

POGIL: Periodic Table Trends

(Adapted from Rush Henrietta CSD)

Why:

The Periodic Table is one of the greatest inventions in the history of man. It allows scientists to predict physical and chemical properties of the elements. Dimitri Mendeleev (a Russian scientist) and Robert Mosley (a British chemist) put together this table in the late 1800's based on properties of the elements known at the time. The trends in these properties as you go across periods and down groups is the subject of this Chem POGIL.

Periodic Table of the Elements

Legend:

- 1. alkali metals
- 2. alkaline earth metals
- 3. transition metals
- 4. metalloids
- 5. nonmetals
- 6. noble gases
- 7. lanthanide series
- 8. actinide series

The table shows elements from Hydrogen (H) to Oganesson (Og). The lanthanide and actinide series are shown below the main table.

Success Criteria:

- Understand the meaning of *atomic radius, reactivity, electronegativity, ionization energy*
- Recognize trends in atomic radius, reactivity, ionization energy and electronegativity as you go across periods and down groups.

Resources:

Reference Table S, Periodic Table, Unit 3 (Chapter 6) Notes, & Chapter 6 in textbook

Prerequisites:

Answer the following questions using the resources above.

- What happens to the number of valence electrons as you go down a group on the periodic table?
- What happens to the number of valence electrons as you go from left to right across a period?
- What happens to the number of energy levels as you go down a group on the periodic table?
- What happens to the number of energy levels as you go from left to right across a period?
- Draw a Lewis structure for a Cl atom.
- Draw a Bohr diagram for the Cl atom. (Draw above!)
- In this lab we will be talking about atomic radius.
 - Look up the atomic radius of Cl on Table S: _____
 - Why is it possible to show the atomic radius using a Bohr diagram but not by using a Lewis structure?
 - On your Bohr diagram draw an arrow to represent the radius of the Cl atom.
- Define *periodic*:
- Define *trend*:

Periodic Table Pogil Answers

Katrin Zwirglmaier



Periodic Table Pogil Answers:

Process Oriented Guided Inquiry Learning (POGIL) Richard Samuel Moog, 2008 POGIL is a student centered group learning pedagogy based on current learning theory This volume describes POGIL s theoretical basis its implementations in diverse environments and evaluation of student outcomes *Cooperative Learning in Higher Education* Barbara Millis, 2023-07-03 Research has identified cooperative learning as one of the ten High Impact Practices that improve student learning If you ve been interested in cooperative learning but wondered how it would work in your discipline this book provides the necessary theory and a wide range of concrete examples Experienced users of cooperative learning demonstrate how they use it in settings as varied as a developmental mathematics course at a community college and graduate courses in history and the sciences and how it works in small and large classes as well as in hybrid and online environments The authors describe the application of cooperative learning in biology economics educational psychology financial accounting general chemistry and literature at remedial introductory and graduate levels The chapters showcase cooperative learning in action at the same time introducing the reader to major principles such as individual accountability positive interdependence heterogeneous teams group processing and social or leadership skills The authors build upon and cross reference each others chapters describing particular methods and activities in detail They explain how and why they may differ about specific practices while exemplifying reflective approaches to teaching that never fail to address important assessment issues

Atoms, Molecules & Elements: Patterns In the Periodic Table Gr. 5-8 George Graybill, 2015-10-01 This is the chapter slice Patterns In the Periodic Table from the full lesson plan Atoms Molecules Elements Young scientists will be thrilled to explore the invisible world of atoms molecules and elements Our resource provides ready to use information and activities for remedial students using simplified language and vocabulary Students will label each part of the atom learn what compounds are and explore the patterns in the periodic table of elements to find calcium Ca chlorine Cl and helium He through hands on activities These and more science concepts are presented in a way that makes them more accessible to students and easier to understand Written to grade and using simplified language and vocabulary and comprised of reading passages student activities crossword word search comprehension quiz and color mini posters our resource can be used effectively for test prep and your whole class All of our content is aligned to your State Standards and are written to Bloom s Taxonomy and STEM initiatives

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understand Written to grade and using simplified language and vocabulary and comprised of reading passages student activities crossword word search comprehension quiz and color mini posters our resource can be used effectively for test prep and your whole class All of our content is aligned to your State Standards and are written to Bloom s Taxonomy and STEM initiatives *Atoms, Molecules & Elements: What Are Elements? Gr. 5-8* George Graybill,2015-10-01 This is the chapter slice What Are Elements from the full lesson plan Atoms Molecules Elements Young scientists will be thrilled to explore the invisible world of atoms molecules and elements Our resource provides ready to use information and activities for remedial students using simplified language and vocabulary Students will label each part of the atom learn what compounds are and explore the patterns in the periodic table of elements to find calcium Ca chlorine Cl and helium He through hands on activities These and more science concepts are presented in a way that makes them more accessible to students and easier to understand Written to grade and using simplified language and vocabulary and comprised of reading passages student activities crossword word search comprehension quiz and color mini posters our resource can be used effectively for test prep and your whole class All of our content is aligned to your State Standards and are written to Bloom s Taxonomy and STEM initiatives **Atoms, Molecules & Elements Gr. 5-8** George Graybill,2007-09-01 Young scientists will be thrilled to explore the invisible world of atoms molecules and elements Our resource makes the periodic table easier to understand Begin by answering what are atoms See how the atomic model is made up of electrons protons and neutrons Find out what a molecule is and how they differ from elements Then move on to compounds Find the elements that make up different compounds Get comfortable with the periodic table by recognizing each element as part of a group Examine how patterns in the period table dictate how those elements react with others Finally explore the three important kinds of elements metals nonmetals and inert gases Aligned to the Next Generation Science Standards and written to Bloom s Taxonomy and STEAM initiatives additional hands on experiments crossword word search comprehension quiz and answer key are also included

Periodic Table & Periodic Properties M. Satake,2010 The book is primarily meant for undergraduate students of chemistry General reader who is interested in chemistry of elements and their behaviour will find it equally interesting and easy to understand Periodic Table 91 Success Secrets - 91 Most Asked Questions on Periodic Table - What You Need to Know Patrick Stein,2014-10-01 Probably The Best Periodic table Guide To Date There has never been a Periodic table Guide like this It contains 91 answers much more than you can imagine comprehensive answers and extensive details and references with insights that have never before been offered in print Get the information you need fast This all embracing guide offers a thorough view of key knowledge and detailed insight This Guide introduces what you want to know about Periodic table A quick look inside of some of the subjects covered Extended periodic table Predicted properties of undiscovered elements Extended periodic table Elements 165 to 172 Extended periodic table Eka superactinides Extended periodic table 8s elements Transition metal Position in the Periodic Table Block periodic table Relativistic effect Periodic

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Periodic Table Linda Trombley,Faye Williams,2000 Whether students are studying chemistry biology or other sciences the periodic table is a vitally important tool These 50 word games puzzles and other creative activities unlock the nature of the various elements while explicating periodicity atomic structure element groups and more Complete teacher support includes background information answer keys and materials lists **Leveled Texts: The Periodic Table** Joshua

BishopRoby,2014-01-01 All students can learn about the periodic table through text written at four different reading levels Symbols on the pages represent reading level ranges to help differentiate instruction Provided comprehension questions complement the text Atoms, Molecules & Elements: What Are Compounds? Gr. 5-8 George Graybill,2015-10-01 This is the chapter slice What Are Compounds from the full lesson plan Atoms Molecules Elements Young scientists will be thrilled to explore the invisible world of atoms molecules and elements Our resource provides ready to use information and activities for remedial students using simplified language and vocabulary Students will label each part of the atom learn what compounds are and explore the patterns in the periodic table of elements to find calcium Ca chlorine Cl and helium He through hands on activities These and more science concepts are presented in a way that makes them more accessible to students and easier to understand Written to grade and using simplified language and vocabulary and comprised of reading passages student activities crossword word search comprehension quiz and color mini posters our resource can be used effectively for test prep and your whole class All of our content is aligned to your State Standards and are written to Bloom s Taxonomy and STEM initiatives **The Basics of the Periodic Table** Leon Gray,2013-12-15 A sweeping history of both the discovery and classification of elements and the development of the modern periodic table Included are discussions of the discovery of matter atoms atomic structure molecules compounds ions and isotopes as well as the first identifications of the 118 and counting elements and the various ways they have been classified and organized by prominent scientists up to the present day periodic table Instruction in how to read the periodic table is accompanied by examinations of the various groups of elements their location on the table and their properties and practical uses This text strongly supports Common Core Standards for the reading of scientific and technical texts and accounts and furnishes ample opportunities to summarize cite

evidence and analyze connections between ideas individuals and events Sorting The Elements Barber,2007-08-01
Explores Elements And Atoms Rows And Columns Common Elements Metals And Nonmetals And Elements Into Compounds

The HISTORY of the ATOM the PERIODIC TABLE and RADIOACTIVITY Alex Kimmons,2021-05-15 THE HISTORY OF THE ATOM THE PERIODIC TABLE and RADIOACTIVITY monochrome Chemistry is an interesting and fundamental branch of science because it gives us the chance to explain the secrets of nature What is water What do we use in our cars as fuel What is aspirin What are perfumes made of These kinds of questions and their answers are all part of the world of chemistry There is no industry that does not depend upon chemical substances the petroleum pharmaceuticals garment aircraft steel and electronics industries for example as well as agriculture all utilize the science of chemistry This book helps everyone to understand nature However one does not need to be a chemist or scientist to understand the simplicity within the complexity around us The aim was to write a modern up to date book where students and teachers can get concise information about the structure of substances Sometimes reactions are given in the detailed form but in general excessive detail has been omitted The book is designed to introduce fundamental knowledge in three areas the history of the atom the periodic table and radioactivity We will study the historical development of atomic structure theories the tendencies of elements in periods and groups and the types of emissions and uses of radioactivity *Chemical Elements Pocket Guide* Coventry House Publishing,2020-02-08 The Chemical Elements Pocket Guide serves as a portable reference for quick study and efficient review of the 118 elements on the periodic table This on the go resource details the physical and atomic properties of each element as well as their history and characteristics in bullet point format The book s small trim size 4 25 x 6 8 inches is intended to fit inside a lab coat pocket and the bound design means you no longer need to carry loose bulky flashcards that can be misplaced or destroyed Includes the updated names nihonium moscovium tennessine and oganesson for elements 113 115 117 and 118 respectively Information provided includes Atomic number Atomic symbol Element category Standard state Atomic mass Electron configuration Oxidation states Electronegativity Atomic radius Ionization energy Electron affinity Melting point Boiling point Density Year discovered Discovered by Appearance Natural occurrence Interesting fact *The Periodic Table* Desmond Grosvenor Cooper,1968 **Mystery of the Periodic Table** Benjamin D Wiker,2003-04-18 Leads the reader on a delightful and absorbing journey through the ages on the trail of the elements of the Periodic Table as we know them today He introduces the young reader to people like Von Helmont Boyle Stahl Priestly Cavendish Lavoisier and many others all incredibly diverse in personality and approach who have laid the groundwork for a search that is still unfolding to this day The first part of Wiker s witty and solidly instructive presentation is most suitable to middle school age while the later chapters are designed for ages 12 13 and up with a final chapter somewhat more advanced Illustrated by Jeanne Bendick and Ted Schluenderfritz **Elements and the Periodic Table, Grades 5 - 12** Theodore S. Abbigy,2013-01-02 Aligned to Common Core State Standards Elements and the Periodic Table present the basics of the

Periodic Table in an easy to understand easy to master way It contains fun activities transparency masters quizzes tests rubrics grading sheets and more From basic elements to table organization Elements and the Periodic Table is the essential handbook for middle school science **Elements and the Periodic Table, Grades 5 - 8** Abbgy,2013-01-02 Aligned to Common Core State Standards Elements and the Periodic Table present the basics of the Periodic Table in an easy to understand easy to master way It contains fun activities transparency masters quizzes tests rubrics grading sheets and more From basic elements to table organization Elements and the Periodic Table is the essential handbook for middle school science *The Periodic Table in Minutes* Dan Green,2016-09-06 An icon of science the Periodic Table defines the fundamental chemistry of everything in the universe In this compact yet comprehensive guide Dan Green outlines the history development and workings of the table shows how its design reflects and illuminates the organisation of all matter and even explains what it has to tell us about the chemistry of distant stars and of our own bodies Contents include an individual entry for every known element detailing properties uses and key data and sections on the patterns and groups of the famous table as well as explanations of basic chemistry concepts such as elements and compounds atomic structure chemical bonds reactions and radioactivity amongst many others

Unveiling the Magic of Words: A Report on "**Periodic Table Pogil Answers**"

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Periodic Table Pogil Answers Introduction

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