**O3.2 Lesson Plan**

**Age group/class:** 12 years old/ Year 7

**Lesson title:** Virtual Tour to the Douro River

**School Discipline:** Geology

**Key concepts:** Minerals, Rocks, Granite, Shale, Quartzite, Gneiss, Moscovite, Biotite, Feldspar, Quartz, Staurolite, Olivine

**Aims:**

* Recognize different types of rocks.
* Identify the minerals of the correspondent rocks.
* Relate the landscape to the dominant rock type.
* Relate the rocks with the correspondent minerals and landscapes.
* Motivate students to use 360 cameras to capture their own images.
* Recognize the importance of sensory stimulation.

**Skills developed:** observation, description, analysis, research and collaboration.

**Materials/Equipment needed**:

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

**Lesson plan:**

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| **Stages** | **Description of activity** | **Time** |
| **1. Preparation before the lesson** | Learners will have already learned about the rock cycle and the different types of rocks (sedimentary, metamorphic and igneous). This lesson focusses on igneous rocks.  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. | 5min |
| **2. Introduction** | Discusses with students and reminds them key concepts associated to rocks characterization. | 3 min. |
| **Initial**  **Immersive**  **Experience** | Learners put on the VR headsets and explore the video at their own pace for about 2 minutes.  Turn the headsets off and bring students back into the classroom.  Students share as registered all type of rocks that they identify on the VR.  Consider some examples.  feldspatoquartzo leitosogranito  estaurolitemoscovitemoscovite  quartzo róseoMário rebordelo-Santa Comba-Pedreira de Vale de Salgueiro 051  After identify the main characteristics. The students went out and identify the as must rocks on their own area. | 2-3 min.  3 min.  5 min. |
| **Follow up** | When the shared discussion the students are joint in groups of 4 and went out and identify the rocks on their own area.  All identifications are registered by mobile photo. All material should be joint in a work wall.  Learners compare notes and discuss across groups to complete their knowledge and understanding. The teacher facilitates the discussion and ensures there are no misunderstandings.  When the research project is finished, learners share their findings and create for each rock an information poster to be displayed in the room as a testimony of their learning and to be used as a resource throughout the topic. | 15 min.  5 min. |
| **Formative assessment** | Teacher monitors students’ discussion to assess and correct understanding. | 5 min. |