

<b>ACTIVITY NAME:</b>	<b>T00B-Ga Ballpoint pen game</b>
<b>OBJECTIVES:</b>	Discover all 5 basic principles of LEAN thinking and working. Especially the process is important in this game.
<b>DESCRIPTION:</b>	<p><b>1. Explain the rules:</b></p> <p>It is an imitation of a process in a production factory of ballpoint pens. The factory has a director, he is helped by a process guard. On the working floor there are four production workers; all specialized in one part of the production of ballpoint pens. A quality controller checks all the ballpoint pens before they are transported to the customer. To transport the ballpoint pens there is the possibility to use two carriers. They can transport only 4 ballpoints pens or parts of the pen intern to the production workers and quality controller and extern to the customer.</p> <p>The factory is built in 1953. De productionline is not logical anymore. There is a store in the back of the building. The working places of the employees are far away. The quality controller works in the office.</p> <p>The aim is to put this ballpoint pen of good quality on the market. There is a lot of competition in the ballpoint pens industry.</p> <p>The customer is the most important thing in the world. The company will always strive to meet the wishes of the customer.</p> <p><b>2. Play the game</b></p> <p>During the first round everybody starts in start position. Use a clock to measure the time.</p> <p>You get 10 minutes of preparation time, in which you start thinking about improvements. You can then eliminate wastage and experiment (how do we tackle it, etc.)</p> <p>The working day takes 4 minutes. There are a minimum of 2 and a maximum of 3 production days.</p> <p>The various activities are recorded in one-point lessons. Given the nature of the work, it is not possible for an employee to make the entire ballpoint pen.</p> <p>The customer demand is 28 ballpoint pens each day.</p>

	<p><b>3. Evaluation of the first round</b></p> <p>The key performance indicators (KPI's) are evaluated at the end of each day:</p> <ul style="list-style-type: none"> <li>- Time to produce 1st ballpoint pen</li> <li>- Number of well-supplied ballpoint pens</li> <li>- Number of incorrect ballpoint pens</li> <li>- Number of semi-finished products in the process</li> <li>- Process time per part of the ballpoint</li> </ul> <p>Questions you could ask?</p> <ul style="list-style-type: none"> <li>- What happened?</li> <li>- How did you feel?</li> <li>- Did we meet the goals? Why not?</li> <li>- How can we do it better?</li> </ul> <p><b>4. Improve and replay</b></p> <p>In the preparation time of the second and third round everybody may renovate or reduce the waste (and change the places of the workstations).</p> <p><b>5. Overall evaluation</b></p> <p>Remember that the second and third round are played in chapter 5. Draw conclusions from the game regarding the LEAN principles:</p> <ul style="list-style-type: none"> <li>• Principle 1: What is the value for the customer?</li> <li>• Principle 2: Does each step in the chain add value for the client?</li> <li>• Principle 3: Is there a continuous flow in the process?</li> <li>• Principle 4: Was there Pull production? Did you only deliver what the customer asked for?</li> <li>• Principle 5: Could we do it even better? How can we pursue perfection?</li> <li>• Principle 6: Was it difficult to change the mindset in this game? And in real life?</li> </ul>
<p><b>TIME TO PLAY:</b></p>	<p>Preparation time: 20 minutes          Playing time: every round 10 min. preparation time &amp; 4 min. time working day          Evaluation and discussion: 10 min. per round          Total time per round: 24 minutes (not included the preparation time)</p>
<p><b>INDIVIDUAL or GROUP:</b></p>	<p>Group. 1 or 2 groups of 9 persons (the teacher is the director/game leader).          Adaption is possible with less players (leave out the customer, although he is important).          If there are more students, they can observe the process and make a proposal for improvement.</p>

<p><b>MATERIAL FOR TEACHER:</b></p>	<ul style="list-style-type: none"> <li>• timer or stopwatch: 10 min. preparation and 4 min. working day</li> <li>• writing board or flap-over to write down the KPI's results</li> </ul> <p>It is important to have a pen with multiple parts, to follow the instruction cards. 7 parts pens are used for the instruction cards.</p>
<p><b>MATERIAL FOR STUDENT:</b></p>	<ul style="list-style-type: none"> <li>• 9 one-point-lessons; instruction of customer, production workers, quality controller, carriers, process guard and the director/game leader.</li> <li>• 72 ballpoint pens for two groups( if possible 36 red and 36 black ballpoint pens)</li> <li>• 7 plastic trays to store the parts of the ballpoint pens</li> <li>• 2 trays to transport the ballpoint pens</li> <li>• 10 centimeters ruler</li> <li>• 2 timers or stopwatches</li> </ul>
<p><b>LAY OUT:</b></p>	<p>A big classroom for a group of 18 persons. Tables and chairs to make working area's and a store. Enough space to walk.</p> <div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;"><b>FLOOR PLAN BALLPOINT PEN FABRIC</b></p> <p>Erasmus+ <span style="float: right;">FOR WORK <b>LEAN</b> FOR LIFE</span></p> <p>OPL NR 1 (Customer)   OPL NR 2 (Worker)   OPL NR 3 (Worker)   OPL NR 4 (Worker)   OPL NR 5 (Worker)   OPL NR 6 (Quality Controller)   OPL NR 7 (Worker)   OPL NR 8 (Quality Controller)   OPL NR 9 (Director)   STORE</p> <p><small>Erasmus +, Key Action 2: Strategic Partnerships for vocational education and training, 2018-1-FI01-KA202-047210   www.leanforworkandleanforlife.eu</small></p> </div>