Brookie Braves A Storm

Curriculum

Testing Water Quality

Watershed:

Standard - 4.1.5.B

Concept introduced at .51 seconds with title that says “Nanticoke Watershed”
Accompanying activities to teach about a watershed:

- ➔ What is a watershed?
- ➔ Rivers and Streams
- ➔ Watershed Delineation
- ➔ Games teaching facts about water and the water cycle

Stewardship:

Standard - 3.4.5.E7

Concept introduced at .55 seconds with introducing the children as Junior Stewards

- ➔ Stewardship activity

Bio-survey:

Standards: 4.1.5.A

Introduced at 1.07 and throughout the video as they look for macroinvertebrates in the stream

- ➔ Info on macroinvertebrates
- ➔ Coloring Pages - characteristics and identification
- ➔ Macro Math card game (Indoor biosurvey)
- ➔ Macro Identification Game
- ➔ Macro Mayhem Game - pollution tolerance, biodiversity
- ➔ Macro memory game – identification*
- ➔ Macro Tag (use cards from memory game) - collection,
- ➔ Macroinvertebrate Mix & Match
- ➔ Macro Mayhem youtube video
- ➔ Roll a Macro - art*
- ➔ “Which macro are you?” personality quiz
- ➔ Macroinvertebrate Report
- ➔ Leech

➔ Crayfish

Trout – indicator species:

Standard - 4.1.5.A

Introduced at 1.34 and throughout the video as they look for macroinvertebrates in the stream

➔ About Trout - characteristics
➔ Fish - animal classification
➔ Trout are Made of Trees video - ecosystem interaction
➔ Trout are Made of Trees book*

Standard - 3.1.5.A3

➔ Life Cycle of a trout

Standard - 3.1.5.A2

➔ Food Chain Info
➔ Food Chain Game
➔ Make food chain for Brookie
➔ Trout poem

Aquatic Passage:

Standard - 3.3.5.A1

Introduced at 2:04 showing a blocked culvert

➔ Aquatic Passage 101 (click culverts & aquatic passage) - informational packet
➔ Aquatic Passage
➔ World Fish Migration Day

Careers in STEAM:

Standard - 3.4.5.A1

Introduced at 2:34 showing when Laura the Scientist introduces herself as a watershed specialist. STEAM stands for Science, Technology, Engineering, Art & Mathematics

- ➔ Comic books
- ➔ Employment Projections STEM Career
- ➔ STEM Occupations
- ➔ Periodic Table of Stem Occupations

Anthracite Coal:

Standard - 3.4.5.E6

Introduced at 3:05 showing a piece of Anthracite Coal

Abandoned Mine Drainage:

Standard - 4.1.5.B

Introduced at 3:28 with AMD graphic

- ➔ AMD
- ➔ Pyrite
- ➔ How to Tell Pyrite Apart from Gold video
- ➔ Iron oxide tie-dying *
- ➔ Iron oxide chalk making *
- ➔ Borehole
- ➔ AMD in your Neighborhood - real life data of locations with AMD discharge

Water Quality Sampling:

Standard - 3.4.5.D3

Introduced at 4:44 with Laura the Scientist conducting a water sample

- ➔ Activities from training
- ➔ How to collect water quality data

- ➔ Current Water Quality issues
- ➔ Interactive Lab

Treatment System:

Standard - 3.4.5.E2

Introduced at 7:12 when they learn about the maelstrom oxidizer from Sevynn the Snail

- ➔ AMD Treatment Systems info document
- ➔ Diagram of Maelstrom Oxidizer
- ➔ Diagram of Askam Treatment System
- ➔ Wetlands
- ➔ Types of Wetlands

Standards

Standard - 3.1.5.A2

Describe how life on earth depends on energy from the sun

Standard - 3.1.5.A3

Compare and contrast the similarities and differences in life cycles of different organisms.

Standard - 3.3.5.A1

Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc.

Standard - 3.4.5.A1

Explain how people use tools and techniques to help them do things.

Standard - 3.4.5.D3

Determine if the human use of a product or system creates positive or negative results.

Standard - 3.4.5.E2

Understand that there are many different tools necessary to maintain an ecosystem, whether natural or man- made.

Standard - 4.1.5.A

Describe the roles of **producers, consumers**, and **decomposers** within a local **ecosystem.**

Standard - 3.4.5.E7

Describe the importance of guidelines when planning a community.

Standard - 3.4.5.E6

Examine how manufacturing technologies have become an integral part of the engineered world.

Standard - 4.1.5.B

Explain the basic components of the water cycle.

Standard - 4.1.5.C

Describe different food webs including a food web containing humans.