

5E Lesson Plan Template

Teacher’s Name		Subject/Course Title Grade Level	Date
Jovana Milenković		“Green monitoring”	
Materials Needed: Laptop with Arduino, USB cable, pH sensor, Temperature sensor, Cups, a hoe, Notebook		Lesson Outcomes: (what the student is expected to learn and to do) <div><div>1.</div>Understand the role of parameters such as pH and temperature in plant growth.</div> <div><div>2.</div>Understand how Arduino software functions.</div> <div><div>3.</div>Analyze and interpret data collected from Arduino.</div>	
Engage 10 min	<div><div></div><div>• Discuss why do some plants do better in one part of the garden than in another.</div><div>• Students comment on their own experiences how they ever planted plants, have they notice how soil affects growth.</div></div>		
Explore 30-40 min	<div><div></div><div>• Students in groups assemble Arduino with helps of instructions and suggestions from teacher.</div><div>• Students testing sensors in different soil samples taken from the environment.</div></div>		
Explain 15 min	<div><div></div><div>• Each group shares their observations.</div><div>• Teacher explains how pH affects plant growth, why moisture is important and how temperature affects it.</div></div>		
Elaborate 10 min	<div><div></div><div>• Students brainstorm solutions for positioning their device in a representative or meaningful location.</div></div>		
Evaluate 15 min	<div><div></div><div>• Short quiz questions on factors that affect plant growth (pH, moisture, temperature).</div><div>• Self-evaluation and peer evaluation using reflection cards with questions such as:<div><div>✓</div>What did I learn?</div><div><div>✓</div>What was the most interesting to me?</div><div><div>✓</div>How engaged was I in the activity?</div><div><div>✓</div>How engaged were my peers?</div></div></div>		

5E Lesson Plan Template

This project was carried out under the auspices of the Center for Education in Kragujevac, in collaboration with fellow professors of physics and mathematics. It is now elaborated according to the 5E instructional model.

