Unit 2: Survival Game

Content Area: **Technology**
Course(s): **Technology**
Time Period: **Generic Time Period**
Length: **Weeks**
Status: **Published**

Unit Overview

Students will work collaboratively within a set world to survive based on a limited supply of an essential resource (in the game suggested, water). Students must plan together to build settlements, develop methods of irrigation and farming, and manage their resources.

Standards

CCSS.ELA-Literacy.RST.6-8.3	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
CCSS.ELA-Literacy.RST.6-8.9	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
SCI.MS-ESS3-3	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
SCI.MS-ESS2-4	Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.
SCI.MS-ESS3-2	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
SCI.MS-LS2-5	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
TEC.5-8.8.1	All students will use computer applications to gather and organize information and to solve problems.
TEC.5-8.8.1.8 B.1	Demonstrate an understanding of how changes in technology impact the workplace and society.
TEC.5-8.8.1.8 B.2	Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.
TEC.5-8.8.1.8 B.3	Explain the purpose of an Acceptable Use Policy and the consequences of inappropriate use of technology.
TEC.5-8.8.1.8 B.4	Describe and practice safe Internet usage.
TEC.5-8.8.1.8 B.6	Choose appropriate tools and information resources to support research and solve real world problems, including but not limited to:
TEC.5-8.8.2.8 A.1	Describe the nature of technology and the consequences of technological activity.
TEC.5-8.8.2.8 A.3	Describe how one technological innovation can be applied to solve another human problem that enhances human life or extends human capability.
TEC.5-8.8.2.8 A.4	Describe how technological activity has an affect on economic development, political actions, and cultural change.
TEC.5-8.8.2.8 A.5	Explain the cultural and societal effects resulting from the dramatic increases of knowledge and information available today.

TEC.5-8.8.2.8 B.1	Demonstrate and explain how the design process is not linear.
TEC.5-8.8.2.8 B.2	Use hands on activities to analyze products and systems to determine how the design process was applied to create the solution.
TEC.5-8.8.2.8 B.4	Describe how variations in resources can affect solutions to a technological problem.
TEC.5-8.8.2.8 C.2	Explain reasons why human-designed systems, products, and environments need to be monitored, maintained, and improved to ensure safety, quality, cost efficiency, and sustainability.
TEC.5-8.8.2.8 C.3	Explain the functions and interdependence of subsystems such as waste disposal, water purification, electrical, structural, safety, climatic control, and communication.

Essential Questions

How does playing with water in Minecraft teach us about water in real life?

What do we know about water in real life that can inform hypotheses for how water functions in Minecraft?

Why do settlements form around a water source? What precautions must you take in order to utilize the resource? How can you protect it and use it efficiently?

What features in a landscape are helpful for building? What hinder building?

Why is it important to allocate and prioritize tasks?

Application of Knowledge: Students will know that...

- There are rules and goals for playing Minecraft in the classroom
- Water is essential for life, and if the resource is mismanaged, there will be consequences
- Working collaboratively can help solve problems and increase creativity

Application of Skills: Students will be able to...

- collaborate to solve problems within the game
- identify cause and effect of depleting water supply
- use Minecraft skills to build and create

Assessments

- Rubric based on completing tasks (buidling settlement, managing resources, irrigating and farming)
- Points based on survival statistics for your group in the game

Suggested Activities

Students will play the game "Water Challenge Remix" (or another survival game chosen by the teacher).

In Water Challenge Remix, students are in an environment with a single source of water. They must work collaboratively to survive with a limited water supply, planning together to develop methods of irrigation and farming, as well as build a settlement planned out on graph paper. Students work in 2-4 groups (can be large groups) to accomplish the tasks. A large scoreboard tracks the number of deaths for each group to show how effective different societies are at managing their resources. The teacher can trigger a "hunger effect" to reinforce the need for players to stay on task.

Alternate Activity:

"Escape from Everest" -- Players awaken after 200 years to find that Mount Everest is the only dry land on Earth. They must work together to balance environmental concerns through a series of quests in which they attempt to re-green the Earth.

Activities to Differentiate Instruction

Beginners can complete a tutorial for the game, experienced players can skip it.

Further extensions to the game: Students can develop self-sustaining farms once they have mastered the original objectives.

Teams who finish early or are looking for something more can create their own game in MinecraftEdu -- http://educade.org/lesson_plans/create-your-own-game-in-minecraft-1

Integrated/Cross-Disciplinary Instruction

Science --

- why do we need water to survive?
- why do we need to protect our natural resources?
- what ways can we encourage sustainable farming and personal water conservation?
- use scientific method (multi-step procedure) when solving problems in the game

Social Studies --

- why did major/ancient civilizations form and thrive near water supplies?

Math --

- geometry and measurement associated with building
- data associated with measuring water supply

Language Arts --

- use language skills to collaborate with partners and solve problems

Resources

Water Challenge Remix:

http://services.minecraftedu.com/worlds/node/76

graph paper, pencils

Escape from Everest:

http://services.minecraftedu.com/worlds/node/27