

MILESTONE 4: PROGRAMMING PLAN

GAME TITLE: ✨Matter Quest✨

OBJECTIVE: Defeat all the enemies and restore peace between all particles 🙌

BACKSTORY:

- World taken over by evil atoms, particles, and molecules 🧪
- You (the protagonist) want to defeat them ✂️
- Travel a treacherous journey to restore peace 🕊️
- Fight/defeat enemies along the way 🎮

STORYLINE:

MATTER QUEST

The land of Matter has been taken over by the dangerous renegade, Mercury, and his loyal followers.

Citizens and fellow particles have grown restless with Mercury's rule. Throughout the particles, there are prophecies of a hero who will confront the wicked king.

Whispers of rebellion have been spread across the land, and danger looms at every turn.

You, the player, decide to embark on a quest to restore peace between all particles and finally defeat the dreaded Mercury.

Good luck player.

RULES:

- Use 🔥 / ❄️ to change the enemies' state of matter (harder/easier depending on the type of molecule/atom)
- Final bosses can be compound elements (elements combine together to form compound) 🏆
- Certain atoms are more dangerous as certain states of matter (ie: mercury ~ very dangerous in gas state)
- Caffeine molecules can restore energy ☕ ⚡
- Maximum 8 energy levels at a time (defeating an enemy = -1 ⚡, defeating a boss = -3 ⚡) ~ Kinetic Energy
- Short explanation of the atom/molecule is shown when encountering a new one
- Enemy health bar decreases with temperature 😓 (transitions into different state of matter when health bar hits certain level 🧊)
- There are 3 levels in the game; each have different challenges/difficulty levels 🎯
- When the player defeats the final boss, there will be a sword that they have to claim; declares them winners of the game ✂️ (If loose, restart game; GAME OVER sign)

CONTROLLER KEYS:

- Arrow Keys = Move Character
- Click/Tap = Selection
- Space = Talking/Text/Communication with NPCs/Enemies

KINETIC MOLECULAR THEORY:

- Defeating Enemies
- Energy; need a certain amount to continue fighting (use caffeine) ~ if low energy, movement slower
- Transitions from different states of matter when health bar hits certain level with enemies

ENEMIES/ENERGY:

OXYGEN (O)

State of Matter: Liquid 💧

- Severe skin & eye irritation 🤢
- Burns & frostbite 🔥 / ❄️
- If inhaled can cause nitrogen narcosis & oxygen toxicity 🤢

Melting Point : -218.8 °C

Boiling Point: -297.3°F

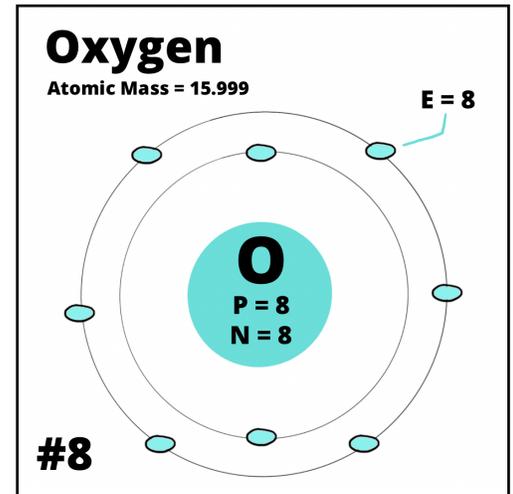
Freezing Point: Below -218.79 °C

Difficulty: 1/5 (easy) ✂️

Location: Level 1

Type: Pawns/Knights ♟️

How to Defeat: Use heat to evaporate 🔥



HYDROGEN (H)

State of Matter: Gas 🌫️

- Mixes well/ reacts violently with air, oxygen, halogens, & strong oxidants 🧪
- Chemical dangers (explosion hazard) ⚠️
- Violent combustion/explosion explosion 💥

Melting Point: -259.2 °C

Boiling Point: -252.9 °C

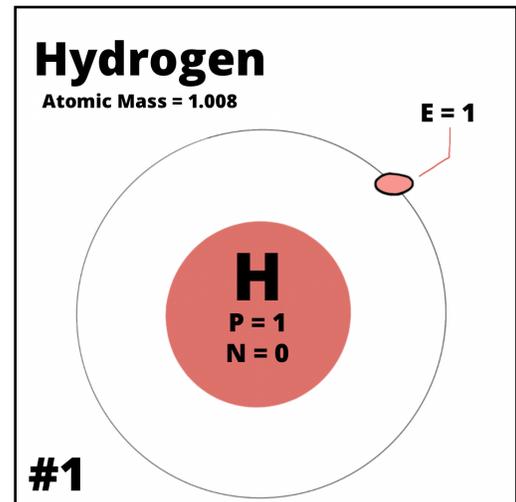
Freezing Point: Below -259.2 °C

Difficulty: 1/5 (easy) ✂️

Location: Level 1

Type: Pawns/Knights ♟️

How to Defeat: Use cold to freeze and solidify ❄️



WATER (H2O)

State of Matter: Solid/Liquid 💧 🧊

- Drowning 🌊
- Burns/hypothermia 🔥 / ❄️
- Freezing ❄️

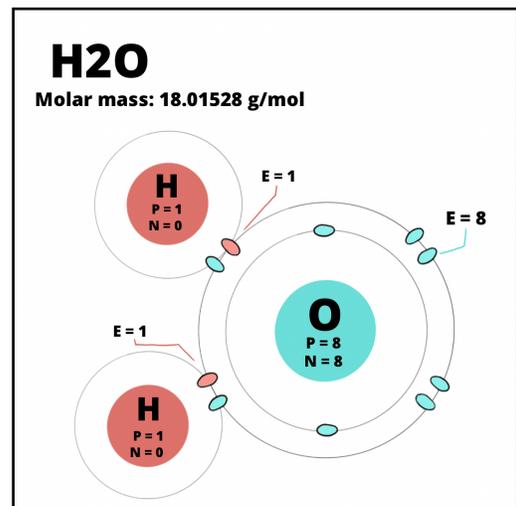
Melting Point: 0 °C

Boiling Point: 100 °C

Freezing Point: 32 °F

Difficulty: 2/5 (normal) ✂️

Location: Level 1



Type: Boss 🦴

How to Defeat: Use heat to evaporate 🔥

CARBON (C)

State of Matter: Gas 🌫️

- Inhalation can lead to damage to lungs & heart 🫁
- Air pollution 🤧
- Respiratory disease 🦠

Melting Point: 3550 °C
Boiling Point: 4827 °C
Freezing Point: -78.5 °C

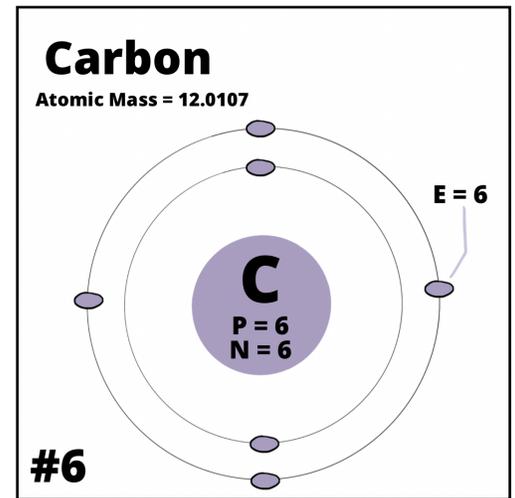
Difficulty: 3/5 (Difficult) ✂️

Location: Level 2

Type: Pawns/Knights ♟️

How to Defeat: Use temperature and density to compress the element (crystal +1 ~ Crystalline Carbon) ❄️💎

- Player can use crystal to heal/gain energy



COPPER (CU)

State of Matter: Solid 🧊

- Hard armour 🗡️
- Toxic if eaten 🦴
- Potential irritant 🤧

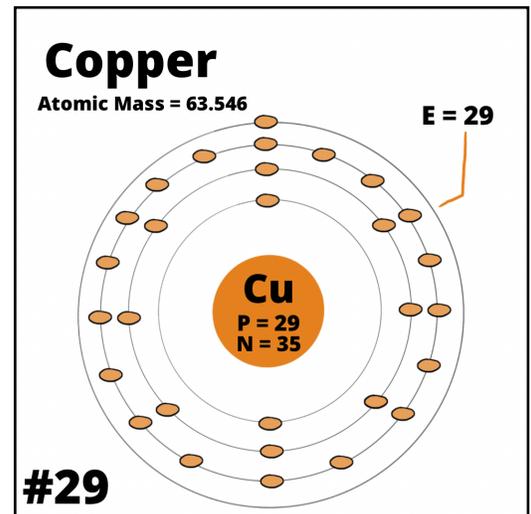
Melting Point: 1,085 °C
Boiling Point: 2,562 °C
Freezing Point: below 2,562 °C

Difficulty: 3.5/5 (Difficult) ✂️

Location: Level 2

Type: Knights ♟️

How to Defeat: Use heat to evaporate; beware of fumes 🔥



CARBON DIOXIDE (CO2)

State of Matter: Gas 🌫️

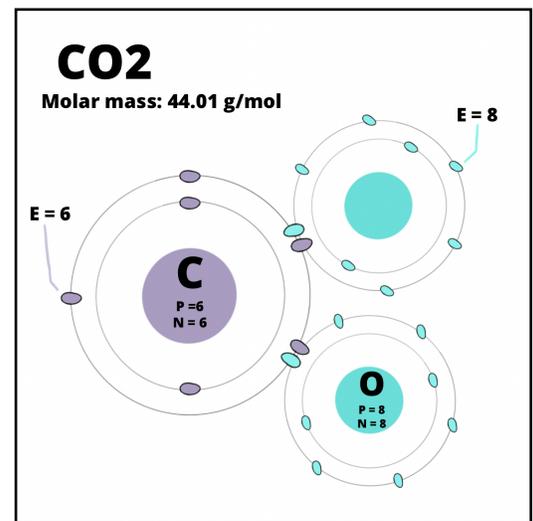
- Greenhouse gas 🌍
- Concentrations of more than 10% causes convulsions, coma, and death 🦴
- Levels of more than 30% act quick (loss of consciousness in seconds) 🤧

Melting Point: -56.6 °C

Boiling Point: $-78.46\text{ }^{\circ}\text{C}$
Freezing Point: $-78\text{ }^{\circ}\text{C}$

Difficulty: 4/5 ✂
Location: Level 2
Type: Boss 💀💀

How to Defeat: Use cold to freeze and solidify (dry ice) ❄



MERCURY (HG)

State of Matter: Gas 🌫

Melting Point: $-38.83\text{ }^{\circ}\text{C}$
Boiling Point: $356.7\text{ }^{\circ}\text{C}$
Freezing Point: below $-38.83\text{ }^{\circ}\text{C}$

Difficulty: 5/5 ✂
Location: Level 2
Type: Final Boss 💀💀💀

How to Defeat: Use cold to freeze and solidify ❄

CAFFEINE (C₈H₁₀N₄O₂)

State of Matter: Liquid ☕

Rarity: 1/5 Common
Location: Level 1&2
Type: Energy

How to Get: Buy/retrieve from other particles/fallen enemies

CRYSTAL (CRYSTALLINE CARBON)

State of Matter: Solid 💎

Rarity: 4/5
Location: 2&3
Type: Energy

How to Get: Solidify Carbon or retrieve from fallen enemies

Caffeine

C₈H₁₀N₄O₂

