

Reinvented State Of Matter Project

Interactions with solid, liquids, and gases has always been a task that human take for granted. At an early age, we learn how the natural world works through our life experiences. This is despite the fact that most of the solar system is made up of a form of matter fairly foreign to our lives; plasma. The Sun is composed primarily of plasma and we get limited “on-Earth” exposure in the form of auroras, lightning, and other forms of ionized particles. Nonetheless, we are perplexed by happenings in our life that do not always make sense and we try to develop ways to explain these phenomena. Your task is to develop a reinvented state of matter (NOT solid, liquid, gas, or plasma), develop a model of your proposed matter, and present your “new matter” to the class. You will have two weeks to complete the project. The following criteria must be fulfilled :

1. Invent a new form of matter that is not a solid, liquid, gas, or plasma.

Examples : Invisible, Negative Mass Particles, Ultra-Elastic or Ultra-Rigid, Gravitationally Immovable, Quantum Spin Liquids, Time Crystals, Dark Matter, Mirror Matter, Degenerate Matter, Bose-Einstein Condensates, Photonic Molecules, String-Net Liquids, Supercritical Fluids, Ghost Matter

(THINK SUPERHERO OR FANTASY MOVIES!)

*** Only be limited by your imagination. ***

2. Create a presentation (Google Slides) for the class with the following :

1. Title

- Include Title, Picture, Name, Date

2. Matter Properties

- Include 5 characteristics of your reinvented form of matter
- Include a picture

3. Similarities

- Include 5 similarities that your reinvented matter has comparing “known matter”
- Include a picture

4. Differences

- Include 5 difference that your reinvented matter has contrasting “known matter”
- Include a picture

5. Methods Of Detection

- Include 5 ways in which humans can detect (or interact) with your proposed matter
- Include a picture

6. Questions

- Other students (and myself) are open to ask you questions about how your proposed matter operates

3. Create a model of your reinvented type of matter to supplement your presentation.

(Physical Model (preferred), Large-Scale Drawing, Picture Hand-outs, Etc.)

GRADING RUBRIC

EX = Exceeding

- All required content present
- All required visuals present
- Accurate information
- Firm understanding of subject
- Organized and thoughtful
- Open-minded to all questions
- Creative model
- Well-created model

MT = Meeting

- Missing 1-2 content elements
- All required visuals present
- Accurate information
- Firm understanding of subject
- Organized and thoughtful
- Open-minded to all questions
- Creative Model
- Well-created model
- *Missing 1 Element from EX*

DV = Developing

- Missing 3-4 content elements
- Missing 1-2 visual elements
- Accurate information
- Superficial understanding
- Organized, but lacking depth
- Supports one viewpoint
- Model lacks creativity
- Model lacks effort & detail

BG = Beginning

- Missing 5+ content elements
- Missing 2+ visual elements
- Information lacks credibility
- Little understanding
- Disorganized
- Promotes one viewpoint
- Model mimics natural matter
- No model present