Note: Text fields and tables can be manipulated as needed to fit responses.

Task 1 - Contextual Information and Learning Environment Factors

A. General Contextual Information for Community, District, and School in Narrative Form (limited to 1 page)

My community is in rural North Central Kansas. We are one of two schools in our county. The county population is 2,962 and the town population that the school resides in is 1,202. The average income for our area is $46,196. Our persons in proverty rate is 12.7% which is an increase from the last census. The main industry in our community is farming. The biggest employer for our area is the County itself. Our county has two school districts but has two main towns that feed the school districts but five smaller towns that also feed into the school systems. Our school district has about 329 students and 164 are in the elementary school. Our school is a Title 1 school and we have about fifty-eight percent of our students are free and reduced lunches. Fourteen percent of our students have learning disabilities in our school district. Our school district has a Preschool building, kindergarten building, elementary school for first through fifth grade. Our final building is a sixth through twelfth-grade building. Our school just moved sixth grade to the junior/senior high building so all our grade school classes, kindergarten through fifth could have two teachers per grade to keep classes small. We average about twelve students per class with about twenty- four students per grade. The grade school is located in the middle of the town and the high school is located on the out skirts of town on on main highway. Our school has a bus system to bus students from surrounding towns and farms. They also have to bus students form the middle of town out to the high school.

B. Characteristics of Class (Use the following two tables to record information for the Whole Class)

Table 1.1 Class Contextual Information (limited to 1 page)

Age range of students ____10-11_____	Number of male students _____4_____
Total number of students _____14_____	Number of female students _____10_____
	Number of non-binary students _____0_____
Percentage of economically disadvantaged students (i.e. students eligible for reduced lunch) _____64%____ [**if reduced lunch information not available for class, provide school percentages]**	
Number of students according to Race/Ethnicity (from U.S. Census definitions)	_____ American Indian/Alaskan Native _____ Asian/Asian American _____ Black/African American ___2___ Hispanic/Latinx _____ Native Hawaiian/Pacific Islander ___12___ White _____ Multiracial _____ Other (specify)

Number of students according to Language proficiency	___0___ English Language Learners	
Number of students with identified special needs (sources and definitions of terms from IDEA sec. 300.8)	_____Autism _____Deaf-blindness _____Deafness _____Emotional disturbance _____Hearing impairment _____Intellectual disability _____Multiple disabilities _____ Orthopedic impairment	___2___ Other health impairment _____ Pervasive Developmental Delay ___2___ Specific learning disability ____1__ Speech or language impairment _____ Traumatic brain injury _____ Visual impairment ___1___ 504 plan

Must provide appropriate charts/graphs to display demographic data for district, school, and classroom in Appendix A.

Table 1.2 Student Characteristics for Whole Class (limited to 1 page for the entire section)
Write about student characteristics that impact teaching in the classroom. Include curricular and extra-curricular interests, academic performance, class behavior, family/community background.

Student Characteristics	General Descriptions	Implication for Teaching
Curricular and extra-curricular interests Impacts on teaching in the classroom	*4 boys and 10 girls *willing to learn. *discuss topics and *research information *enjoys technology. *below standard science. *hands-on learning *play recreation sports *exposure to real world experiences	Students like to talk even when not instructed. I will have to spend extra time explaining topics the students are expected to already know. I need to make sure I have manipulatives and hands on experiences for the students. I can provide students with online videos and expose them to the real-world experiences.
Previously demonstrated academic performance: % Above standard ___15%__ % Meets standard ___50%__ % Below standard ___35%__		

Interpersonal interactions/behavior in class	Students like to talk to each other. Students are supportive of each other. Most students have a growth mindset. I have two students that have social interaction issues in the classroom.	I have to remind students several times of their voice level. Remind students of what is expect and approperete behavior for the activity.
Family and/or community background	Over half of my class has parents that are still together. Most students have parent support. A fourth of the students are coming from farms. Some of my students have parents that do not have any education past high school	Limit homework because parents will not be able to help the students. Send emails to parents about what students need to have done for projects so parents can help when they do have time.

C. Sub- Group/Focus Student Information

Table 1.3 Subgroup/Focus Student Characteristics

	Describe this subgroup/student and a rationale for why you selected them.	**What are the instructional implications?**
SUBGROUP or FOCUS STUDENT	The subgroup I have picked are three of my special education students and one at -risk student. Two of the students are very low in several subjects and are not at fifth-grade instructional reading. One of my special education students also has struggles to write for long periods of time. Another student has some social issues and has a hard time staying on task. The fourth student really struggles in math and is very quiet and does not engage in group discussions. All four of these students are willing to work hard and sometimes will not even tell you that they are struggling with an issue. I need to make sure they are on task with the class.	When I have reading material make sure it is at their instructional level or have someone read it to them. Make sure I am checking in with the students several times that they are on task and understanding the task. I also need to make sure I am not only calling on the students that have their hand raised to engage in the discussion, but to make sure my subgroup is also engaged by asking their thoughts. I would like to pair up with higher students the lower students, so I can challenge the higher student to help explain and ask the right questions so subgroup students can learn when I can't always be there. I also need to make sure I pair my off- task student with a very organized and structured group so this student can stay on task. When we lots or writing to have some of the writing material typed up and printed off so the student can just tape or glue the material in instead of writing.

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Task 2 - Instructional Design

A. Description of Learning Objectives and Rationale for Selection (Minimum 2 learning objectives, maximum 4)

Students will explain an atom is very small and cannot be seen and label the parts by end of lesson 4 by explaining to me how they know an atom is so small. Students need to understand everything is made up of atoms, however, it is very hard to understand since we cannot see atoms. Students will explore how small an atom really is and why they cannot see an atom. The students also need to understand all the parts that make this very small atom. Students will be able to graph a temperature change when mixing a substance and show the weight did not change by using water and Alka-Seltzer and explain to me the change in temperature. Students will understand when a chemical reaction occurs that the temperature changes. The students will be able to see this change when they see their data and then put in on a line graph to see the change. They also need to explain to me what happened to the temperature and why it changed. Students will be able to demonstrate they can identify materials based on their physical properties by naming at least three properties that make up that material. Students will be able to explore with different materials and see why you need to use more than just one physical property to describe a material so because you can have many different materials fit the same single physical property. The students will be able to realize the more physical properties they the easier it is to identify the material. Students will be able to find the density and volume of an object by looking at a picture with dimensions or measurements stated 90% times by end of the unit. Students need to understand how to find the volume of a given object if it is not a rectangular prism. The students also need to know how to find the volume of a cube or regular prism when given the dimensions. This is also a math standard that we will cover in math so the students will have a good understanding of this concept when we get to this unit in math also.

B. Identify Learning Objectives: Focus should be on student performance – not activities.
What will students know or be able to do?

Obj. No.	Learning Objectives	State Standard/Benchmark Met by Learning Objective
1	Students will demonstrate an atom is very small and cannot be seen by end of lesson 2 by explaining to me how they know an atom is so small by drawing a picture or writing a small essay with 90% accuracy.	5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen
2	Students will be able to graph a temperature change when mixing a substance and show the weight did not change by using water and Alka-Seltzer and explain to me the change in temperature writing a short essay with a 90% accuracy.	5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.

3	Students will be able to analyze materials and list physical properties by naming at least three properties that make up that material 90% from task cards around the room.	5-PS1-3. Make observations and measurements to identify materials based on their properties.
4	Students will be able to find the density and volume of an object by looking at a picture with dimensions or measurements stated 90% times by end of the unit.	5.MD.5b. Apply the formulas $V = l \cdot w \cdot$H $V = BB \cdot h$ (B represents the area of the base) for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems

C. Narrative: How do the unit objectives address these standards? (**limited to 1 page)**

We start by learning about what matter is and that is everything including air. Then we start into learning that matter is made of atoms. The students have several experiments, demonstrations and watch some videos to understand that an atom is very small, and you cannot see it. Next, we going to the parts of an atom and what an atom is made up of. The students get to make their own atom structure. Then finally we define the terms of an atom. Then we branch off into understanding that matter is not created or destroyed, and the student and I will do several experiments and demonstrations of this. They will also understand that in a chemical reaction that the atoms are just rearranged not destroyed. They will have an opportunity to graph their experiment findings. The students will complete an experiment that shows temperature change and they will graph it in their science notebook and on the computer. Student will also explain by typing why the temperature changed. Next students will explore the properties of matter. They will make a graphic organizer and look at several materials and explain the properties. We will explore volume and density which also connect to one of our math standards. The students will learn the formula for both and use the formula to find the volume and density of objects. The students will also learn how to find the volume of materials that are not rectangular prism or cubes by using water displacement. The students will finally learn at what point does an item sink or float.

D. Table 2.1 – Instructional Design: Overview of Unit Plan minimum 4 lessons, maximum 10.

Lesson	Date	Learning Objective (s)	Instructional Activities/Strategies	Describe Specific Adaptations/Differentiation/Universal Design for Learning (UDL)
1	9/8/20	Learning Objective 1	Students will try to blow a tissue ball through a bottle. Students will start a PowerPoint over Matter defining mass and atoms	
2	9/9/20	Learning objective 1	Students will try to blow up a balloon in a bottle. Students will cut paper as small as possible and still see that an atom is still smaller than that	

3	9/15/20	Learning objective 1	Students will organize a deck of cards in columns and rows. Then the students will discuss how the Parodic Table is organized. Students will build atomic structures by picking out an element from the periodic table	My subgroup students, I worked with them to understand what a good element for them would be to construct. I may need to explain to them again the different parts of the atom to help them figure out their atomic structure Students will have the freedom of materials to build their atomic structure. I will encourage the high students to make more complex structures.
4	9/16/20	Learning objective 1	Students will make a graphic organizer of the vocabulary words of matter. Once the students are finished, the students will do a "Hexagonal Thinking" task of how the words are connected	I will have the definitions printed out for the one student in my subgroup that has issues with writing for long periods of time. Students will have the freedom to make the graphic organizer their own by drawing pictures that helps them remember the terms. Students will explain their hexagonal thinking of how they connected words with other students.
5	9/17/20	Learning objective 2	We will several experiments for the students to see that matter cannot be created or destroyed. We will use a microwave popcorn, and students will also get to see a candle burn all the way down to see that candle was not destroyed but just changed states. Students will do can experiment with water and Alka-Seltzer in an open Ziplock back and a closed Ziplock back to understand open and closed systems.	I will group my students so the high students can help the lower students be successful with the experiment. I will also group my students so on task students can help the non- on task students stay focused on our experiment Students will write or draw the experiments and findings in their science journals.
6	9/21/20	Learning objective 2	I will do a class demonstration of making elephant toothpaste, a chemical reaction. We will use the slide show to see the chemistry behind the experiment. We will also some YouTube experiments that would be too dangerous for us to do in our classroom to show the rearranging of atoms.	
7	9/23/20	Learning objective 2	Students will use Alka-Seltzer and water to measure the temperature during the experiment.	My subgroup I will give them the slides printed off for the quiz so they can look back the questions or go at their own speed if they need more time. My subgroup my use their

			Students will take a quiz of Part A of Matter that is fun and engaging through a PowerPoint.	notebook if they need to find the answer. If a student would rather have paper slides they may. I will go through the slides on the projector this time so the students can see how the "review game" works. We will take our time, so everyone has a chance to answer the questions. Students will graph the data in their science notebook, and they will also put the data into the computer and have the computer graph the data and explain to me the temperature change and submit it through Google Classroom.
8	9/28/20	Learning objective 3	The students will have an introduction activity by using prior knowledge and their senses to guess items in brown bags. Students will use the Matter PowerPoint and their journal to make a graphic organizer of all the different physical properties of matter.	I will have a printed graphic organizer and words printed off for my subgroup, so they do not have ton concrete on writing all the words.
9	9/29/20	Learning objective 3 and 4	Students will learn the different ways to fine volume. They will use different objects in water in a graduated cylinder. They will also be giving a measurement of to a rectangular prism to find the volume	I will allow my subgroup to use a calculator when finding the volume of the rectangular prisms.
10	10/1/20	Learning Objective 4	Students will learn how to find the density of an object. They will use the information from their water activities to find the density of their objects. Students also work with a partner to find density and volume objects from the PowerPoint slide. Students will have a review quiz from a PowerPoint of volume, density, and properties of matter.	My subgroup will be able to use calculators to help with multiplying numbers I can see if they understand how to use the formula. I will also make sure my students are paired with a partner that will help explain to them why they are doing wrong and not just give the student the answers. If a student does not want to take the quiz in a fun game form, then they can have the questions on paper. This time the students will take the quiz on their computer with google slides and can move at their own pace. I will have a copy of the questions for my subgroup so they can go back to the questions when they need or if they have

				trouble reading from the screen. My subgroup can also use their science notebook to help find the answers.

E. Table 2.2: Description of Pre-assessment, Formative Assessments, and Summative (Post) Assessment (limited to 2 pages) (minimum 2 formative assessments)

	Describe the assessment to be used	**Explain rationale for choosing this assessment**	**Which objectives does this assessment address?**	**Identify how the assessment will be scored and/or the criteria to be used for evaluation. What accommodations or modifications will you make for your focus student or sub-group?**
Pre-Assessment	Multichoice and matching vocabulary test	It is the same as the post-test and it will easy for me to see the areas we need to work most on. Also, it will show me the most gains per area with the same questions.	This addresses all the objectives.	I will score a point for each question. This will just be used for my information the students will not get a grade for this assessment. I will use the data to see if the students have any background knowledge of matter. If the students already have some knowledge we can extend on those areas. I will use the information to see what extra materials I may need to supply for my subgroup.
Formative Assessment	PowerPoint Review Quiz Part A	I picked this type of assessment to add some fun to test taking besides the boring paper pencil.	This addresses objectives 1 and 2	The students will have a paper that has a grid on it with numbers. The student will write an answer in the box. The questions are multi-choice, true/false, and fill in the blank. This test the questions will be given to the whole group so they can understand how the game works. The questions are worth 2 points each. This will help me understand if the students understand the material on their own. This will also let me know if I need to review any topic areas with the class. My subgroup I will allow them to use their notebooks and have a copy of the slides.
Formative Assessment	PowerPoint Review Quiz for Part B	I picked this type of assessment to add some fun to test taking besides the boring paper pencil	objectives 3 and 4 but does have a question from objectives 1 and 2 to see if they still	The students will have a paper that has a grid on it with numbers. The student will write an answer in the box. The questions are multi-choice, true/false, and fill in the blank. This time the students will do the quiz game on their own on their computer unless they would prefer to have a copy of the slides. The questions are worth 2 points each. This will help me understand if the students understand the material on their own. It will also let me know if I

			remember information.	need to review any topic areas. My subgroup I will allow them to use their notebooks and have a copy of the slides.
Summative (Post) Assessment	Same as Pre-test Multichoice and matching vocabulary test	The multi-choice is how the Kansas State Assessment is tested. Less writing. Matching is good to see if the students really understand the definitions or if they are just getting lucky out of 1 in 4th chance.	This addresses all the objectives.	I will score the test one point each. This will let me know if the students understand Matter. This is a big part of the Kansas State Assessment test so this will also allow me to know what areas we will need to review before we take the test this spring.

F. Additional Details in Instructional Design (limited 1 page)

How do the instructional strategies/activities address the learning objectives for this unit?	The students were able to explore the materials with experiments and small activities to make a lasting image and connection items that can seem very abstract. When materials are not safe for the students, I was able to do a class demonstration that still held the students' interest on the topic, and I included them in the different steps as much as possible.
How will critical thinking and problem solving strategies be implemented in the unit? Give specific examples of use.	While working through the PowerPoint which I use for our main source of the curriculum to help guide us through our lessons I have the students engage in class discussions and give them participation points based on a rubric to keep the students involved in our class. I ask questions that simple answer and I also ask the questions that might have more than one answer the students talk about why they think their answer is right. The making an atom structure from an element the students had to think about how they were going to use the materials to make their structure 3-D and still include all the parts.
How does the unit demonstrate integration of knowledge/skills across and within content fields?	Math-Volume, density, and making graphs ELA- class discussion and collaboration, building vocabulary with Phoneme and word decoding

Explain the literacy/reading strategies that will be used throughout the unit. Give specific examples. (Remember that using text is not a reading strategy)	Using Phoneme and word decoding for vocabulary words Class discussion and collaboration, Student will work on building the discussion beyond one person answer the question, Report to the class what they have constructed or how they found in an experiment and explaining their thinking on their hexagonal thinking, Typing their explanation of the change of temperature in the experiment.
How will technology be integrated within the unit? Explain candidate use and student use.	Teacher: Computer for PowerPoints- teaching the material, Elmo for papers and charts- Showing items that I do not have in the PointPower so the students can see it better, Clicker to walk around the classroom Students: Google Classroom- for Quiz, Google Docs for making graphs and explain their finds, Elmo for displaying atom structures and hexagonal thinking cards

Task 3 - Teaching and Learning

A. Narrative: Daily Teaching Reflections (limited to 2 pages total)

Day 1: The engage piece I had planned for the students was with "Generation Genus" however there were technology problems with the computer. We filled out KWL chart together. The student did not know anything about matter yet that they know of. However, I know they know somethings about solid, liquid, gases. So we went ahead and started into the PowerPoint slides. The students discussed matter and learned matter is anything that has mass and takes up space. They also discovered that air takes up space in a bottle and it is not empty along with air has weight and is made up of matter by doing a demonstration with a ballon. The students had lots of good discussions about matter.
Day 2: The students really enjoyed today's experiment with using a ballon in a pop bottle. They really enoyed exploring different options to see if they could get the balloon to blow up in the bottle. Of course, when we add the water they really enjoyed this. However, this did not go quite as planned. It would be best if we had a sink to supply the water for the ballon instead of a water bottle because it is hard to get the balloon to fill up with water and it does not squirt up as much. The students were in awe of how small an atom was. They really enjoyed cutting the paper to get see how small an atom was.
Day 3: The students really enjoyed making the atomic structures. However, they had to go back and make them better several times. The students really struggled to understand the number of electrons and protons were the same number. We discussed several of the students' models and by the end of the class, they were starting to understand.
Day 4: The students were able to help define the vocabulary words since we have been working with the words for several days. The students were able to make some great pictures of what the words met to them also. I really enjoyed the hexagonal thinking activity so I could see if the students were understanding matter and the vocabulary words that go along with this unit. It also gave the students some good discussion where they thought certain words should go when there was no direct connecting word. Eighty percent of my class was able to label the parts of the atom. 100% of my students were able to explain to me in writing or a drawing that the atom so small that you can not see it.
Day 5 The students are understanding that energy can not be created or destroyed. The microwave popcorn activity they really enjoyed and surprised some of them that the bag weighed about the same. The students understood that even though the candle melted that matter was still

there in form of a liquid and a gas. However, it did lose a little weight because of the steam coming out. We did have a good discussion about Atoms billions of years ago being us now. Some students struggled with this thought because of religion however, the class was very respectful of everyone's opinion. Next time I do this lesson I will be more prepared for this lesson, and explain we need to think about the science side of this topic. The students enjoyed seeing the closed open system of the Alka-Seltzer. Several did not think the close system would weigh any different, and they were surprised to see the results. The students were able to label open and closed systems.
Day 6 The students really enjoyed see chemical reactions from youtube videos and making our elephant toothpaste. This has several of the student wanting to know if we could make the toothpaste foam up quicker with hotter water or colder water. So we tried it again with warmer water later on in the day and did not work as well. The students are understanding that matter is not created or destroyed but just the rearranging of atoms in a chemical reaction. We also touched on physical change with water and how water can go from a solid, to a liquid to a gas but does not change its atoms the just move faster or slower.
Day 7: The student really enjoyed getting to do an experiment today and interact with students again. The students were surprised to see the temperature go down when the Alka-Seltzer was added. The students were able to graph the data on a line graph. Some students have not had much experience with line graphs. We had to talk about using the lines and not spaces like they had in past years for bar graphs. We will need to continue to working making line graphs in future science experiments.
Day 8: The students used their five senses to try to figure out what is in a brown sack. The students did very well with this. As a whole class, most of the students got these right. However, next time I think it would better and harder for the students if I should boxes instead so they could not use their sense of touch as much and use the other senses more. Students made a graphic organizer of Properties of Matter. We also look at several properties of the different elements with our PowerPoint.
Day 9: Students learned the formula for volume and only about 50% of my student had prior knowelege of volume. Most students do well with finding volume, however some students struggled with their math facts, and using calculators allowed me to see they understand how to find the volume. The students have not had much experience reading from graduated cylinders so this created some issues in the students finding the volume displaced in water.
Day 10: Today the students built on the lesson from the volume and learned the formula for density. The students used the volume information of their object then the students weighted their object and find the density. Then students put their object in water to see if their calculation was right. They got to see if their object would sink or float. The students work with a partner to find the density and volume of several objects with a PowerPoint to review the math skills on finding volume and density.

B. Student Interaction and Engagement (Strategies for promoting student-to-student interaction and student-to-teacher interaction) (limited to 1 page)

Strategies for promoting student-to-student interaction class demonstrations, student experiments youtube videos, engaging PowerPoint with movements, using a clicker	Tissue paper in the bottle to see the air is already in the bottle, and a ballon in the bottle to see the air is already in the bottle. Building an atomic structure to understand an atom. Using a deck of cards to understand the periodic table. Using water and Alka-Suetzer to show an open and closed system, and show the temperature of a chemical reaction of time. Youtube videos on matter and atoms, and

the slide show so I can,be walking around th room engaging quizzes from with PointPoint slides	experiments that would be hard for us to in the classroom. When doing the PowerPoint I use a clicker can move around the Classroom. My PowerPoint has animations and items for the students to look for throughout the PowerPoint to keep them interested.
Strategies for promoting student-to-teacher interaction	Asking questions to lead the discussions, Walking around the room with a clicker so I can be involved the class, Class Demonstration of air has weight, Class Demonstration that matter can not be created destroyed, Class Demonstration on elephant toothpaste to show atoms are rearranged in a chemical reaction, Having a Quiz on a PowerPoint so I can activity walk around as the room, and see the students answer and the students feel comfortable because, it is a relaxing enviroment because it is not a pencil paper quiz.

C. Analysis of Assessment (limit 1 page)

Pre-Assessment:	
Description of results, based on pre-assessment chart (appendix C)	The range of the correct answer was 17-4 which was a 60% to 14%. The average score was 10 which is a 35%. The median score was 10.5. The students understood some of the simple mathetics of science. However, more complex math they did not get such as volume, density, and water displacement. Students were not able to draw and label an atom. Only 21% of the students were able to define matter.
Describe how pre-assessment data was used to proceed with instruction for all students.	The students did not show they knew much about matter. We will review the terms and information several times to make sure they understand. We will also do lots of hands-on activities or demonstrations to help them understand matter.
Formative Assessment:	
student performance results of formative assessment	The students ranged from 90%-30%. The average score was a 72% and the median score was 75%. Students struggled with open ended questions. 70% of the students received a 100% on the multipichoice and true- false questions. This lets me know the students know the information they see it but they can not produce the information on their own yet. The second formative was not as good. The student range was 70%-20%. The average score was 36%.
Discuss the results in reference to the learning objectives.	50% of the students were able to demonstrate that an atom is very small with getting a 100% of the questions correct and 79% of the class getting 80% correct or higher. Students are still working to understand chemical and physical changes. 70% of the students understand that matter can not be created or destroyed. The students did well with finding the volume with 11 of 13 students getting this right

	(one of the student did not take the quiz because they were gone for medical reasons). Students also did well finding what material is denser by looking at layered liquids. The students really struggled with reading graduated cylinder with a meniscus line. They also have a had time finding how much water is displaced even though we have done several demonstrations of this and talked about it several times. Only about 50% of the class knew the formula of density. Some of the other concepts the students missed are items we talked and discussed but are hard to understand and I wanted to see if they understand them yet and they do not. These topics are how much a cubic cementer of water weights and then applying that to a 10cmX 10cmX 10cm cube.
Discuss any accommodations or modifications based on the results of formative assessments.	My subgroup was allowed to use a science notebook for the formative assessment. However, three of the students still did not perform well on the assessment. We need to go over the different types of changes such as chemical and physical change. I allowed my subgroup to use their notebook for the formative assessment. We will be coming back and working on displaced water and work with students reading graduated cylinders.
Summative (Post) Assessment:	
Description of results, based on summative assessment chart (appendix C)	Most students improved. However, I have one student that missed a lot of classtime and she did not improve. She missed several demonstrations and group discussions. This student was a child in my subgroup that is not a special education student. Over half the students performed over the average summative score.
How do the results demonstrate meeting your learning objectives? How do they demonstrate not meeting learning objectives?	The students performed below average for all the objectives. The average test score was 62%. Some of my students did very well and some of them did not do well at all. I would like my average to be higher. Three students hit the 90% on the post-test. Then it dropped off quickly to 66%. Several students once again did not demonstrate they knew the information when it came to matching terms. The students did better in the multichoice section. Almost every student was able to label the atom and the one student that did not demonstrate it was very small. So even though the overall score does not show that they understand that concept I feel their drawings showed me that they did. Students did not seem to have remembered what happens with open and closed systems and this will be something we will need to review. Students are still struggling with remembering the formula for volume and density. This will be something we can go over this again in math class.

D. Visual Representation of Disaggregated Data (limited to 2 pages)

See Appendix C for data and graphs on the pre-assessment and summative assessment.

Task 4 - Self-Evaluation and Reflection

A. Description of Successful Objectives (limited to 1/2 page)

Based on the analysis of all the assessment results, identify your most successful learning objective(s) from the unit.	**Explain why these objective(s) were successfully met. Give more than one reason for each of the successes identified.**
Objective 1: Students will demonstrate an atom is very small and cannot be seen by end of lesson 2 by explaining to me how they know an atom is so small by drawing a picture or writing a small essay with 90% accuracy.	The students performed the 90% accuracy on their drawing or short essay. When students were asked on the summative test what the smallest substance something could be broken down into 86% of students got this right. The students were also able to demonstrate the parts of the atom and the one student that could not answered it was very small and this student was from my subgroup. Students are able to understand an atom is very small and they can not see it.
Objective 2: Students will be able to analyze materials and list physical properties by naming at least three properties that make up that material 90% from task cards around the room.	Students were able to list the three properties of a material very easily. Every student received 90% or higher on their task cards. Students were able to demonstrate on their summative and formative tests when an object floats or sinks with 76% of the students getting this concept. Even though they can not calculate density they were able to use it as a property to explain the object.

B. Description of Least Successful Objectives (limited to 1/2 page)

Based on the analysis of all the assessment results, identify your least successful learning objective(s) from the unit.	**Explain why these objective(s) were not as successfully met. Give more than one reason for each of the least successful objectives identified.**
Objective 2: Students will be able to graph a temperature change when mixing a substance and show the weight did not change by using water and Alka-Seltzer and explain to me the change in temperature writing a short essay with a 90% accuracy.	Students were able to demonstrate at the time of the lesson that weight and temperature change of closed and open system. When we did the formatives the students understood what happens to the weight of and ope However, when it came time for the summative student did not seem to remember in a closed system the weight did not change.

Objective 4: Students will be able to find the density and volume of an object by looking at a picture with dimensions or measurements stated 90% times by end of the unit.	The students can find the volume of a shape if the dimensions are listed. However, students are struggling to find the displaced volume. The students are still struggling to use the formula to find density. On the Summative and formative the students could not figure out to subtract the water differences. Only 43% of the students were able to figure this out.
Discuss at least TWO things to do differently in the future to improve students' performance. Be frank and thorough in your analysis.	
One thing I would do differently would make sure to have a new scale. I think if the students could see the number moving and not have sit and wait on the scale to balance they will stay interested better. I wonder during some of the experience if I lost some of the students during the time of waiting on scales to balance out because that does a lot of time balance very time you change something. I feel I need to spend some time having students work with finding measurements of graduated cylinders and breakers. The students really struggle to read the measurement. I feel this is hindering their process of finding water displacement because they have a hard time just reading the measurement.	

C. Reflection on Unit and Implications for Teaching (limited to 1page)

Based on the teaching of the unit, student performance, and two detailed lessons, identify at least TWO aspects of your instruction that should be improved. Explain reasoning.	**What steps are you going to take to improve your teaching in these areas? Be specific.**
Aspect 1: The students lack knowledge of how to use science tools. Students struggle to read readings on graduated cylinders. Students struggle to make sure scale balances. Students did not receive much science in form of experiments before they get to my class.	When school starts and we are going over the basic information of science. I will take the time to teach a mini- lesson on the different science tools and equipment and how to use and read them. I will have the student explore the items but weighing objects and filling up cylinders and telling measurement. Also, go the other way and have the student fill the cylinder up to a certain amount.
Aspect 2: I need to break my matter unit into more sections. The students need more time with volume and open and closed systems. These are the two areas they did not understand as well on their summative test.	I will have the students do more experiments and exploring with open and closed systems. We need to do an extra day on finding the displacement of water of an object. The students did an object of their own. However, I would like to set up stations and task cards for the students to move around the room and get more excercise on this topic.

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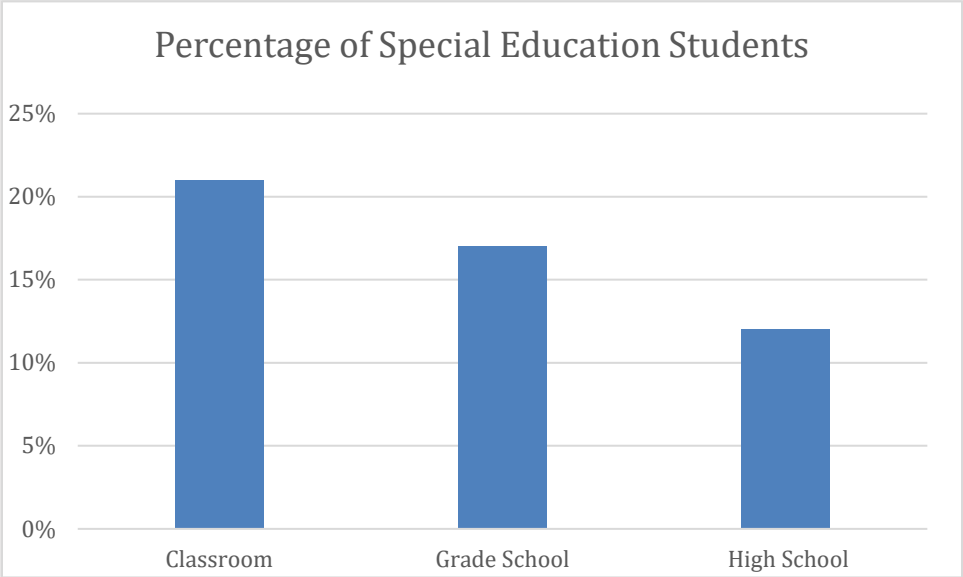
REFERENCES

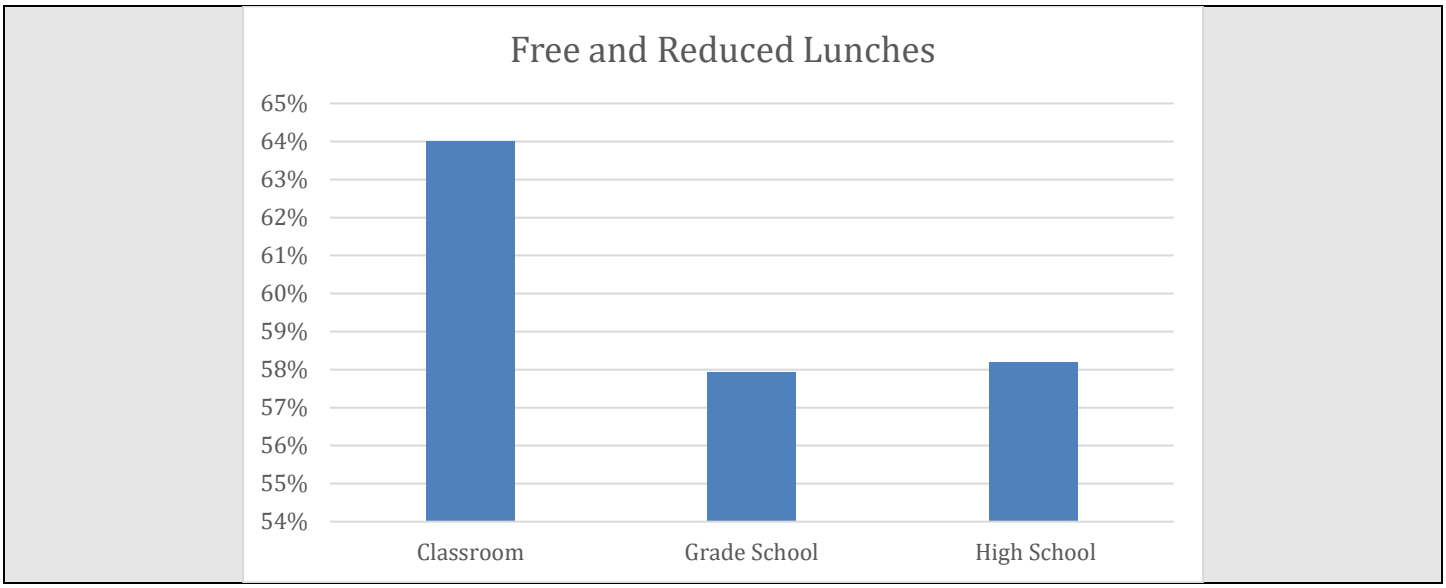
Use this section to list credible resources you cited in the text to inform and/or support your instructional decisions/rationale in this work sample.

www.censusreporter.org

https://www.teacherspayteachers.com/Product/5th-Grade-Science-Curriculum-NGSS-2654418

APPENDIX A Demographic Data for classroom, school, and district




Free and Reduced Lunches
65%
64%
63%
62%
61%
60%
59%
58%
57%
56%
55%
54%
Classroom
Grade School
High School

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APPENDIX B Detailed Lesson Plans (2)

LESSON PLAN LOGISTICS	
KCCR Standard(s) Content Area #1	5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.
KCCR Standard(s) Content Area #2	(Write standard in correct format here)
Lesson Objective	Students will explain an atom is very small and cannot be seen and label the parts by end of lesson 4 by explaining to me how they know an atom is so small by giving some examples.
Type of Lesson Delivery	___X____ Classroom _____ Virtual
Platform for Virtual Lesson	Recommend using Zoom for delivery, also include any additional learning platforms used for learning in lesson, example google classroom, Seesaw, etc. *Enter NA if this is not a virtual lesson.*
Communications and Instructions for Parents/Adults	Include checklist and communication instructions to prepare parents/students for virtual lesson Setup Communication: Materials/manipulatives/handouts/apps Technology Platform and Applications Resources *Enter NA if this is not a virtual lesson.*
Assessment & Criteria	Students will be to tell me how many protons and electrons in their atomic structure. My high students will be able to tell me how many protons, electrons, and neutrons are in their atomic structure.
Content Vocabulary	Atom: The basic unit of all matter Electron: Negatively charged particle of an atom that spins around the outside of the nucleus of an atom Proton: Positively charged particle located at the center of an atom inside the nucleus Neutron: Particle of an atom that is located inside the nucleus with protons. It has no charge

	Nucleus: the center Element: A pure substance made from a single type of atom Molecule: A combination of elements bonded together Compound: A substance made up of 2 or more different elements.
Preparation for Lesson	Materials Students: Deck of cards, science journals Teacher: Periodic Chart, candy, and toothpicks and the periodic table Technology Computer, PPT Resources Teachers Pay Teachers activities
Universal Design	Students will fill their journal out that makes the most sence to them by either drawing, writing making graphs, ect. Students will be able to express their knowledge by drawing or writing
Lesson Considerations	List Bloom's thinking level: Apply Make sure students social distance a much as possible in groups or encourage students to wear a face mask. My subgroup of students I will direct them to an element that they will be able to complete in the allowed time and has a low number of electrons and protons.

INSTRUCTIONAL SEQUENCE

Write out **detailed** lesson procedures and activities. Be sure to include questions you will ask during the lesson and the expected student responses. Your plan shoul be detailed enough for another teacher or substitute to teach it without having to ask you any questions. Numbering and bullets are permissible and encouraged.

Prior Lesson(s)		Students have been learning about matter, and that matter is anything that has mass and takes up space. Students have also discovered that air has particles. They have been introduced to how smal an atom is.
Beginning	20 mins	Students will be instructed to get with their partner. I will instruct the students to organize their deck of cards in rows and columns that makes the most sense to them. 1. When students are finished ask the questions: 2. How are your columns organized? 3. How are your rows organized? 4. Where did you put your Jokers? Why did you put them there? Then I will show the students a PowerPoint of gold, copper, and diamonds. I will ask the students if they recognized what is on the slides. After the student say what the pictures are, I will explain that all these are elements. This means that they are a pure substance that cannot be broken down into anything different. I will then show the periodic table 1. Have the students talk with their partner about what they noticed about the chart? 2. Do you recognize anything on this chart? 3. Do you notice anything about how the elements are organized? 4. Then I will show a YouTube video Tell students to write in their journal about their findings from the YouTube Video

Middle (Explain/Explore)	45 mins	1. Tell the students we are going to be creating an atom model by choosing and element from the periodic table. Let the students know there is be a time limit so you might not want to build the element Silver because you will have 47 atoms to create this element. 2. Instruct the students they can use the candy on the table to create their atoms. However, if you use a yellow gumdrop for a proton you can't use a yellow gumdrop for an electron either. You can use toothpicks however you need to be very careful. You may material from the art cart also. 3. I will start the timer for 15 minutes 4. When you are finished make a drawing of your element in your science journal 5. Ask students to share their atom model using the Elmo. I ask how many protons and electrons. For my high students, I will also ask how many neutrons does your model have. Allow the classmates to see if they can figure out what element the student presenting made by looking at the periodic table.
End (Extend/Evaluate)	5 mins	1. Have students add to the KWL chart of what they want to know and what they have learned.
Next Lesson		The students will make a foldable of the vocabulary words we have been learning about.

LESSON PLAN LOGISTICS- Lesson Plan B	
KCCR Standard(s) Content Area #1	5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.
KCCR Standard(s) Content Area #2	RF.5.3 Know and apply grade-level phonics and word analysis skills in decoding words. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read unfamiliar multisyllabic words accurately in context and out of context
Lesson Objective	Students will explain an atom is very small and cannot be seen and label the parts by end of lesson 4 by explaining to me how they know an atom is so small by giving some examples. Language objective: Student will write and sound out the vocabulary words for their foldable.
Type of Lesson Delivery	___X____ Classroom _____ Virtual
Platform for Virtual Lesson	Recommend using Zoom for delivery, also include any additional learning platforms used for learning in lesson, example google classroom, Seesaw, etc. *Enter NA if this is not a virtual lesson.*
Communications and Instructions for Parents/Adults	Include checklist and communication instructions to prepare parents/students for virtual lesson Setup Communication: Materials/manipulatives/handouts/apps Technology Platform and Applications Resources *Enter NA if this is not a virtual lesson.*
Assessment & Criteria	Student are able to label the parts of an atom and say the element represented by counting the protons and electrons on an exit ticket On the back of the exit ticket students will also explain to me how small an atom and example of how small an atom is.
Content Vocabulary	Atom: The basic unit of all matter Electron: Negatively charged particle of an atom that spins around the outside of the nucleus of an atom Proton: Positively charged particle located at the center of an atom inside the nucleus Neutron: Particle of an atom that is located inside the nucleus with protons. It has no charge Nucleus: the center Element: A pure substance made from a single type of atom Molecule: A combination of elements bonded together Compound: A substance made up of 2 or more different elements.

	Periodic Table: A chart that organizes the elements
Preparation for Lesson	Materials Students science journals Teacher: Periodic Chart, atom, quiz sheet, KWL charts Technology Computer, PPT Resources Teachers Pay Teachers activities
Universal Design	Students will fill their journal and foldable with words and/or pictures to help them remember the vocabulary words. Students will also do a hexagonal thinking activity so I can see how the students feel the words are connected.
Lesson Considerations	List Bloom's thinking level: Apply For the one student in my focus group I will have the definitions printed out so the student can just glue down the definition and does not get hand fatigue from writing.

INSTRUCTIONAL SEQUENCE

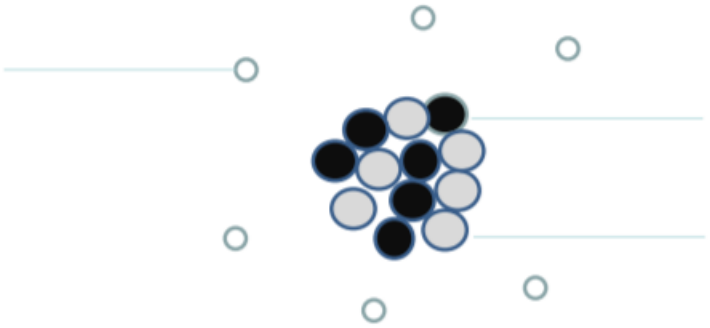
Write out **detailed** lesson procedures and activities. Be sure to include questions you will ask during the lesson and the expected student responses. Your plan shoul be detailed enough for another teacher or substitute to teach it without having to ask you any questions. Numbering and bullets are permissible and encouraged.

Prior Lesson(s)	Students have been learning about matter, and that matter is anything that has mass and takes up space. Students have also discovered that air has particles. They have been introduced to how smal an atom is and worked on the atom structure. The students have made atoms and looked at the periodic table.

Name_____

Atoms Quiz

Directions: Label each type of particle and indicate its charge.



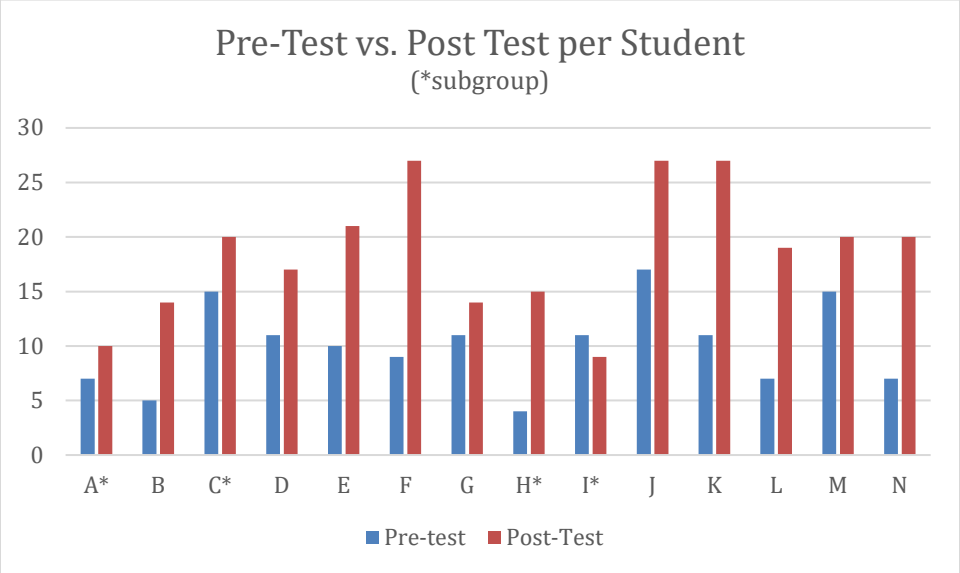
What is the name of the atom in the box? _____

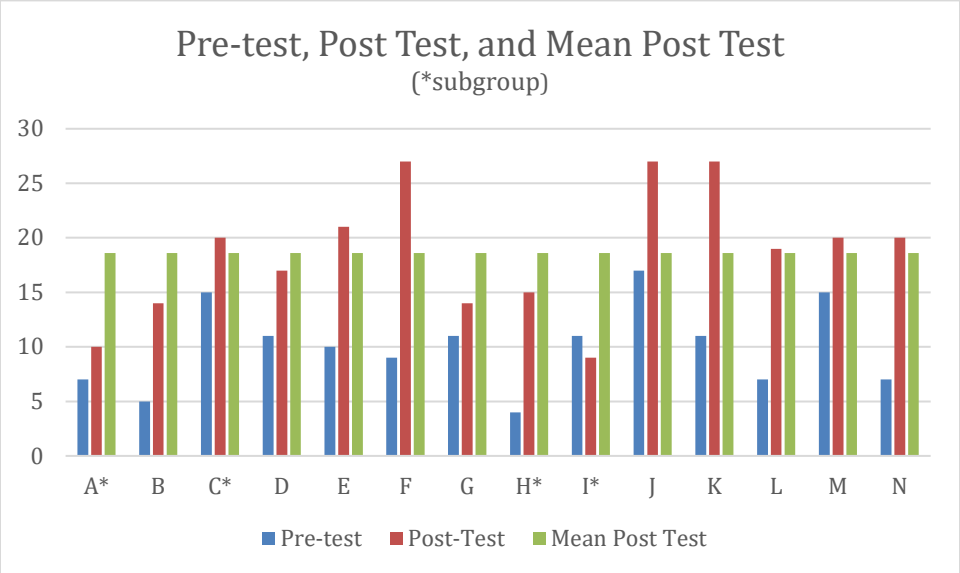
How do you know?_____

What is the chart called that organizes the elements?

_____

APPENDIX C Assessments and Rubrics





Name _____ Date _____

Matter Assessment

1. An ice cube has a mass of 10 grams. The ice cube melts. Which statement is TRUE about the ice cube?

   a. The ice cube has a greater mass than the melted ice cube.
   b. The ice cube has less mass than the melted ice cube.
   c. The ice cube has the same mass as the melted ice cube.
   d. The melted ice cube has a mass of 7 grams.

2. A substance that cannot be broken down into something simpler is a/an?

   a. Nucleus
   b. Atom
   c. Element
   d. Molecules

3. Which statement is TRUE?

   a. The mass and weight of an object are the same everywhere in the universe.
   b. The weight of an object is the same everywhere in the universe, but its mass can change.
   c. The mass of an object is the same everywhere in the universe, but its weight can change.
   d. The mass and weight of an object both can change depending on the object's location.

4. A student pours 27 grams of oil and 75 grams of water into a beaker. The mass of the beaker is 108 grams. The student places the beaker with its contents in one pan of the balance. What total amount of weights must the student put in the other pan to make the pans balance?

   a. 108 grams
   b. 105 grams
   c. 183 grams
   d. 210 grams

5. In the density of a material that has a mass of 16g and volume of 8ml?

   a. 8 g/cm3
   b. 2 g/cm3
   c. 0.5 g/cm3

6. If an objective has a mass of 12 grams and volume of 24ml, will the object....

   a. fly
   b. float
   c. sink

7. What is density?

   a. The mass of a substance plus its volume
   b. The mass of a substance in a certain volume
   c. The volume of a substance
   d. A state of matter

8. Which is the volume of a rectangular prism with the dimensions of 6cm by 2cm by 4cm?

   a. 16 cm3
   b. 48 cm3
   c. 0 cm 3
   d. 10 cm3

9. Dale puts vinegar in a pop bottle and adds baking soda to the vinegar. (there is no balloon on top) What kind of system is this?

   a. Closed
   b. Open
   c. Isolated

10. What is called when two or more molecules are joined into one particle?

    a. element
    b. molecule
    c. nucleus
    d. neutron

11. Kelly has a stack of 20 blocks. The mass of each block is 100 grams. What is the mass of the stack?

    a. 200 grams
    b. 80 grams
    c. 2,000 grams
    d. 120 grams

12. Kate puts 10ml of water in a bag. Then she adds an Alka-Seltzer tablet to the water then closes the lid. What will happen to the weight of the bag and the tablet?

    a. The weight will go down
    b. The weight will go up
    c. The weight will stay the same
    d. The weight will double

13. These bottles are.... 

    a. Half empty
    b. Half full
    c. Completely full
    d. Full of matter in the form of gas

14. Does an object sink if has a density of 0.54 g/cm3?

a. True
b. False

15. _____ dense body in the center of the atom, "the brain"

a. Protons
b. Neutrons
c. Electrons
d. Nucleus

16. Wanda has a cube of sugar. She crushes it into a powder. What has changed about the sugar?

a. Shape
b. Volume
c. Shape and mass
d. Volume and mass

17. _____have a negative charge and are located on the outside of the nucleus.

a. Protons
b. Neutrons
c. Electrons
d. Nucleus

18. Tom used a graduated cylinder to find the volume of a toy. His graduated cylinder stated with a 500ml of water after he put his toy in the water his graduated cylinder read 620ml. What is the volume of his toy?

a. 120 ml
b. 1,120 ml
c. 20 ml

19. This is a change where a substance changes from one state of matter to another without a change in chemical composition?

a. Physical
b. Matter

Vocabulary

a. Matter	b. mass	c. weight	d. atom
e. volume	f. element	g. physical property	J. density

1. _____ a measure of the pull of gravity on an object's mass.

2. _____ a characteristic of an object or substance that can be observed directly or measured with a tool.

3. _____ anything that takes up space.

4. _____ the amount of matter in an object.

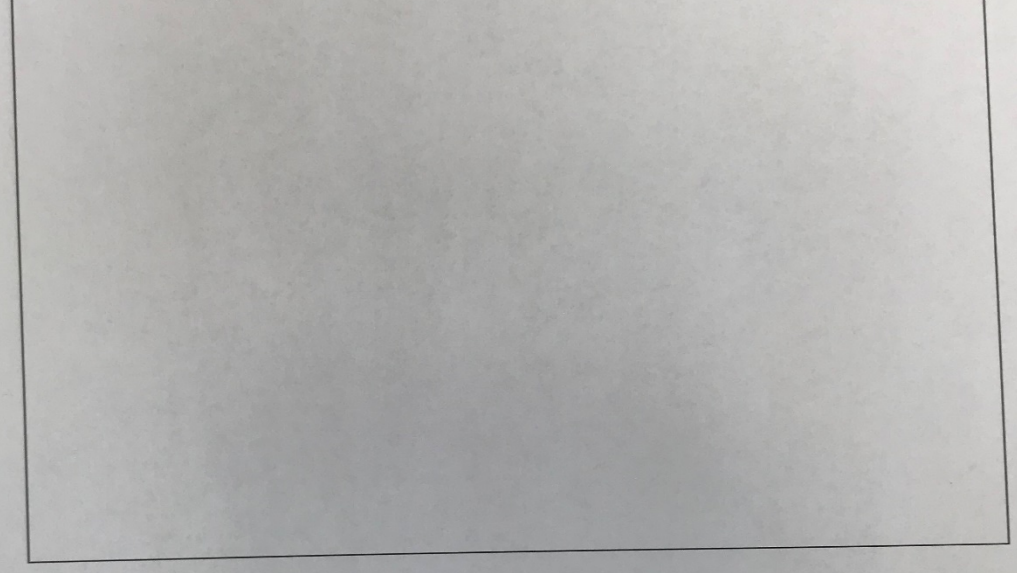
5. _____ an object's mass divided by its volume.

6. _____ the amount of space that something takes up.

7. _____ the basic unit of all matter

8. _____ the pure substance made from a single atom.

Draw a picture of an atom and label all the parts.

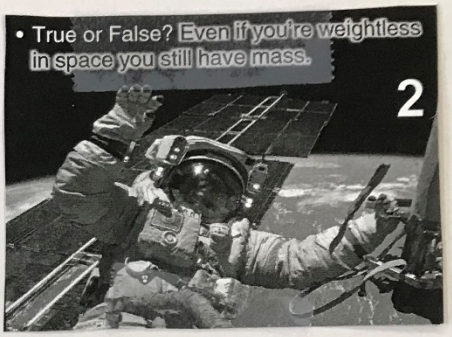


1

- Which of the following best describes Matter?
  - A.) Can only be found in the solid state.
  - B.) Always under the influence of gravity.
  - C.) Anything that has mass and takes up space.
  - D.) Smaller than even the smallest atom.
  - E.) Matter can be easily created or destroyed.

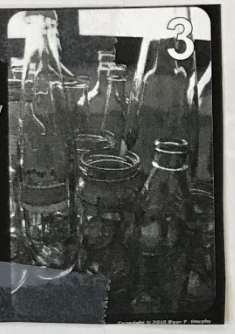
2

- True or False? Even if you're weightless in space you still have mass.



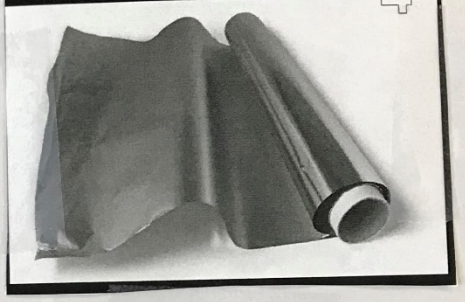
3

- These bottles are…
- A.) Half empty
- B.) Half full
- C.) Completely empty
- D.) Full of matter in the form of gas



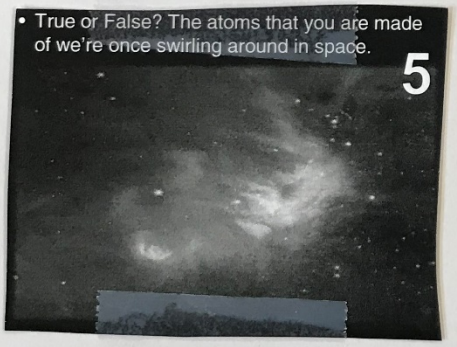
4

- What is aluminum foil made of?



5

- True or False? The atoms that you are made of we're once swirling around in space.



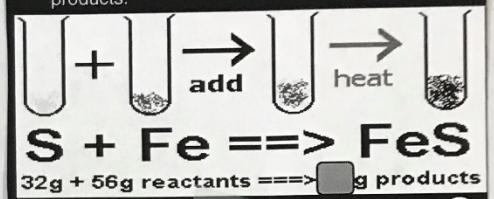
6

- A closed system is a thermodynamic system where…
  - A.) Both mass and energy enter and leave freely.
  - B.) Only energy can enter, but mass can leave.
  - C.) It's a system in isolation where neither mass or energy can enter.
  - D.) Energy can enter and leave the system but mass cannot. Mass is conserved.

- During any chemical or physical change the total amount of matter remains constant.
  - In other words, matter can be neither…

7

- When Sulfur is mixed with iron it creates Iron Sulfide (FeS).
  - How many grams of FeS should there be in the products.



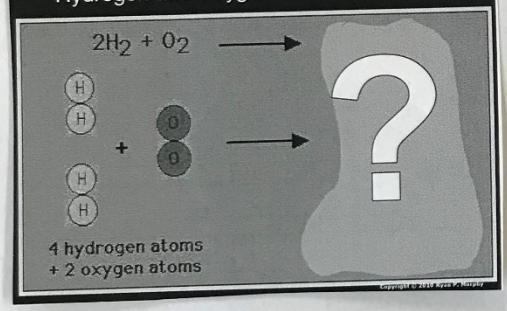
S + Fe ==> FeS

32g + 56g reactants ===> [ ] g products

8

- In this chemical reaction, How many Hydrogen and Oxygen atoms will result?

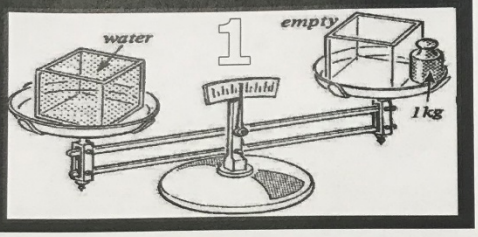
9



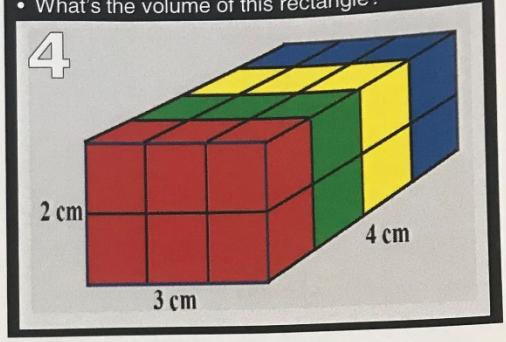
- This is the name for when a substances changes through a reorganization of the atoms.

10

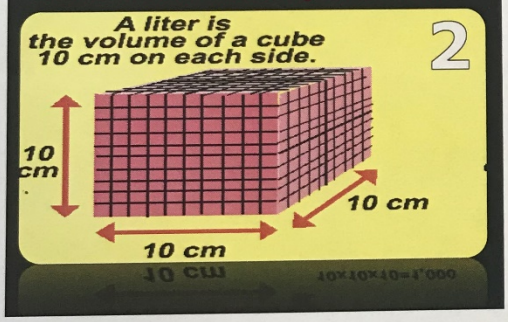
- Science uses water as a part of the metric system.
  - 1 cubic centimeter of water weighs [redacted]



- What's the volume of this rectangle?



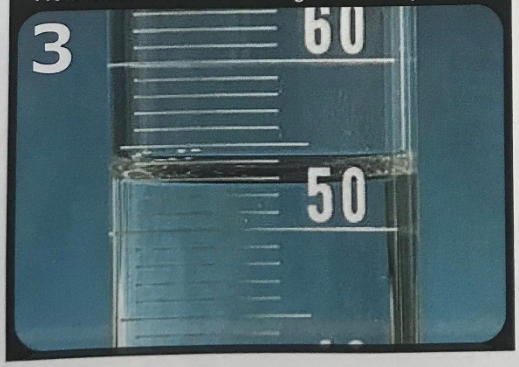
- A cube measuring 10 cm, by 10 cm, by 10 cm if filled with water would weigh how much?



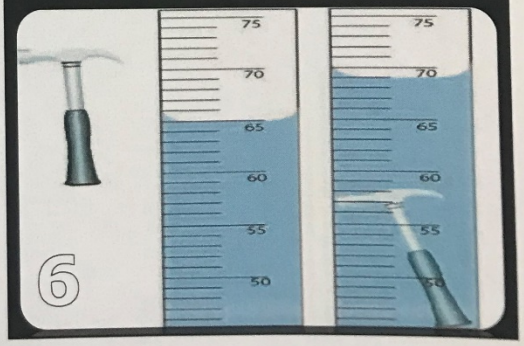
- How much volume is this Mountain Dew?
- Please don't ever drink that much soda!

5

- How much water is in this graduated cylinder?



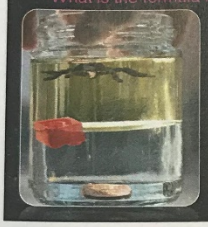
- What's the volume of the hammer?



- Density: Is how much mass is contained in a given volume. We use grams/cm³
  - (grams per cubic centimeter)

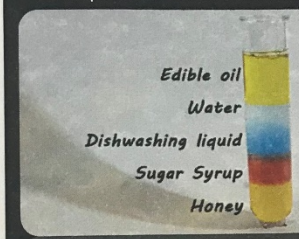
What is the formula for finding density?

7



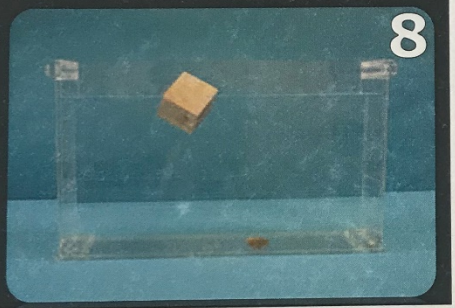
- Name one liquid more dense than water, and one liquid less dense than water?

10



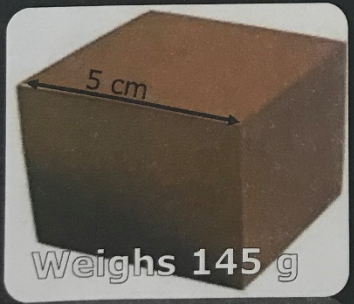
- The wooden block has density less than…

8



- What is the density of this cube?

9



Answer Keys

Summative Test

1.C
2. B
3. C
4. D
5. B
6. B
7. B
8. B
9. A
10. B
11. C
12. C
13. D
14. B
15. D
16. A
17. C
18. A
19. A

1. Weight
2.. Physical Property
3. Matter
4. Mass
5. Density
6. Volume
7. Atom
8. Element

Atom:

Formative 1

1. C
2. True
3. D
4. Aluminum or atom
5. True
6. D
7. Created or Destroyed
8. 88g
9. Same or 4 H and 2 Oxygen
10. Chemical Change

Formative 2

1. 1 gram
2. 1000g or 1kg
3. 53 mL
4. 24 cm3
5. 3L
6. 4mL
7. D= mass/volume
8. Less than 1
9. 1.16 g/cm3
10. More: Dishwashing Liquid, sugar syrup, or honey
Less: Edible oil

End of document