**O3.2\_Framework of the lesson plan**

**Age group/class: 15 years old and above**

**Lesson title: Water Treatment Plant. Systems, procedures, water filtration.**

**School Discipline: Technology**

**Key concepts:**

**Aims:**

* How to understand concepts such as water treatment plant technology, schematics, working principles of main filtration components etc.
* How to understand the differences between hard and soft water
* How to understand ecological impact of mankind on water bodies

**Skills developed**: observation, description, analysis

**Materials/Equipment needed**:

* VR headset
* VR video/link <https://eloquent-ramanujan-887aa5.netlify.app/water-treatment.html>

**Lesson plan:**

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| --- | --- | --- |
| **Stages** | **Description of activity** | **Time** |
| **Preparation before the lesson** | This lesson focuses on water treatment plant technology.  If this is a first VR experience for students – go through the safety rules: -  Learners are to sit down whilst using the VR glasses and not hold anything in their hands, unless the experience is of such a nature that it requires you standing, in which case, ensure enough space is allowed around all students.  -  Learners will be told to expect a feeling of vertigo. If it gets worse, students must remove VR glasses.  -  Learners need to know how to adjust the viewing focus before using the headsets.  -  Learners must not use the headset when they are: tired, need sleep, under emotional stress or anxiety, when suffering from cold, flu, headaches, migraines as this can worsen their susceptibility to adverse reactions.  -  Learners should be given the choice to opt out of using VR. |  |
| **Introduction** | Share Learning Intentions with students.  Ask learners to think and write any questions they have regarding the learning objectives, as for example: *Where does our tap water come from? What is a water treatment plant? Where should a water treatment plant be placed? How does a water treatment plant work? What is hard water? What is soft water? Do we have an impact on nature and water bodies?* | 5 min. |
| **Initial Immersive Experience** | Learners put on the VR headsets and explore the video at their own pace.  Turn the headsets off and bring students back into the classroom. | 3 min. |
| **Guided Immersive Experience** | Learners begin to explore the VR material on water treatment plants.  Students put on the VR headsets and start the immersive experience focusing on finding more information on how water treatment plants work, what is water hardness and what is the ecological impact of water treatment.    Allow time for this guided exploration or on and off for as long as it is needed for learners to familiarise with the tools. | 5 min. |
| **Follow up** | When the VR moment is over, learners gather in groups of 2 or 3and share their ideas.  Learners compare notes and discuss to complete their knowledge and understanding. The teacher facilitates the discussion and ensures there are no misunderstandings.  Learners use their research stations (laptops/tablets/phones) to add to the knowledge gained through the VR experience by completing their notes.  The task is:   * analyze how water treatment plants work, where they are placed, what operations they do * analyze how water hardness has an effect * analyze why water bodies are affected by humans | 5 min.  10 min. |
| **Formative Assessment** | Teacher shows materials that explain the water treatment process and water hardness examples in daily activities. | 5 min. |