

## Blood pressure

### 1. Preparing the Lesson Plan

<p><b>Brief description</b> <i>How would you summarize your lesson plan in a Tweet? In two or three lines briefly state the aim of the activity, the topics it covers, and the tools used.</i></p>	<p><i>Measurement of blood pressure is important in knowing the flow of blood through the heart. Learning about this, students will be able to understand how and why the heart is so powerful organ in our bodies.</i></p>
<p><b>Age group</b> <i>For which age group is the activity recommended? You can either narrow it down to a concrete age, or use the following categories: Preschool, Primary Education (6 to 12 years), Lower Secondary (12 to 16 years), and Upper Secondary (16 to 18/19 years)</i></p>	<p><i>Upper Secondary (16 to 18/19 years)</i></p>
<p><b>Learning space</b> <i>In what type of room or space should the activity take place? The classroom, the computer room, the gym, at home, etc. Does the space have any requirements or need any preparations? For instance, closing the curtains for a projection, or moving desks to free space, creating different workstations, etc.</i></p>	<p><i>In a laboratory or classroom.</i></p>
<p><b>Learning Objectives</b> <i>What are the goals of your lesson plan? Please, phrase them from the point of view of the learners: the <b>knowledge</b> learners would acquire, the <b>skills</b> they would gain, and the <b>attitudes</b> they would develop. Adhere to the SMART principle as much as possible and try to keep it simple with no more than four objectives.</i></p>	<p><i>After this lesson, students should be able to:</i></p> <ul style="list-style-type: none"> <li>• <i>describe what blood pressure is and how high blood pressure can impact the cardiovascular system</i></li> <li>• <i>explain how heart valves work, as well as how they are related to blood pressure</i></li> <li>• <i>develop communication skills</i></li> <li>• <i>measure the blood pressure</i></li> <li>• <i>develop practical competences,</i></li> <li>• <i>raising awareness of healthcare,</i></li> <li>• <i>develop critical thinking skills,</i></li> <li>• <i>develop research questions: hypothesis and variables.</i></li> </ul>

<p><b>Materials</b> <i>Which materials are required to carry out your lesson plan? Please, keep in mind that the less materials and the more affordable they are, the easier will it be to replicate your lesson plan. You can also list optional materials that are not required to successfully complete the lesson plan, but that would add value to the lesson.</i></p>	<p><i>Stethoscope and asphygmomanometer Student Worksheet Mobile phone</i></p>
---	--

**Other**

*Nothing to add.*

## 2. Developing the Lesson Plan

In order to replicate your lesson plan, other educators need to understand clearly each step of the process. Please, use clear language, add the necessary details, and ensure that a person who is not familiar with your teaching context and methods is able to replicate the lesson plan. We recommend dividing the lesson plan into steps, and to detail each step in one row of the table below. For instance, a simple lesson plan can be divided into an introduction, a game, and a debriefing discussion.

<p><b>Method</b> <i>Which type of facilitation method or activity do you use for this part? For instance, a discussion, a presentation, a role-play game, a collaboration game, a discussion, assessment such as quizzes etc.</i></p>	<p><b>Details and description</b> <i>Provide details of the content of this activity. Ensure that the lesson plan can be replicated by other educators by being detailed and using clear language. For instance, describe which materials are being used, whether students work individually or in groups (and the size of those groups), what is the teacher doing, which instructions are the students given, what contents are being covered, etc.</i></p>	<p><b>Time</b> <i>Approximately, how long does this part of the lesson plan take?</i></p>
<p><i>Discussion with students asking them the questions</i></p>	<ol style="list-style-type: none"> <li>1. <i>Do you know what blood pressure is?</i></li> <li>2. <i>Why is blood pressure important?</i></li> <li>3. <i>Who was the first person who measure the blood pressure?</i></li> <li>4. <i>What are systolic and diastolic blood pressures?</i></li> <li>5. <i>How is blood pressure measured?</i></li> <li>6. <i>What is normal blood pressure?</i></li> <li>7. <i>What are blood pressure disorders?</i></li> <li>8. <i>Can blood pressure disorders be cured?</i></li> <li>9. <i>How can we checking blood pressure at home?</i></li> <li>10. <i>What is manometer?</i></li> <li>11. <i>What is the most accurate way to determine heart rate?</i></li> </ol>	<p><i>10 min</i></p>
		<p><i>80 min</i></p>

<p>Video presentations and questions answering</p> <p>Blood pressure determination</p> <p>Heart rate determination</p> <p>Effect of exercise on blood pressure and heart rate</p> <p>Form a hypothesis</p>	<p>Teacher will explain to the students what a blood pressure is. Teacher will demonstrate to the students how to take a blood pressure, and explain to them the sounds they will hear when taking a blood pressure. The apical pulse and the radial pulse will be explain too.</p> <p>After this the students will watch this video presentations: <a href="#">How to: Measure Blood Pressure</a> (4:08)</p> <p><a href="#">How to: Measure Resting Heart Rate</a> (1:15)</p> <p>Than, the students will answer the questions.</p> <p>Activity 1. Blood pressure determination</p> <p>Students will divide up into groups of two. Each student will take their partner's blood pressure and have their blood pressure taken by their partner.</p> <p>They will measured by the auscultatory method, in the brachial artery of the upper arm (with a stethoscope) . The first pressure they will listening is systolic pressure. After this, when they stop hearing the heartbeat, this blood pressure will be diastolic pressure.</p> <p>The students will recorded the blood pressure on theirs worksheets.</p> <p>Activity 2. Heart rate determination</p> <p>Working with their partner, students will determined both their apical and radial pulse. The apical pulse is the actual counting of the heartbeats using the stethoscope over the heart. The radial pulse is measured by counting the pulses of blood in the radial artery . After that the students will recorded their apical and radial pulses. A pulse deficit is the difference between the apical and radial pulse. A pulse deficit greater than four can indicate some physiological problem.</p> <p>Activity 3. Effect of exercise on blood pressure and heart rate</p> <p>After exercised for 3 minutes the students will measured the pulse rate and blood pressure and recorded data on the worksheets provided.</p>	
--	--	--

<p>for the experiment</p>	<p>Activity 4: Form a hypothesis for the experiment of Activity 3.</p> <p>The students will be able identified the dependent and the independent variable. After that, they will be able identified at least one controlled variable and create a class diagram.</p>	
<p>Quiz (individual work)</p>	<ol style="list-style-type: none"> <li>1. What name is the actual counting of the heartbeats using a stethoscope over the heart? Apical pulse</li> <li>2. What is the name of the instrument used to measure blood pressure? Sphygmomanometer.</li> <li>3. What is hypertension? High blood pressure.</li> <li>4. What's considered low blood pressure ? Hypotension.</li> <li>5. The name of the difference between the apical and radial pulse is? Pulse deficit</li> <li>6. Pressure exerted in aorta during ventricular contraction is named? Systolic pressure.</li> <li>7. Which is the normal blood pressure? 16/10,7kPa (120/80 mm Hg)</li> </ol>	<p>10 min</p>
<p>Discussion</p>	<p>Assessment and student's feedback</p> <p>Reflection activities will help students to think critically about their own learning process. Students will discuss the lesson with each other and with the teacher about the lesson and their work:</p> <ul style="list-style-type: none"> <li>-Was it boring/interesting/easy/difficult...?</li> <li>-Was there enough time for each activity?</li> <li>-Which part was the hardest?</li> <li>-Do you think you have learned enough and how could you improve that?</li> <li>- How can you make the lesson more interesting and fun?</li> </ul> <p>The students could write their opinions about the lessons in a Padlet, too.</p>	<p>15 min</p>
<p><b>Blended and remote learning environments</b></p> <p>Can the activity be replicated in a blended learning environment (online and offline teaching combined) or in a remote learning scenario (fully online teaching)? If so, for which of these two learning environments can it be adapted, or both? Which tools and what preparations are necessary?</p>		
<p>We can made lesson on line using <a href="https://www.practicalclinicalskills.com/blood-pressure-measurement">https://www.practicalclinicalskills.com/blood-pressure-measurement</a> ,waching videopresentations and learning with other digital tools.</p>		



### 3. Follow up of the Lesson Plan

This section is optional, as not every topic or activity has materials available to complete this. However, we encourage you to try to find materials for follow up and to suggest an evaluation method of the lesson plan!

<p><b>Follow material and/or homework</b>  <i>Help learners complete their learning process by suggestion materials the educator can suggest them to read or work on. This can be readings, exercises, websites, a more challenging level of the activity carried out in the lesson plan, etc. If you share any external resources, ensure you have the rights to share those resources.</i></p>	<p><i>Activity 4: Form a hypothesis for the experiment of Activity 3.</i></p> <p><i>The students will be able identified the dependent and the independent variable. After that, they will be able identified at least one controlled variable and create a class diagram.</i></p>
<p><b>Evaluation</b>  <i>You can suggest an activity or an exercise that the educator can propose to their students to evaluate the lesson plan. This does not refer to your evaluation of the lesson plan.</i></p>	<p><i>Evaluation for the teacher and the students.</i></p>

**Author: Sandra Juran**

**Country or region: Croatia**