**Dear Fifth Grader:**

**Hello, I miss everyone so much, and I hope and pray I will be able to see everyone in May  I hope you are all doing well.  Remember you can still communicate with me through google classroom (stream), the Remind App, google meets, or email, or gmail.**

## Week 4  April 13-17

☑

- ❑ **Study and review the Space, Life Science, and Physical Science Study Guide.  This guide covers all the content from this year.  Please spend at least 20 minutes reviewing this packet.  You can also review your red folder and steno for more practice.**
- ❑ **When you are ready, please take the review test in google classroom (forms) or paper/pencil.**
- ❑ **Next, you will be working on our last unit:  Forces and Motion.  Take the Forces and Motion:  Pretest.  You can take the pretest in google classroom (forms) or paper/pencil.**
- ❑ **Add the Lesson 1 Forces and Motion Vocabulary words/definitions/examples to your steno.  The words are in google classroom.**

## Week 5:  April 20-24

☑

- ❑ **Online Resource:  Watch Audri's Monster Trap.  How does this video relate to forces and motion?**
  **https://www.youtube.com/watch?v=lMbol4cOAuQ**
- ❑ **Online Resource:  Force and Motion**
  **https://www.youtube.com/watch?v=xUCYFof8QyA**
- ❑ **Carefully, complete the Forces and Motion Slides in google classroom or use paper/pencil.  These slides will help you complete the mini experiment.**
- ❑ **Complete the Mini Experiment:  Toys in Motion.  You can always record the information in your steno.**

**Week 6: April 27- May 1**

☑

- ❑ **Study: Quiz over Lesson 1 next week. Study your steno and the Google Slides.**
- ❑ **Take the quiz over Lesson 1: Force and Motion. You can take the quiz in google forms or use paper/pencil.**
- ❑ **Add Lesson 2 Vocabulary Words/Definitions/Examples in your steno. The words are in google classroom.**
- ❑ **Online Resource: https://www.youtube.com/watch?v=_nAKwhZyXnw**
- ❑ **Online Resources: https://ideastream.pbslearningmedia.org/resource/vtl07.math.measure.rate.calcspeed/calculating-speed/**

**Love,**
**Miss Heinz**


# Space, Life, and Physical Science

# Study Guide

# Planets:

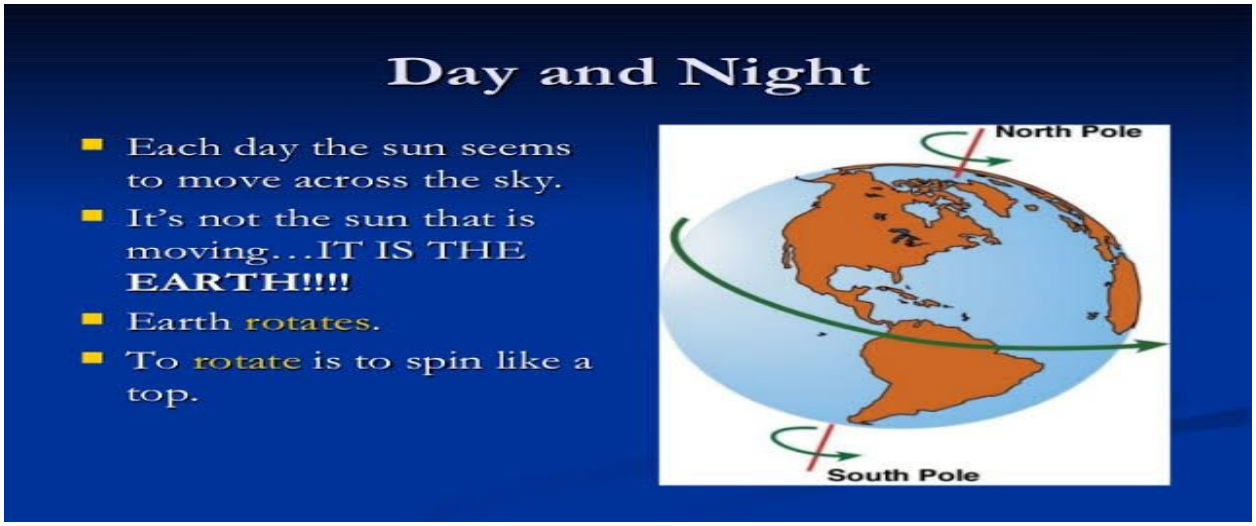

## Earth:

1. Earth is the third planet from the sun.
2. It has a rocky surface and, ¾ (75%) is covered by oceans of liquid water.
3. Earth rotates, spin every 24 hours on its axis counter- clockwise
4. Orbits, revolves the sun every year (365 ¼ days).

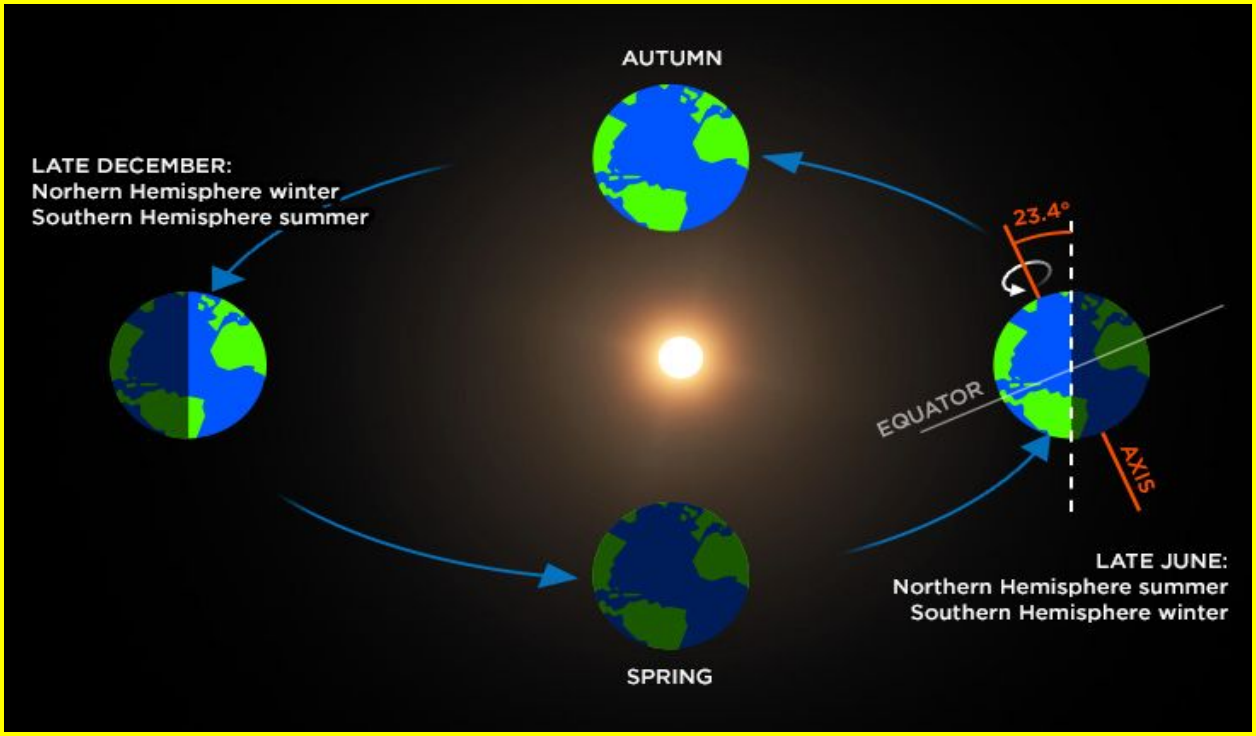
# Day and Night:

**Q. Why do we have day and night?**

**A. We have day and night because earth rotates, spins on its axis counter-clock wise.**




# Earth Seasons:



## Stars:

## Q. Why do the stars at night look like points of light?

## A. The stars at night look like points of light because they are so far away.

# Organisms:

1. **Organism – any single living thing**

**Example: Panda**

2. **Ecosystem – A community of organisms and the environment in which they live**

**Example: dog cage**

3. **Adaptation – A structure or behavior that helps an organism survive**

**Example: A shark's teeth**

4. **consumer – an organism that eats plants, other animals, or both.**

**Example: chinchilla**

5. **Producer – an organism that makes its own food through photosynthesis.**

**Example: Maple Tree**

6. **herbivore – an animal that eats only producers**

**Example: Rabbit**

7. **carnivore – an animal that eats other animals**

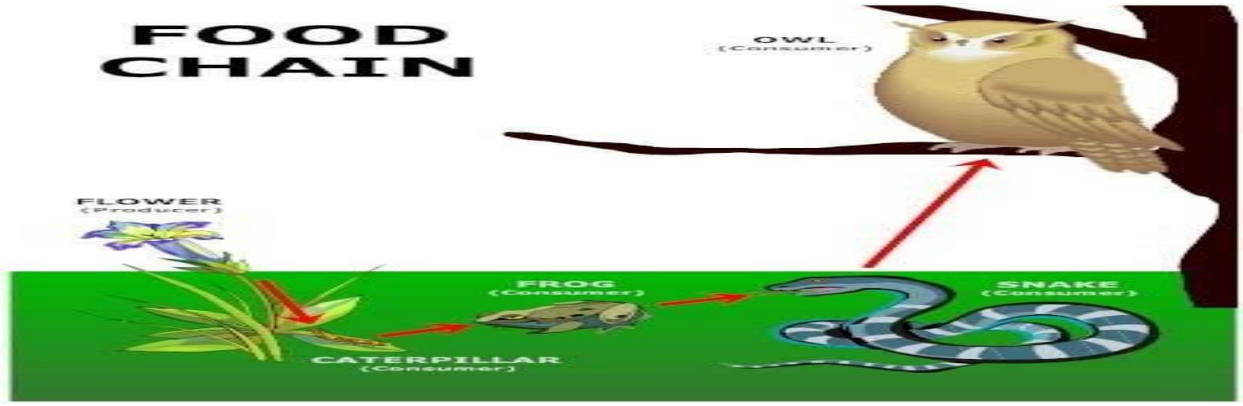
**Example: Owl**

8. **omnivore – an animal that eats both producers and animals**

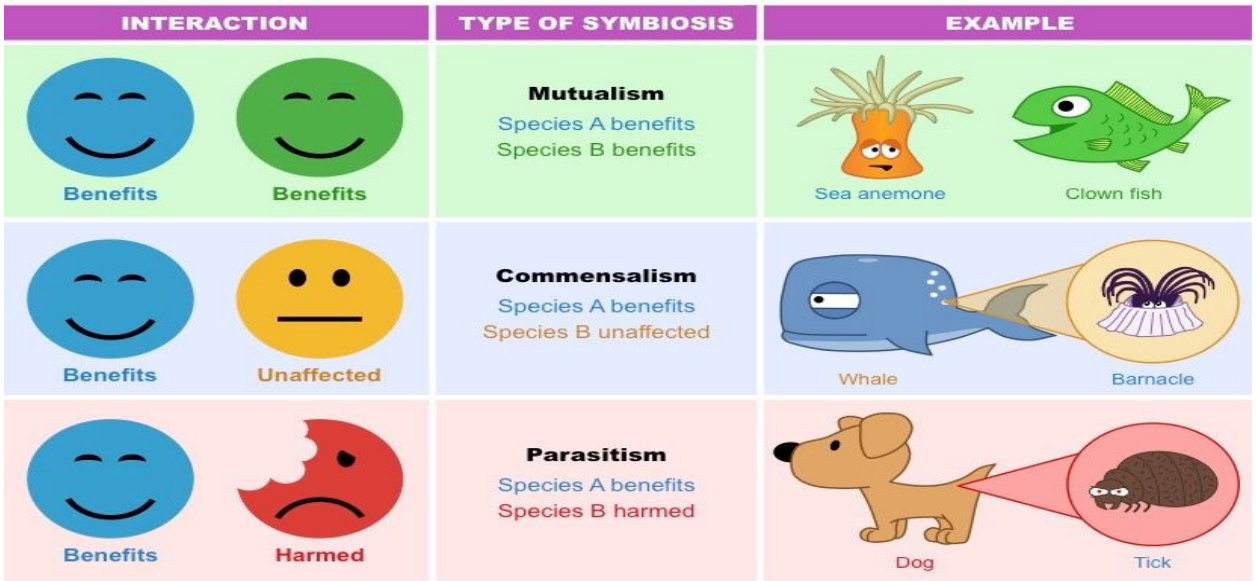
**Example: Human**

9. **decomposer – a <u>consumer</u> that <u>breaks down</u> the <u>remains</u> of <u>dead plants</u> and <u>animals</u>**
10. 

**Example: (F.B.I – Fungus, Bacteria, and insects**




**The arrows point to the eater and this shows the transfer of energy.**




# Sound:

1. vibrations - the **back- and-forth movement** of matter

Example: plucking a guitar string

2. volume -the **loudness or softness** of a sound

Example: Radio

3. pitch – the **highness or lowness** of a sound

Example: Shortened or Lengthen Vocal Chords

4. transmission – allowing sound to **travel**

Example: string phone

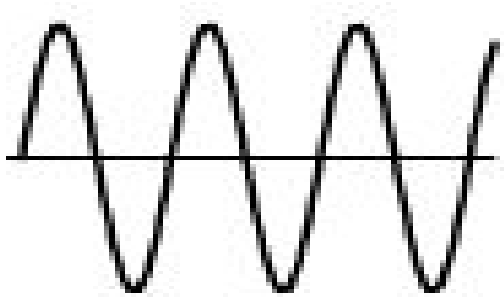
5. absorption – **taking in; soaking up** sound

Example: Blankets muffle sound

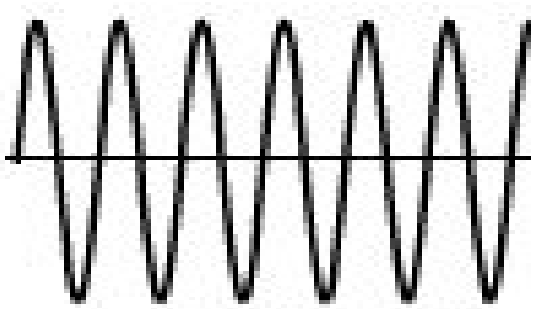
6. reflecting – **sending back sound** that strikes a surface

Example: echo

Sound Waves:



Lower Pitch



Higher Pitch

# Light:

1. **transmission – <u>allowing</u> light to <u>travel</u> through**

**Example: window**

2. **reflection – the <u>bouncing</u> back of light from a surface**

**Example: A plain mirror produces the best reflection.**

3. **refracting – the <u>bending</u> of light as it passes through one material into another**

**Example: Broken Pencil**

4. **absorption – <u>soaking up</u>, <u>taking in</u> light**

**Example: a black shirt**

5. ***transparent* – an object that allows a person to <u>see through it clearly</u>. <u>Allows all the light to travel</u>**

**Example: Clear glass window**

6. ***translucent- an*** **object that allows a person to see t<u>hrough it, but not clearly</u>. Allows some light to travel.**

**Example: Stained glass window**

7. ***<u>opaque</u>*** **object blocks all light rays. No light will travel through.**

**Example: Most objects (desk)**

## Which is transparent, translucent, and opaque?

5th Grade Post-Assessment: Earth, Life and Physical Sciences - Each question is worth 1 point for a total of 20 points.

What is your first and last name? *

1. From Ohio, we see the sun in the day sky and other starts in the night sky. Nighttime stars look like tiny points of light. Which statement explains why nighttime stars appear so much smaller than the sun? *

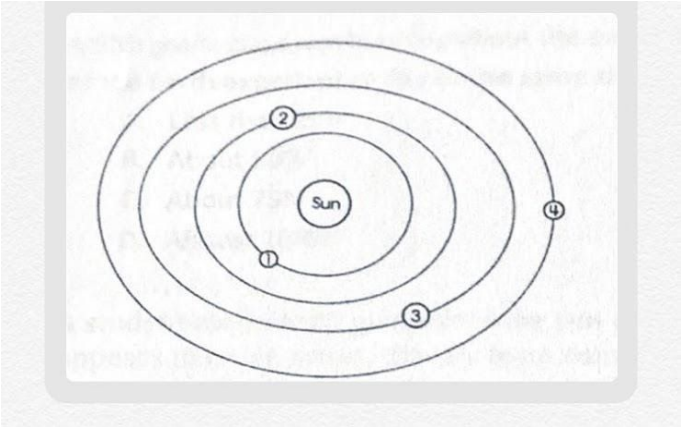
The stars are much smaller.

The sky is much darker at night.

The stars are much farther away.

The moon blocks out most starlight.

2. A diagram of the Planets Orbits Closest to the Sun. Which number in the diagram represents Earth?




1

2

3

4

3 What causes day and night on Earth?

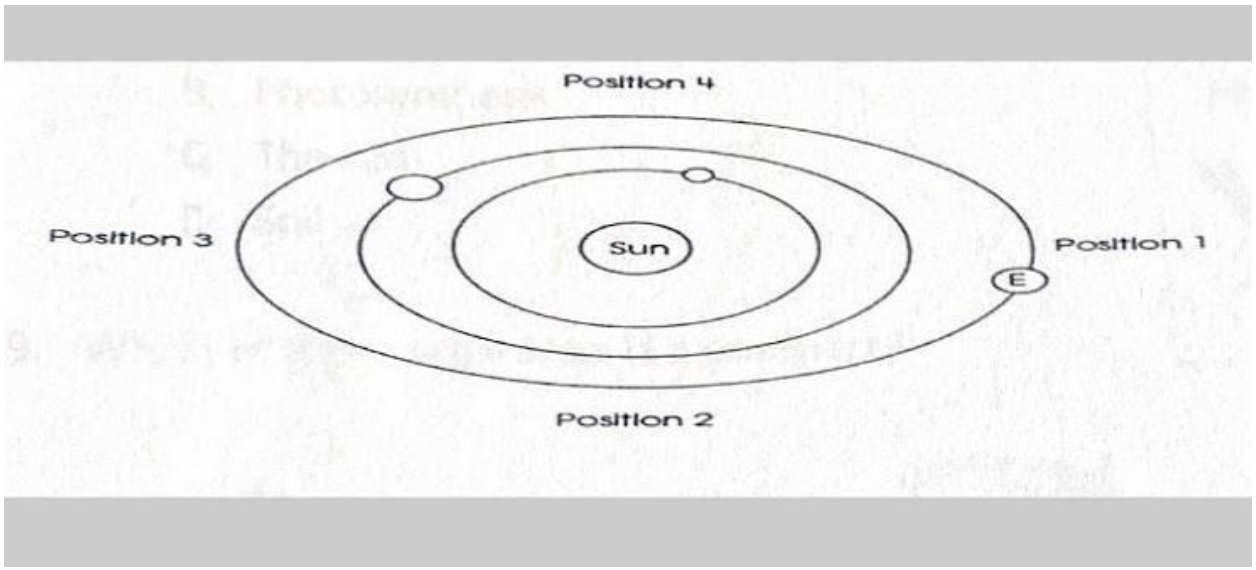
Earth rotates on its axis.

Earth orbits around the sun.

The moon orbits around the Earth.

The moon rotates on its axis.

**4. The diagram shows the position of Earth (E) now. Where will the Earth be in nine month?**




Position 1

Position 2

Position 3

Position 4

**5. A fifth grade class was learning about the pattern of day and night on Earth. What part of the Earth experiences day at the same time?**

Less than 25%

About 50%

About 75%

Almost 100%

6. A student models the motions of the sun and Earth to understand why the sun appears to move across the sky from sunrise to sunset. In this model, the student represents Earth and light represents the sun. Which model demonstrates this appearance of the sun moving across the sky?

The student holding the light at arm's length and turning in a circle.

The student walking around in a wide circle while the light sits on a desk.

The students spinning around in place while the light sits on a desk nearby.

The student standing and light being moved over the student's head.

7. Why are decomposers important in an ecosystem?

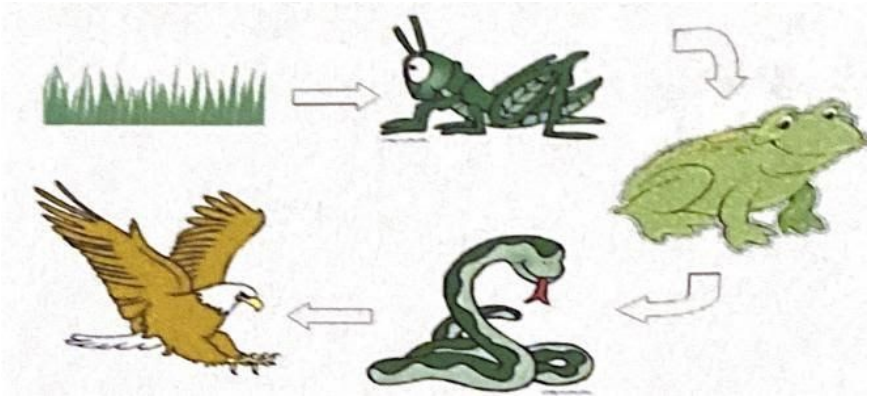
They directly provide energy for all living organisms.

They decompose and break down the remains of dead organisms.

They transform sunlight energy into sugars and starches that other organisms eat.

They eat only live organisms to complete the food chain.

8. A food chain shows the flow of energy. What is missing from the food chain below?



**Carbon dioxide**

**Photosynthesis**

**The sun**

**Soil**

## 9. Which of these organisms is a producer?

**1 point**


**Bacteria**

**Grass**

**Grasshopper**

**Snake**

## 10. Which organisms in this food chain are consumers?

**grass, grasshopper, hawk**

grass, lizard, hawk

grasshopper, lizard, hawk

sun, lizard, hawk

11. A mosquito bits its host organism, drinking its blood. Mosquitoes are known to carry diseases and can hurt the host. When one species harms another, this is an example of what symbiotic relationship?

Symbiosis

Commensalism

Mutualism

Parasitism

12. Oxpeckers land on zebras and eat ticks and other parasites that live on their skin. The oxpeckers get food and the zebras get pest control. Also, when there is danger, the oxpeckers fly upward and scream a warning; this allows the zebras to be aware of predators. This is an example of what type of symbiotic relationship?

Symbiosis

Commensalism

Mutualism

Parasitism

13. Cattle egrets live in fields with cows and other livestock. As the cattle and horses walk through the fields eating, they stir up bugs from the ground. The egrets follow the

livestock and catch and eat the bugs. The cows and horses are unaffected by the egrets. This is an example of what symbiotic relationship?

Symbiosis

Commensalism

Mutualism

Parasitism

14. A group of students play basketball in a gym and sometimes play outdoors. They notice it is much louder in the gym than outside. Why is it louder inside the gym than outdoors?

The sound reflected off the walls and hard floors of the gym.

The sound is transmitted by the walls and floor of the gym.

The sound is absorbed by the speakers in the gym.

The sound is carried off by the wind outside.

15. Joe made this musical instrument in science class out of tape and straws. What question was he testing in this experiment?

How different lengths of straws sound when blown into

How color affects the sound the straw makes

Which kind of straw is the least expensive.

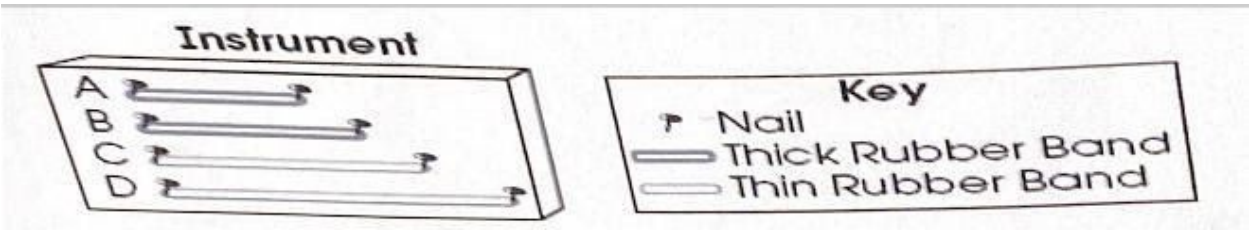
How the position affect the sound the straw makes

16. Students observe the sound of their voices in an empty classroom. They fill the room with soft objects like coats and backpacks and notice the sound of their voices

**change. How will the sound of their voices change if the room is filled with soft objects?**

- **The sound will combine.**
- **The sounds will become louder.**
- **The sound will travel more slowly.**
- **The sounds will have a higher pitch.**

**17. Students pluck each rubber band on the instrument shown below. Which rubber band produces a sound with the highest pitch?**




- **Rubber band A**
- **Rubber band B**
- **Rubber band C**
- **Rubber band D**

**18. Look at the image below. What property of light does this picture best demonstrate?**

**Light can be refracted.**

**Light can be reflected.**

**Light can be absorbed.**

**Light can be changed.**

**19. You see yourself when you look in the mirror. What does this demonstrate about light?**

**Light is translucent.**

**Light can be refracted.**

**Light can be reflected.**

**Light cannot change directions.**

**If you were observing light shining on a black sweater, which term would you accurately use to describe how it reacts to light?**

**Reflected**

**Refracted**

**Absorbed**

**Transmitted**

**Comic: Enjoy! I miss everyone!**


# Forces and Motion Pretest- This isn't for a grade.

What is your first and last name? *

1.What is a push or pull on an object? *

Motion

Force

Gravity

Friction

2. What is described as a change of position? *

Friction

Gravity

Motion

Mass

3. Which of the following is the current formula for determining the speed of an object?

Speed = time/weight

Speed = weight/force

Speed = distance/time

Speed = distance/force

4. Which statement best describes what must happen in order for a person to lift an object?

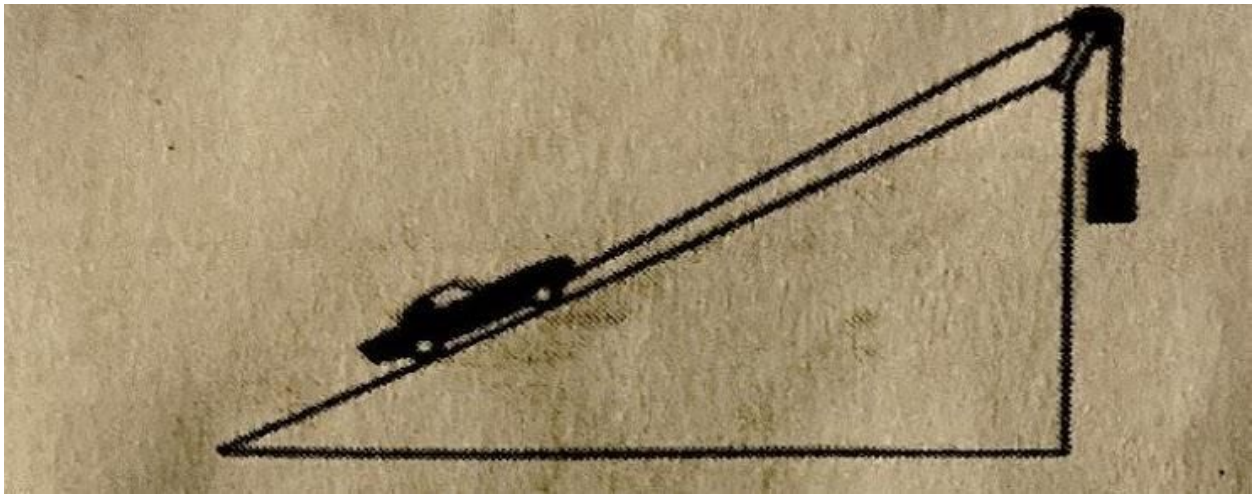
The force of gravity must be greater than the mass of the object.

The mass of the object must be greater than the upward pull or push of the object.

The force of the gravity must be greater than the upward pull or push of the object.

**The upward pull or push on the object must be greater than the force of gravity.**

**5. This diagram shows a ramp with a toy car at the bottom. A string is attached to the front of the car and the string goes over a pulley at the end of the ramp. A weight is attached to the other end of the string. What would be most responsible for the toy car being pulled up the ramp?**



**Friction**

**Gravity**

**Motion**

**Speed**

# Everyday Forces: Lesson 1

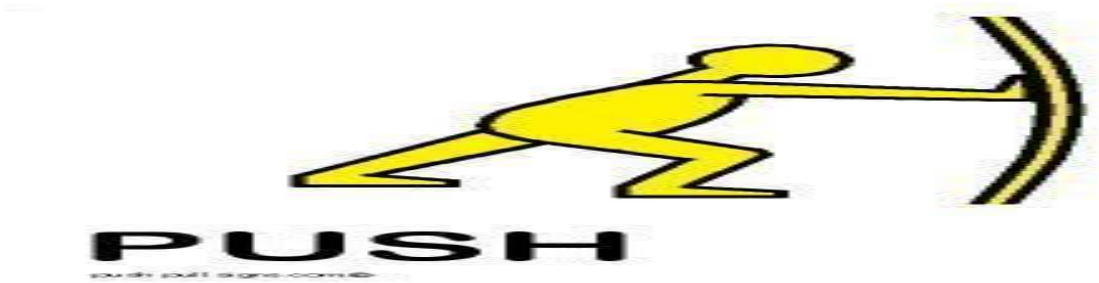
1. Motion – is the <u>change</u> in an object's <u>position</u>

Example: Browns' player running

2. Force – is any <u>push</u> or <u>pull</u> that causes an object to move, stop, or change direction

Example:

Pushing on a door




3. Mass – the <u>measure</u> of how much <u>matter</u> is in an <u>object</u>.

Example: We measure mass by using a balance.


4. Gravity– is the <u>force</u> that causes <u>objects</u> with <u>mass</u> to be <u>attracted</u>, or <u>pulled</u>, toward one another.

Example:

Gravity is what holds everything in place


**Google Slides**

**Force and Motion**

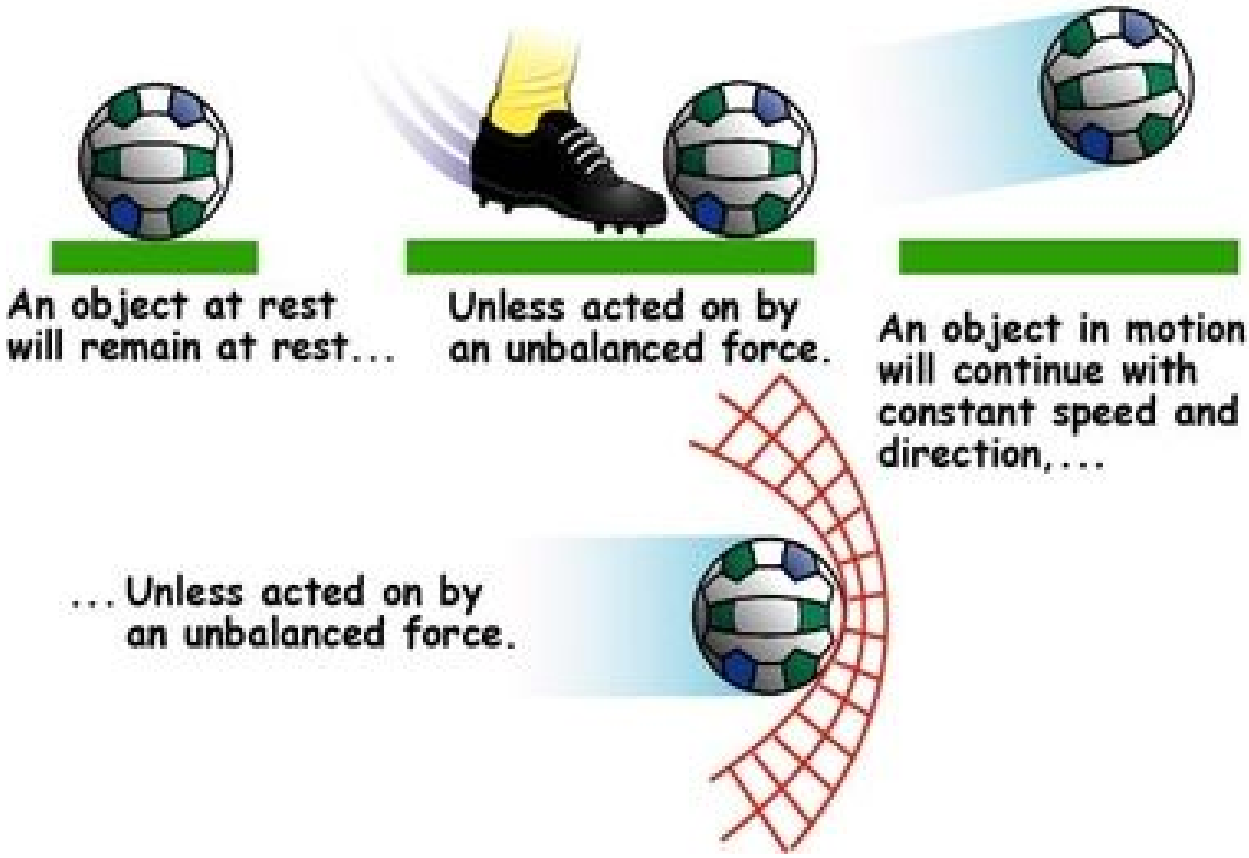
**Force** is a push or pull on an object caused by an

interaction with another object. Think about a baseball player. When he hits a ball with a bat, he has applied a force on the ball causing it to move in the direction of the push. The pitcher put the ball in **motion** by applying a force on the ball while pitching it towards the batter. Motion is a change of position from one place to another.

Through observation and experimentation, scientists have identified rules that help us predict the effects of force. Here are some of the most important laws of motion:

- Objects only move when something pushes or pulls them.
- The harder an object is pushed or pulled, the faster it will go.
- The more **massive** an object is, the harder it is to move. The object is also harder to stop once it is moving.
- Objects tend to keep moving until something stops them.

# Newton's First Law of Motion



Gravity

Without force, we would not be where we are! **Gravity** is a force that pulls two objects together. **The gravity of the Earth pulls everything around it towards the center**. That is why we can walk around here on Earth without floating into outer space. **Earth's gravity is also what keeps the moon in its orbit around us. Gravity keeps the Earth in this place in our Solar System. The sun's gravity pulls the planets towards it, keeping each planet in their orbit.**

# Types of Forces

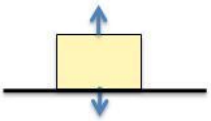
**Contact forces:** interactions between objects that touch

applied force

spring force

drag force

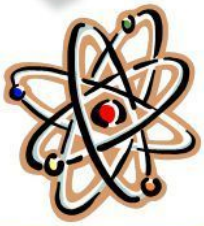
frictional force



normal force

**Non-contact forces:** attract or repel, even from a distance

magnetic force



electric force

gravitational force

# Toys in Motion


**It takes a force to put everything in motion.**

Types of forces

- Push
- Pull
- Gravity

| Contact Force | Non-contact Force |
|---|---|
| Wind | Gravity |
| Air Pressure | Magnetic forces |
| Collision/Impact | Static electricity |
| Friction | |

**Locate 5 toys or games around your house, and then complete the chart. Some toys might have more than one force. See example below.**

| Type of Toy | What force(s) affect the motion of the toy? | Are the forces contact or non-contact? |
|---|---|---|
| wind-up toy | push | contact |
| Connect Four Game | Gravity | Non-contact |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

# Forces and Motion Quiz: Lesson 1

Each question is worth 1 point.

What is your first and last name? *

1. What is a push or pull on an object?

Friction

Force

Motion

Gravity

2. A moving object tends to stay in motion and a resting object tends to stay at rest...

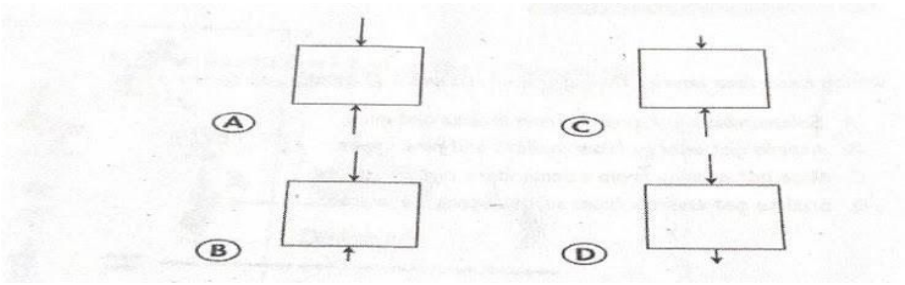
even if it is pushed or pulled

a unless a force acts on it

until there are major weather changes

even if it is rolled

3. Arrows represent the forces applied to an object. A longer arrow means a greater force. Which object will move forward?



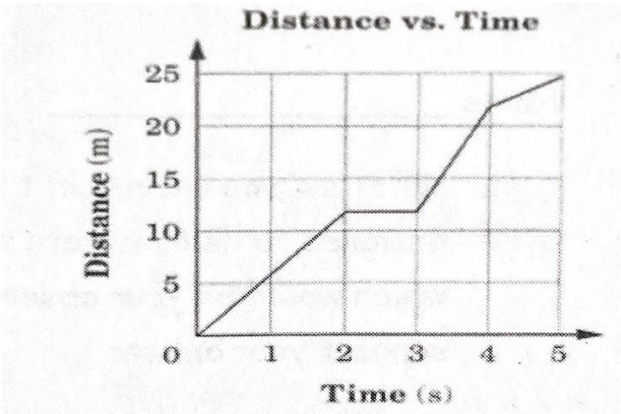

A

B

C

D

4. This graph shows the motion of an animal. When does the animal remain still? *



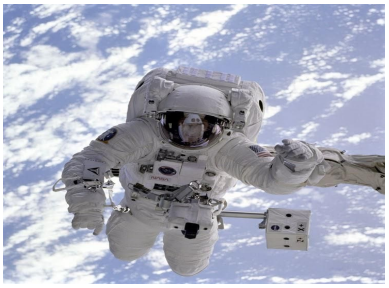

between second 1 and second 2

between second 2 and second 3

between second 3 and second 4

between second 4 and second 5

5. Astronauts design an experiment to test the effects of force on an object. They know that one of the forces we experience on Earth is less on the moon. Which forces are the astronauts testing?



Push

Pull

Gravity

Friction

6. When a force acts on an object, the object will usually...

spin in a circle

evaporate

stop, move, change speed, or change position

do nothing

7. A class is testing fan-powered sailboats. If the students increase the speed of the fan blowing on the sail, what will happen to the movement of the boat?

It will stop.

It will speed up.

It will change direction.

It will travel a shorter distance.

# Lesson 2 Speed

1. Speed – the distance traveled in a set period of time.

Example: Millennium Force goes up to 93 mph

https://www.youtube.com/watch?v=MybcORGVkEU

2. Friction – a force that can slow down moving objects

Example: Sandpaper