



## Augmented Science – E-Guide

This document is part of the Erasmus+ project ‘*Enriching Learning with Augmented Reality Simulations for Interactive Science*’ (Project number: 2023-1-PL01-KA220-SCH-000164042). **The project aims** to develop scientific content and experiments enriched with **augmented reality**, together with all the necessary supporting documents and an **online active learning system** for schools in the EU. The idea behind the project is that an **augmented reality (AR)-based educational environment** will support the learning and teaching of science subjects by teachers by transferring science laboratories to students' tablets or mobile phones. Such simulations enriched with augmented reality are needed to make science education **accessible and attractive** and to continue active learning.

### Main outputs of Augmented Science project:

- **E-Book:** Science Course Content-Scenario-Enriched Activities
- **Mobile app** with AR-Enriched Experiments and Simulations
- Web-based Active Learning System (**WALS**)

Upon completion of the project, its results will be made **available free of charge** and translated into the **languages** of the project partners (Polish, Greek, Turkish, Finnish).

The purpose of the E-Guide is to assist users (teachers, students, educators, administrators) in effectively utilising the project's outcomes: the mobile application and the WALS e-learning platform.

Below, we present a step-by-step guide on how to use the mobile application and the WALS e-learning platform.

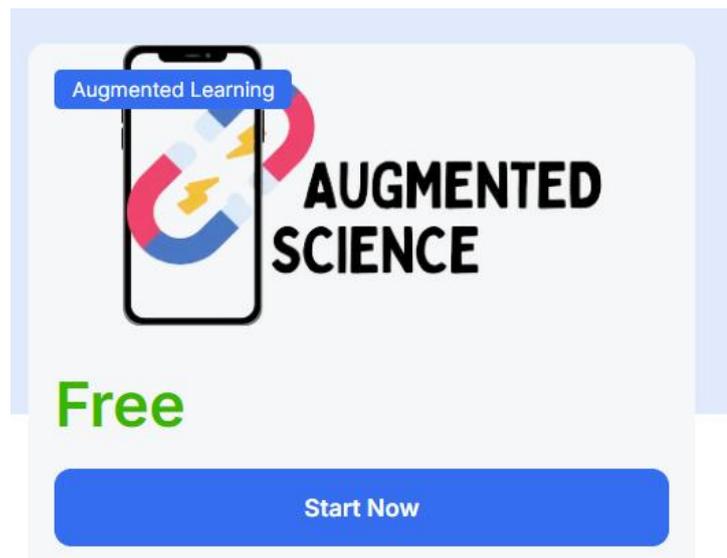


1. First, download the **Augmented Science** app to your mobile device: <https://e-hub.augmentedscience.eu/courses/wals/>

Get The App >>



2. Then register on the **WALS platform** (click 'Start Now' button on the right): <https://e-hub.augmentedscience.eu/courses/wals/>



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3. Enter your **username and password**. You can also register using your Google account.

## Login with your site account

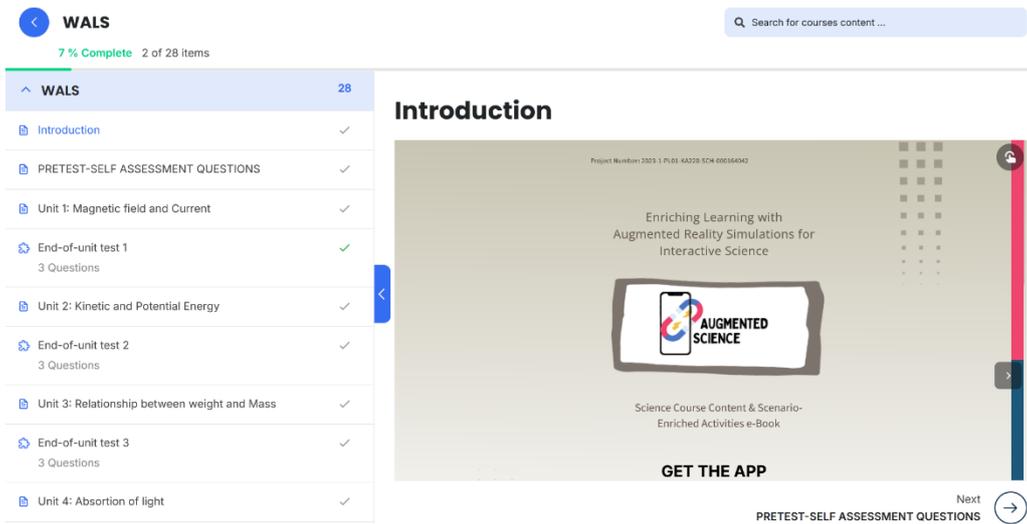
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Login

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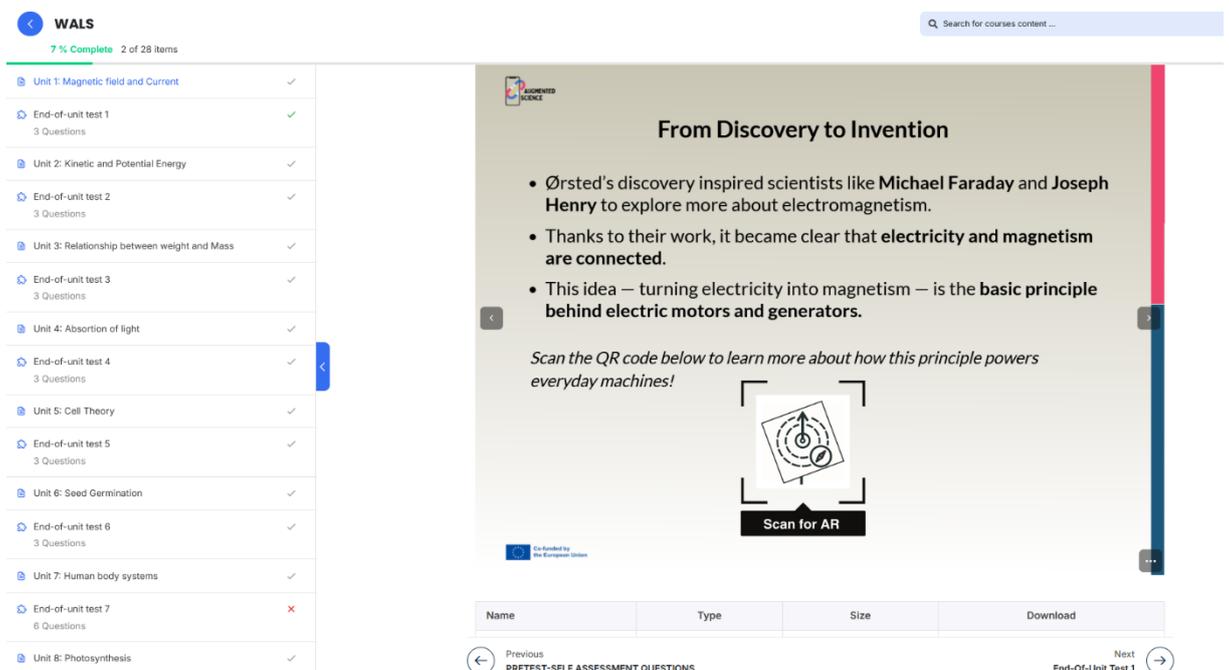
4. After you login click **Start Course**, you will then be redirected to the e-learning platform, to the



The screenshot shows the user interface of the e-learning platform. At the top, there is a navigation bar with a back arrow, the course name "WALS", and a search bar. Below the navigation bar, a progress indicator shows "7% Complete" and "2 of 28 Items". A sidebar on the left lists the course content, including "Introduction", "PRETEST-SELF ASSESSMENT QUESTIONS", and four units: "Unit 1: Magnetic field and Current", "Unit 2: Kinetic and Potential Energy", "Unit 3: Relationship between weight and Mass", and "Unit 4: Absorption of light". The main content area displays the "Introduction" module, which features a central graphic with the "AUGMENTED SCIENCE" logo and text: "Enriching Learning with Augmented Reality Simulations for Interactive Science" and "Science Course Content & Scenario-Enriched Activities e-Book". At the bottom of the introduction, there is a "GET THE APP" button and a "Next" button leading to "PRETEST-SELF ASSESSMENT QUESTIONS".

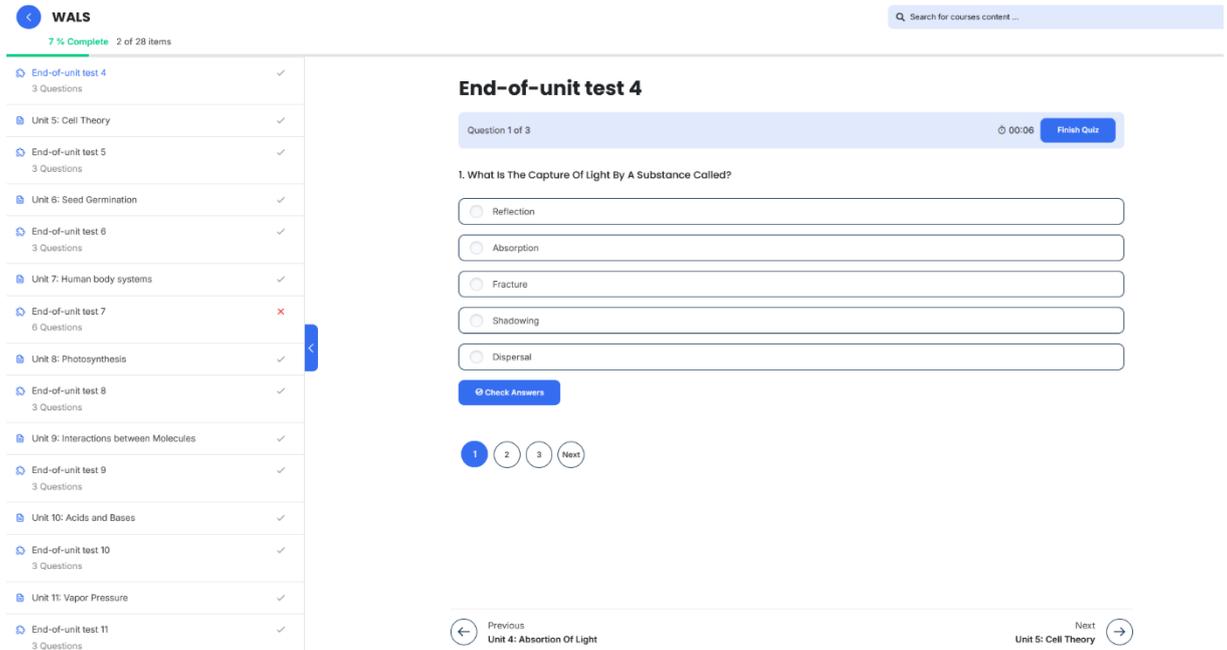
**Introduction module.**

5. Use the arrows on the right and left to read the Introduction.
  
6. In the same way, **explore all the 12 units** in sequence. Each unit contains theoretical content and learning activities:
  - Unit 1: Magnetic field and Current
  - Unit 2: Kinetic and Potential Energy
  - Unit 3: Relationship between weight and Mass
  - Unit 4: Absorption of light
  - Unit 5: Cell Theory
  - Unit 6: Seed Germination
  - Unit 7: Human body systems
  - Unit 8: Photosynthesis
  - Unit 9: Interactions between Molecules
  - Unit 10: Acids and Bases
  - Unit 11: Vapor Pressure
  - Unit 12: Physical and Chemical changes
  
7. To complete the learning activities in each module, open the mobile application, select a specific unit/activity and **point your mobile device at the marker (Scan for AR)**.



The screenshot shows the mobile application interface. On the left, a list of course items is displayed under the heading 'WALS' with a progress indicator '7% Complete 2 of 28 items'. The list includes units and end-of-unit tests, with most items marked as complete (green checkmark) and one (End-of-unit test 7) marked as incomplete (red X). On the right, the AR content page is shown, titled 'From Discovery to Invention'. It contains a list of bullet points about Ørsted's discovery and its impact on electromagnetism. Below the text is a QR code with the instruction 'Scan the QR code below to learn more about how this principle powers everyday machines!' and a 'Scan for AR' button. At the bottom, there is a navigation bar with 'Previous PRETEST-SELF ASSESSMENT QUESTIONS' and 'Next End-Of-Unit Test 1'.

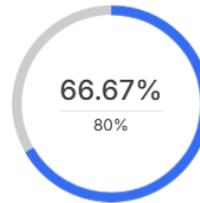
8. You can use the **marker on the slides or the marker below** (last page). You can also print the marker, place the printed marker on a flat surface and then point your mobile device at it.
9. After each unit on the WALs platform, take the **knowledge test** by answering the questions.



The screenshot displays the WALs platform interface. On the left, a sidebar lists units and tests, with a progress indicator showing '7% Complete' and '2 of 28 items'. The main content area shows the 'End-of-unit test 4' interface. The test title is 'End-of-unit test 4'. Below the title, it indicates 'Question 1 of 3' and a timer '00:06'. A 'Finish Quiz' button is visible. The question is: '1. What Is The Capture Of Light By A Substance Called?'. The answer options are: Reflection, Absorption, Fracture, Shadowing, and Dispersal. A 'Check Answers' button is located below the options. At the bottom, there are navigation buttons for 'Previous' (Unit 4: Absorption Of Light) and 'Next' (Unit 5: Cell Theory).

10. After each test, you will receive a **summary** of the points you have scored.

## End-of-unit test 3



Failed ×

Time spent	00:00:12
Points	2 / 3
Questions	3
Correct	2
Wrong	1
Skipped	0
Minus points	0

Retake

Review

11. You can then **retake the test or review it** - check the correct answers.

## End-of-unit test 3

1. Which Of The Following Is A Correct Statement About Mass?

It depends on the force of gravity.

It is synonymous with weight.

It is measured with an equal-armed balance scale.

It is expressed in Newtons.

Measured with a dynamometer.

Correct 1/1 point

1

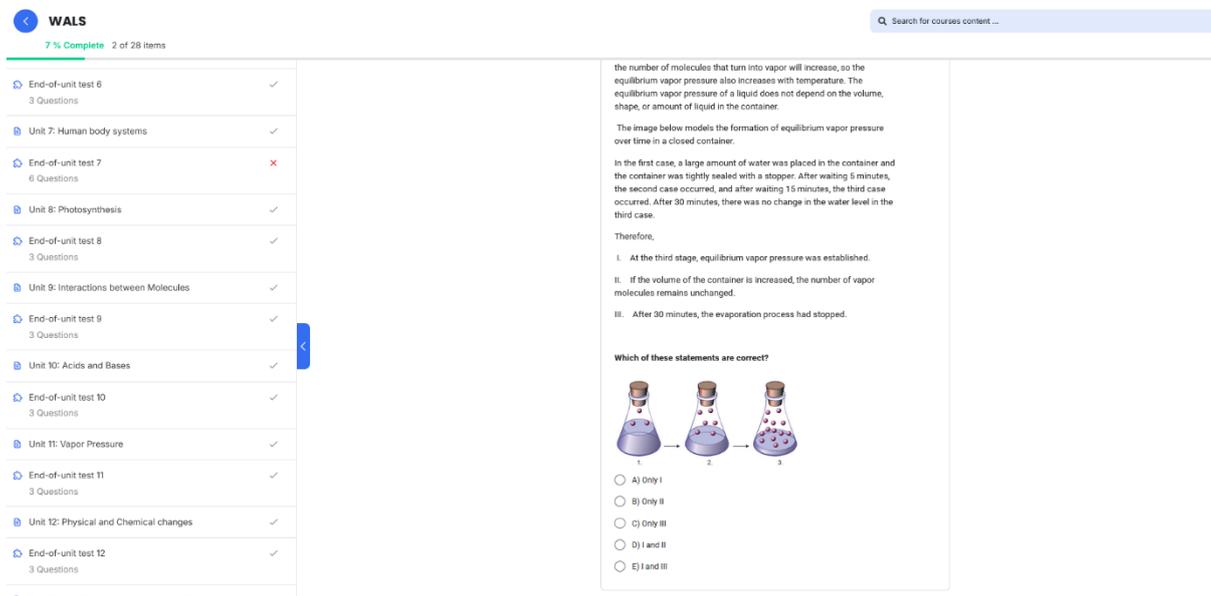
2

3

Next

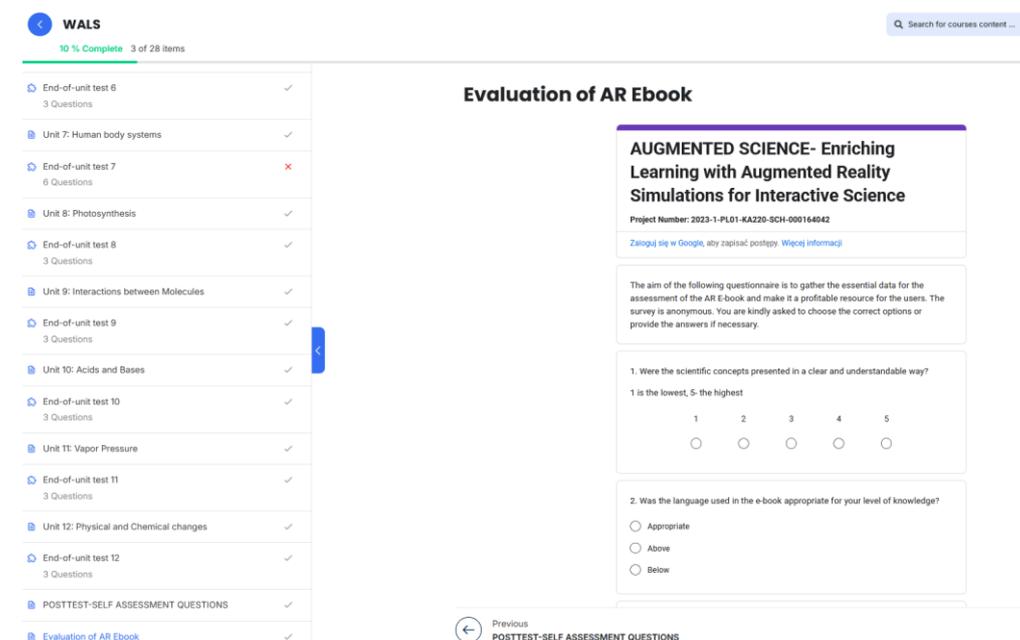
Result

12. Before and after completing all 12 units, fill in the **Pretest and Posttest-Self Assessment Questions** on the WALS platform.



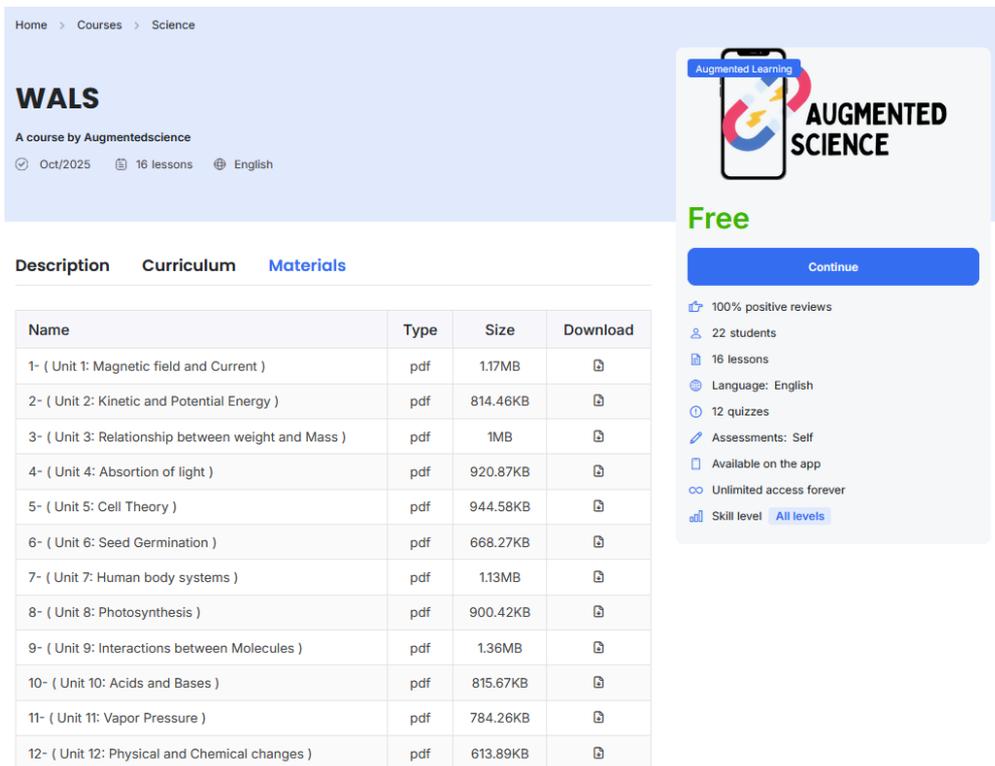
The screenshot shows the WALS platform interface. On the left, a sidebar lists units from 6 to 12, with 'POSTTEST-SELF ASSESSMENT QUESTIONS' at the bottom. The main content area displays a question about vapor pressure. The text reads: 'the number of molecules that turn into vapor will increase, so the equilibrium vapor pressure also increases with temperature. The equilibrium vapor pressure of a liquid does not depend on the volume, shape, or amount of liquid in the container. The image below models the formation of equilibrium vapor pressure over time in a closed container. In the first case, a large amount of water was placed in the container and the container was tightly sealed with a stopper. After waiting 5 minutes, the second case occurred, and after waiting 15 minutes, the third case occurred. After 30 minutes, there was no change in the water level in the third case. Therefore, I. At the third stage, equilibrium vapor pressure was established. II. If the volume of the container is increased, the number of vapor molecules remains unchanged. III. After 30 minutes, the evaporation process had stopped. Which of these statements are correct?' Below the text are three diagrams of a flask with water and a stopper, labeled 1, 2, and 3, showing the water level rising and then stabilizing. The options are: A) Only I, B) Only II, C) Only III, D) I and II, E) I and III.

13. After completing the entire course, we encourage you to fill out the **evaluation form**.



The screenshot shows the WALS platform interface with the 'Evaluation of AR Ebook' form. The sidebar on the left shows 'Evaluation of AR Ebook' as the selected item. The main content area is titled 'Evaluation of AR Ebook' and contains the following text: 'AUGMENTED SCIENCE- Enriching Learning with Augmented Reality Simulations for Interactive Science. Project Number: 2023-1-PL01-KA220-SCH-000164042. Zaloguj się w Google, aby zapisać postępy. Więcej informacji'. Below this is a paragraph: 'The aim of the following questionnaire is to gather the essential data for the assessment of the AR E-book and make it a profitable resource for the users. The survey is anonymous. You are kindly asked to choose the correct options or provide the answers if necessary.' The first question is: '1. Were the scientific concepts presented in a clear and understandable way? 1 is the lowest, 5- the highest'. The response options are radio buttons labeled 1, 2, 3, 4, and 5. The second question is: '2. Was the language used in the e-book appropriate for your level of knowledge?'. The response options are radio buttons labeled 'Appropriate', 'Above', and 'Below'. At the bottom, there is a 'Previous' button and a 'POSTTEST-SELF ASSESSMENT QUESTIONS' button.

14. The pace of your individual work is up to you, but we estimate that it will take about 30 minutes to familiarise yourself with each unit on WALS platform and completing tests.
15. In the **materials section**, you can download PDF files from each module.



Home > Courses > Science

## WALS

A course by Augmentedscience

Oct/2025 16 lessons English

**Description** **Curriculum** **Materials**

Name	Type	Size	Download
1- ( Unit 1: Magnetic field and Current )	pdf	1.17MB	
2- ( Unit 2: Kinetic and Potential Energy )	pdf	814.46KB	
3- ( Unit 3: Relationship between weight and Mass )	pdf	1MB	
4- ( Unit 4: Absortion of light )	pdf	920.87KB	
5- ( Unit 5: Cell Theory )	pdf	944.58KB	
6- ( Unit 6: Seed Germination )	pdf	668.27KB	
7- ( Unit 7: Human body systems )	pdf	1.13MB	
8- ( Unit 8: Photosynthesis )	pdf	900.42KB	
9- ( Unit 9: Interactions between Molecules )	pdf	1.36MB	
10- ( Unit 10: Acids and Bases )	pdf	815.67KB	
11- ( Unit 11: Vapor Pressure )	pdf	784.26KB	
12- ( Unit 12: Physical and Chemical changes )	pdf	613.89KB	

**Free**

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- 100% positive reviews
- 22 students
- 16 lessons
- Language: English
- 12 quizzes
- Assessments: Self
- Available on the app
- Unlimited access forever
- Skill level [All levels](#)

16. You can also click on **your profile** to view your completed steps, achievements, and available courses.

## LP Profile



Filiz Hititsoy

- My Courses
- Certificates
- Quizzes
- Wishlist
- Orders
- Settings >
- Logout

📖 Enrolled Course  
**1**

📅 Inprogress Course  
**1**

📄 Finished Course  
**0**

✅ Passed Course  
**0**

❌ Failed Course  
**0**

All In Progress Finished Passed Failed

	Name	Result	Expiration time	End time
	WALS	0%	Never	-

17. The **Forum section** allows you to exchange ideas and experiences, encouraging collaboration and peer learning among participants.

### e-Hub Forum

[Subscribe](#)

This forum has 4 topics, 1 reply, and was last updated 6 days, 5 hours ago by  Agnes.

Topic	Voices	Posts	Last Post
AR-Ebook	1	1	6 days, 5 hours ago <a href="#">Agnes</a>
WALS accelerated my learning process	1	1	1 week ago <a href="#">Irena</a>
My experiences with the Augmented Science mobile application	2	2	1 week ago <a href="#">Carlos</a>
Details in AR displays	1	1	1 week ago <a href="#">Carlos</a>

18. If you have any questions or concerns about the application, please contact **Muhsin: muhsinkyk08@gmail.com**, **Yahya: dogan.yahya.16@gmail.com** to arrange an individual consultation.
19. If you have any questions or concerns about the application or e-book, please contact **Filiz Hititsoy filiz@polygonalnorth.fi** to arrange an individual consultation.





Marker do Augmented Science Mobile app:



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