magnetic ☐	
2	Stan [illegible] the refrigerator door closed all the way, but it seemed [illegible] on its own. Static ☐ Magnetic ☐	
3	Paul went down the slide and as he got [illegible] he felt a shock. Static ☐ Magnetic ☐	
4	Jasmine's purse snapped closed when the two sides got close enough together. Static ☐ Magnetic ☐	

PREVIEW

© Super Simple Sheets

Name: _____ 84

Curriculum Connection
C2.2, C2.4

How a Compass Works

What is a Compass?

A compass is a navigational tool that tells people which direction they are going. The compass was invented in 1300 by an Italian explorer named Flavia Goia.



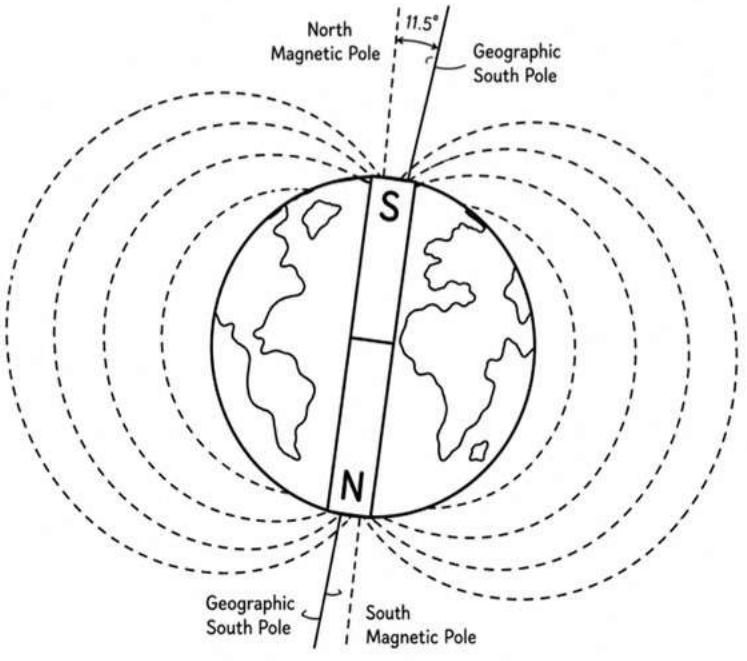
Com with a map, a compass was very important for sailors t direction they were going. This is beca hen yo e middle of an ocean, you cannot see any landm han sun. Therefore, it is impossible to kn ch di are going!

PREVIEW

How a Compass Works

We have learned that the Ea ike t that has its own magnetic field. Deep in the Earth's core, there is a N d Sou that attracts and repels other magnets.

EARTH'S MAGNETIC FIELD



A de from a magn needl points to the directions n th, e st. When you hold a mp poles inside of the magnet w e attracted or repelled by the Earth's poles.

Depending on how you hold the compass, the needle will move so that the north pole is attracted to the Earth's south pole. The movement of the needle will show you which direction you are facing.

© Super Simple Sheets

Name: _____ 85

Curriculum Connection
C2.2, C2.4

Making Connections What does this remind you of in your life?

Questions Answer the questions below using evidence from the text.

1) Why was the compass important to sailors?

2) How does a compass tell us which direction we are going?

Draw Draw a picture of a compass. Label it N, E, S, W.

PREVIEW

© Super Simple Sheets

Name: _____ 86

Curriculum Connection
C2.2, C2.4

Activity – Making Your Own Compass

Objective

What are we learning about?

The objective of this activity is to help students understand how Earth's magnetic field influences compass directions by creating a simple compass.

Materials

What will you need for the activity?

- N[illegible]p[illegible]dent or group)
- S[illegible]magnet[illegible]
- Cork slices[illegible]ott[illegible]ap
- Shallow d[illegible]s[illegible]owls
- Water
- how-to guide on [illegible]al[illegible]comp[illegible] (provided)
- One compass for teacher[illegible]how their compass is like the manufa[illegible] compass and points North



PREVIEW

Instructions

How will you complete the activ[illegible]

1) Organize the class into small groups or pairs to enc[illegible]ge collaboration during the activity.

2) Distribute all the materials and the how-to guide and begin the [illegible]vity by demonstrating how to magnetize the needle.

3) Instruct each group to fill their dish with water and prepare the cork.

4) Guide students to place the magnetized needle on the cork and then on the water.

5) Observe which direction the needle points and discuss why.

6) Conclude the activity by discussing the importance of Earth's magnetic field in navigation.

Name: _____ 87

Curriculum Connection
C2.2, C2.4

How-to Guide | Use this sheet to guide you to make your own compass.

How to Make Your Own Compass

What You Need:

- A needle and a small magnet
- A slice of cork (like from a wine bottle)or a bottle cap form a water bottle
- A shallow dish or bowl with some water

Steps to M a Compass:

1. Magne Needle:

- H
- U magn ke it along the needle.
- Do this 30 ti ire ion.
- This make n e act y magnet!

2. Prepare Your Dish:

- Fill your shallow dish ith
- Make sure it's still so you pas

3. Get Your Cork Ready:

- Take your slice of cork or bottle cap
- Float the cork or bottle cap (flat side into ter up) on the water.

4. Put the Needle on the Cork:

- Lay the magnetized needle across the centre of the floa g c
- Be careful and ask for help if you need it!

5. Float Your Compass:

- Watch as it floats and the needle starts to turn.

6. Find North:

- Wait a bit and see the needle stop moving.
- The teacher stops by each group with a compass to show the group their compass is pointing North.
- It points towards the North because of Earth's invisible magnetic force!

Remember, scientists and explorers have used compasses for hundreds of years to find their way around the big, wide world. Now, you've made one too!

PREVIEW

Name: _____ 88

Curriculum Connection
C2.2, C2.4

Reflection Answer the questions below.

1) In which direction did your compass needle point?

2) How d[illegible]eedle know which way is North?

3) Why was it necessary to magnetize [illegible]e need[illegible]

4) How do you think people long ago used compasses like yours to explore?

PREVIEW

© Super Simple Sheets

Name: _____ 89

Curriculum Connection
C1.2

Magnets Harmful Effects on Technology

Magnets Effect on Magnetized Objects

Many great technologies use magnetism to work. Credit cards and hard drives store information using the force of magnetism. Read below how you can damage these objects by touching a magnet to them.



Magnets [illegible]age Computers

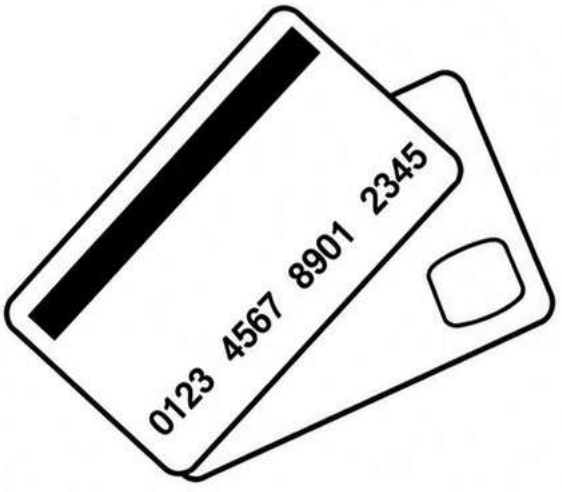
A co[illegible]rive that holds information about t[illegible]compu[illegible]he documents and games you downloa[illegible]n[illegible]he ha[illegible]. The hard drive works because of a[illegible]cess. This means the hard drive use[illegible]tism[illegible]ata.

If you hold a strong magn[illegible]t up[illegible]put could ruin the magnetic field in the h[illegible]drive. T[illegible] will wipe the hard drive clean and delete all you[illegible]es an[illegible]nts. It could also break the hard drive.

PREVIEW

Magnets and Credit Cards

The thin strip on a credit card uses magnetism to store informa[illegible]n [illegible]e card.



If a strong magnet touches the ma[illegible]etic strip on the credit card, it can erase all of the information about the card.

This happens because the electrons change their charge when a magnet is put close to it. This is just like when we rub metal with a magnet, we can change the metal's magnetic ability.

© Super Simple Sheets

Name: _____ 90

Curriculum Connection
C1.2

Questions

Answer the questions below using evidence from the text.

1) How does a magnet affect a hard drive?

2) What w[illegible]agnet do to a credit card?

PREVIEW

True or False

Is the [illegible] true?

1) A hard drive makes a computer r[illegible].	True	False
2) A hard drive stores information using magn[illegible].	True	False
3) The thin strip on a credit card uses magneti[illegible]	True	False
4) Touching a magnet to a computer can wipe clean [illegible]ive	Tru[illegible]	False
5) You can wipe a hard drive clean using a weak fridge magnet.	[illegible]	alse

Word Search

Find the words in the wordsearch.

Magnet	Damage
Harmful	Technology
Hard	Drive
Clean	Wipe
Credit	Card

C R E D I T V O G H O F V B
A A I P U Z P N E A W I P E
N D M D X W E E G R E K Q S
M A G N E T M V A D V C N H
H A R M F U L I M Z C L Y X
S J I E F K B R A Q A E T T
W L C T P F Q D D E R A S K
T E C H N O L O G Y D N Y R

© Super Simple Sheets

Curriculum Connection
C1.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark ____

Check only the true statements.

Statement	✓
Magnets can damage some hard drives.	
A credit card uses magnetism to store information.	
A strong magnet can erase information on a magnetic strip.	
Magnets make computers run faster.	
Hard drives use magnetism to store data.	
A magnet can never affect technology.	
Some technology uses magnetism to work.	
Magnets can damage stored information.	

Name: _____ Mark ____

Check only the true statements.

Statement	✓
Magnets can damage some hard drives.	
A credit card uses magnetism to store information.	
A strong magnet can erase information on a magnetic strip.	
Magnets make computers run faster.	
Hard drives use magnetism to store data.	
A magnet can never affect technology.	
Some technology uses magnetism to work.	
Magnets can damage stored information.	

Name: _____ Mark ____

Check only the true statements.

Statement	✓
Magnets can damage some hard drives.	
A credit card uses magnetism to store information.	
A strong magnet can erase information on a magnetic strip.	
Magnets make computers run faster.	
Hard drives use magnetism to store data.	
A magnet can never affect technology.	
Some technology uses magnetism to work.	
Magnets can damage stored information.	

Name: _____ Mark ____

Check only the true statements.

Statement	✓
Magnets can damage some hard drives.	
A credit card uses magnetism to store information.	
A strong magnet can erase information on a magnetic strip.	
Magnets make computers run faster.	
Hard drives use magnetism to store data.	
A magnet can never affect technology.	
Some technology uses magnetism to work.	
Magnets can damage stored information.	

PREVIEW

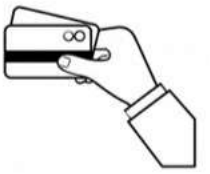
© Super Simple Sheets

Name: _____ 94

Curriculum Connection
A2.1, A2.2, A3.1, A3.2

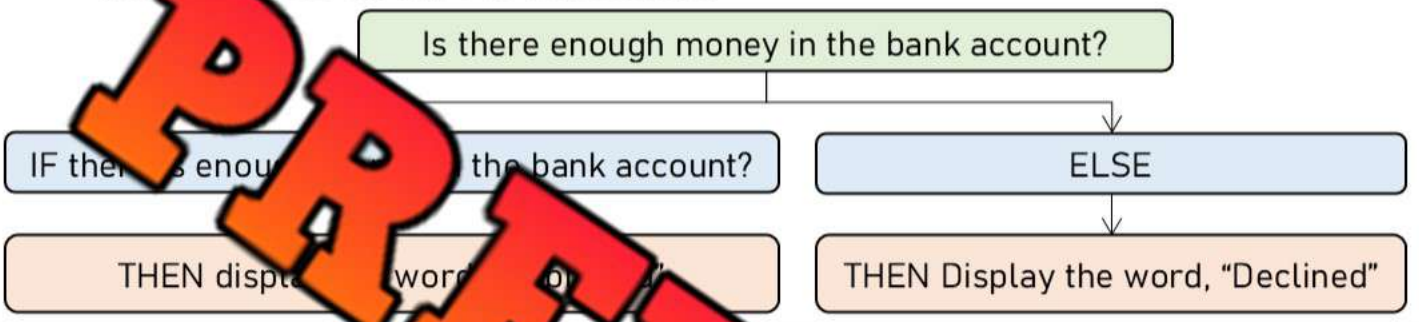
Coding – Bank Cards and Magnets

Magnets and Bank Cards



Bank cards have a magnetic strip that stores codes on it. The codes link to a bank account. When you swipe your card, the card reader detects the magnetic code in the card. It connects to your bank account so that the transaction can be made. A transaction is when money is taken from the card's bank account and sent to the store owners bank account.

The [illegible] uses an IF/ELSE statement.



PREVIEW

Directions If there is enou[illegible] one[illegible] purchase, it will say approved. If there is not, it will say [illegible].

	Cost of Purchase	Money in Account	ELSE	[illegible]oved or Declined?
1)	$50	$150		
2)	$120	$95		
3)	$209	$209		
4)	$318	$305		
5)	$385	$452		
6)	$491	$223		
7)	$509	$511		
8)	$750	$719		
9)	$825	$815		
10)	$987	$999		

© Super Simple Sheets

Name: _____ 99

Curriculum Connection
C2.4

Devices Using Non-Contact Forces

Devices that Use Magnetism



Magnets are used in the following devices:

- ❑ Computer hard drives to store information
- ❑ Microphones, speakers, headphones, and telephones all use magnets to create a magnetic field that allows sound waves to travel loudly
- ❑ Doorbells use electricity to move a plate that comes in contact with another plate to make a ding-dong sound.

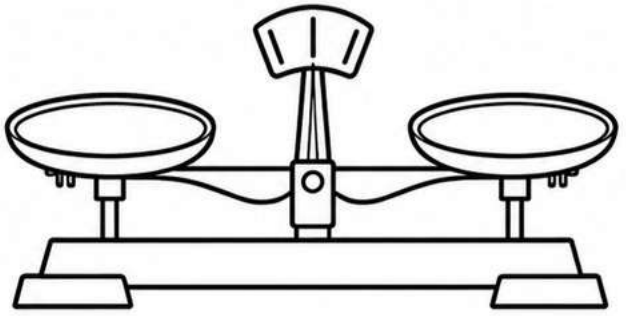
PREVIEW

Devices Using Electrostatic Forces

An electrostatic mop is used to collect dust because it is made of polyester and polyamide materials that make a lot of static electricity when they spin on the ground.

As they build-up static in the mop, the dust attaches to the mop just like a balloon attaches to the hair on your head. You may notice when handling these mops that you will get little shocks!





Devices Using Gravitational Forces

A balance is used to find out how much an object weighs. It works by placing the object on the platform.

The heavier the object, the more gravity will pull it down. This will exert more force on the platform and will raise the other side up higher.

© Super Simple Sheets

Name: _____ 100

Curriculum Connection
C2.4

Questions Answer the questions below using evidence from the text.

1) Which invention that uses these forces do you think is the most important?

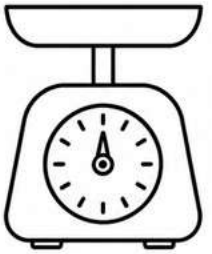
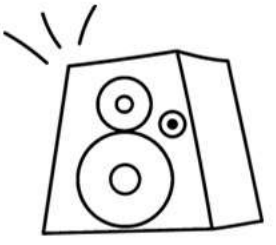
2) Can yo[illegible]k of another invention that uses one of these forces? Explain.

PREVIEW

Visualizing Draw what yo[illegible]e picturi[illegible] you were reading. Explain the picture.

Which Force? Write the force that is used in the devices below.



© Super Simple Sheets

Name: _____ 103

Curriculum Connection
A2.1, A2.2, A3.1, A3.2

Coding Activity – Hard Drive

Leah is working on her computer. To find the information she has saved on her hard drive, the arm will move to the correct binary code. To find the binary code, use ordered pairs. Start with the x-axis (horizontal number →) as the number you will write as the first ordered pair. Use the y-axis (vertical number) as the second number in the ordered pair.



	00	11	000	111	0000	1111	00000	11111
1								
0								
11								
00								
111								
000								
1111								
0000								
11111								
00000								

PREVIEW

© Super Simple Sheets

Name: _____ 104

Curriculum Connection
A2.1, A2.2, A3.1, A3.2

Code Write the binary code to find the files below on the hard drive.

File	Ordered Pair – Binary Code
	(00000, 000)
	
	
	

File	Ordered Pair – Binary Code
	
	
	
	

PREVIEW

Questions Answer the questions below.

1) Why do you think a computer uses binary code and no words?

2) What files do you save on computers you have used?

© Super Simple Sheets

Name: _____ 105

Curriculum Connection
C2.1

Contact Force - Applied Force

What is a Contact Force?

Contact forces are the pushes or pulls that happen when two things touch each other. Imagine you are pushing a toy car. Your hand is applying a force to the car. This is a c force.



Appl rces

Applied forc of t force. This happens when a person or an object pushes or on a er t. For example, when you kick a ball, you're using an applied force. a book i ble, the table is using an applied force to keep the book from g t

PREVIEW

Examples of Contact Forces

☑ Playing Tug of War: When you pull on the r in a t of war, you're using a contact force. Your hands have to touch to p g

☑ Pushing a Swing: When you push someone on a swing, you u ntact force. Your hands push the swing to make it move.



☑ Pulling a Wagon: If you pull a wagon full of toys, you're using a contact force. Your hand pulls the handle of the wagon to make it move.

So, remember, a contact force happens when two things touch each other and one pushes or pulls on the other.

© Super Simple Sheets

Name: _____ 106

Curriculum Connection
C2.1

True or False

Is the statement true or false?

1) Throwing a ball is an applied force.	True	False
2) A ball rolling down a hill with no one touching it is an applied force.	True	False
3) Pulling a wagon is an applied force.	True	False
4) An apple falls from a tree because of an applied force.	True	False
5) Pushin is an applied force.	True	False

Making nection

at applied forces have you used today?

PREVIEW

Questions

Answer the questions below.

1) What is a contact force?

2) What is an applied force?

© Super Simple Sheets

Curriculum Connection
C2.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ | Mark

Is this a contact force? Yes or No?

Swing moves by pushing	Yes	No
Pulling rope in tug war	Yes	No
Wind blowing a leaf	Yes	No
Pushing door open	Yes	No
Pulling a Wagon	Yes	No
Book stays on table	Yes	No
Magnet pulling an object	Yes	No
Balloon floating in air	Yes	No
Kicking a ball	Yes	No
Sitting on a chair	Yes	No

Name: _____ | Mark

Is this a contact force? Yes or No?

Swing moves by pushing	Yes	No
Pulling rope in tug war	Yes	No
Wind blowing a leaf	Yes	No
Pushing door open	Yes	No
Pulling a Wagon	Yes	No
Book stays on table	Yes	No
Magnet pulling an object	Yes	No
Balloon floating in air	Yes	No
Kicking a ball	Yes	No
Sitting on a chair	Yes	No

Name: _____ | Mark

Is this a contact force? Yes or No?

Swing moves by pushing	Yes	No
Pulling rope in tug war	Yes	No
Wind blowing a leaf	Yes	No
Pushing door open	Yes	No
Pulling a Wagon	Yes	No
Book stays on table	Yes	No
Magnet pulling an object	Yes	No
Balloon floating in air	Yes	No
Kicking a ball	Yes	No
Sitting on a chair	Yes	No

Name: _____ | Mark

Is this a contact force? Yes or No?

Swing moves by pushing	Yes	No
Pulling rope in tug war	Yes	No
Wind blowing a leaf	Yes	No
Pushing door open	Yes	No
Pulling a Wagon	Yes	No
Book stays on table	Yes	No
Magnet pulling an object	Yes	No
Balloon floating in air	Yes	No
Kicking a ball	Yes	No
Sitting on a chair	Yes	No

PREVIEW

© Super Simple Sheets

Name: _____ 108

Curriculum Connection
C2.1

Contact Force – Frictional Force

Frictional Force



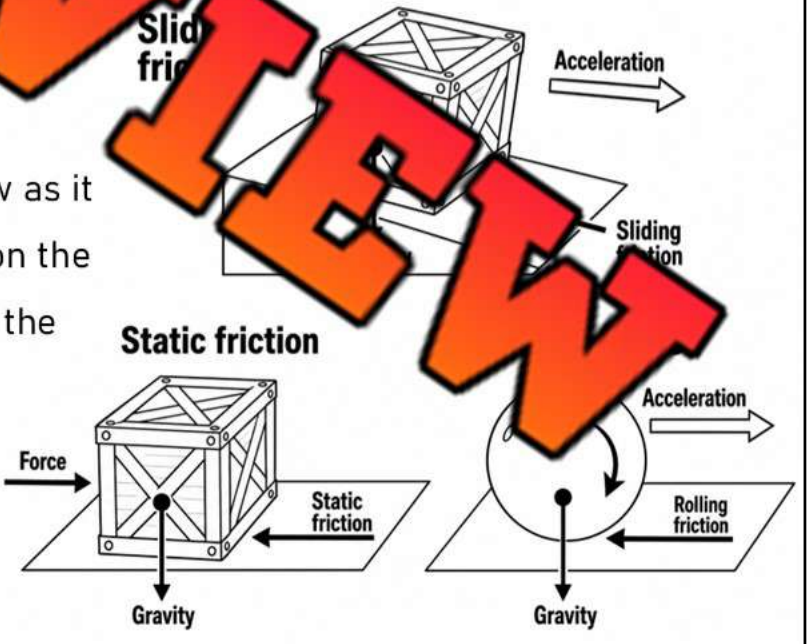
Friction is a force that makes it harder to slide objects across each other. For example, if you tried to slide a box on ice, there isn't much friction to slow the box down. But if you slide the same box on pavement, there is a lot of friction to slow down the box. Friction is that force that makes objects stick together.

Friction is important because it allows us to walk on the ground without slipping. Some shoes have surfaces that create more friction, like rubber, which is why shoes have rubber soles on the bottom.

PREVIEW

Three Types of Friction – Static, Sliding, Rolling

Static Friction – The frictional force that keeps an object still. For example, your desk has static friction right now as it isn't moving. The bottom of the legs on the desk have enough static friction with the floor to stop it from sliding.



Sliding Friction – The frictional force that slows the movement of two surfaces that slide against one another. When you push your desk and it begins to move, it will still need a lot of force because there is sliding friction.

Rolling Friction – The frictional force that slows the movement when an object rolls over it. This happens when you roll a wheel, ball, or cylinder over a surface.

© Super Simple Sheets

Name: _____ 109

Curriculum Connection
C2.1

Questions

Use information from the text to support your answer.

1) What is friction?

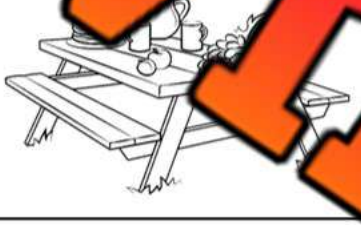
2) Why is [illegible] wear basketball shoes while playing basketball than just socks?

PREVIEW

Which Force?

Write the [illegible] for [illegible] happening in the pictures.







Define

What do the forms of friction mean?

Static Friction	
Sliding Friction	
Rolling Friction	

Name: _____ 110

Curriculum Connection
A1.3, A1.4, A1.5

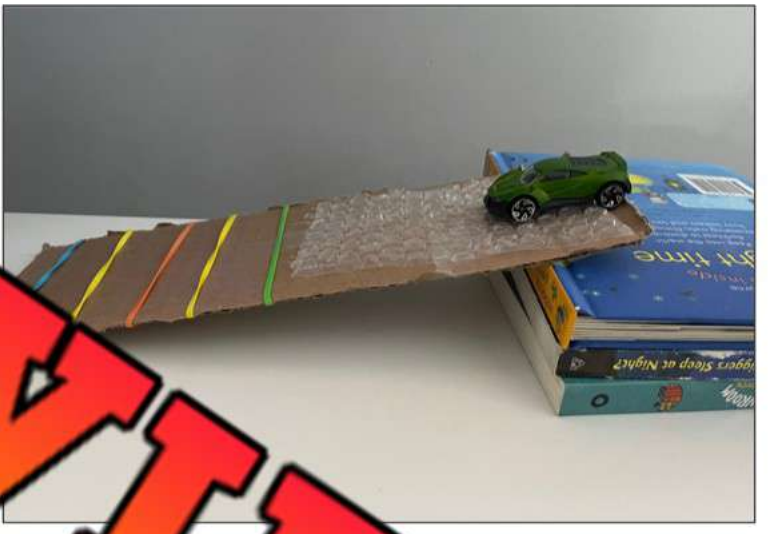
Experiment – Friction Car Ramp

Research Question Does more friction slow down a moving car?

If we roll a car down a smooth ramp, will it go further than a bumpy ramp?

Materials What do we need?

- ✓ Card[illegible] make the ramps
- ✓ [illegible] to rest on
- ✓ [illegible] car p[illegible]
- ✓ Glue
- ✓ Textured mat[illegible]
  - ➢ Bubble wr[illegible]
  - ➢ Bread tabs
  - ➢ Rubber bands
  - ➢ Rice
  - ➢ Staples



Method How do we complete the experim[illegible]

1) Each group will make one ramp. The teacher can be [illegible] co[illegible] a ramp that is smooth.
2) Groups will need cardboard cut into a rectangle that will act as [illegible]amp.
3) Students can use some of the textured materials listed above to make a textured ramp. They can glue rice to the ramp, put staples in it, glue bubble wrap down, or wrap rubber bands around the ramp. Be creative!
4) Have each group test their ramps with their toy car.
5) When all groups are finished, they can demonstrate their car going down the smooth ramp versus the textured ramp.
6) Mark how far the toy car travelled on the smooth ramp versus the textured ramp. Record your results on the back of the page.

PREVIEW

Name: _____ 111

Curriculum Connection
A1.3, A1.4, A1.5

Observations | What happened?

1) How did you make your textured ramp? Which materials did you use?

_____

_____

_____

2) Did the [illegible]vel further on the smooth or textured ramp?

Smo[illegible]	Textured Ramp

PREVIEW

Results | Answe[illegible]

1) On which ramp did the ca[illegible] m[illegible] [illegible]when it travelled down it?

Smooth Ramp	[illegible]tured Ramp

2) Why did the car travel further on the smo[illegible]mp?

_____

_____

_____

3) If the car raced on ice, would the ice give more or less friction?

More	Less

4) Would the car travel further if it travelled on ice? What do you think?

_____

_____

_____

© Super Simple Sheets

Name: _____ 112

Curriculum Connection
A1.3, A1.4, A1.5

Experiment – Frictional Force Power

Research Question — What are we learning about?

Can we make a model that uses friction to lift an object?



Materials — What do we need?

- ✓ F
- ✓ Wat bottl m dium sized
- ✓ Paintbrus il
- ✓ Optional - Funn

PREVIEW

Method — How do we compl the ?

1) Fill the water bottle with rice using the funnel
2) Bang the bottle gently on the table to settle the rice
3) Ensure the bottle is mostly full
4) Place the pencil in the bottle
5) Bang the bottle on the table while you push the pencil to the bottom. This will ensure the rice settles around the pencil
6) Try to lift the bottle by pulling up on the pencil
7) Record your observations on the back of this page



Name: _____ 113

Curriculum Connection
A1.3, A1.4, A1.5

Observations | What happened?



Were you able to lift the bottle using the pencil? Explain what happened.

Results | Answ[illegible]stions below.



1) What force allo[illegible]he p[illegible]t[illegible]he bottle?

2) How did friction allow the pencil t[illegible] bott[illegible]

3) If you didn't bang the table and settle the rice, would the pe[illegible]able to lift the bottle? Explain why or why not.

4) Why wouldn't this work if you only filled the bottle halfway with rice? Explain.

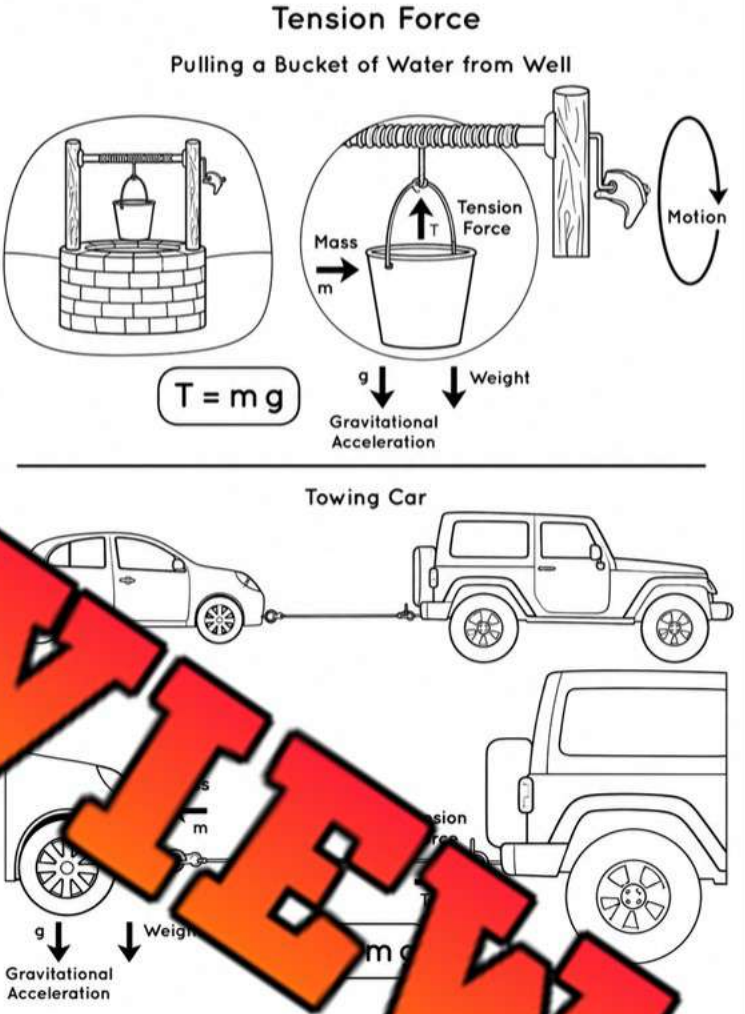
PREVIEW

Contact Force - Tension

What is Tension?

Tension is a type of contact force. It happens when you pull on a string, a rope, or anything else that is stretchy. When you [illegible] you make the string or rope ti[illegible] g[illegible]ss is called tensi[illegible]

Tension [illegible] that [illegible]ove objects. A tow tr[illegible]n us[illegible] wire under tension to p[illegible] If the wire is pulled tight, the tow [illegible] wil[illegible] pull the car. But if the wire is loose, the car will not move.



Tension in Action

Imagine you are playing with a toy on a string. When you pull the string, the toy comes towards you [illegible] working! The force you used to pull the string made the toy move.

Examples of Tension

☑ Flying a Kite: When you fly a kite, you hold onto the string and pull. The tension in the string helps the kite to fly high in the sky.

☑ Playing Tug of War: In a game of tug of war, when you pull on the rope, you create tension. This tension helps you to try and pull the other team over the line.

PREVIEW

Name: _____ 118

Curriculum Connection
C2.1

Draw Draw a tow truck using tension to pull a car.

Questions Answer in complete sentences be

1) What is tension force?

2) Write 3 examples of tension force in action.

1	
2	
3	

PREVIEW

© Super Simple Sheets

Curriculum Connection
C2.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Check only the facts that describe tension.

☐ Tension happens when you pull on a string, rope, or anything stretchy.

☐ Tension can help move objects, like when a tow truck pulls a car.

☐ Tension works only when the rope or string is loose.

☐ When you pull a toy on a string and it moves toward you, that is tension.

☐ Tension is a force that pushes objects apart.

☐ In tug of war, pulling the rope creates tension.

Name: _____

Mark

Check only the facts that describe tension.

☐ Tension happens when you pull on a string, rope, or anything stretchy.

☐ Tension can help move objects, like when a tow truck pulls a car.

☐ Tension works only when the rope or string is loose.

☐ When you pull a toy on a string and it moves toward you, that is tension.

☐ Tension is a force that pushes objects apart.

☐ In tug of war, pulling the rope creates tension.

Name: _____

Mark

Check only the facts that describe tension.

☐ Tension happens when you pull on a string, rope, or anything stretchy.

☐ Tension can help move objects, like when a tow truck pulls a car.

☐ Tension works only when the rope or string is loose.

☐ When you pull a toy on a string and it moves toward you, that is tension.

☐ Tension is a force that pushes objects apart.

☐ In tug of war, pulling the rope creates tension.

Name: _____

Mark

Check only the facts that describe tension.

☐ Tension happens when you pull on a string, rope, or anything stretchy.

☐ Tension can help move objects, like when a tow truck pulls a car.

☐ Tension works only when the rope or string is loose.

☐ When you pull a toy on a string and it moves toward you, that is tension.

☐ Tension is a force that pushes objects apart.

☐ In tug of war, pulling the rope creates tension.

PREVIEW

© Super Simple Sheets

Name: _____ 122

Curriculum Connection
A1.3, A1.4, A1.5

Experiment – Popsicle Stick Catapult

Research Question | Can I build something that makes something move?

Can I build a structure that moves paper balls without me throwing them?

Materials | What do we need?

- ✓ [illegible]
- ✓ 3 [illegible]ber b[illegible]
- ✓ 1 plasti[illegible]

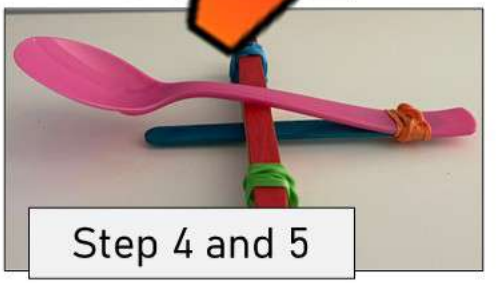


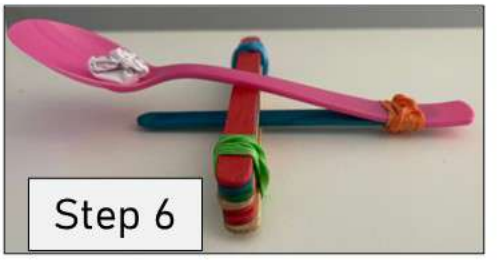
Method | How do we [illegible] the e[illegible]ent?

1) Stack 7 popsicle sticks.
2) Wrap one rubber band around the se[illegible] sticks on one side and another ban[illegible] the other side.
3) Put the last popsicle stick through the bottom stick and the one above it.
4) Lay the spoon in the same direction as the one stick. Put the spoon on top of the stack of 7 sticks.
5) Use the last elastic to attack the spoon to the sticks.
6) Put a paper ball in the spoon.
7) Pull down on the spoon while holding the catapult.









PREVIEW

© Super Simple Sheets

Name: _____ 123

Curriculum Connection
A1.3, A1.4, A1.5



Observations	What happened?

1) What happened when you pulled down on the spoon?

_____

_____

2) Is the s a bendy or rigid material?

Bendy Rigid

3) If y ed a ri ial that didn't bend at all, would the catapult move?

No

4) What type of forc at

Co -Contact

5) What type of force moved the obj o the a

Muscular Force	Gravity	gneti	Spring Force

6) How does spring force move objects?

_____

_____

_____

7) Draw a diagram of the catapult you made.

PREVIEW

© Super Simple Sheets

Name: _____ 124

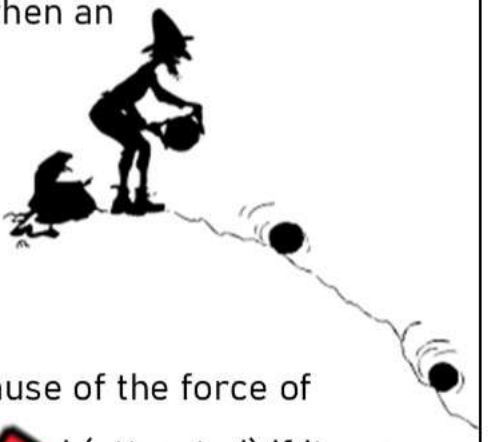
Curriculum Connection
C2.2

Forces Acting on Objects

Forces Acting on Objects

When a force acts on an object, the object will move. An object at rest cannot move unless a force is applied to it. Objects can be moved by contact or non-contact forces.

Mag[illegible]m, electrostatic, and gravity are three forces that move objects without c[illegible]u[illegible]cular force is a contact force used when an anim[illegible]s [illegible] to move an object at rest.



Magnetism an[illegible]ional

Objects at rest will [illegible]me[illegible] magnetism, electrostatic, or gravity a[illegible]m.

A ball at the top of a hill [illegible]ecause of the force of gravity. A magnetic object will be pus[illegible] (repell[illegible]d (attracted) if it nears another magnetic material. Hair will move w[illegible]e ele[illegible]he hair and objects close by have positive or negative charge[illegible]

PREVIEW

Muscular Force

Humans and other animals use their muscles to apply a force to objects all the time. We can cause an object at rest to move. We can also stop a moving object with our muscles, and we can change the direction of a moving object.



In sports, we see objects move because of muscular forces. In soccer, the ball is at rest for opening kickoff but will move when the player kicks it. A teammate might stop the pass, so they control the ball. Next, they might kick it at the goalie who will block it in another direction. Throughout this play, the ball (object) has muscular force changing the ball's direction, moving it from rest, and stopping it.

© Super Simple Sheets

Name: _____ 125

Curriculum Connection
C2.2

Questions Is the statement true or false?

1) What forces can move an object?

2) How do soccer players use muscular force to play soccer?

Visualizing D[illegible]d exp[illegible]when you applied muscular force.

Examples Write an example of when you have applied muscu[illegible]fo

Moving an object at rest	
Stopping a moving object	
Changing the direction of a moving object	

PREVIEW

© Super Simple Sheets

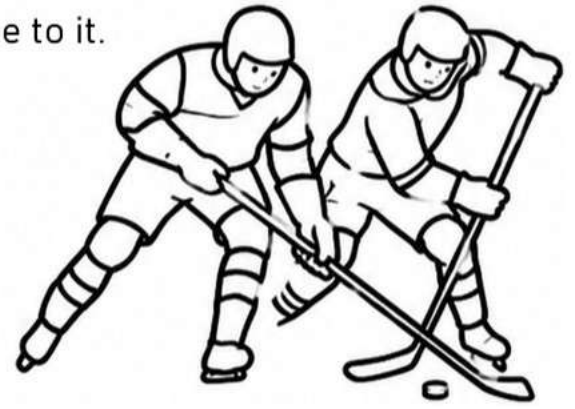
Name: _____ 129

Curriculum Connection
C2.3

Objects Changing Direction

Changing Directions

When an object is in motion, it is travelling in one direction. We can change the direction of the object in motion by applying a force to it. In sports, this is common using muscular forces.



Example

Hockey – A one-timer in hockey is an example of the puck changing direction. A one-timer is when a teammate passes the puck in one direction to a teammate who shoots the puck directly into the net. They don't slow the pass down, they change the direction of the pass by aiming it towards the net.



Baseball – When a pitcher throws the ball to the hitter, the ball is changing direction. The pitcher uses their muscular force to throw the ball as fast as they can to the hitter.

The hitter swings the bat as hard as they can to change the direction of the ball towards the outfield and hopefully over the fence. Homerun!

Tennis – In tennis, the ball starts with the server hitting it to the returning player. The returning player hits the ball back by changing the direction of the ball. They swing their arm while holding a racquet to strike the ball.



Tennis players use muscular force to swing the racquet. The stronger the player, the more muscular force they can make.

PREVIEW

© Super Simple Sheets

Name: _____ 130

Curriculum Connection
C2.3

Questions Answer the questions below using evidence from the text.

1) How does an object change directions?

2) What is an example of an object changing direction?

Draw Draw a picture of a situation in which an object changes direction. Label the object to show what forces acting on the object.

Making Connections What does this remind you of in your life?

PREVIEW

© Super Simple Sheets

Name: _____ 131

Curriculum Connection
C2.3

Force Diagram – Changing Directions

Force Diagram
A **force diagram** can be drawn to show the forces acting on objects. In a game of tug of war, the rope starts at rest. On both sides of the rope, two teams apply a muscular force. The rope will change directions towards the team that applies the most force. If one team uses a lot more force, they will win quickly. If they pull just a bit less, they will win but it will take longer.

Questions ...mine the force diagrams and answer the questions.

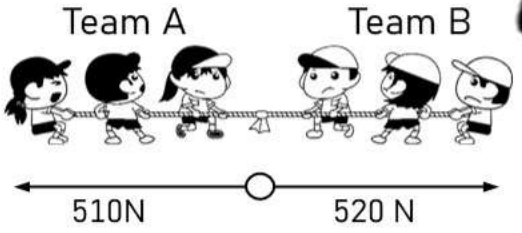
PREVIEW

1)



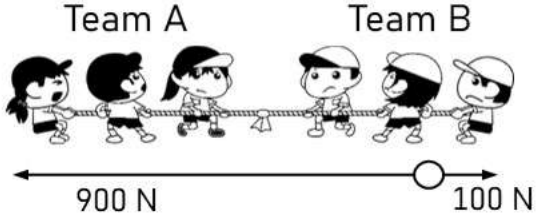
Who will win? Will it be a long/short match?

2)



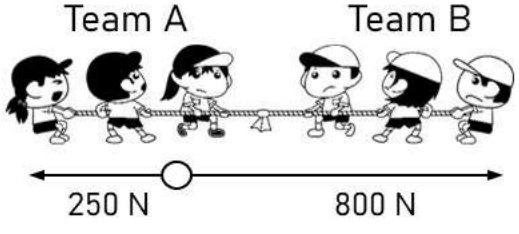
Who w... Will it be a long/short match?

3)



Who will win? Will it b... l... t match?

4)



Who will win? Will it be a long/short match?

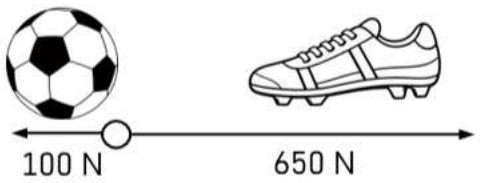
© Super Simple Sheets

Name: _____ 132

Curriculum Connection
C2.3

Questions Examine the force diagrams and answer the questions.

1)



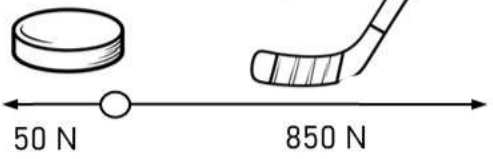
Is the ball moving? What will happen when the cleat hits it?

2)



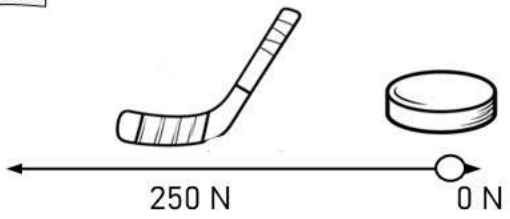
Is the ball moving? What will happen when the cleat hits it?

3)



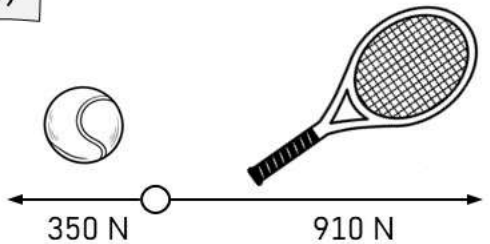
Is th at will happen when the stick hits it?

4)



Is the puck moving? What will hap its it?

5)



Is the ball moving? What will happen when the racquet hits it?

PREVIEW

Name: _____ 136

Curriculum Connection
C2.4

Forces in Our Everyday Lives

Forces in our Everyday Lives

The forces we have been learning about are used to help us in our everyday lives.

Read below to learn about how we use each force in our everyday lives.



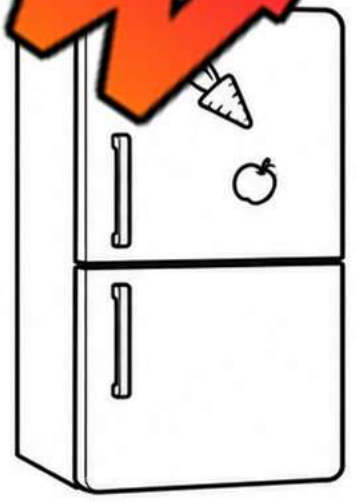
Gravity

- Keep [illegible] the ground
- K[illegible] art[illegible] hit around the sun
- Play[illegible]g spor[illegible]g a[illegible]d jumping, ball falling to the ground, [illegible] puck f[illegible] the ice



Fric[illegible]

- [illegible] brake pads squeezing on the [illegible]s to sl[illegible]wn
- Slidin[illegible]k ac[illegible]k to a friend
- Setting a p[illegible]etball [illegible]nting your rubber shoes o[illegible]



Magnetism

- Magnets stick things to a surface like a fridge
- Magnets are used to make a tight seal on the doors of a fridge/freezer

Muscular Force

- Kicking a soccer ball across a field
- Opening a door
- Using our bodies to move objects – throwing a ball into the air

PREVIEW

© Super Simple Sheets

Name: _____ 137

Curriculum Connection
C2.4

Examples

Write an example of each of the forces you see in your life.

Gravity	
Friction	
Magnetism	
Muscular Force	

PREVIEW

Which Force?

Explain how each force is in action in the picture below.



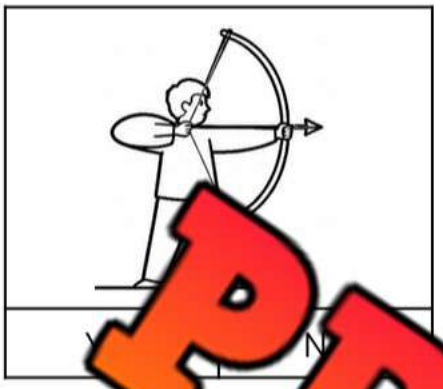
Gravity	
Friction	
Muscular	

Name: _____ 140

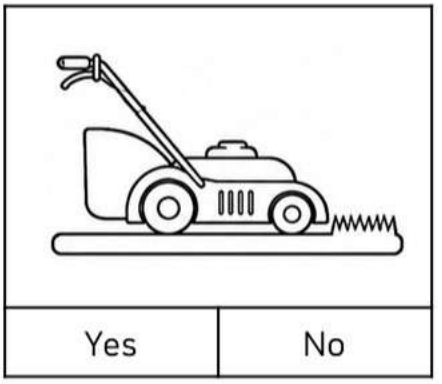
Curriculum Connection
A3.1, A3.2

Elastic Energy – Making Connections

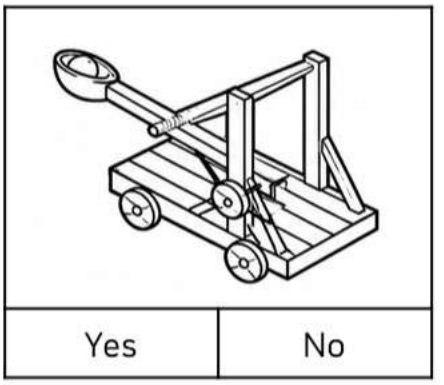
Elastic Energy?	Does the device use elastic energy – yes or no?



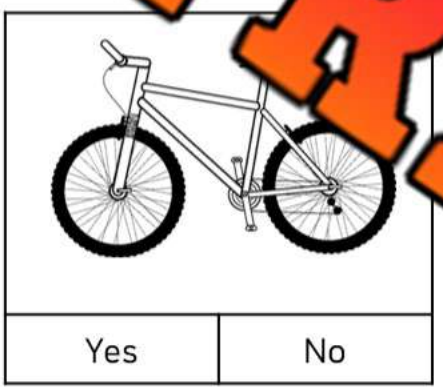
Yes	No



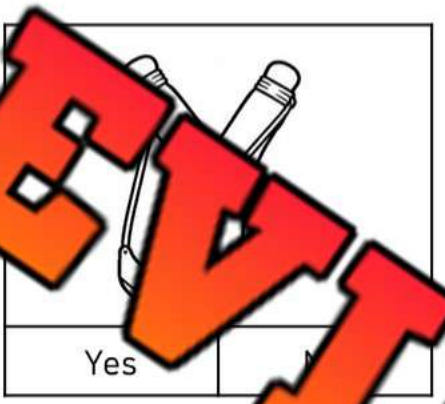
Yes	No



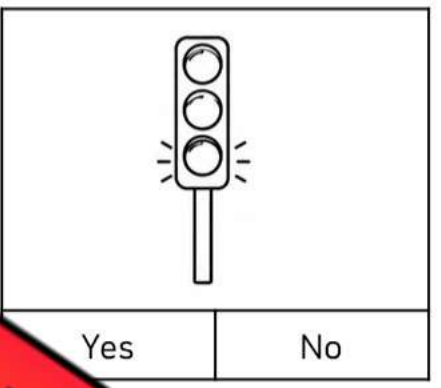
Yes	No



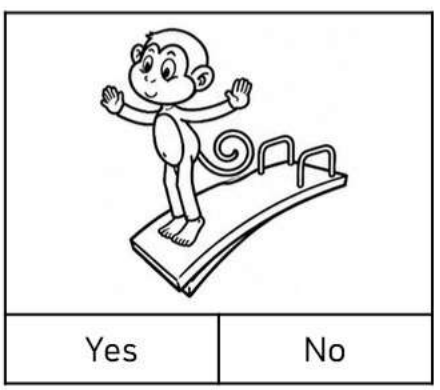
Yes	No



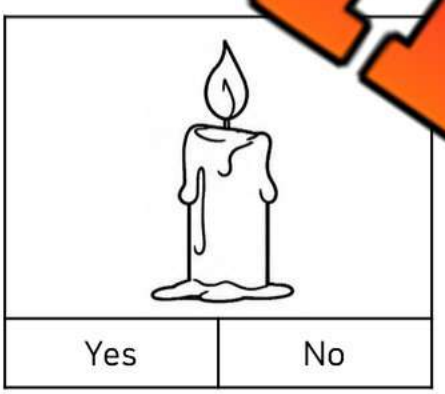
Yes	No



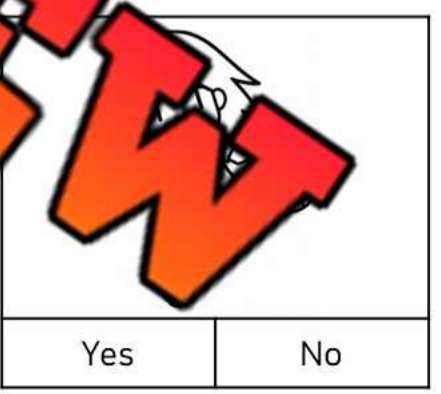
Yes	No



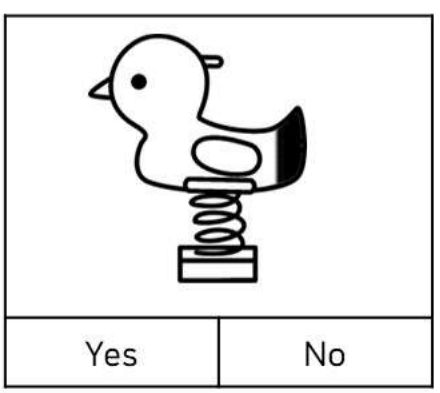
Yes	No



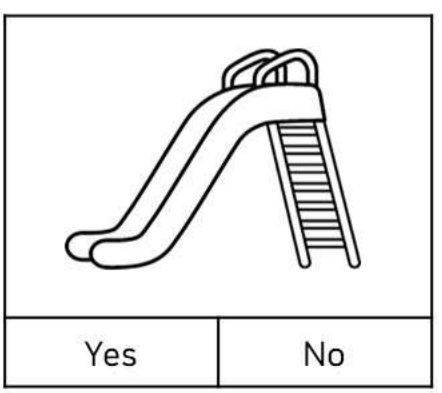
Yes	No



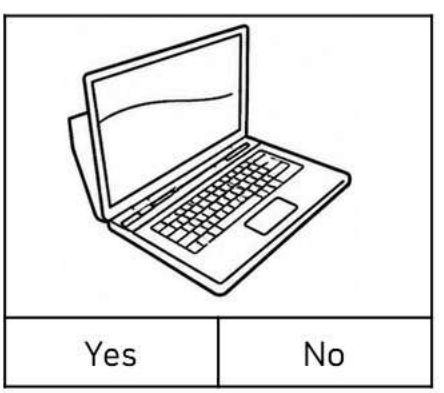
Yes	No



Yes	No



Yes	No



Yes	No

PREVIEW

Name: _____ 141

Curriculum Connection
C2.1, C2.2, C2.3, C2.4

Activity – Force Jeopardy

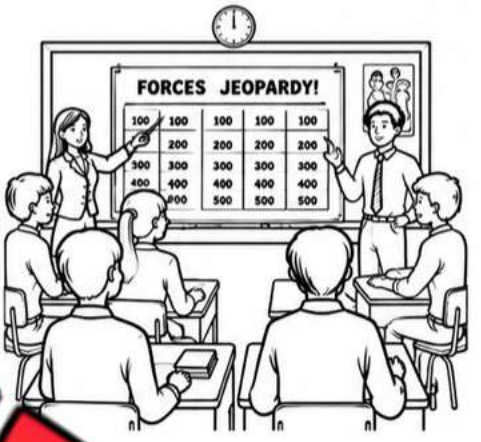
Objective

What are we learning about?

To review and reinforce key concepts and vocabulary from the forces unit, including gravity, magnetism, and static electricity, through a Jeopardy-style game. This activ courages competitive learning, teamwork, and active recall.

Mater

need for the activity?



- Jeopardy b the n
- Buzzer or bell

Instructions

How will you complet tivity

1) Print the Jeopardy board on the next p
2) Divide the class into two teams.
3) Ask one team to go first by selecting a point value.
4) Read the question aloud from the point value.
5) The first team to ring the bell or buzzer gets to answer.
6) If they answer correctly, award them the points. If not, another team can answer.
7) Continue the game until all questions have been answered.
8) Tally the points to determine the winning team.
9) Conclude by discussing what they learned about the topics in the questions.

PREVIEW

Name: _____ 142

Curriculum Connection
C2.1, C2.2, C2.3, C2.4

Jeopardy Question | Ask students the questions below.

1 Points	2 Points	3 Points	4 Points	5 Points
What pulls objects down? (**Gravity**)	What is the opposite of attract? (**Repel**)	What do we call the push or pull on an object? (**Force**)	What force can we use to stick notes on fridges? (**Magnetism**)	What force slows motion? (**Friction**)
What do magnets attract? (**Metal**)	Gravity in space? (**Yes**)	What tool can show direction because of Earth's magnetism? (**Compass**)	What happens to your weight on the moon? (**Decreases**)	What do you call it when you apply force to stretch a rubber band? (**Stretch**)
What is it called when you use force to move something toward you? (**Pull**)	What material do magnets not stick to? (**Plastic**)	What do magnets have that attract or repel? (**Pole**)	What kind of electricity is in lightning? (**Static**)	What tool measures force? (**Scale**)
What force do you use to open a door? (**Push/pull**)	What invisible force pulls objects? (**Gravity**)	What does a compass point to? (**North**)	Can static electricity make small objects move? (**Yes**)	How does a fish move forward in water? (**Push**)
Can a magnet attract a plastic spoon? (**No**)	Can magnetism work through paper or water? (**Yes**)	What happens when two north poles of magnets are put together? (**Repel**)	What do we call it when gravity helps the earth rotate around the sun? (**Orbit**)	What force helps a kite fly in the sky? (**Lift**)

PREVIEW

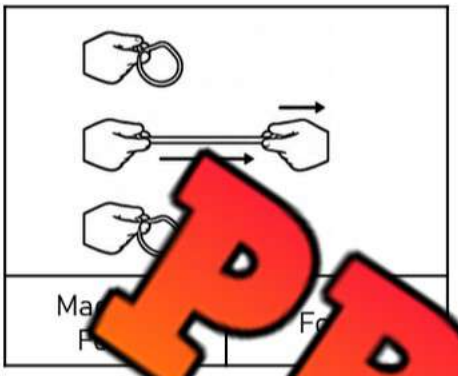
© Super Simple Sheets

Name: _____ 144

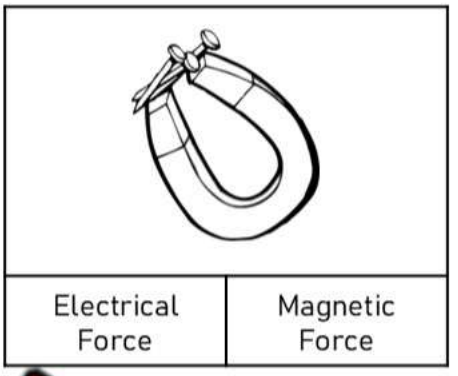
Curriculum Connection
C2.1, C2.2, C2.3, C2.4

Forces, Magnetic Forces and Electrical Forces

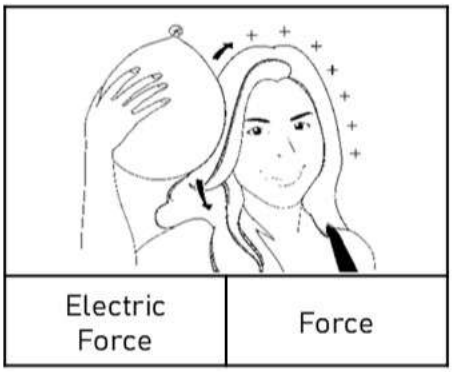
Think Circle if the image shows a Force, Magnetic Force, or Electric Force.



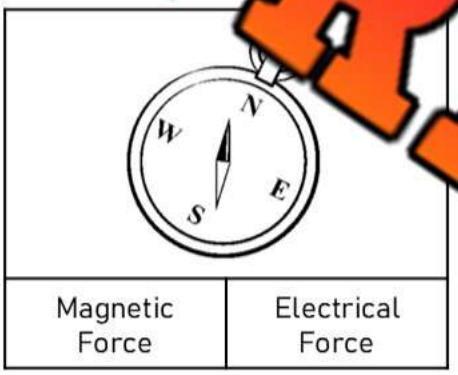
Ma… | Fo…



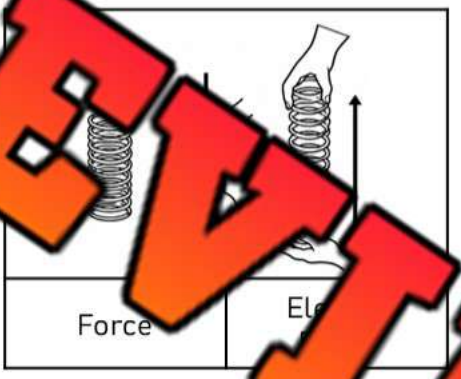
Electrical Force | Magnetic Force



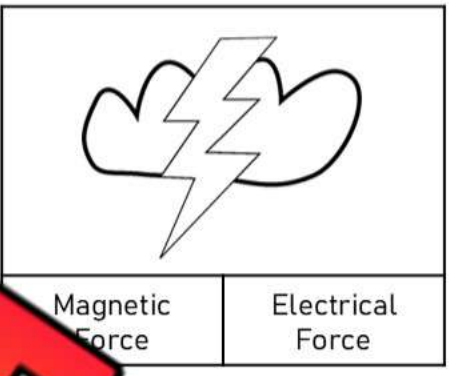
Electric Force | Force



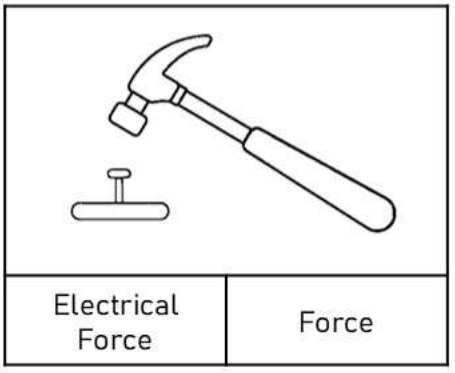
Magnetic Force | Electrical Force



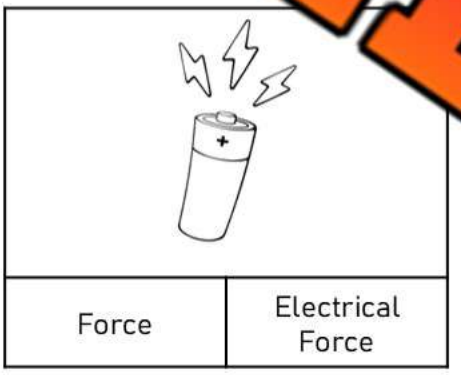
Force | El…



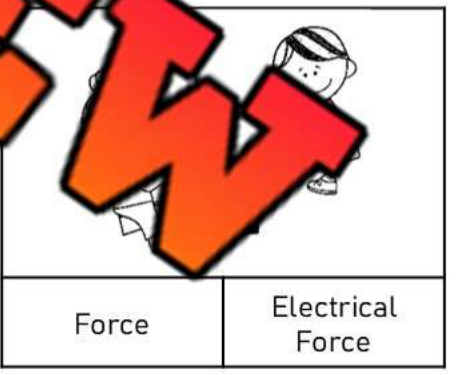
Magnetic Force | Electrical Force



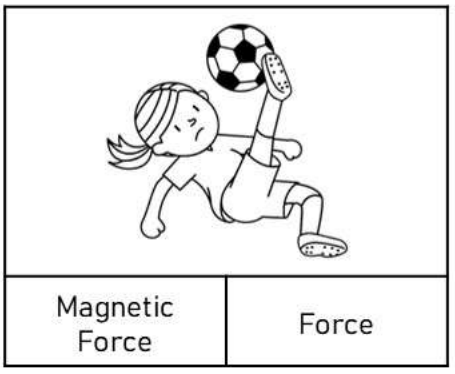
Electrical Force | Force



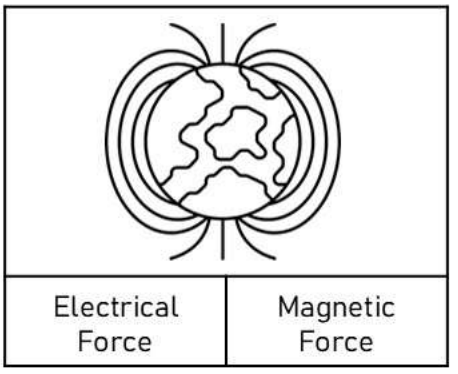
Force | Electrical Force



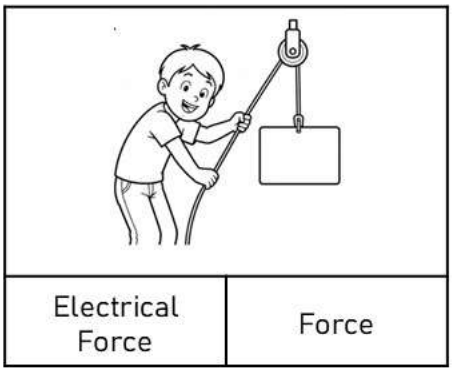
Force | Electrical Force



Magnetic Force | Force



Electrical Force | Magnetic Force



Electrical Force | Force

PREVIEW

Name: _____ 145

Curriculum Connection
C1.1, C2.4

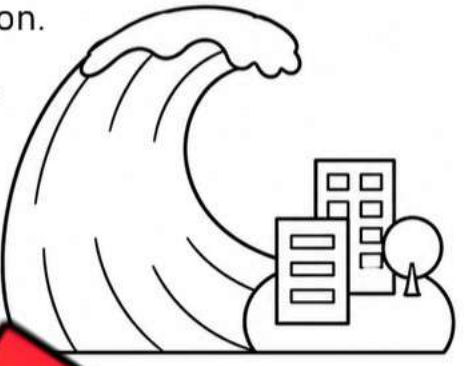
Forces in Nature – Natural Disasters

Forces in Nature

In our environment, we can see forces push and pull objects. Forces in nature include the movement of wind and water. When these forces are strong, they can damage things humans have built and destroy other things in our environment.

Water Fo unami

A **tsu** rce that is the movement of large waves. Tsunamis are caused an un arthquake or volcanic explosion.



Tsunami om 1 to 30 m. They travel at a speed of 700 ki etr ir force is so strong, that they will des ling trees, and other structures in its path.

In 2011, a massive tsunami stru he isla Japan. It destroyed over 120,000 buildings a ma omeless.



Wind Forces - T

A **tornado** is a natural ce t movement of wind that spin ados look like giant tubes because the spins in a circle, which leaves an area inside called the eye. The eye of the tornado is calmer.

Tornados are caused by the movement of cold and warm air. They form when warm, wet air meets cold, dry air. This also makes a thunderstorm.

Tornados travel at speeds up to 480 kilometres per hour! They will destroy everything in their path. A tornado is a natural force that can pick up a car and send it hundreds of metres away. Houses can also be toppled by tornados!

PREVIEW

Name: _____ 146

Curriculum Connection
C1.1, C2.4



Questions Answer the questions below using evidence from the text.

1) How can water create a very strong natural force? Describe the force.

2) How ca d create a very strong natural force? Describe the force.

PREVIEW

True or False Is ement false?

1) Wind and water can create strong orce.	True	False
2) Tsunamis are very strong wind forces.	True	False
3) Tornados can travel up to 480 km/hour.	True	False
4) Tornados can pick up cars and send them hundre tres a	True	False
5) A tsunami is created by strong winds.		alse

Visualizing Draw what you were picturing while you were reading. Ex he picture.

© Super Simple Sheets

Name: _____ 151

Curriculum Connection
C1.2

Describing The Strength Of Force

What is Force Strength?

Force strength tells us how strong or weak a push or pull is. When we use a lot of force, we say it's a strong or large force. When we use a little force, we say it's a weak or small force.



Strong Forces

Think about pushing a heavy box. To move it, you need to use a strong force. But if you're pushing a toy car, you only need to use a weak force. The toy car is light, so it moves easily.

PREVIEW

Examples of Force Strength

Examples of Strong Forces

- Bulldozer Pushing Dirt: A bulldozer uses a very strong force to push big piles of dirt when it is building roads.
- Crane Lifting Heavy Objects: Cranes use a super strong force to lift heavy objects high into the sky when they are building tall buildings.



Examples of Weak Forces

- Petting a Kitten: When you pet a kitten, you use a soft touch. That's a weak force!
- Picking Up a Feather: A feather is very light. You only need to use a weak force to pick it up.

© Super Simple Sheets

Name: _____ 152

Curriculum Connection
C1.2

Force Strength

Is the force strong, medium, or weak?

1) Lion Roaring	Strong	Medium	Weak
2) A Kitten Purring	Strong	Medium	Weak
3) Opening a Heavy Door	Strong	Medium	Weak
4) Blowing Out Birthday Candles	Strong	Medium	Weak
5) Bounci sketball	Strong	Medium	Weak
6) Turn	Strong	Medium	Weak
7) Dum uck C cks	Strong	Medium	Weak
8) Using a Ha	Strong	Medium	Weak
9) Petting a Kitten	Strong	Medium	Weak
10) Flipping a Light Switch	Strong	Medium	Weak
11) Bulldozer Pushing Dirt	rong	Medium	Weak
12) Sipping Water with a Straw	St	Medium	Weak

PREVIEW

Questions

Answer the questions below.

1) Write 2 strong forces you used today.
2) Write 2 weak forces you used today.

© Super Simple Sheets

Curriculum Connection
C1.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark

Circle which force is used?

1) Noah slammed the door shut.	
Strong Force	Weak Force
2) Mia gently pushed the door.	
Strong Force	Weak Force
3) Tom pulled the little box.	
Strong Force	Weak Force
4) Ava lifted the big bucket.	
Strong Force	Weak Force

Name: _____ Mark

Circle which force is used?

1) Noah slammed the door shut.	
Strong Force	Weak Force
2) Mia gently pushed the door.	
Strong Force	Weak Force
3) Tom pulled the little box.	
Strong Force	Weak Force
4) Ava lifted the big bucket.	
Strong Force	Weak Force

Name: _____ Mark

Circle which force is used?

1) Noah slammed the door shut.	
Strong Force	Weak Force
2) Mia gently pushed the door.	
Strong Force	Weak Force
3) Tom pulled the little box.	
Strong Force	Weak Force
4) Ava lifted the big bucket.	
Strong Force	Weak Force

Name: _____ Mark

Circle which force is used?

1) Noah slammed the door shut.	
Strong Force	Weak Force
2) Mia gently pushed the door.	
Strong Force	Weak Force
3) Tom pulled the little box.	
Strong Force	Weak Force
4) Ava lifted the big bucket.	
Strong Force	Weak Force

PREVIEW

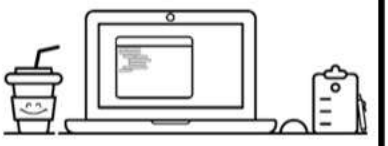
© Super Simple Sheets

Name: _____ 156

Curriculum Connection
A2.1

Introduction to If/Then Statements

An if/then statement is a *conditional* that is an action that could occur if something specific happens.
For example – If the bell goes at school, then the students go to class.



Questions Circle which then statement makes the most sense.

PREVIEW

1)		Then	The bike stops	The bike goes faster
2)	If the ba	Then	Team gets a goal	Team loses a goal
3)	If the magnet attract		gets closer	It moves further away
4)	If you pull an object			It moves further away
5)	If you push an object	Then		away
6)	If the ball is thrown in the air	Then	It will keep going up forever	it
7)	If you wear safety equipment	Then	You'll get hurt less	You'll get hurt more
8)	If we cut down trees	Then	Erosion won't happen	Erosion will get worse
9)	If waves get really big	Then	It could be a tornado	It could be a tsunami
10)	If winds get really strong	Then	It could be a tornado	It could be a tsunami

© Super Simple Sheets

Name: _____ 157

Curriculum Connection
A2.1

Coding – Else Statements

An **else** statement works like an if statement. When an if statement is false, we can have another command, instead of nothing happening.



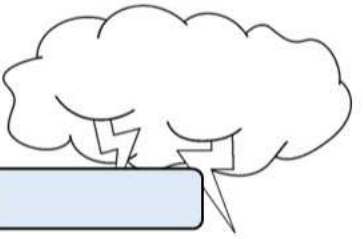
Is there a storm coming?

IF there is a storm coming

THEN stay inside

ELSE

Keep playing wherever



Directions EL commands below with your own ideas

Is a teammate open in hockey



tea en

ELSE

THEN

Is it too icy on my step?

If it too icy on my step

ELSE

THEN



PREVIEW

© Super Simple Sheets

Name: _____ Date: _____

Unit Test – Forces and Motion

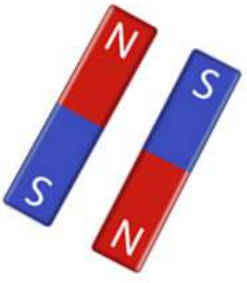
Multiple Choice Circle the correct answer.

1) An example of a pulling force is... a) Kicking a ball b) Punching a punching bag c) Playing [illegible]var d) Pushi[illegible]e a swing	2) A ball comes back down to the Earth because of... a) Electrostatic Force b) Gravity c) Friction d) Muscular Force
3) W[illegible]cycle bra[illegible]squeeze a bike tire to s[illegible]it, it is [illegible]e in action... a) Electrostati[illegible]e b) Gravity c) Friction d) Muscular Force	4) How many poles are there on a magnet? a) 1 b) 2
5) A balloon sticks to our hair because a) Static electricity b) Magnetism c) Friction d) None of the above	6) Wh[illegible]hrow a basketball into the hoop [illegible]are [illegible]which force? a) [illegible]rosta[illegible] b) Gra[illegible] c) Friction d) Muscular Force

PREVIEW

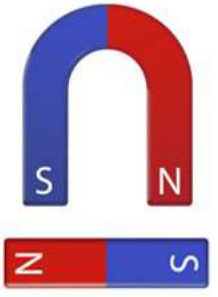
Magnets Will the magnets attract or repel each other?

1)



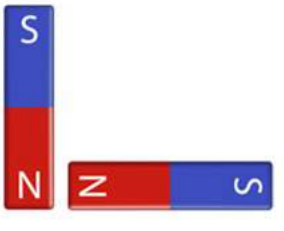
Attract	Repel

2)



Attract	Repel

3)



Attract	Repel

Matching Draw a line from the term to the description.

Term		Description
Contact force	•	• Examples of this force are gravity and magnetism
Non-contact force	•	• The force pulling us to the centre of the Earth
Muscular Force	•	• Has two poles that can attract or repel
Gravity	•	• A force that touches an object to move it
	•	• A force that has more strength when compressed
Magn	•	• When animals use their bodies to move an object
Spring	•	• Force that moves our hair on a trampoline

Short Answer Answer the questions below. Each question is worth 3 marks.

1) Explain the force of gravity. Is it a non-contact force? How does it work.

2) How do forces act on a soccer ball in a soccer game?

3) What can people do to protect themselves from strong forces?

PREVIEW