Crypto Craft Next Generation Science Standards Connections

1. Science and Engineering Practices

SEP 2: Developing and Using Models

• Standard: Students create and use models to represent systems and their interactions, such as energy flows, matter cycles, and financial systems.

• Crypto Craft Connection: Students design models, such as tokenized art pieces or the Meme Coin, to represent abstract financial systems, simulating tokenization and cryptocurrency concepts in tangible ways.

SEP 4: Analyzing and Interpreting Data

• Standard: Students use data to identify patterns and trends and make predictions.

• Crypto Craft Connection: Challenges like calculating inflation, analyzing market caps, or comparing cryptocurrency layers require students to interpret financial data and identify patterns to draw conclusions.

2. Disciplinary Core Ideas (DCI)

ESS3.A: Natural Resources

• Standard: Humans depend on Earth's resources, which have varying availability and are subject to economic and technological factors.

• Crypto Craft Connection: Mining, a key component of cryptocurrency, parallels real-world natural resource extraction, encouraging students to think about the energy costs and sustainability of blockchain technology.

ETS1.B: Developing Possible Solutions

• Standard: When evaluating solutions, it's important to consider economic, social, and environmental impacts.

• Crypto Craft Connection: Students assess the implications of different financial systems (fiat vs. crypto) and emerging technologies like blockchain in solving real-world economic challenges.

3. Crosscutting Concepts

Systems and System Models

• Standard: Models can be used to represent systems and their interactions, including inputs, processes, and outputs.

• Crypto Craft Connection: Students engage with cryptocurrency as a system, using Minecraft builds (like the Layers Library or Fiat Fort) to represent how financial systems and technologies interact.

Cause and Effect

• Standard: Cause and effect relationships can be used to predict phenomena in natural or designed systems.

• Crypto Craft Connection: Students explore how market trends, inflation, and trading decisions affect cryptocurrency value and broader financial systems.

Energy and Matter

• Standard: The transfer of energy and matter drives physical and financial systems.

• Crypto Craft Connection: Mining as a process introduces the concept of energy consumption in blockchain, tying in environmental science and energy sustainability concerns.

Example NGSS-Aligned Performance Expectations

HS-ESS3-2: Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

• Crypto Craft Connection: Students analyze the environmental and economic trade-offs of crypto mining versus traditional fiat systems.

MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution.

• Crypto Craft Connection: Building projects like the Meme Coin or tokenized art pieces require students to apply criteria such as functionality, creativity, and adherence to economic concepts.

HS-ESS3-4: Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

• Crypto Craft Connection: Discussions around the environmental impacts of crypto mining allow students to brainstorm solutions, such as green mining or alternative blockchains.