

Mystery Elements Cards

Instructions: Print, cut apart on lines and shuffle. Use the numbers in the lower right corner of each card to find the “mystery” element name on the answer sheet.

<h3>Mystery Element</h3> <ul style="list-style-type: none">◆ First element in the periodic table◆ One of two elements that make up water◆ Gaseous at room temperature◆ Extremely flammable◆ Oxidation state (charge) of +1 <p>26</p>	<h3>Mystery Element</h3> <ul style="list-style-type: none">◆ Diatomic gas◆ 79% of our atmosphere is this in gaseous form◆ Liquid used in cryogenics and to make ice cream◆ One of two elements in ammonia◆ Integral part of amino acids <p>30</p>
<h3>Mystery Element</h3> <ul style="list-style-type: none">◆ Often used to inflate balloons◆ Gaseous at room temperature◆ Temporarily changes one’s voice when a small amount is inhaled◆ Second lightest element◆ A noble gas <p>19</p>	<h3>Mystery Element</h3> <ul style="list-style-type: none">◆ Major component of air◆ Waste product of photosynthesis◆ Human life would not exist without it◆ Oxidation state (charge) of -2◆ One of its states (isotopes) plays a major role in the protective layer around the Earth <p>29</p>
<h3>Mystery Element</h3> <ul style="list-style-type: none">◆ Lightest metal element◆ Chemically very similar to sodium◆ Used in batteries◆ Reacts easily with water◆ Oxidation state (charge) of +1 <p>7</p>	<h3>Mystery Element</h3> <ul style="list-style-type: none">◆ Halogen◆ Poisonous and corrosive gas◆ Reacts explosively with hydrogen◆ Most reactive and electronegative of all elements◆ Used in production of Teflon <p>27</p>

Mystery Element

- ♦ Alkaline earth metal
- ♦ Contains four protons
- ♦ Used as a hardening agent in metal alloys
- ♦ Emeralds and aquamarines contain this element
- ♦ Toxic

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Mystery Element

- ♦ Colorless inert gas
- ♦ Part of the noble gas family
- ♦ Second lightest noble gas
- ♦ Used to make attention-getting signs
- ♦ Contains 10 protons

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Mystery Element

- ♦ Solid at room temperature
- ♦ Brown or black non-metal
- ♦ Acts as a Lewis-acid
- ♦ Oxidation state (charge) of +3 (very electrophilic)
- ♦ Used to make insulating fiberglass

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Mystery Element

- ♦ Alkali metal
- ♦ One of two elements present in salt
- ♦ Found in baking soda
- ♦ Necessary for life to exist
- ♦ Oxidation state (charge) of +1

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Mystery Element

- ♦ Contains six protons
- ♦ Diamond and graphite are composed of this
- ♦ Present in all organic compounds; the basis of life
- ♦ Used in radioactive dating
- ♦ Makes steel when combined with iron

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Mystery Element

- ♦ Contains 16 protons
- ♦ Yellow non-metal
- ♦ Found in several amino acids; essential for life
- ♦ Associated with a rotten egg smell
- ♦ Part of a relatively strong acid used as an industrial raw material

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Mystery Element

- ♦ Very abundant on Earth
- ♦ Alkaline earth metal
- ♦ Used to make mild of magnesia and Epson salts
- ♦ Used to make metal alloys
- ♦ An important human nutrient found in nuts, seeds and whole grains

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Mystery Element

- ♦ Used to disinfect water and swimming pools
- ♦ Diatomic gas
- ♦ One of two elements found in common salt
- ♦ Extremely poisonous
- ♦ Halogen with a -1 oxidation state (charge)

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Mystery Element

- ♦ Very resistant to oxidation
- ♦ Strong and lightweight metal
- ♦ Used to make automobiles and beverage cans
- ♦ Was once considered a precious metal due to the rarity of the pure element
- ♦ Oxidation state (charge) of +3

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Mystery Element

- ♦ Contains 18 protons
- ♦ Colorless and odorless
- ♦ Commonly used in lighting
- ♦ Most common noble gas on Earth
- ♦ No confirmed chemical compounds contain this element

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Mystery Element

- ♦ Similar properties to carbon, but less reactive
- ♦ Contains 14 protons
- ♦ Second most abundant element in Earth's crust
- ♦ Quartz and sand contain this element
- ♦ Used in semiconductor industry and a major component of glass and cement

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Mystery Element

- ♦ Shares many characteristics with sodium
- ♦ Second lightest metal
- ♦ Alkali metal that reacts violently with water
- ♦ Found in high quantities in bananas
- ♦ A shortage of this element in the body leads to a fatal condition known as hypokalemia

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Mystery Element

- ♦ Very reactive, solid, non-metal
- ♦ Oxidation state (charge) of -3 or +5
- ♦ Found in all living cells
- ♦ Burns spontaneously in air
- ♦ Used to produce fertilizer and by cells to transport energy

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Mystery Element

- ♦ Soft, gray alkaline earth metal
- ♦ Essential for life
- ♦ Human nutrient found in dairy products
- ♦ Fifth most abundant element in the Earth's crust
- ♦ Oxidation state (charge) of +2

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Mystery Element

- ♦ Transition metal
- ♦ Contains 21 protons
- ♦ Used to make high-intensity lights
- ♦ Used to form metal alloys with aluminum
- ♦ Found in rare minerals in Scandinavia

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Mystery Element

- ♦ Comes from Latin word "ferrum"
- ♦ Essential to all organisms; used in the heme complex in humans
- ♦ Most abundant element that makes up the Earth
- ♦ Most widely-used metal
- ♦ Extracted from hematite and magnetite

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Mystery Element

- ◆ Similar properties to zirconium
- ◆ Used to make very strong, light-weight metal alloys
- ◆ Used to make medical implants, aircraft and boats
- ◆ As strong as steel, but half the weight
- ◆ Corrosion resistant

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Mystery Element

- ◆ Contains 27 protons
- ◆ Corrosive-resistant transition metal
- ◆ Oxidation state (charge) of +2 or +3
- ◆ Used in radiotherapy
- ◆ Comes from the German word “kobold,” which means evil spirit

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Mystery Element

- ◆ Transition metal containing 23 protons
- ◆ Used to make metal alloys, particularly steel
- ◆ Rare and ductile
- ◆ Very toxic
- ◆ Only found bound to other elements

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Mystery Element

- ◆ Used in coin making; and brass and iron plating
- ◆ A US monetary coin shares its name with this element that contains it
- ◆ Found in rechargeable batteries
- ◆ Belongs to the iron group
- ◆ The Earth’s core is supposedly composed of this element and iron

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Mystery Element

- ◆ Reacts immediately with oxygen, forming a protective layer
- ◆ Steel gray color
- ◆ Helps with sugar metabolism in humans
- ◆ Used in making metal alloys as well as in dyes and paints

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Mystery Element

- ◆ Used in the US one cent piece
- ◆ Reddish-gold color
- ◆ Known as “chalkos” by the Greeks, “aes Cyprium” by the Romans, and simplified to “cuprum”
- ◆ Used by civilizations more than 10,000 years ago
- ◆ Used to make brass/bronze metal alloys

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Mystery Element

- ◆ Essential to steel production
- ◆ Contained in potassium permanganate, which is used in medicine
- ◆ Nutrient in all of life
- ◆ Found primarily in pyrolusite
- ◆ Part of the iron group of elements

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Mystery Element

- ◆ Contains 30 protons
- ◆ Fourth most common metal used on Earth
- ◆ Necessary for life; found in animal proteins
- ◆ Human deficiency leads to memory and sensory loss as well as stunted brain development
- ◆ Oxidation state (charge) of +2

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