

Lesson Plan

Teacher: Natasha Dore, James Krasinkiewicz, Samantha O'Neil, Katie Tracey		
Subject: Chemistry	Grade/Class: Grade 9 Applied or Academic	Course Code: SNC1D/P
Date:	Time:	Duration: allocated 75 minutes
Lesson Topic: Discovering the Periodic Table		

BIG IDEA:

- Elements and compounds have specific properties that determine their uses.
- The use of elements and compounds has both positive and negative effects on society and the environment.

CURRICULUM EXPECTATIONS ADDRESSED:

Overall Expectations:

- **C3.** demonstrate an understanding of the properties of common elements and compounds, and of the organization of elements in the periodic table.

Specific Expectations:

- **C3. 4** describe the characteristic physical and chemical properties of common elements and compounds
- **C3.7** compare and contrast the physical properties of elements within a group (e.g., alkali metals) and between groups (e.g., the carbon group and noble gases) in the periodic table
- **C3.8** identify and use the symbols for common element

LEARNING GOALS: By the end of the lesson student should know how to:

- To identify and describe key characteristics of the periodic table (chemical periods and families, atomic names and symbol)
- To locate an specific elements based on key characteristics

Prior Knowledge: Students should know:

- The differences between metals, non-metals
- How to describe physical and chemical properties of elements

TEACHING LEARNING RESOURCES: Teacher will use

- Laptop
- Textbooks (if necessary)
- Overhead projector
- Printable Periodic Table
- Elemental Pursuit Board
- Elemental Pursuit game cards
- Coloured Markers (or coloured pencils)

LESSON SEQUENCE:

INTRODUCTORY ACTIVITY: (15 MINUTES):

Teachers will review the students' knowledge about the different features of the periodic table such as chemical periods and families, differences between metals, non-metal and metalloids using a colour- code periodic table activity (See Printable Periodic Table). The teacher can play the instructional video to the students on the overhead projector as students follow along colouring their own periodic table. Student should have six different coloured pencils/ markers to fill in the empty periodic table.

This introductory activity serves two purposes: Engagement and Extend learning. As students, corporately participate in the instructional activity they will enhance their knowledge and organizing skills. This activity also provides opportunity for student accountability.

DEVELOPMENTAL STRATEGIES (50 MINUTES):

[Assessment for Learning]

Teachers will present the board game **Elemental Pursuit** to the students to explain key features on the periodic table (chemical families and periods) as well as specific characteristics associated with the first 20 elements on the periodic table. The delivery of instruction will be done in a fun and creative way in attempts to cater to the different learning abilities of each student. Teachers will assign students into groups of 3-4 depending on the class size. The game is simple and easy to set-up and play. (See Game package) As students play, the teacher will actively observe and assess students' learning.

DIFFERENTIATION INSTRUCTIONAL STRATEGIES:

This lesson utilizes a variety of learning styles including visual, auditory, reading, writing, and kinetic (playing the game board) components. Specific accommodations and adaptations to game can be done for students who are having difficulties understanding the concepts.

- Written description (handout) of the task will be provided to students who need it, as well as a verbal outline of the instructions will be given to the entire class
- Students can partner with another student while playing the game and collaboratively answer the questions together.
- Remove the challenge cards component

To challenge certain students, you can incorporate more challenge cards and remove the regular game cards.

CULMINATING ACTIVITY: (5-10 MINUTES) At the end of the lesson, the teacher can further consolidate students' learning by assigning a quiz on the 20 elements, if time allows (See Quiz) This will help students practise their spelling skills and recognition of element symbol and corresponding element names. This will be marked by the teacher and additional feedback will be given to each student. Any reoccurring mistakes will be addressed to the entire class by the teacher. This will assess students' understanding of material that was taught in this lesson.

ON-GOING ASSESSMENT/ EVALUATION:

Formative assessment will be conducted through observation of groups as they play the game. Teacher will move around the classroom and visit all the groups to gauge student's understanding on the game's rules and objectives. The teacher will also use prompts during the lesson and activity to build connects to the overall concept. These question will probe student's understanding and allow the teacher to assess any misconceptions while learning.

NEXT STEPS:

Future classes could consist of students participating in lab experiments that investigate physical and chemical properties of common elements/ compounds, using Bohr-Rutherford to model and describe electron arrangement, constructing molecular models, or to distinguishing between elements and compounds.

Reflection: To be completed by the teacher

As a reflective practitioner the teacher can ask some reflective questions:

- Was this activity successful why or why not?
- How effective was the activity in achieving the learning objectives?
- Was there enough time allocated for each activity?
- Are there areas that can be improved for the future ?

1 H 1.01																	2 He 4.00
3 Li 6.94	4 Be 9.01											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
11 Na 23.99	12 Mg 24.30											13 Al 26.98	14 Si 28.05	15 P 30.97	16 S 32.06	17 Cl 35.45	18 Ar 39.95
19 K 39.10	20 Ca 40.1	21 Sc 44.1	22 Ti 47.87	23 V 50.94	24 Cr 52.0	25 Mn 54.9	26 Fe 55.41	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.38	31 Ga 10.81	32 Ge 72.64	33 As 74.92	34 Se 78.69	35 Br 79.90	36 Kr 83.8
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.96	43 Tc 97.91	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
55 Cs 132.9	56 Ba 137.3	57-71	72 Hf 178.5	73 Ta 180.1	74 W 183.8	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204	82 Pb 207.2	83 Bi 209.0	84 Po 209.0	85 At 210.0	86 Rn 222.0
87 Fr 223	88 Ra 226	89 - 103	104 Rf 261	105 Db 262	106 Sg 266	107 Bh 264	108 Hs 277	109 Mt 268	110 Ds 271	111 Rg 272	112 Cn 285	113 Uut 10.81	114 Fl 385	115 Uup 289	116 Lv 292	117 Uus 293	118 Uuo 294
			57 La 138.9	58 Ce 140.1	59 Pr 140.9	60 Nd 144	61 Pm 145	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 159.0	66 Dy 162.5	67 Ho 164.5	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
			89 Ac 227	90 Th 232	91 Pa 231	92 U 238	93 Np 237	94 Pu 244	95 Am 243	96 Cm 247	97 Bk 247	98 Cf 251	99 Es 252	100 Fm 257	101 Md 258	102 No 259	103 Lr 262

Element Quiz

Name: _____

Date: _____

Carbon		Ar	
Neon		He	
Sodium		Ca	
Chlorine		F	
Potassium		P	
Hydrogen		Si	
Aluminum		Li	
Sulfur		B	
Magnesium		Be	
Nitrogen		O	

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