Water Capture

1 Overall aims:

- -Explore the vitality of water
- -Explore methods of water collection and conservation
- -Explore the concept of level ground and slopes
- -Develop mathematical skills
- -Develop measuring skills
- -Make predictions
- -Strengthen fine motor skills

2 Vocabulary - keywords

hydrogen, oxygen, Swales, gravity, absorption, evaporation, vegetation, deep rooters

3 Sustainable abilities developed

- Systems thinking
- Anticipatory competency
- Normative competency:
- Strategic competency:
- Critical thinking
- Self-awareness

4 Pillars of sustainability included

- Economic
- Ecological
- Social

5 STEAM domains

Science, Technology, Engineering, Math

6 Teaching methodologies/activity outline

The teacher asks the children about water.
“What do we need water for?”
“Where does water come from?”
“Where does sate water go?”

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	"What water can we use to feed our plants?" "How can we conserve water?" Using stories, digital resources, books and role play, the teacher explains that a swale is a ditch carefully dug along level lines that catches and stores rain water and preserves soil from being washed away. Using an A Frame level that the children can build, the teacher leads them in marketing where to dig the Swales. According to the type of soil and climate, he teacher and children dig the Swales and then plant them with vegetation. . The teacher employs the NASA best engineering model ASK- children identify the problem, requirements that must be met and constraints that must be considered IMAGINE- children brainstorm solutions and research ideas. They also identify what others have done. PLAN- children choose two to three of the best ideas from their brainstormed list and sketch possible designs, ultimately choosing a single design to prototype CREATE - children build a working model, or prototype that aligns with design requirements and is within design constraints. TEST children evaluate the solution through testing, they collect and analyse data; they summarise strengths and weaknesses of their design that were revealed during testing IMPROVE Based on the results of their tests, children make improvements on their design. They also identify changes they will make and justify their revisions
7	**Expected learning outcomes** **The child will be able to:** ● Explain the importance of water ● Explain the importance of water conservation ● Explain what a Swale does ● Assist in measuring for and digging swales.
8	**Assessment** Help the children in observing and assessing the effectiveness, if any of the Swales. ,

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9	**Equipment and materials to be used in learning unit (tools, ingredients etc)** A Frame level, Spade, deep rooter plants or seeds.
10	**Kind of setting - lab, kitchen, outdoor etc.** outdoors, garden
11	**References - source:** Permaculture | Making and Using an 'A-Frame'

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