

STUDENT'S NAME _____

Date of Submission: **Monday, Nov. 10th, 2014**

Answer all questions on these sheets.

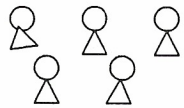

- | | | K | T | C | A |
|---|--|---|---|---|---|
| 1) Identify whether the property described is physical or chemical. | | X | | | |
| a) A cut apple turns brown when exposed _____ | | | | | |
| b) Salt dissolves when added to water _____ | | | | | |
| c) A metal anchor sinks in water _____ | | | | | |
| d) An iron railing rusts _____ | | | | | |
| 2) a) Mention a physical property of gasoline. _____ | | X | | | |
| b) Mention a chemical property of gasoline. _____ | | | | | |
| 3) a) Distinguish between an element and a compound. | | X | | X | |
| _____ | | X | | | |
| _____ | | X | | | |
| b) Name an element that you can find in your house. _____ | | | | | |
| c) Name a compound that you can find in your kitchen. _____ | | | | | |
| 4) a) What is the symbol of the chemical element sodium? _____ | | X | X | X | X |
| b) Sodium is located in period ____ and family ____. | | | | | |
| c) What is the atomic number of sodium? _____ | | | | | |
| d) What is the mass number of sodium? (Round the atomic mass to the nearest whole number) _____ | | | | | |
| e) Sodium atom has ____ protons, ____ electrons, and ____ neutrons. | | | | | |
| f) Draw the Bohr-Rutherford diagram of a sodium atom. | | | | | |
| g) How many electrons are found in its first energy level? _____ | | | | | |
| h) Is the first energy level full? _____ | | | | | |
| i) How many electrons are found in its second energy level? _____ | | | | | |
| j) Is the second energy level full? _____ | | | | | |
| k) How many valence electrons does a sodium atom have? _____ | | | | | |
| l) Is sodium a metal, non-metal, or semi-metal? _____ | | | | | |
| m) Name at least 2 physical properties of sodium. _____ | | | | | |
| _____ | | | | | |
| 5) Complete the table. | | X | X | | |

	Proton	Electron	Neutron
Charge			
Location			
Relative mass			

6) Complete the table below.

Name Of substance	Chemical symbol or formula	Element or compound	Atom or molecule	Elements present	How many atoms of each element?
Oxygen gas (part of air)				Oxygen	2 atoms of O
Diamond				Carbon	1 atom of C
Sodium bicarbonate (baking soda)	NaHCO ₃				

7) Identify, by checking (✓) the appropriate box, each of the following models to indicate whether the model is an element or a compound, and whether it is an atom or a molecule. X X

	Pure substance	Element	Compound	Atom	Molecule
A					
B					

8) a) What is the most reactive metal? _____ X
b) What is the most reactive non-metal? _____

9) Use the chemical symbols shown below to write **three** English words. Use a minimum of three elements for each word. X

C	S	H	He	N	O	P	1. _____
Si	Ne	Br	B	Ca	Na	Ti	
U	Ar	As	W	Pu	Fr	Cu	2. _____
Cl	Mo	I	Al	Li	F	K	
Au	Ag	Ba	Co	Fe	Ge	Ga	3. _____

10) Can a substance be both desirable and undesirable? Justify and elaborate your answer. (**Conversation**) X X

- 11) What is a PVA plastic bag? Describe why hospital workers can load PVA bags of laundry right into a washing machine without having to empty the laundry out of the bag first. (**Conversation**) X X

- 12) What is the environmental impact of the widespread use of plastics? Mention some advantages and disadvantages of the use of plastics. (**Conversation**) X X

STUDENT'S CHECKLIST

Before the task

- Do I know and understand what the **task** is?
- Have I asked or clarified any unclear **instructions**?
- Are all the **materials** ready and available to carry out the task?
- Do I have the **sequence or procedure** in completing the task laid out well?
- Do I need to do some **research**?
- Is the task to be completed in stages or phases before submitting the final work?
- Have I noted the submission date for the 1st stage/phase? N/A
- Have I noted the submission date for the 2nd stage/phase? N/A
- Have I noted the submission date for the final work? Nov. 10th, 2014

During the task (Before submission of the final work)

- Am I following the procedure accurately?
- Am I recording my data/observations?
- Have I followed the format in presenting my work?
- Have I presented all my work in an organized and neat manner?
- Has my work (1st stage/phase) been proofread or edited?
- Has my work (2nd stage/phase) been proofread or edited?
- Do I have everything needed for the 1st stage/phase?
- Do I have everything needed for the 2nd stage/phase?
- Have I included all drafts and research done for this task?
- Have I written my name on my work?

After the task

- Did I take note of the recommendations to improve my work?
- Did I take note of the corrections to improve my work?
- Did I understand clearly what I have to do to improve my work?
- To improve my mark in this task, I could have _____

Learning Goals

- To show scientific investigation skills in the four areas (initiating and planning, performing and recording, making conclusions, and communicating).
- To study how the properties of common elements and/or simple compounds affect their use, and test the social and environmental impact of producing or using them.
- To understand the properties of common elements and simple compounds, and general features of the periodic table.
- To find physical and chemical properties of common elements and simple compounds.

Success Criteria

Here's what your teacher is looking for. Go through the success criteria to make sure that you considered all of them before submitting your assignment; circle "yes" if you believe you have, and "no" if you don't think that you met the criteria.

		Description	Level 1 Struggling	Level 2 Pretty Close	Level 3 Grade 9 Standard	Level 4 Above & Beyond!
KNOWLEDGE/UNDERSTANDING (Student Product)						
Yes	No	I can describe the physical and chemical properties of common elements and compounds.				
Yes	No	I can mention elements and compounds in common household products.				
Yes	No	I can tell the charge, location, and relative mass of protons, electrons, and neutrons.				
Yes	No	I can tell the relationship between the properties of elements and their position in the periodic table.				
Yes	No	I can tell the characteristics of an element (e.g., reactivity, metal, atomic number, etc.)				
THINKING (Observation, Student Product)						
Yes	No	I can use appropriate sources to locate information (e.g., periodic table, textbook, etc)				
Yes	No	I can check my answers before handing my work.				
Yes	No	I have done the checklist sheet, including this page, to ensure success.				
COMMUNICATION (Student Product)						
Yes	No	I can use vocabulary, conventions, or symbols appropriately (e.g., Bohr-Rutherford diagram).				
Yes	No	I can use chemical symbols and formulas to represent common elements and simple compounds.				
Yes	No	I can have my thoughts and ideas organized and expressed in complete sentences.				
Yes	No	I can submit my work in an organized and presentable manner.				
APPLICATION (Conversation)						
Yes	No	I can apply what I know about the periodic table to identify elements.				
Yes	No	I can justify how some chemicals are desirable and undesirable.				
Yes	No	I can explain the environmental impact of plastics.				
Yes	No	I can mention the benefits and impact of using PVA bags.				

STUDENT'S NAME _____
 Date of Submission: Wednesday, Nov. 6th, 2013

Key

Answer all questions.

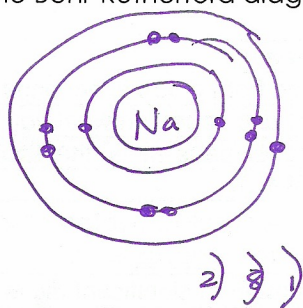
K T C A
 X

- 1) Identify whether the property described is physical or chemical.
- a) A cut apple turns brown when exposed C
 - b) Salt dissolves when added to water P
 - c) A metal anchor sinks in water P
 - d) An iron railing rusts C

- 2) a) Mention a physical property of gasoline. liquid, yellowish, distinct odor, viscous
 b) Mention a chemical property of gasoline. flammable, reacts with oxygen in the air

- 3) a) Distinguish between an element and a compound. cannot be broken down into simpler parts X X
 b) Name an element that you can find in your house. iron, aluminum, gold X
 c) Name a compound that you can find in your kitchen. sugar, H₂O, baking powder, baking soda, salt X

- 4) a) What is the symbol of the chemical element sodium? Na X X X X
 b) Sodium is located in period 3 and family 1.
 c) What is the atomic number of sodium? 11
 d) What is the mass number of sodium? (Round the atomic mass to the nearest whole number) 23
 e) Sodium atom has 11 protons, 11 electrons, and 12 neutrons.
 f) Draw the Bohr-Rutherford diagram of a sodium atom.



- g) How many electrons are found in its first energy level? 2
 h) Is the first energy level full? yes
 i) How many electrons are found in its second energy level? 8
 j) Is the second energy level full? yes
 k) How many valence electrons does a sodium atom have? 1
 l) Is sodium a metal, non-metal, or semi-metal? metal
 m) Name at least 2 physical properties of sodium. malleable, solid, shiny, conducts heat/electricity

5) Complete the table. X X

	Proton	Electron	Neutron
Charge	<u>+</u>	<u>-</u>	<u>0</u>
Location	<u>inside the nucleus</u>	<u>outside of around the nucleus</u>	<u>inside the nucleus</u>
Relative mass	<u>about 1</u>	<u>about 1/2000</u>	<u>about 1</u>

6) Complete the table below.

Name Of substance	Chemical symbol or formula	Element Or compound	Atom Or molecule	Elements present	How many atoms of each element?
Oxygen gas (part of air)	O_2	element	molecule	Oxygen	2 atoms of O
Diamond	C	element	atom	Carbon	1 atom of C
Sodium bicarbonate (baking soda)	$NaHCO_3$	compound	molecule	sodium hydrogen carbon oxygen	1 atom 1 atom 1 atom 3 atoms

7) Identify, by checking (✓) the appropriate box, each of the following models to indicate whether the model is an element or a compound, and whether it is an atom or a molecule.

	Pure substance	Element	Compound	Atom	Molecule
A			✓		✓
B		✓			✓

8) a) What is the most reactive metal? Francium
b) What is the most reactive non-metal? Fluorine

9) Use the chemical symbols shown below to write **three** English words. Use a minimum of three elements per word.

- | | | | | | | |
|----|----|----|----|----|----|----|
| C | S | H | He | N | O | P |
| Si | Ne | Br | B | Ca | Na | Ti |
| U | Ar | As | W | Pu | Fr | Cu |
| Cl | Mo | I | Al | Li | F | K |
| Au | Ag | Ba | Co | Fe | Ge | Ga |

- Answers vary:
- Na-Ti-O-N
 - Ca-P-Ti-O-N
 - P-U-C-K

10) Can a substance be both desirable and undesirable? Justify and elaborate your answer. Write your answer on a separate paper. Yes, answers vary.

11) What is a PVA plastic bag? Describe why hospital workers can load PVA bags of laundry right into a washing machine without having to empty the laundry out of the bag first. Write your answer on a separate paper. Polyvinyl alcohol
→ PVA disintegrates/dissolves in warm

12) What is the environmental impact of the widespread use of plastics? Write your answer on a separate paper.
→ nonbiodegradable
→ pollution
→ clogging sewage
→ kill animals (entangled/suffocation/trapped)

Student's Name	Course	Date	Task/Activity
	SNC1P		CHEMISTRY UNIT ASSIGNMENT

C H E C K L I S T

Before the task

- Do I know and understand what the **task** is?
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- Do I have the **sequence or procedure** in completing the task laid out well?
- Do I need to do some **research**?
- Is the task to be completed in stages or phases before submitting the final work?
- Have I noted the submission date for the 1st stage/phase? N/A
- Have I noted the submission date for the 2nd stage/phase? N/A
- Have I noted the submission date for the final work? Nov. 6th, 2013
- Are there any safety precautions or WHMIS guidelines to be followed?

During the task (Before submission of the final work)

- Am I following WHMIS guidelines and taking safety precautions?
- Am I following the procedure accurately?
- Am I recording my data/observations?
- Have I included units and observed the rules on significant digits, if necessary?
- Have I followed the format in presenting my work?
- Have I presented all my work in an organized and neat manner?
- Has my work (1st stage/phase) been proofread or edited?
- Has my work (2nd stage/phase) been proofread or edited?
- Do I have everything needed for the 1st stage/phase?
- Do I have everything needed for the 2nd stage/phase?
- Have I included all drafts and research done for this task?
- Have I written my name on my work?

After the task

- Did I take note of the recommendations to improve my work?
 - Did I take note of the corrections to improve my work?
 - Did I understand clearly what I have to do to improve my work?
 - To improve my mark in this task, I could have _____
- _____
- _____

Student's Name	Course	Date	Task/Activity
	SNC1P		CHEMISTRY UNIT ASSIGNMENT

Learning Goals: What should I be showing in this assignment?

- Study how the properties of common elements and/or simple compounds affect their use, and test the social and environmental impact of producing or using them.
- Understand the properties of common elements and simple compounds, and general features of the periodic table.
- Find physical and chemical properties of common elements and simple compounds.

Success Criteria: How can I show it?

		Description	Level 1 Struggling	Level 2 Pretty Close	Level 3 Grade 9 Standard	Level 4 Above & Beyond!
KNOWLEDGE/UNDERSTANDING						
Yes	No	I can describe the physical and chemical properties of common elements and compounds.				
Yes	No	I can mention elements and compounds in common household products.				
Yes	No	I can tell the charge, location, and relative mass of protons, electrons, and neutrons.				
Yes	No	I can tell the relationship between the properties of elements and their position in the periodic table.				
Yes	No	I can tell the characteristics of an element (e.g., reactivity, metal, atomic number, etc.)				
THINKING						
Yes	No	I can use appropriate sources to locate information (e.g., periodic table, textbook, etc)				
Yes	No	I can check my answers before handing my work.				
Yes	No	I have done the checklist sheet, including this page, to ensure success.				
COMMUNICATION						
Yes	No	I can use vocabulary, conventions, or symbols appropriately (e.g., Bohr-Rutherford diagram).				
Yes	No	I can use chemical symbols and formulas to represent common elements and simple compounds.				
Yes	No	I can have my thoughts and ideas organized and expressed in complete sentences.				
Yes	No	I can submit my work in an organized and presentable manner.				
APPLICATION						
Yes	No	I can transfer what I know about the periodic table to identify elements.				
Yes	No	I can justify how some chemicals are desirable and undesirable.				
Yes	No	I can explain the environmental impact of fertilizers.				
Yes	No	I can mention the benefits and impact of using PVA bags.				