Phys/Chem Weekly Planner: All science week of 2.10.2020

Objectives for the week: Chm.2.2 Analyze the structure and nature of the periodic table.
Phys 1.2 Analyze the nature of forces

Day	Honors Physics	Honors Chemistry
Mon	-Warm UP -Finish velocity vs. acceleration paradigm lab NOTES: Forces *HW= test corrections due Wed (2hr), projectile problems due 2/11!!	-Warm UP -Notes: ionic bonding and compound properties -practice *HW= Finish Ch 7 notes & https://play.plasma.games 12DC3220-8DDA-457E-8F50-EDFFD0E42CAD
Tues	Stunt car problem Football Problem HW= 1)Dayton in a boat and 2) the canon problem, 3) TEST CORRECTIONS.	Go over NOTES- CH 7 Packet pages 38-40 Notes: Ch 8 *HW= pg 38, 39 and 40. YOU MUST NAME EACH!!!
Wed	NOTES: Forces *HW=Pgs 4 and 5 on	LAB!! Molecular shapes *HW= Ch 8 notes- finish

	a separate sheet of paper.	packet. FINISH LAB
Thurs 2/13	Last night's HW: https://screencast-o-matic.com/watch/cYnIcQwvD2 (∑= sum of) Forces at an angle: https://www.youtube.com/watch?v=8eVVI6GdpXo Inclined planes: Inclined planes review from yesterday Tension Force Problems: https://www.youtube.com/watch?v=6OAlb5F3NEE *Classwork/HW= from the BOOK on schoology and the BOOK (not viewer) page numbers HW= pg 112 # 42-50, pg 115 #89& 90	Naming compounds: https://www.youtube.com/watch?v=nijb6UMvZuE Naming acids: https://www.youtube.com/watch?v=apmiikhKML0 **Class work/HW= packet pages 40-47. (check answers online Thursday night after 6pm right here below this agenda!)**
Friday 2/14	TEST- forces and motion	**TEST: chemical bonding**

Forces problems
HW= pg 112 # 42-50,
pg 113 # 59, 64-70,
pg 114 # 75, 86,87,
pg 115 #89& 90 (21 q. total)
CH 7 questions pg 232 # 67-89 CH 8 questions pg 274 # 86, 88-90, 92-96
pg 275 #100, 114-118,
pg 256 #132, 133 (17 q. total)

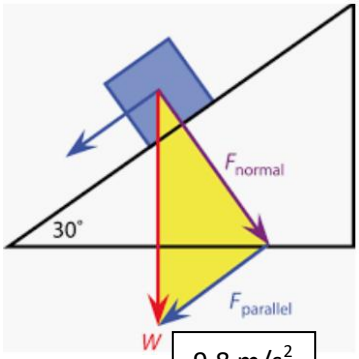
Warm up activities!

Monday 2.10.20-

https://evansccca.weebly.com/

TURN OFF cell phone and put in the bin ☺

PHYZ Warm up: TURN OFF cell phone and put in the bin ☺	**CHEM Warm up: Turn OFF your cell**

GET out your colored pens Vector resolution.....  9.8 m/s^2	**phone and put in bin** ☺ Draw a Lewis dot diagram of Barium and a Lewis dot diagram of Fluorine. Explain how these two atoms would bond ionically.

Tuesday 2.11.20-

https://evansccca.weebly.com/

PHYZ Warm up: TURN OFF cell phone and put in the bin ☺ HOW many did you get correct out of 7? Describe one of the problems and explain the right answer.	**CHEM Warm up: 1.21.2020** **Turn OFF your cell phone and put in bin** ☺ Explain the properties that ionic compounds exhibit.

Wednesday 2.12.20-

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PHYZ Warm up: TURN OFF cell phone and put in the bin ☺ Explain why projectile problems have to be broken up into different parts of the problem. Which one determines time..why?	**CHEM Warm up: 1.21.2020** **Turn OFF your cell phone and put in bin** ☺ Describe the intermolecular forces of ionic compounds vs. covalent compounds.

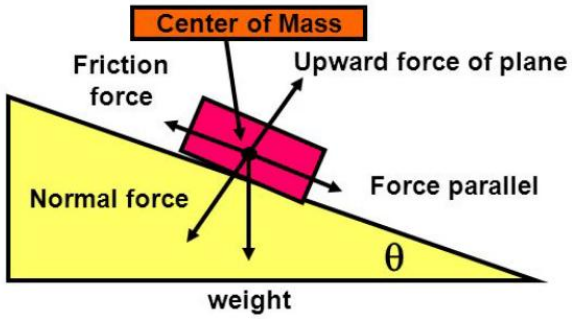
Thursday 2.13.20-

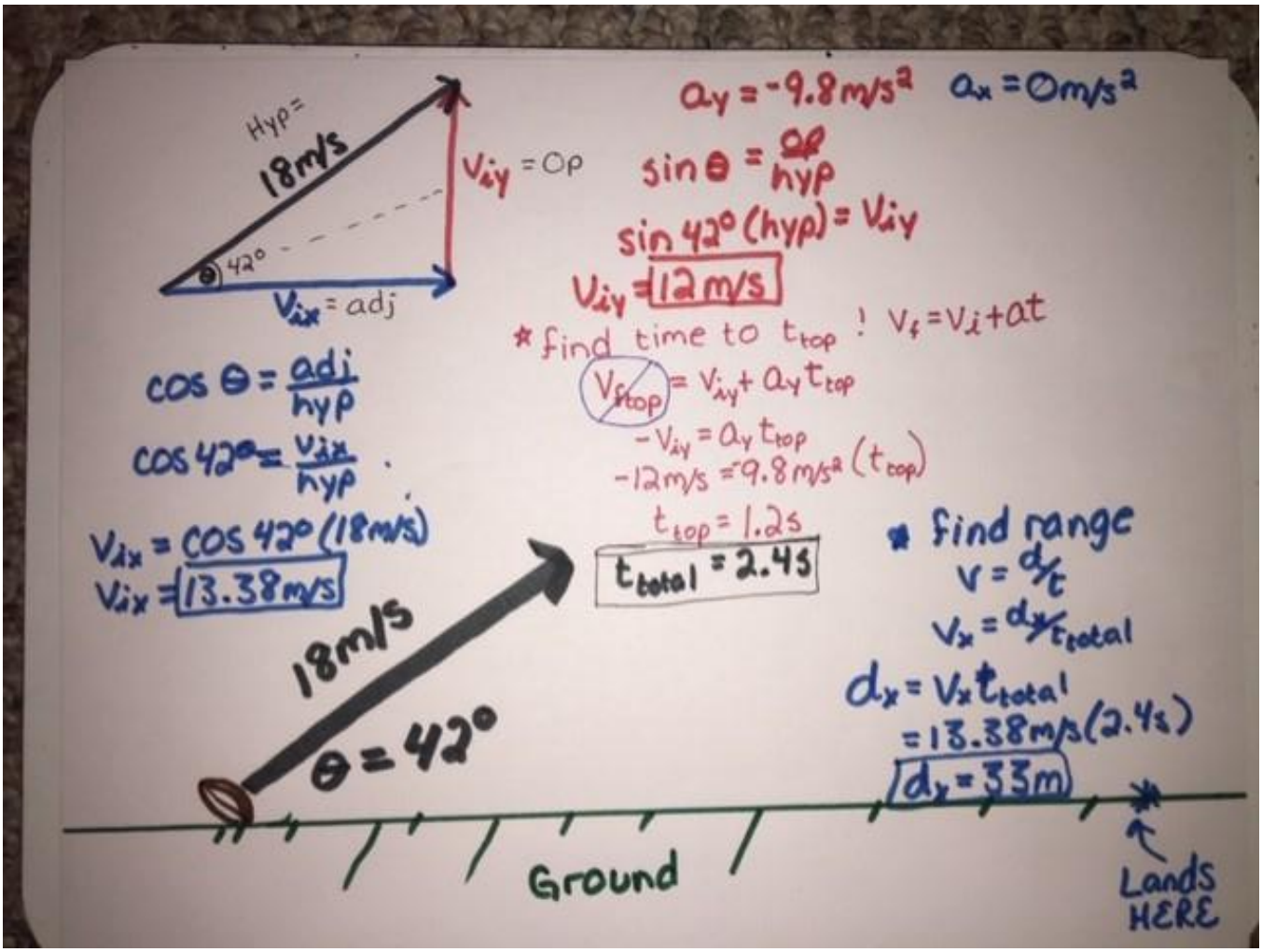
https://evansccca.weebly.com/

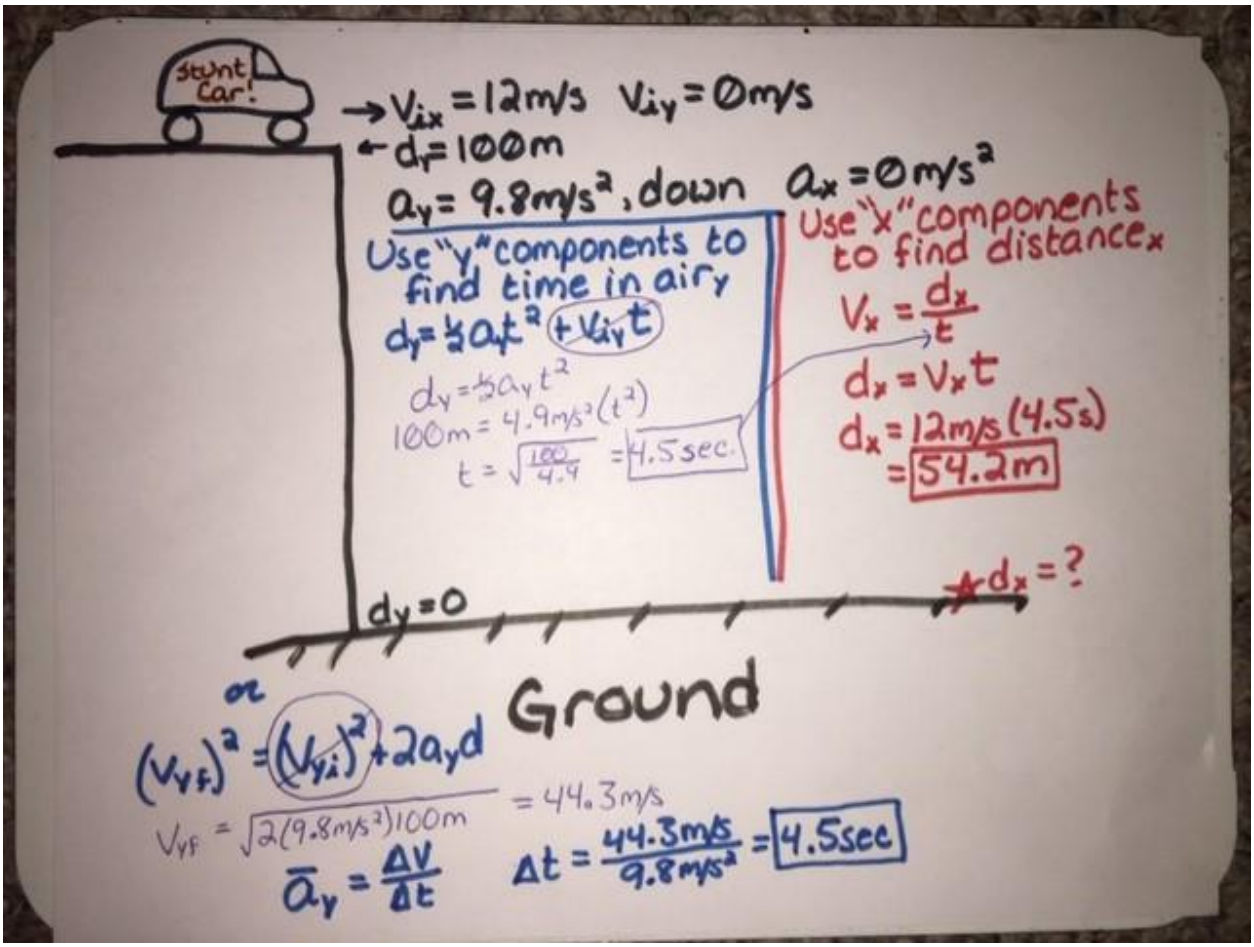
PHYZ Warm up: TURN OFF cell phone and put in the bin ☺ How is the Normal force different from the Weight? How is it different?	CHEM Warm up: 1.21.2020 Turn OFF your cell phone and put in bin ☺ Name three molecular formulas and write them.

Friday 2.14.20-

https://evansccca.weebly.com/

PHYZ Warm up: TURN OFF cell phone and put in the bin ☺ Solving an Inclined Plane Problem # 1 A box slides down an plane 8 meters long inclined at 30^0 with a coefficient of friction of 0.25. (a) what is the acceleration of the box? (b) what is its velocity at the bottom of the incline?  https://slideplayer.com/slide/8381203/	CHEM Warm up: 1.21.2020 Turn OFF your cell phone and put in bin ☺ Write the name of the following: 1) HCl 2) Na_2SO_4 3) CO 4) CCl_4 5) Ba_3PO_4

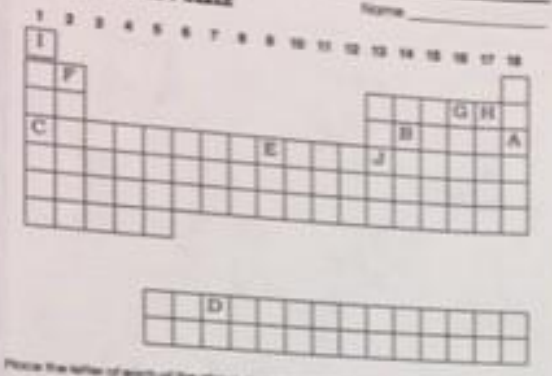

Hyp=
18m/s
42°
V_{iy} = Op
V_{ix} = adj
$a_y = -9.8 m/s^2$
$a_x = 0 m/s^2$
$\sin\theta = \frac{op}{hyp}$
$\sin 42° (hyp) = V_{iy}$
$V_{iy} = 12 m/s$
* find time to t_{top} ! $V_f = V_i + at$
$V_{f\,top} = V_{iy} + a_y t_{top}$
$-V_{iy} = a_y t_{top}$
$-12 m/s = -9.8 m/s^2 (t_{top})$
$t_{top} = 1.2s$
$\cos\theta = \frac{adj}{hyp}$
$\cos 42° = \frac{V_{ix}}{hyp}$
$V_{ix} = \cos 42° (18 m/s)$
$V_{ix} = 13.38 m/s$
$t_{total} = 2.4s$
* find range
$v = d/t$
$V_x = d_x / t_{total}$
$d_x = V_x t_{total}$
$= 13.38 m/s (2.4s)$
$d_x = 33m$
18m/s
$\theta = 42°$
Ground
Lands HERE


stunt car!
$\rightarrow V_{ix} = 12 m/s$ $V_{iy} = 0 m/s$
$\leftarrow d_x = 100m$
$a_y = 9.8 m/s^2$, down
$a_x = 0 m/s^2$
Use "y" components to find time in air
$d_y = \frac{1}{2} a_y t^2 + V_{iy} t$
$d_y = \frac{1}{2} a_y t^2$
$100m = 4.9 m/s^2 (t^2)$
$t = \sqrt{\frac{100}{4.9}} = 4.5 sec.$
Use "x" components to find distance
$V_x = \frac{d_x}{t}$
$d_x = V_x t$
$d_x = 12 m/s (4.5 s)$
$= 54.2m$
$d_x = ?$
$d_y = 0$
Ground
or
$(V_{yf})^2 = (V_{yi})^2 + 2 a_y d$
$V_{yf} = \sqrt{2(9.8 m/s^2) 100m} = 44.3 m/s$
$\bar{a}_y = \frac{\Delta V}{\Delta t}$
$\Delta t = \frac{44.3 m/s}{9.8 m/s^2} = 4.5 sec$

ANSWER KEY

PERIODIC TABLE PUZZLE

Name _____



Place the letter of each of the above elements next to its description below.

1. An alkali metal C
2. An alkali earth metal F
3. An inactive gas A
4. An active nonmetal H
5. A semi-metal B
6. An inner transition element D
7. Its most common oxidation state is -2 G
8. A metal with more than one oxidation state E
9. Metal with an oxidation number of +2 J
10. Has oxidation numbers of +1 and -1 I

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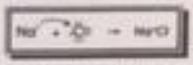
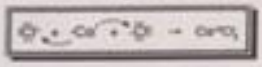
IONIC BONDING

Name _____

Ionic bonding occurs when a metal transfers one or more electrons to a nonmetal in an effort to attain a stable octet of electrons. For example, the transfer of an electron from sodium to chlorine can be depicted by a Lewis dot diagram.

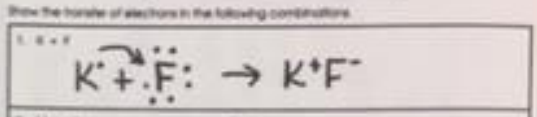


Calcium would need two chlorine atoms to get rid of its two valence electrons.

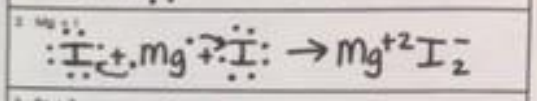


Show the transfer of electrons in the following combinations.

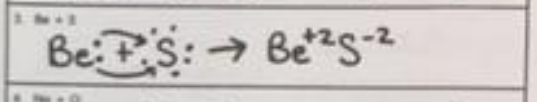
1. K + F



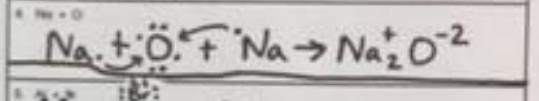
2. Mg + I



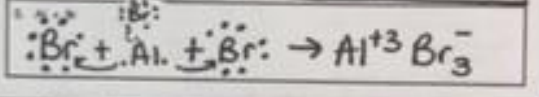
3. Be + S



4. Na + O



5. Al + Br



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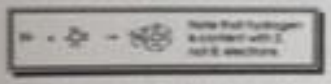
COVALENT BONDING

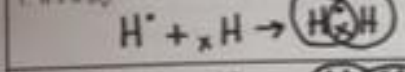
Name _____

Covalent bonding occurs when two or more nonmetals share electrons, attempting to attain a stable octet of electrons at least part of the time. For example:

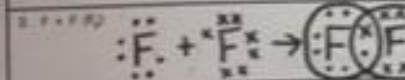


Show how covalent bonding occurs in each of the following pairs of atoms. Atoms may share one, two or three pairs of electrons.

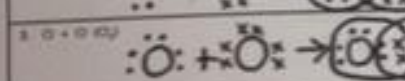
1. H + H (1)



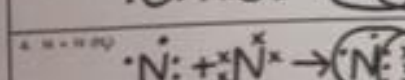
2. F + F (1)



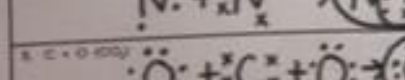
3. O + O (2)



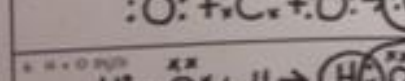
4. N + N (3)



5. C + O (CO)



6. H + O (H$_2$O)



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TYPES OF CHEMICAL BONDS

Name _____

Classify the following compounds as ionic (metal + nonmetal), covalent (nonmetal + nonmetal) or both (compound containing a polyatomic ion).

1. $CaCl_2$	ionic	11. MgO	ionic
2. CO_2	covalent	12. NH_4O	both
3. H_2O	covalent	13. HCl	covalent
4. $BaBr_2$	both	14. KI	ionic
5. K_2O	ionic	15. $NaOH$	both
6. NaF	ionic	16. NO_2	covalent
7. Na_2CO_3	both	17. $AlPO_4$	both
8. CH_4	covalent	18. $NaCl$	ionic
9. SO_2	covalent	19. P_2I_3	covalent
10. $LiBr$	ionic	20. N_2O_5	covalent

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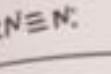
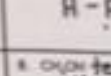
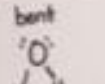
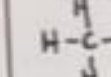
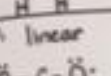
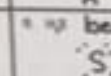
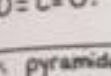
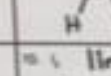
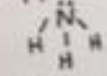
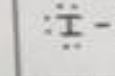
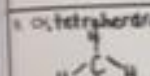
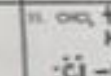
ANSWER KEY

SHAPES OF MOLECULES

Name _____

1. N_2 linear 	7. HF linear 
3. H_2S bent 	8. CH_3OH tetrahedral 
5. CO_2 linear 	9. H_2S bent 
6. NH_3 pyramidal 	10. I_2 linear 
9. CH_4 tetrahedral 	11. $CHCl_3$ tetrahedral 
4. SO_3 triangular planar 	12. O_2 linear 

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POLARITY OF MOLECULES

Name _____

Determine whether the following molecules are polar or nonpolar.

1. N_2 nonpolar	7. HF polar
3. H_2S polar	8. CH_3OH polar
5. CO_2 nonpolar	9. H_2S polar
6. NH_3 polar	10. I_2 nonpolar
9. CH_4 nonpolar	11. $CHCl_3$ polar
4. SO_3 nonpolar	12. O_2 nonpolar

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CHEMICAL BONDING CROSSWORD

Name _____

Across

1. Ammonia is polar because its shape is _____.
3. Word to describe a molecule with an unequal charge distribution
5. Type of bond formed between an active metal and a nonmetal
8. The simultaneous attraction of electrons for the nuclei of two or more atoms is a chemical _____
11. Type of covalent bond in which one atom donates both electrons
14. Bonding that is responsible for the relatively high boiling point of water
15. Type of covalent bond found in diatomic molecules
16. Carbon dioxide is a nonpolar because it is _____
17. Particles formed from covalent bonding

Down

1. Compounds with both ionic and covalent bonds contain the type of ion
2. Type of bond found in aluminum foil
4. The formula of ionic compounds must be expressed as _____ formula
5. The shape of a water molecule
7. Type of bond found between nonmetals
9. Type of covalent bonding that is found in the diamond
10. Type of covalent bond found between atoms of different electronegativity values
12. Force of attraction between nonpolar molecules
13. Element with the highest electronegativity value

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WRITING FORMULAS (CRISS-CROSS METHOD)

Name _____

Write the formulas of the compounds produced from the listed ions.

	Cl^-	CO_3^{-2}	OH^-	SO_4^{-2}	PO_4^{-3}	NO_3^-
Na^+	$NaCl$	Na_2CO_3	$NaOH$	Na_2SO_4	Na_3PO_4	$NaNO_3$
NH_4^+	NH_4Cl	$(NH_4)_2CO_3$	NH_4OH	$(NH_4)_2SO_4$	$(NH_4)_3PO_4$	$NaNO_3$
K^+	KCl	K_2CO_3	KOH	K_2SO_4	K_3PO_4	KNO_3
Ca^{+2}	$CaCl_2$	$CaCO_3$	$Ca(OH)_2$	$CaSO_4$	$Ca_3(PO_4)_2$	$Ca(NO_3)_2$
Mg^{+2}	$MgCl_2$	$MgCO_3$	$Mg(OH)_2$	$MgSO_4$	$Mg_3(PO_4)_2$	$Mg(NO_3)_2$
Zn^{+2}	$ZnCl_2$	$ZnCO_3$	$Zn(OH)_2$	$ZnSO_4$	$Zn_3(PO_4)_2$	$Zn(NO_3)_2$
Fe^{+2}	$FeCl_2$	$Fe_2(CO_3)_2$	$Fe(OH)_2$	$Fe_2(SO_4)_2$	$FePO_4$	$Fe(NO_3)_2$
Al^{+3}	$AlCl_3$	$Al_2(CO_3)_3$	$Al(OH)_3$	$Al_2(SO_4)_3$	$AlPO_4$	$Al(NO_3)_3$
Co^{+2}	$CoCl_2$	$CO_2(CO_3)_2$	$Co(OH)_2$	$Co_2(SO_4)_2$	$CoPO_4$	$Co(NO_3)_2$
Fe^{+3}	$FeCl_3$	$FeCO_3$	$Fe(OH)_3$	$FeSO_4$	$Fe_3(PO_4)_3$	$Fe(NO_3)_3$
H^+	HCl	H_2CO_3	HOH or H_2O	H_2SO_4	H_3PO_4	HNO_3

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4.1 Force and Motion

Vocabulary

- force (p. 88)
- free-body diagram (p. 89)
- net force (p. 92)
- Newton's second law (p. 93)
- Newton's first law (p. 94)
- inertia (p. 95)
- equilibrium (p. 95)

Key Concepts

- An object that experiences a push or a pull has a force exerted on it.
- Forces have both direction and magnitude.
- Forces may be divided into contact and field forces.
- In a free-body diagram, always draw the force vectors leading away from the object, even if the force is a push.
- The forces acting upon an object can be added using vector addition to find the net force.
- Newton's second law states that the acceleration of a system equals the net force acting on it, divided by its mass.

$$\boldsymbol{a} = \frac{\boldsymbol{F}_{\text{net}}}{m}$$

- Newton's first law states that an object that is at rest will remain at rest, and an object that is moving will continue to move in a straight line with constant speed, if and only if the net force acting on that object is zero.
- An object with no net force acting on it is in equilibrium.

4.2 Using Newton's Laws

Vocabulary

- apparent weight (p. 98)
- weightlessness (p. 98)
- drag force (p. 100)
- terminal velocity (p. 101)

Key Concepts

- The weight of an object depends upon the acceleration due to gravity and the mass of the object.
- An object's apparent weight is the force an object experiences as a result of the contact forces acting on it, giving the object an acceleration.
- An object with no apparent weight experiences weightlessness.
- The effect of drag on an object's motion is determined by the object's weight, size, and shape.
- If a falling object reaches a velocity such that the drag force is equal to the object's weight, it maintains that velocity, called the terminal velocity.

4.3 Interaction Forces

Vocabulary

- interaction pair (p. 102)
- Newton's third law (p. 102)
- tension (p. 105)
- normal force (p. 107)

Key Concepts

- All forces result from interactions between objects.
- Newton's third law states that the two forces that make up an interaction pair of forces are equal in magnitude, but opposite in direction and act on different objects.

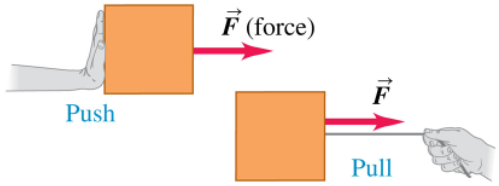
$$\boldsymbol{F}_{\text{A on B}} = -\boldsymbol{F}_{\text{B on A}}$$

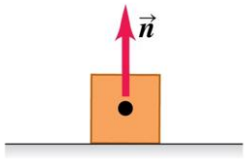
- In an interaction pair, $\boldsymbol{F}_{\text{A on B}}$ does not cause $\boldsymbol{F}_{\text{B on A}}$. The two forces either exist together or not at all.
- Tension is the specific name for the force exerted by a rope or string.
- The normal force is a support force resulting from the contact of two objects. It is always perpendicular to the plane of contact between the two objects.

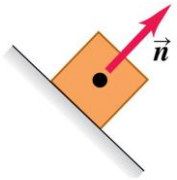
NOTESHEET FORCES:

What are some properties of a force?

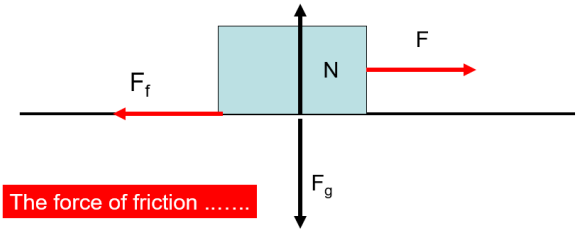
- A force is a push or a pull.
- A force is an interaction between two objects or between an object and its environment.
- A force is a vector quantity, with magnitude and direction.







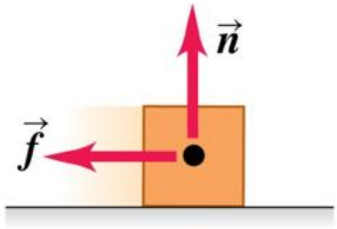
Friction: the most important everyday force, next to gravity!



The force of friction …….

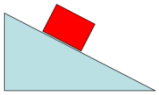
- Is the result of contact between two bodies.
- Always acts to oppose (slow down) the motion.
- Is proportional to the Normal force.
- Does not depend on area of contact. *Why not?*

$$F_f = \mu N$$

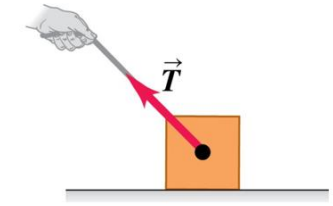


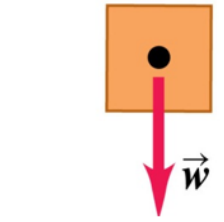
A problem of friction

A block of mass M = 1.5 kg sits on a hinged inclined plane. The coefficient of static friction is μ=0.15. At what angle of the inclined plane does the block begin to slide?



1. Draw the picture showing the forces on the block. What are they?
2. Draw the free-body diagram.
3. Write down Newton's law, F_{net} = M a
4. Think about the problem. When does the acceleration become greater than zero?





Two forces $\vec{F}_1$ and $\vec{F}_2$ acting on a body at point O have the same effect as a single force $\vec{R}$ equal to their vector sum.

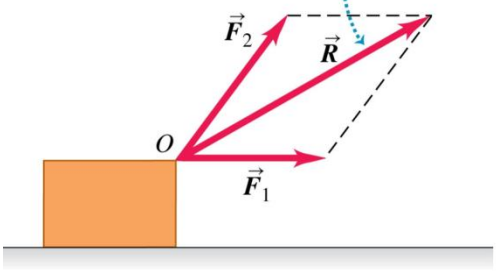


Table 4.1 Typical Force Magnitudes

Sun's gravitational force on the earth	3.5×10^{22} N
Thrust of a space shuttle during launch	3.1×10^{7} N
Weight of a large blue whale	1.9×10^{6} N
Maximum pulling force of a locomotive	8.9×10^{5} N
Weight of a 250-lb linebacker	1.1×10^{3} N
Weight of a medium apple	1 N
Weight of smallest insect eggs	2×10^{-6} N
Electric attraction between the proton and the electron in a hydrogen atom	8.2×10^{-8} N
Weight of a very small bacterium	1×10^{-18} N
Weight of a hydrogen atom	1.6×10^{-26} N

pg 231

CH 7 questions pg 232 # 67-89

Section 8.1 The Covalent Bond

MAIN Idea Atoms gain stability when they share electrons and form covalent bonds.

Vocabulary
- covalent bond (p. 241)
- endothermic reaction (p. 247)
- exothermic reaction (p. 247)
- Lewis structure (p. 242)
- molecule (p. 241)
- pi bond (p. 245)
- sigma bond (p. 244)

Key Concepts
- Covalent bonds form when atoms share one or more pairs of electrons.
- Sharing one pair, two pairs, and three pairs of electrons forms single, double, and triple covalent bonds, respectively.
- Orbitals overlap directly in sigma bonds. Parallel orbitals overlap in pi bonds. A single covalent bond is a sigma bond but multiple covalent bonds are made of both sigma and pi bonds.
- Bond length is measured nucleus-to-nucleus. Bond dissociation energy is needed to break a covalent bond.

Section 8.2 Naming Molecules

MAIN Idea Specific rules are used when naming binary molecular compounds, binary acids, and oxyacids.

Vocabulary
- oxyacid (p. 250)

Key Concepts
- Names of covalent molecular compounds include prefixes for the number of each atom present. The final letter of the prefix is dropped if the element name begins with a vowel.
- Molecules that produce H^+ in solution are acids. Binary acids contain hydrogen and one other element. Oxyacids contain hydrogen and an oxyanion.

Section 8.3 Molecular Structures

MAIN Idea Structural formulas show the relative positions of atoms within a molecule.

Vocabulary
- coordinate covalent bond (p. 259)
- resonance (p. 258)
- structural formula (p. 253)

Key Concepts
- Different models can be used to represent molecules.
- Resonance occurs when more than one valid Lewis structure exists for the same molecule.
- Exceptions to the octet rule occur in some molecules.

Section 8.4 Molecular Shapes

MAIN Idea The VSEPR model is used to determine molecular shape.

Vocabulary
- hybridization (p. 262)
- VSEPR model (p. 261)

Key Concepts
- VSEPR model theory states that electron pairs repel each other and determine both the shape of and bond angles in a molecule.
- Hybridization explains the observed shapes of molecules by the presence of equivalent hybrid orbitals.

Section 8.5 Electronegativity and Polarity

MAIN Idea A chemical bond's character is related to each atom's attraction for the electrons in the bond.

Vocabulary
- polar covalent bond (p. 266)

Key Concepts
- The electronegativity difference determines the character of a bond between atoms.
- Polar bonds occur when electrons are not shared equally forming a dipole.
- The spatial arrangement of polar bonds in a molecule determines the overall polarity of a molecule.
- Molecules attract each other by weak intermolecular forces. In a covalent network solid, each atom is covalently bonded to many other atoms.

CH 8 questions pg 274 # 86, 88-90, 92-96

pg 275 #100, 114-118,

pg 256 #132, 133 (17 q. total)

Daily Soft Start Talk Circles

- 10-15 minute conversation structured around CASEL's Five Core Competencies.
- Monday: Self-Awareness
- Tuesday: Self-Management
- Wednesday: Responsible Decision Making
- Thursday: Relationship Skills
- Friday: Social Awareness

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Self-Awareness

Purpose

*Awareness of body: Heart rate, breath, etc
*Awareness of thoughts and emotions
*Develop understanding of personal attributes
*Know your heart and mind: morals, values

Awareness of Body

Play the following body scan video for your students. This is a mindful practice that helps students develop an awareness of their body, breathing and heart rate.

Self-management

Purpose

*Identify and acknowledge emotions
*Use self-regulation practices: Breathing
*Use self-regulation practices: Compassionate self-talk

Identify and Acknowledge Emotions

What emotion/emotions do we see in this video? Lead discussion with students about emotions and how they are a normal part of life.

In this case the emotion of the character in the video is sadness. Talk with students about what they can do to manage the feeling of sadness. This starts with acknowledging the emotion then

Responsible Decision Making

Purpose

*Analyze situations
*Identify problems
*Determine solutions
*Practice patience

Analyze Situations/Identify Problems/Determine Solutions/Practice Patience

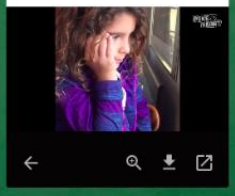
Watch the following video with your students. Upon completing the video lead a discussion with your class and ask the following questions:
*What is being asked of the young people in this video?
*What problem/problems are the young people encountering in this situation?
*What can the young people do to overcome these problems?

Relationship Skills

*Ask students how they think acting with compassion made the young girl feel.

*Ask students how they felt observing the young girls act of compassion.

*Compassion spreads positive feelings and emotions to. Help the students develop an understanding that they have the power to spread this same kind of positivity through their actions.



Social Awareness

Purpose

*Empathy
*Personal role in community building
*Common humanity

Empathy

Defined: The ability to understand and share feelings with another.

*Show the following video to your students. Ask them to identify the emotions being felt by the man in the video.

*Ask students to demonstrate understanding of the emotions the man in the video is feeling.

*Link to the lesson on compassion and ask students what they would do to make the man feel better if

Section 7.1 Ion Formation

MAIN Idea Ions are formed when atoms gain or lose valence electrons to achieve a stable octet electron configuration.

Vocabulary

- anion (p. 209)
- cation (p. 207)
- chemical bond (p. 206)

Key Concepts

- A chemical bond is the force that holds two atoms together.
- Some atoms form ions to gain stability. This stable configuration involves a complete outer energy level, usually consisting of eight valence electrons.
- Ions are formed by the loss or gain of valence electrons.
- The number of protons remains unchanged during ion formation.

Section 7.2 Ionic Bonds and Ionic Compounds

MAIN Idea Oppositely charged ions attract each other, forming electrically neutral ionic compounds.

Vocabulary

- crystal lattice (p. 214)
- electrolyte (p. 215)
- ionic bond (p. 210)
- ionic compound (p. 210)
- lattice energy (p. 216)

Key Concepts

- Ionic compounds contain ionic bonds formed by the attraction of oppositely charged ions.
- Ions in an ionic compound are arranged in a repeating pattern known as a crystal lattice.
- Ionic compound properties are related to ionic bond strength.
- Ionic compounds are electrolytes; they conduct an electric current in the liquid phase and in aqueous solution.
- Lattice energy is the energy needed to remove 1 mol of ions from its lattice.

Section 7.3 Names and Formulas for Ionic Compounds

MAIN Idea In written names and formulas for ionic compounds, the cation appears first, followed by the anion.

Vocabulary

- formula unit (p. 218)
- monatomic ion (p. 218)
- oxidation number (p. 219)
- oxyanion (p. 222)
- polyatomic ion (p. 221)

Key Concepts

- A formula unit gives the ratio of cations to anions in the ionic compound.
- A monatomic ion is formed from one atom. The charge of a monatomic ion is its oxidation number.
- Roman numerals indicate the oxidation number of cations having multiple possible oxidation states.
- Polyatomic ions consist of more than one atom and act as a single unit.
- To indicate more than one polyatomic ion in a chemical formula, place parentheses around the polyatomic ion and use a subscript.

Section 7.4 Metallic Bonds and the Properties of Metals

MAIN Idea Metals form crystal lattices and can be modeled as cations surrounded by a "sea" of freely moving valence electrons.

Vocabulary

- alloy (p. 227)
- delocalized electron (p. 225)
- electron sea model (p. 225)
- metallic bond (p. 225)

Key Concepts

- A metallic bond forms when metal cations attract freely moving, delocalized valence electrons.
- In the electron sea model, electrons move through the metallic crystal and are not held by any particular atom.
- The electron sea model explains the physical properties of metallic solids.
- Metal alloys are formed when a metal is mixed with one or more other elements.