

Book 1 - Alchemical Wizards

present

"Magical Elements Of The Periodic Table."

In this periodic table book, 23 Alchemical Wizards present Magical Elements of the Periodic Table. Each wizard wields a magical staff tipped with an element which gives them unique powers.



Areg starts out Book 1 of the Alchemical Wizards by introducing the important element Argon on his element page.

Thurwin rounds out the Book 1 elements by presenting facts and other fun information about the metal, Thulium on his element page.



Another elemental favorite is Galoa, who represents Gadolinium. It gives her the power to control and manipulate electromagnetic waves, rendering her a formidable force in the world of technology and communication.





Phova is truly magical, as Phosphorus gives her the ability to manipulate light and create illusions. She can control the intensity, color, and direction of light, allowing her to bend it to her will.

The Alchemical Wizards, along with their techno-magical unicorn and dragon friends from the first 2 Magical Elements Books are the perfect group to introduce you to metals and other elements in the Periodic Table. Hopefully, the Magical Elements of this periodic table book will spark an interest in the magical and real world properties of all the metals and other elements known today. You may be surprised at how prominently they feature in our every day lives.

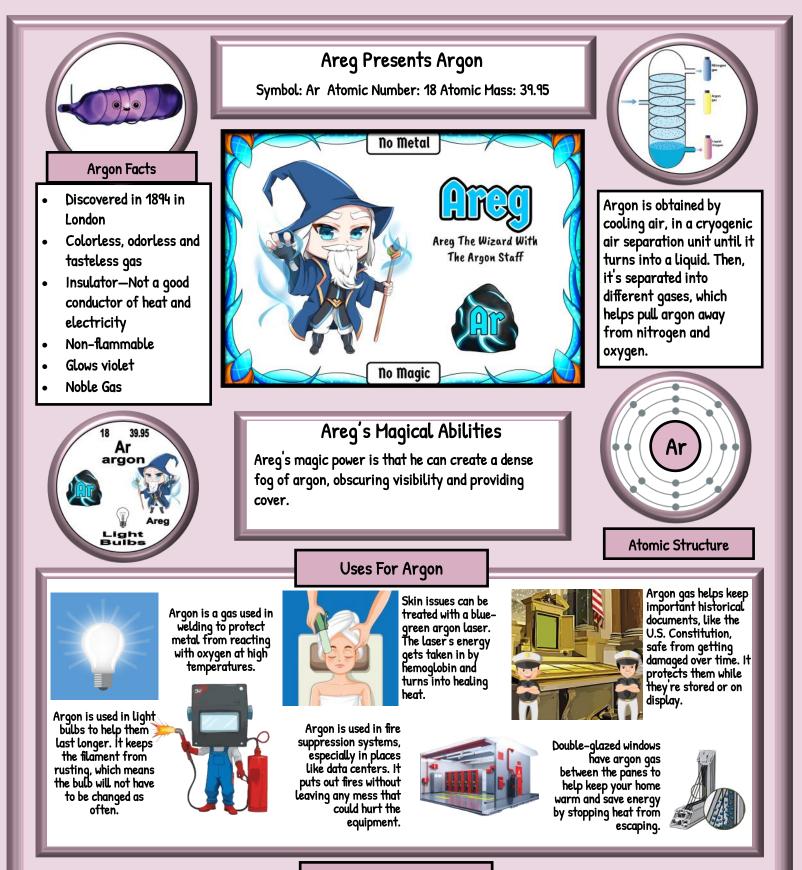
Each element page in this book contains terms that might not be completely familiar to the reader. Refer to the definitions in the back of the book to get a clear understanding of each meaning.

There is also a fun elemental themed Periodic Table at the back of the book. It features metal horn unicorns, dragons with element tipped tails, wizards and knights with elemental staffs and swords; and radiated goblins.

Remember, "No metal - No Magic. . .and No Technology".

It's Techo-Magical.

Note: The reference page for all entries in this periodic table book is at MagicalPTElementscom/MW1PT. Follow sybrinablueunicorn on Instagram, The Blue Unicorn Book Store on Facebook, @sybrinad on Pinterest, Sybrina_SPT on Twitter; and Sybrina Durant on LinkedIn.



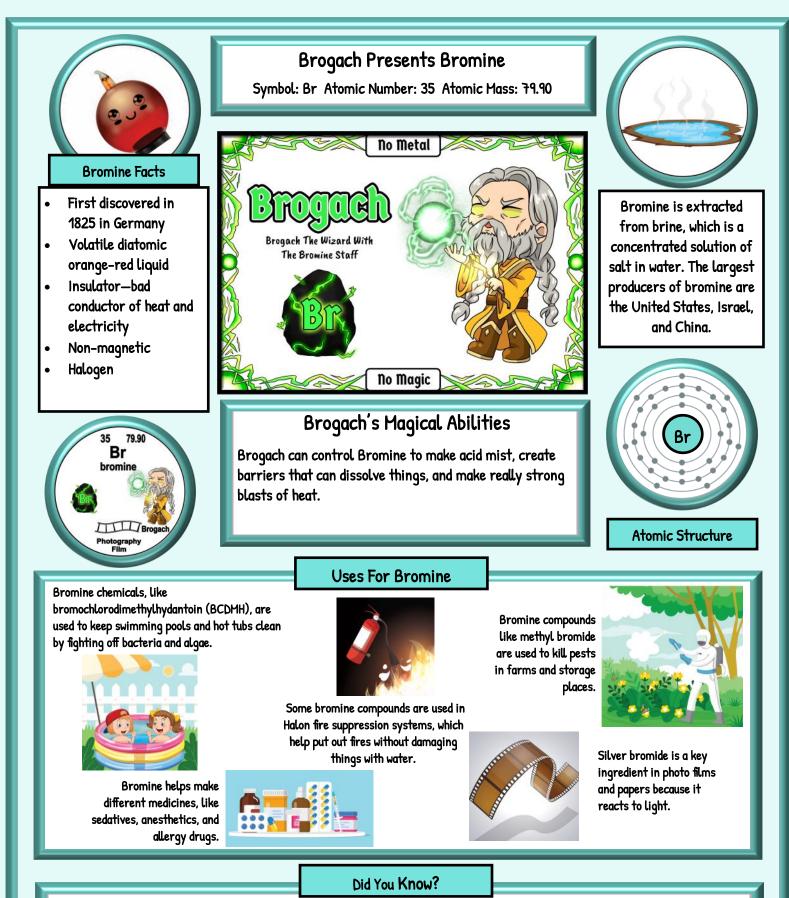
Did You Know?

- Argon was suspected to be present in air by Henry Cavendish in the year 1785. It was first isolated from air in 1894 by Lord Rayleigh and Sir William Ramsay at University College London.
- Argon gets its name from the Greek word "argos," which means idle or lazy, because it hardly reacts with anything.
- Argon is the most common noble gas on Earth. There's more of it in the air than water vapor—over twice as much.
- Argon is used to keep snack chips fresh in their packaging. While other noble gases could work too, argon is the cheapest option.
- Argon can be mixed with oxygen to create a special breathing gas called Argox. It helps get rid of extra nitrogen from your blood when you re decompressing after deep-sea diving.

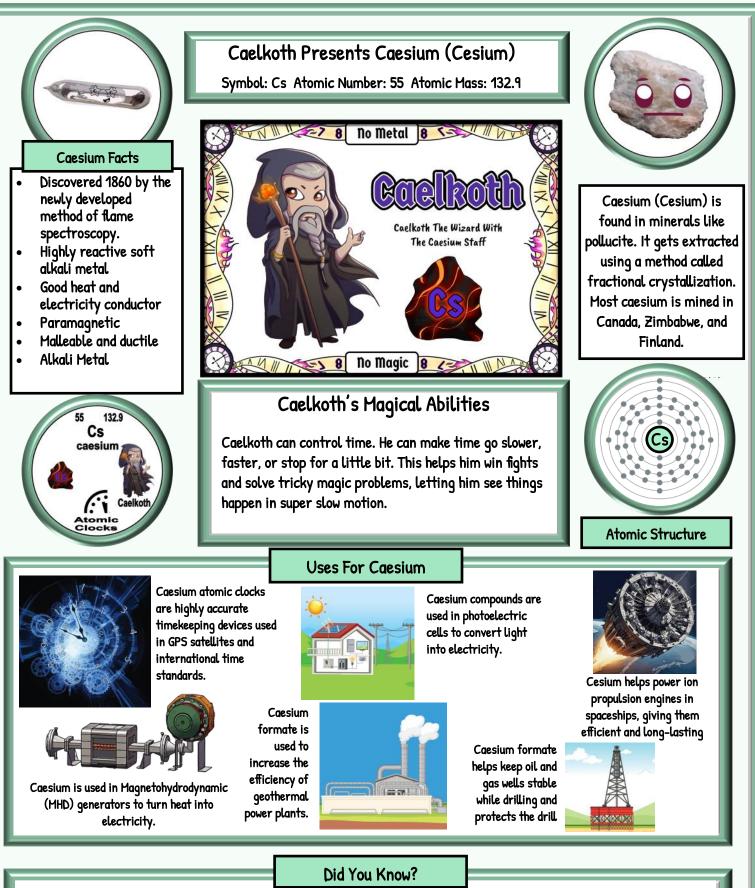


Did You Know?

- The name boron comes from the mineral borax which gets its name from the Aribic word "burah" which means borax.
- In 1808, scientists Louis-Josef Gay-Lussac and Louis-Jacques Thénard in Paris, along with Sir Humphry Davy in London, figured out how to get boron by heating borax with potassium. Then, in 1892, Henri Moissan made a cleaner version. Finally, in 1909, E. Weintraub created the super pure boron we use today.
- Boron burns bright green in flame tests. Boron's green flame properties are used to make green colors in fireworks.
- Boric acid kills insects when they eat it. It works by messing with their stomachs and affecting their nervous system.



- Bromine was discovered independently by two chemists, Carl Jacob Löwig (Germany) and Antoine Balard (France), in 1825 and 1826, respectively. Löwig isolated bromine from a mineral water spring from his hometown of Bad Kreuznach in 1825.
- Bromine is the only nonmetal that's a liquid at room temperature, making it one of just two elements that are liquid at room temp and pressure (the other is mercury).
- It easily evaporates to make stinky brown fumes that smell really bad. Its name literally means "stench of he-goats."
- Bromine is extremely reactive but bromides (negatively charged bromine ions) are non-reactive. The Dead Sea has a lot of bromide in it.



- Caesium or Cesium? It's spelled "caesium" everywhere else, but in 1921 the U.S. switched to "cesium." This element got its name from the cool blue lines in its spectrum and the blue flame it creates. The Latin word "caesius" means "sky-blue."
- This silvery metal with a golden cast is the most reactive and one of the softest of all metals. It is liquid at or near room temperature and will melt in your hand. But don't hold it! Sweat on your palms could make it explode.
- It has an electrical conductivity 10-times less than copper, and a thermal conductivity about 10-times less than gold.
- A second is how long it takes for a certain amount of radiation to come from caesium-133. That's why caesium is used in atomic clocks
 and gadgets like cell phones to keep track of time.

Allotropes

An allotrope is one or more forms of a chemical element that can exist in the same physical state. Allotropes have different chemical and physical properties due to the different ways in which the atoms bond together to create each allotrope.

Boron =

Borophene Borospherene Boron Nanotubes



Borophene (boron sheets) Applications: Used in batteries, hydrogen storage, micro-mano sensors, laser shielding, composites, textile products, bendable screens, circuit boards, paintings and coatings.

Borospherene (boron fullerenes) Applications: Used as a nanoparticle in the fields of medicine, electronics, and in the fields of molecular devices.

Boron nanotubes Applications: Used to shield large space crafts from space radiation and high temperatures during atmospheric entry, descent, and landing.

White Phosphorus (yellowish waxy solid) Applications: Used to manufacture

chemicals used in fertilizers, food additives, and *cleaning compounds*.

Black Phosphorus (phosphorene) Applications: Used in photodetectors,

Red Phosphorus (dark red, amorphous powder) Applications: Used in

supercapacitors, superconductors, and memory devices.

Phosphorous =

White Phosphorus **Red Phosphorus** Black Phosphorus

Arsenic =

Yellow Arsenic. Black Arsenic, Gray Arsenic

Selenium =

Amorphous Red Selenium,

Hexagonal Selenium

Amorphous Black Selenium, Monoclinic Selenium,



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Selenice

rinter

Yellow Arsenic (non-metallic solid) Applications: Used in pharmaceuticals, wood preservatives, agricultural chemicals, and applications in the mining, metallurgical, glass-making, and semiconductor industries.

Black Arsenic (glassy chrystal) Applications: Used in pharmaceuticals, wood preservatives, agricultural chemicals, and applications in the mining, metallurgical, glass-making, and semiconductor industries.

Gray Arsenic (metallic) Applications: Used to strengthen alloys of lead (e.g. in automotive batteries) and copper.

Amorphous Black Selenium (glassy and amorphous) Applications: Used as photoconductors in X-ray detectors and as toners for copy machines.

Amorphous Red Selenium (brick-red powder) Applications: Used for infrared technology, ultra-violet lights and as a red colorant.

Monoclinic Selenium (Crystalline) Applications: Used in the electronics industry, as a nutritional supplement, in the glass industry, as a component of pigments in plastics, pains, enamels, inks and rubber.

Hexagonal Selenium (Metallic Gray) Applications: Used in toner cartridges, optical materials, static photographic materials and other optical instruments.

Can you quess the most well-known allotrope of all?



= ??????

(Answer can be found below.)

The above chart only shows a few of the allotropes formed by those elements. Other elements with allotropes are:

Bromine: Dibromine, Chlorine: Dichlorine, Fluorine: Difluorine, Hydrogen: Dihydrogen, Iodine: Diiodine, Nitrogen: Dinitrogen, Polonium: Alpha Polonium & Beta Polonium, *Tin*: White Tin & Gray Tin, *Oxygen*: Díoxygen, Ozone & Tetraoxygen, *Sulfur*: Rhombic Sulphur, Monoclinic Sulphur & Amorphous Sulphur, *Antimony*: White Antimony, Yellow Antimony & Black Antimony.

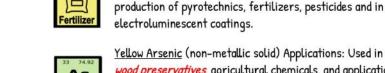
Carbon is the most well-known allotrope of all because its atoms bond together to form Graphite, Graphene, Diamonds, Carbon Nanotubes, Carbon Buckeyballs, and much more.

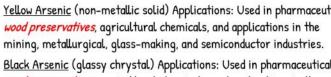
None of the other elements of the periodic table form allotropes.

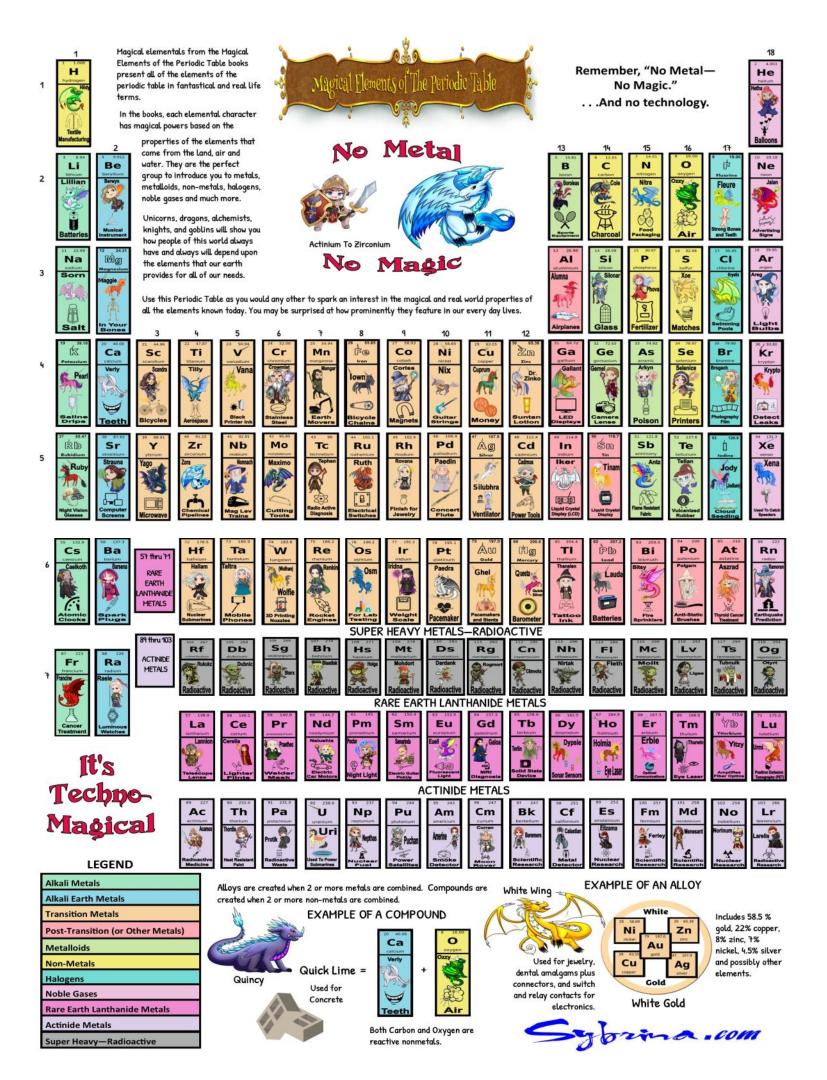












Types of Elements On The Periodic Table

Alkali Metals—Some metals on the periodic table are soft and shiny—they're so soft you can actually cut them with a knife! These metals love to give away their electrons, which makes them super reactive. When they do, they form something called salt. Interestingly, you won't find these metals by themselves in nature; they need to be taken from other materials.

Examples of these metals include lithium, sodium, potassium, rubidium, cesium, and francium.

Alkali Earth Metals—The elements in column 2 of the periodic table have 2 outer electrons in their shell. This makes them super reactive with nonmetals that need electrons to feel stable. When they react, they create something called a salt. You can often find them alone in nature, and they can even conduct electricity! The elements are beryllium, magnesium, calcium, strontium, barium, and radium.

Post-Transition (or other Metals)— Elements directly to the right of the transition metals. They are known as "poor metals: and are soft and brittle. These include aluminum, gallium, indium, tin, thallium, lead, bismuth, zinc, cadmium and mercury.

Transition Metal—The main metals are found in the middle and bottom rows of the periodic table. They look like metal, can conduct electricity, can bend and be shaped easily. The period 4 transition metals are scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, and zinc. The period 5 transition metals are yttrium, zirconium, niobium, molybdenum, technetium, ruthenium, rhodium, palladium, silver, and cadmium. The period 6 transition metals are lanthanum, hafnium, tantalum, tungsten, rhenium, osmium, iridium, platinum, gold, and mercury. The period 7 transition metals are the naturally-occurring actinium, and the artificially produced elements rutherfordium, dubnium, seaborgium, bohrium, hassium, meitnerium, darmstadtium, and roentgenium.

Metalloids—The elements called metalloids are a mix of metals and nonmetals. They look like metals, but can't conduct electricity very well. They also break easily and act like nonmetals. These include boron, silicon, germanium, arsenic, antimony, tellurium, astatine, and polonium.

Non-Metals—These elements reside in columns 15-17, and can be gases, liquids, or solids. They don't conduct heat or electricity. The solids are brittle, and they have no metallic luster. They readily accept electrons from metals to form salts. These include nitrogen, oxygen, fluorine, chlorine, bromine, and iodine.

Halogens—Halogen chemicals are a special type of element. When they mix with metal, they become a kind of salt. Halogens are super reactive because they like to take an electron from metals. They can be found in column 17 of the element table. Some of them can be found in nature, but most are very dangerous and can hurt you if you touch them. They include fluorine, chlorine, bromine, iodine, and the radioactive elements astatine and tennessine.

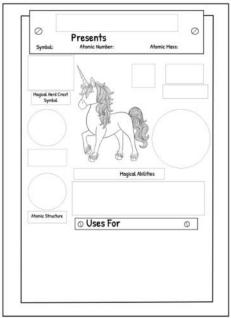
Noble Gases—These elements reside in column 8. They are all odorless, colorless gases that are chemically very stable (inert). They don't generally form compounds by bonding with another element. These include helium, neon, argon, krypton, xenon, and radon.

Lanthanide Rare Earth Minerals—The Japanese call them "the seeds of technology." The US Department of Energy calls them "technology metals." These elements have atomic numbers 57-71. They are vital to industry. They can be added to metals to strengthen them to make alloys such as stainless steel, used to refine crude oil, and are crucial in producing technology—electronics, telecommunications, and metal devices to name a few. They are lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium,

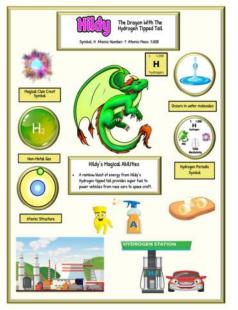
Actinide Metals—Any of a series of chemically similar metallic elements with atomic numbers ranging from 89 (actinium) to 103 (lawrencium). All of these elements are radioactive, and two of the elements, uranium and plutonium, are used to generate nuclear energy. The lanthanides and actinides are sometimes called the inner transition metals, referring to their properties and position on the table. They are actinium, thorium, protactinium, uranium, neptunium, plutonium,

Super Heavy—Radioactive—Superheavy elements are those elements with a large number of protons in their nucleus. Elements with more than 92 protons are unstable; they decay to lighter nuclei with a characteristic half-life. They do not occur in large quantities (if at all) naturally on earth, and only exist briefly under highly controlled circumstances. They include lawrencium, rutherfordium, dubnium, seaborgium, bohrium, hassium, meitnerium, darmstadtium, roentgenium, copernicium, nihonium, flerovium, moscovium, livermorium, tennessine, and oganesson.

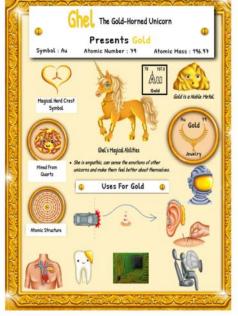
Printable Magical Elemental Activity Downloads Fun Way For Students To Learn The Elements Of The Periodic Table



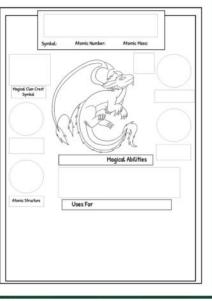
Blank Unicorn Element Card



Sample Dragon Element Card



Sample Unicorn Element Card



Blank Dragon Element Card

Magical Unicorn Elemental Research Sheet

element.	
Name of Hagical Unicorn:	
Unicorn's Magic Power Based on the Element's Properties:	
Element Nome:	
Clement Symbol:	
Number of Protons:	
Number of Neutrons	
Number of Electrons:	
Element Group:	
Rement Period:	
Clement Family Nome:	
Bement Type:	
State of Element At Room Temperature:	
what is Element Hined or Extracted From?	
is Element Magnetic?	
Does Element Conduct Electricity?	
where is the Element commonly found in Nature?	
What are 2 alloys of the Element?	
What are 2 compounds of the Element?	
lame the most common use for this Element:	
lame a little known use or this Element:	
tame one more use for his Element:	
that year and where was this Element discovered?	
who discovered this Rement?	

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Magical Dragon Elemental Research Sheet

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Does Element Conduct Deachristry? Where is the Element commonly found in	
Where is the Element commonly found in	
What is 1 alloy of the Element? How used?	
What is 1 compound of the Element? How used?	
Name the most common use for this Element:	
Nome s Utilis known use for this Element:	
Name one more use for this Bernent:	
interesting and Fun Facts	

Blank Research Sheet

Using the sample Magical Elemental cards provided, have students select an element from the Periodic Table and a Magical Elemental Card Blank to create their own Magical Elemental Card. The blank and sample cards do not have to match.

You will receive a pdf containing either 26 unicorn or 26 dragon sample cards and blanks to be printed on 8 1/2 x 11 sized paper or card stock. The pdf also contains a Magical Elemental Research Sheet for the students to work on before creating their unique Periodic Table Elemental. They will also write a short paragraph describing their Unicorn or Dragon Elemental from that research.

Get These Fun Elemental Periodic Table Activity Sheets at MagicalPTElements.com

I hope you enjoyed this sample

Magical Elements of The Periodic Table

Presented By The Alchemical

The book is available in Kindle, Soft Cover and Hard Back. Learn more about it at sybrina.com/mw1pt



If you love the book, please ask your local children's librarian to purchase it in Hard Cover format ISBN # 978-1-942740-47-6