

## We are the makers – IoT Learning Scenario – 3dOCEAN

<b>1. Title of the Scenario</b>	<b><i>3dOcean: recycling, marine biology, circular economy and 3d printing</i></b>
<b>2. Target group</b>	This scenario can be fit with different ages: - 6-10 yo / 11-13 yo /14-16 yo
<b>3. Duration</b>	This scenario can be divided in 3 different 1/1,5 hour lesson.
<b>4. Learning needs</b>	Environmental Awareness, improve the knowledge about the plastics, Economic issues, 3d printing bases, Biological issues
<b>5. Expected learning outcomes</b>	Identify the environmental impact of the plastics Learn ethical behaviours Analyze new type of economic system Learn marine biology Be a positive leader of their family Learn to print in 3d
<b>6. Methodologies</b>	Lesson 1: the teacher have to inspire students with some videos (link to the presentation) and if he want he can focalisez on 3d printing. After the inspirational model, student have to bring with himself some plastic objects and recognize the plastic. So this part is and hands-on activity. If the school have all the tools the recycling action can be reproduced by students.  Lesson 2: Kamishibai theater Lesson 3 learning by doing , situated learning Lesson4: learning by doing constructivism
<b>7. Place / Environment</b>	Classroom and lab
<b>8. Tools / Materials / Resources</b>	Projector, Audio system, and not mandatory tools to shred plastic and melt plastic. In the lesson 1 it will be useful bring some plastics objects to classify. Digital Material: presentation 3docean Recycling/

<p><b>9. Step by step description of the activity / content</b></p>	<p>Lesson 1</p> <ol style="list-style-type: none"> <li>1. Use the presentation (metti link) to involve students and share some information about plastic and pollution</li> <li>2. Introduction to different plastics</li> <li>3. Use videos from presentation to introduce the concept of Circular Economy</li> <li>4. Plastic name and Bring Material</li> <li>5. Classification of different plastics with real object</li> </ol> <p>Lesson 2</p> <p>Primary school level or using in digital humanities courses Using Kamishibai methods Print Fishes Stencil or other figurines from thingiverse Draw the scenario and tell a story</p> <p>Secondary level How to draw an animal with google sketchup Print it Create a stop motion youtube adv to save the ocean</p> <p>Lesson 3 Circular Economy Repair you toys, find a broken plastic toy, draw the piece by tinkercad other software and print it.</p> <p>Lesson 4 How to create a stencil Choose an image from the ocean Use it to create the stencil Print the stencil with abs recycled</p>
<p><b>10. Feedback</b></p>	<p>Lesson 1: At the end of the session we can manage a close questionnaire or a work group about the organization of a cleaning activity in the block.</p>
<p><b>11. Assessment &amp; Evaluation</b></p>	<ul style="list-style-type: none"> <li>- Lesson 1: thanks to this lesson you can evaluate the environmental awareness of you students and the knowledge about plastic and environmental impact. It is important to introduce a "social impact" of our action, the real assessment it will be during the cleaning activities.</li> <li>- Lesson 2: the evaluation is on "real task" and about a performance of each group about theatre,</li> <li>- Lesson 3: modern version of Full participation, focus on the process and not on the products, problem solvine, time spent on planning and designing</li> <li>- Lesson 4</li> </ul>