# Daily Agenda

**Physical Science S1: Introduction to Chemistry and Waves**

## Unit 1A: What's It Made Of?

Competencies & Rubrics | Google Resource Folder | Unit 1B: What's An Atom Made Of? (Oct)
Course Website | Jump to Daily Agenda Unit 1B

| Course Date | Learning Activities |
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| **Begin Mini-Unit 1A: C3 Types of Substances - Initial Classifications** | |
| Monday, August 26, 2024 | **Today's Goals: WELCOME!**<br>Introductions and norms<br><br>**Welcome to Physical Science S1: Introduction to Chemistry and Waves!**<br>❏ **Index Card:**<br>● Name & Pronoun preferences** (Please recognize that it takes me a bit to learn names & pronouns. If names/pronouns used with home differ from those used at school, consider waiting to tell me preferred school-only information.)<br>● Seating preferences (location in room, people)<br>● Share one interesting note to introduce yourself.<br>● What should I know about you?<br>● What kind of learner are you?<br>● What are you planning after high school?<br>❏ **Folder Tab:** Write your preferred name, first and last, on a tab for your folder<br>❏ **Join** the Intro Chem & Waves google classroom<br>❏ **Bookmark** the Class Website - using the link in the classwork tab of google classroom OR the QR code at the front of the room.<br>❏ **View** this Daily Agenda, the Course Syllabus, and the Competencies & Rubrics<br>❏ **Norms & Expectations (Syllabus)**<br><br>❏ **Pre-Assess:** Zooming in on soda…<br><br>**Homework** -- Have a parent/guardian email me, using the contact information on the class website, to confirm that you have shown them the class website, resources, and **daily agenda**. |
| 8/27/24 | **Today's Goals:**<br>I can write a logical classification argument; introductions<br><br>☐ **Bell-Ringer:** People call Ms Armour a nerd, and she's good with that. What are some names / classifications that people call you - ones that you can proudly say "Yes I Am!"? Why are you fine with that classification?<br>☐ **Join** the Intro Chem & Waves google classroom<br>☐ **Bookmark** the Class Website - using the link in the classwork tab of google classroom OR the QR code at the front of the room.<br><br>☐ **New Information:** How to write a logical classification argument; EXAMPLE<br>☐ **Move into chosen partner pairings.** |

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| | ☐ **Pair-share:** explain your response to the bell-ringer - how did you classify yourself and why?<br><br>☐ **Visual Name-Tags** (Choice of Partners): Write your partner's name on the front side of the "teepee." On the back side, add diagrams/visuals to show me who your partner is. Tell me something unique / memorable about the person, beyond what's on their index card<br>☐ **Complete Visual Nametags** - add your chosen classification term to yours.<br><br>☐ **Whole Class Share-Out:** Definitions vs Evidence<br>☐ **Write and turn in:** Write a logical classification argument telling me how you classify yourself. (In Google Classroom if you have your chromebook)<br><br>☐ **Substances Brainstorm** -- What substances have you interacted with in the past 24 hours? Which are "natural" vs "human-made"? Now also consider these: Maple Syrup; Milk; Sugar; Rubber; Steel; Glass; Paper; Plastic How did you define each term / what evidence did you give?<br><br>Reminder: **Homework** -- Have a parent/guardian email me, using the contact information on the class website, to confirm that you have shown them the class website, resources, and daily agenda. |
| 8/28/24 | **Today's Goals:**<br>I can create a scientific diagram<br><br>**Bell-RInger:**Write a logical argument to classify one of these substances as natural or human-made: Maple syrup, milk, sugar, rubber, steel, glass, paper, plastic (Yes, it is OK to quickly google how it's made)<br><br>☐ **Tech Check -- can you go to YouTube and see videos?**<br>☐ **Any Self-Classification arguments to turn in?**<br>☐ **Pd 6 -** Create a Diagram to show a zoomed in view of seltzer water (carbonated water and flavoring)<br>☐ **Lesson:** Create a formal diagram to represent one activity you did over the summer.<br>☐ **Discussion**: What parts do all scientific diagrams have? (Title, horizontal labels and/or key) May include annotations.<br>☑ ~~**Diagram**: Create a formal diagram to show one of the bell-ringer substances~~<br><br>Reminder: **Homework** -- Have a parent/guardian email me, using the contact information on the class website, to confirm that you have shown them the class website, resources, and daily agenda. |
| 8/29/24 | **Today's Goals:**<br>I know what the words "phase," "atom," and "molecule" mean, and can diagram and model them.<br>(And teacher pre-assessment of content, ability to work with manipulatives)<br><br>**Bell-Ringer:** Create a scientific diagram to show 3 "atoms" of carbon vs 3 "molecules" of $CO_2$. |

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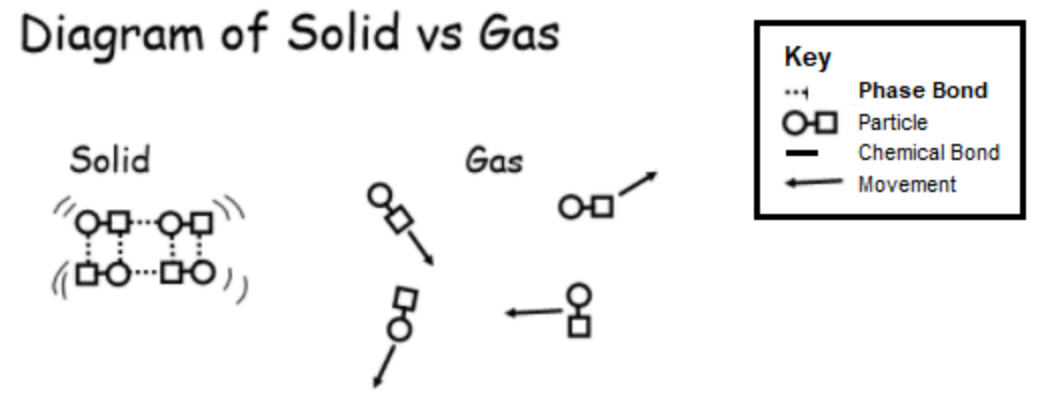
| |  **Discuss & diagram, note as needed, modeling with wooden/plastic atom balls:**<br>☐ Atom: smallest particle that we can recognize as a substance; atoms of elements<br>☐ Molecule: 2 or more atoms *chemically* bonded (connected)<br>☐ Phase (aka "state"): solid, liquid, gas, (plasma)<br>☐ **"Particle" can be any piece -- an atom, a molecule, or even just a "bit"<br><br>Are these particles atoms or molecules? How do you know?<br><br>What is the difference between a solid and a gas?<br>● Movement<br>● Phase bonds / expansion<br>How would you represent liquid $CO_2$? In model? In a diagram?<br><br>How would you represent the air in the room?<br><br>**Exit Ticket:** (Be sure your name is on this!) Diagram dry ice (solid $CO_2$), liquid water ($H_2O$), Gaseous Oxygen ($O_2$).<br>Aiming Higher? Use ONE key, which includes a symbol for a carbon atom, a hydrogen atom, and an oxygen atom. |
| | **Happy Labor Day Weekend** |
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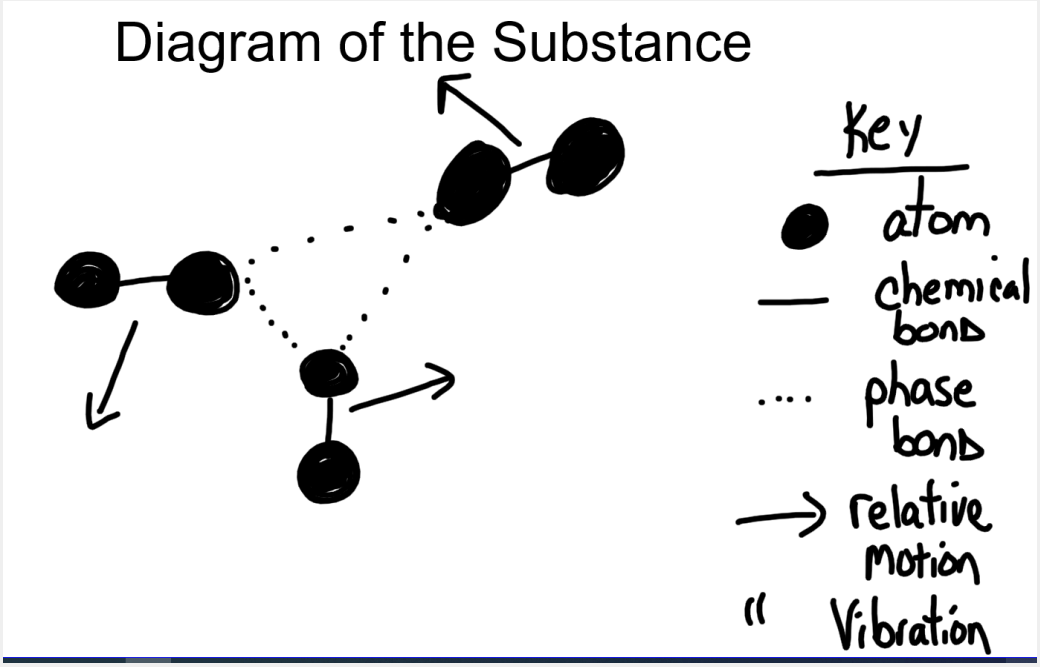
| Tuesday<br>Sept 3, 2024 | **Bell-Ringer: Write a logical argument to classify the substance in the diagram on the board as a solid, liquid, or gas.**<br><br><br><br>**Today's Goals:** I can identify several "properties."<br>I can identify materials as "pure substances" or "mixtures" based on properties.<br>I am beginning to know that mixtures can be physically separated, including by filtration, distillation, evaporation, chromatography<br><br>Learning Activities<br>• Chromatography of markers (&/or paint, sharpies, etc….) -- set aside to observe later… (Each student needs a strip of the filter paper, name at the very top, dot from a chosen marker about 1 cm up from the bottom. Put your strip into a cup or graduated cylinder with alcohol, so that the dot is NOT IN the alcohol, but is just above it, and no one else's strip touches yours. Tomorrow, we'll be examining results and drawing some conclusions…<br><br>• Bags A, B, C…. without opening the bags, but using any commonly available lab equipment, identify the iron filings, carbon, and mixture<br><br>• Reading to identify some "properties"<br>☐ **Review** the graphic organizer / purpose for reading (Notes)<br>☐ **Read** the 14-3 Text, taking notes on the graphic organizer as you read. *(This helps me understand how you process informational text, so please give it a try… we'll have different ways of getting the information / options to read with the teacher on future assignments.)*<br>*How do Crystals Form?* |

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| Wed Sept 4, 2024 | **Today's Goals:**<br>I can identify materials as "pure substances" or "mixtures" based on properties.<br><br>**Bell-Ringer**: Oh-No! The Zombie Apocalypse happened! (Or you're just out in the wilderness and need drinkable water…) How do we get some drinkable water from the river/ocean/puddle?<br><br>☐ Bring Back the Trades -- opportunity for select sophomores to attend the junior/senior trip.<br>☐ Completing discussion of chemical & physical properties from yesterday.<br>☐ Discussing Mixture vs Pure Substance.<br>  ☐ Pure substance - only one kind of atom or molecule, therefore only one set of properties<br>  ☐ Mixture - two or more different kinds of atoms or molecules physically jumbled together<br><br>☐ Get your chromatography strip from yesterday. What do you see/observe? Write a logical argument to classify your ink as a pure substance or a mixture, using your evidence.<br><br>☐ ~~Create a scientific diagram of the air in the room. Yes, you may want to quickly google something…~~<br><br>In case you missed class / need some extra support:<br>☐ Professor Dave on Phases, Basic Types of Substances (4:14) |
| Thurs 9/5 | **Today's Goals:**<br>I can identify materials as "pure substances" or "mixtures" based on properties.<br><br>**Bell-Ringer:** Create a scientific diagram of the air in the room. Yes, you may want to quickly google something…<br>Each table needs a plastic modeling kit, and a "bowlful" of wooden modeling balls, marbles, beads…<br><br>☐ Visualize & Define: pure substance vs mixture, Atom vs molecule; element vs compound,. (atom modeling balls, marbles, beads, LEGOs)<br>  ☐ Pure Substance - one kind of material, so one set of properties for all particles<br>  ☐ Mixture - two or more different materials, not chemically bonded, can be physically separated into substances with different properties<br>  ☐ Atom - smallest particle we recognize as a distinct substance<br>  ☐ Molecule - two or more atoms chemically bonded together<br>  ☐ Element - single kind of atom, found on the periodic table<br>  ☐ Compound - two or more different kinds of atoms, chemically bonded to make a new substance with different properties than the originally atoms<br>  ☐ At your table groups model (and create ONE key): pure oxygen ($O_2$), mixture of gaseous oxygen and carbon dioxide ($O_2$ & $CO_2$), aerosol of water vapor and two random other chemicals, mixture of Fe (iron) and C (carbon), rust ($Fe_2O_3$) |

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| Fri 9/6 | **YouTube is blocked for students due to some tech glitch. We need to scrap this lesson…**<br>~~**Today's Goals:**~~<br>~~I know that mixtures can be physically separated, including by filtration, distillation, evaporation, & chromatography~~<br><br>~~5 locations modeling & share out~~<br>~~Select ONE, go to the appropriate corner/center of the room, prepare to report out about it AND model it in 10 min. **Also, textbooks on tables as resources~~<br>☐ ~~Evaporation (and using boiling point property to define "syrup"): Boiling Sap~~<br>☐ ~~Filtering: Filtering Water for Zombie Apocalypse~~<br>☐ ~~Distilling: SIMPLE distilling~~<br>☐ ~~CA Desalination Article: News Article & How It Works & another *Desalinization Article*~~<br>☐ ~~Chromatography applications and how to video (stop 6 min in…)~~<br><br>~~Share Out~~<br><br>~~SET UP for Types of Substances "Conferences" - who is going to which conference?~~ |
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| Monday Sept 9, 2024 | **Today's Goal:** I can describe, define, and give examples of ONE of the following types of substances (Elements/Compounds, Heterogeneous Mixtures, Suspensions, or Solutions)<br><br>**Bell-Ringer:** We'll be going to expert conferences right away -- who is your company (table) sending to each expert conference?<br><br>**Types of Substances Activity:** Day 1 (Expert Conferences)<br>• Send one person from your group to each of the four "expert conferences." There is one expert conference on each of the following: Compounds, Heterogeneous Mixtures, Suspensions, or Solutions.<br>• In your expert conference, work together to use the reading, support videos, and any other research to reach a consensus understanding of your type of substance. You should be able to<br>☐ define it in your own words<br>☐ provide 3 examples<br>☐ diagram & model the substance<br>☐ answer your expert group's questions<br>☐ Write a logical argument to classify one example<br>Resources:<br>❏ Reference - Mixtures.pdf (If you struggle with that text, try this version - a "colloid" and a "suspension" are pretty much the same thing.)<br>❏ **NOTE**: "Alloy" isn't in the main text -- An alloy is a special kind of solution. It is a solution that contains one or more metals.<br><br>If you need review / another version:<br>❏ Atoms-Elements-Compounds-Mixtures<br>❏ In case you missed class / need some extra support:<br>❏ Professor Dave on Phases, Basic Types of Substances<br>❏ COVID Video Intro to the project |

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| Tuesday Sept 10, 2024 | **Today's Goal:** I am beginning to be able to describe, define, and give examples of types of substances<br><br>**Types of Substances Activity: Day 2** (Sharing back with your group)<br><br>☐ Meet in your company groups (table). PLAN - what is the best way to share out the information, so that everyone will UNDERSTAND the information on each type of substance?<br>☐ Each of you is now an "expert" on one type of substance. Share out with the others in your group about your understanding of your type of substance. (~5 min per person)<br>☐ Working together, define, describe, and give some examples of each type of substance: Matter, Pure Substance, Element, Compound, Mixture, Heterogeneous Mixture, Homogeneous Mixture, Solution, Suspension, and *Alloy. At the end, everyone should have their **own** page of notes - preferably as a graphic organizer / web. Leave some room on your notes page for some diagrams and extra examples of each!<br>☐ Play at least one round of Quizlet practice… (Match is more fun than Flash Cards…different cards in each round)<br>☐ Each company needs to **pick up their bucket of materials**<br>☐ Begin classifying the materials…<br><br>**If you really don't like surprise twists, and you're showing enough initiative to read this daily agenda, you can scroll down to "see the future." Just like in real life, we'll be throwing some monkey wrenches into the works! |
| 9/11/24 | **Bell-RInger: …Jump right into your Classifying Materials Activity….**<br><br>Types of Substances Activity: Day 3… more stuff in the buckets… |
| 9/12/24 | **Today's Goal:** I can classify, define, diagram and give examples of types of substances<br><br>Types of Substances Day 4<br><br>Your company's client added a request -- they want to make sure that the product is really getting into all the phases… in addition to making sure you show some examples in each phase (solid, liquid, gas), they want a couple clarifications:<br>● What is the difference between an "amorphous solid" and a "crystalline solid"?<br>● What does it mean to "dissolve"?<br>Assign someone (or two) to find out & share back…<br><br>**Beginning to work on a large page now but STICKY NOTES (changes coming)…**<br>new substances in the buckets (be extra careful, lots of liquids) |

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| 9/13 | **FORMATIVE:** Types of Substances (multiple choice / matching types with definitions, diagrams, models…) MUST BE TAKEN ON CHROMEBOOKS! (Logical Argument is written on paper)<br><br>You can only take it once; be sure you are logged into Chrome with your school acct. Please don't start it before your class period.<br><br>Think you know what's in cinnamon? Check this recent news article…<br>When you finish, continue working on your company poster. Remember that you need definition & diagram for each type of substance, and a logical argument and MANY examples for each type that can be a classification. |
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| Monday 9/16 | **Today's Goal:** I can classify, define, diagram and give examples of types of substances<br><br>**Agenda Books -- note project due date (pencil) and Next Formative**<br><br>**Discussion of Formative 1**<br>**Making Salt Long Form (can stop at 2:11) silly one Rxn**<br><br>**New Information! (This always happens - you think you've got it all, and something changes! That's progress!)**<br>The company CEO heard about these things called "Polymers" -- what are they? Where do they go on the classification chart? What are some examples? How are they different from "monomers"? What are some examples? How would you diagram them?<br>(A possible resource -- We'll revisit this once we learn more about chemical bonds, so don't worry if some of this is a little over your head…)<br><br>**Project Work Time -- You should have definitions and diagrams for each term by the end of class today, with a common key** |

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| Tuesday 9/17 | **Today's Goal:** I can classify, define, diagram, give examples of types of substances<br><br>**Bell-Ringer:**<br>**Mini-Conference Jigsaws - "attend" one and bring the information back to your company**<br>● Metallic Glass! Check out this article What kind of substance is glass?<br>● Recycling Aluminum saves 95% of the energy vs making it from aluminum ore!<br>● Membranes: Read this article (It's OK if the vocabulary gets challenging for you near the end…) Answer: What is a "membrane"? Can a membrane separate a compound into elements?<br><br>**Another Twist!** What is a "Composite Material"? Assign a member of your company to research it and share back… how does this change your poster layout?<br><br>Two more substances for the buckets…<br><br>**Project work time - You should have lists of examples for each classification term by the end of class today (Add some examples that weren't in the buckets)** |
| Wed 9/18 | **Today's Goal:** I can classify, define, diagram and give examples of types of substances<br><br>**Bell-Ringer (complete individually):** I pour some yellow-ish liquid through a filter paper. There are solid yellow pieces left on the filter paper. There is a nearly clear liquid in the cup underneath.<br>A) Write a logical argument to classify the initial yellow-ish liquid.<br>B) Draw a scientific diagram to represent the initial yellow-ish liquid.<br><br>Is Hard Water Good for You?<br>**Do you need a copy of class notes on types of substances?**<br><br>**Project work time** |
| Thur 9/19 | **Today's Goal:** I can classify, define, diagram and give examples of types of substances<br><br>**Bell-Ringer:** Create a diagram to compare solid KCl vs gaseous $H_2O$ vs a liquid SOLUTION of KCl in $H_2O$, using the same key for all three substances. Could it be possible to physically separate the solution? How?<br><br>**SciShow (whole class): How recycling works** (~8:30 min) -- fast talking, ties a bunch of stuff -- polymers etc…<br>Optional Processing EWaste (biologicals)<br><br>Do you need a copy of class notes on types of substances?<br><br>**Project work time - Adding a logical argument for each classification term** |

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| Friday 9/20 | **Today's Goal:** I can classify, define, diagram and give examples of types of substances<br><br>**Bell-Ringer:** Diagram ocean water. Make a logical argument to classify ocean water. Then make a prediction - can ocean water be separated with a piece of **filter** paper? Why/why not? Can ocean water be **evaporated** to produce pure NaCl? Why/Why not? Can Na and Cl be separated with **filter** paper? Why/Why not?<br><br>Optional: Quizlet practice… (Match is more fun than Flash Cards…different cards in each round)<br><br>Do you need a copy of class notes on types of substances?<br><br>**Final class day of project work time (reminder to add examples that weren't in your buckets… Did you address all of the twists?)** |
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| Monday 9/23 | **Your Company's Final Product is DUE when you walk into class today!**<br><br>**Gallery Walk**<br>Each INDIVIDUAL: Post one note per poster of POSITIVE / WARM feedback; one note per poster of Suggestion / Cool feedback. Be specific, and include your name. Make your notes for voting as you go….<br><br>**4 Corner Voting: Best Presentation; Most Unique Correct Example; Best Definitions; Best Diagrams; Best Logical Arguments -- argue your position, one opportunity for folks to change minds, then count.**<br><br>**As time allows:** Vinegar into Baking Soda with volunteer "taster" before and after. Did we just "mix" the two, or did a chemical reaction happen that completely changed what we have in the container? Diagram & Logical Argument for the resulting substance.<br><br> |
| Tuesday 9/24 | **Individual Formative/Summative** (Stays in gradebook till NOVEMBER -- when we conclude Unit 1C, there is a BIG summative on all of C3. That mark *can* replace this one if you're really struggling now. There will NOT BE RETAKES of this "half" summative; this assessment only includes the first two checkboxes of C3, not all three.) |
| | **Moving into Unit 1B: What's an Atom Made Of?** |
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