Digital Wizards Curriculum for ICT, Coding and AI

CBSE (Class 1 to 8)

Transform your school computer labs from simple ICT learning to comprehensive AI lab, with carefully structured curriculum and practical-based learning for 21st Century Skills.

Authored By

Pankaj Kumar Verma
Chief Technology Officer, STEMpedia
B. Tech, IIT Kanpur

Dhrupal R Shah
Chief Executive Officer, STEMpedia
M. Tech, IIT Kanpur

Khushbu Chauhan
AI & Robotics Expert, STEMpedia
BE, Gujarat Technological University

Devi M
AI & Robotics Expert, STEMpedia
ME, Anna University

Digital Wizards (Class 1 to 8)

Mastering Coding, Artificial Intelligence, and Computer Technology with Fun Activities for CBSE Schools

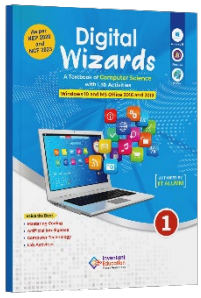
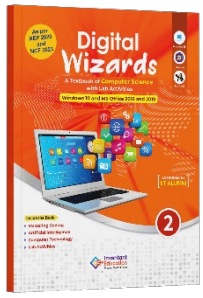
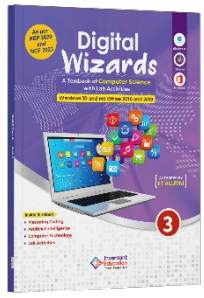
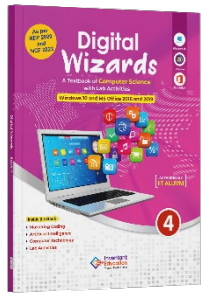
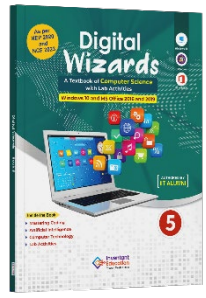
Digital Wizards is an advanced and interactive curriculum designed for CBSE schools, encompassing students from Class 1 to 8. This curriculum is specifically structured to delve into the realms of Coding, Artificial Intelligence, Data Science, Machine Learning, Digital Skills, alongside foundational computer education. It aims to equip students with the skills and knowledge needed to excel in the digital era through a blend of theoretical learning and practical lab activities.

Program Details

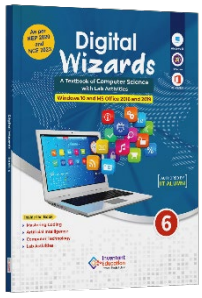
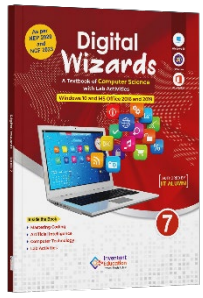
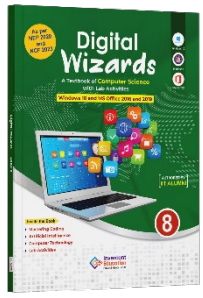
Item	Detail
Board	CBSE
Classes	Class 1 to 8
Concepts Covered	Coding, Artificial Intelligence, Data Science, Machine Learning, Digital Skills, Computer Basics, Windows 10 Basics and Microsoft Office
Detail of CBSE Skill Subjects	CBSE Coding Skill Subject covered for Class 6 to 8 CBSE Artificial Intelligence Skill Subject covered for Class 8
Number of Lab Activities	For Class 1 to 2 – 15 Lab Activities For Class 3 to 8 – 25 Lab Activities
Lesson Plan	For Class 1 to 2 – 30 Sessions (15 for Classroom Learning & 15 for Lab Activities) For Class 3 to 8 – 50 Sessions (25 for Classroom Learning & 25 for Lab Activities) Each of the Classroom Learning and Lab Activity session is of 40 minutes
Teacher Resources	Lesson Plan – Yearlong session wise lesson plan for teachers instructing how to execute the program. Lecture Slides – Provided for every Classroom Learning and Lab Activity session
Capstone Project	All students are provided opportunity work on open projects and submit their work in Codeavour International Competition.
PictoBlox Credits	Every student enrolled in the program will get 3000 PictoBlox credits.

Digital Wizards presents a future-focused curriculum that balances the depth of technical knowledge with the excitement of discovery and creativity. It prepares students to navigate the ever-evolving digital landscape, fostering a strong foundation in technology and an innovative mindset. This curriculum not only aligns with the CBSE educational standards but also propels students towards global competitiveness and digital proficiency.

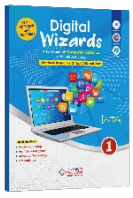
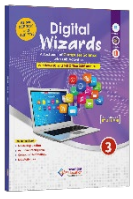
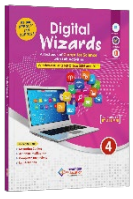
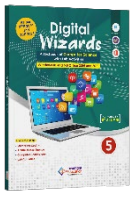
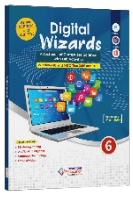
Digital Wizards Class 1 to 5 Comparative Study

Feature	Class 1	Class 2	Class 3	Class 4	Class 5
					
# of Pages	60	60	106	117	120
# of Chapters	5	5	8	8	6
# of Activities	14	15	25	25	25
Software and Hardware Used	Notepad, MS Paint, PictoBlox Jr	WordPad, Tux Paint, PictoBlox Jr	Windows 10, Notepad, MS Paint, Tux Paint, MS Word, MS Excel, PictoBlox	Windows 10, MS Paint, Tux Paint, MS Word, MS Excel, PictoBlox Block Coding, PictoBlox AI	Windows 10, Calculator, MS Paint, WordPad, MS Word, MS PowerPoint, PictoBlox Block Coding, PictoBlox AI, PictoBlox Physics
Competition	Access to Codeavour, Sample Paper for Cyber Olympiad				
Technologies	Computers, Coding, Artificial Intelligence and Robotics				
Sessions Required	Total 30 – (15 Lab Activities, 15 Classroom)	Total 30 – (15 Lab Activities, 15 Classroom)	Total 50 – (25 Lab Activities, 25 Classroom)	Total 50 – (25 Lab Activities, 25 Classroom)	Total 50 – (25 Lab Activities, 25 Classroom)
Resources for Teachers	Lesson Plan, Lecture Slides (Textual, Images, Video)				
Certification	Yes (5 lab activities)	Yes (5 lab activities)	Yes (10 lab activities)	Yes (10 lab activities)	Yes (10 lab activities)
TOC Chapters	1. Know Your Computer 2. Fun with Paint 3. Algorithmic Thinking 4. Into the World of Coding 5. Into the AI	1. Know Your Computer 2. Fun with Paint 3. Critical Thinking and Analysis 4. Into the World of Coding 5. Into the AI	1. Know Your Computer 2. Fun with Paint 3. Introduction to Algorithm and Coding 4. Introduction to MS Word 5. Introduction to MS Excel 6. Sketch with PictoBlox 7. Game Development 8. Learn About AI	1. Know Your Computer 2. Fun with Paint 3. Basics of Coding and Algorithmic Thinking 4. Introduction to MS Word 5. Introduction to MS Excel 6. Sketch with PictoBlox 7. Fun with AI 8. Stepping into the World of Game Design	1. Know Your Computer 2. Coding & Algorithmic Thinking 3. Explore More in MS Word 4. Introduction to PowerPoint 5. The World of AI 6. Exploring the Internet

Digital Wizards Class 6 to 8 Comparative Study

Feature	Class 6	Class 7	Class 8
			
# of Pages	151	161	160
$ of Chapters	12	10	10
$ of Activities	25	25	25
CBSE Skill Subject Covered	Class 6 Coding Skill Subject (Chapter 2 - 7)	Class 7 Coding Skill Subject (Chapter 2 - 5)	Class 8 Coding Skill Subject (Chapter 2 - 6) Class 8 Artificial Intelligence Skill Subject (Chapter 9)
Software and Hardware Used	Windows 10, Windows Media Player, MS Word, MS PowerPoint, PictoBlox Block Coding, PictoBlox AI	Windows 10, PicsArt App, MS Excel, MS PowerPoint, PictoBlox Block Coding, PictoBlox AI, HTML Web Designing	Windows 10, Canva App, MS Excel, PictoBlox Block Coding, PictoBlox Python Coding, PictoBlox Machine Learning, PictoBlox AI
Competition	Access to Codeavour, Sample Paper for Cyber Olympiad		
Technologies Covered	Computers, Coding, Artificial Intelligence	Computers, Coding, Artificial Intelligence, Web Design	Computers, Coding, Artificial Intelligence, Data Science, Machine Learning
Sessions Required	Total 50 – (25 Lab Activities, 25 Classroom Learnings)	Total 50 – (25 Lab Activities, 25 Classroom Learnings)	Total 50 – (25 Lab Activities, 25 Classroom Learnings)
Resources for Teachers	Lesson Plan, Lecture Slides (Textual, Images, Video)		
Certification	Yes. Need to submit 15 lab activities online to get a digital certificate by STEMpedia, STEM.org and ARTPARK.		
TOC Chapters	1. Basics of ICT 2. Introduction to Coding 3. Algorithms with Block Coding 4. Variable using Block Coding 5. Control with Conditions 6. Loops using Block Coding 7. Game Development with Block Coding 8. Basics of Python Programming 9. Basics of MS Word 10. Basics of Microsoft PowerPoint 11. Fun with AI 12. Internet and Computer Networking	1. Basics of ICT 2. Coding & Variables in Real Life 3. Sequencing with Block Coding 4. Fun with Functions 5. Collections and Arrays 6. Introduction to MS Excel 7. Explore More in PowerPoint 8. Fun with AI 9. Internet and Security 10. Introduction to HTML	1. Basics of ICT 2. Basics of Python Programming 3. Conditions in Details 4. Get Creative with Loops 5. Functions in Depth 6. Understanding Arrays 7. Mastering MS Excel 8. Basics of Data Science with MS Excel 9. Artificial Intelligence and Machine Learning 10. Emerging Technologies

Software and Hardware Used

	Windows 10	MS Paint	Notepad	PictoBlox Junior Blocks						
	Windows 10	Tux Paint	WordPad	PictoBlox Junior Blocks						
	Windows 10	MS Paint	Tux Paint	Notepad	WordPad	MS Word 16/19	MS Excel 16/19	PictoBlox Block Coding	PictoBlox AI	
	Windows 10	MS Paint	Tux Paint	MS Word 16/19	MS PowerPoint 16/19	PictoBlox Block Coding	PictoBlox AI			
	Windows 10	MS Paint	WordPad	Calculator	MS Word 16/19	MS PowerPoint 16/19	PictoBlox Block Coding	PictoBlox AI	Google Chrome	
	Windows 10	Windows Media Player	MS Word 16/19	MS PowerPoint 16/19	PictoBlox Block Coding	PictoBlox AI	PictoBlox Py Editor			
	Windows 10	PicsArt	MS Excel 16/19	MS PowerPoint 16/19	PictoBlox Block Coding	PictoBlox AI	PictoBlox Py Editor	Notepad	HTML	
	Windows 10	Canva App	MS Excel 16/19	PictoBlox Py Editor	PictoBlox AI	PictoBlox Machine Learning				

FAQs on Digital Wizards

1. What is the Digital Wizards Program?

The “Digital Wizards” program represents a significant advancement in the educational approach to technology and computing in schools. Previously, schools operated computer labs that primarily focused on basic Information and Communication Technology (ICT). These labs provided fundamental knowledge and skills in using computers and understanding basic digital tools and software.

With the introduction of the “Digital Wizards” program, there has been a substantial upgrade in the scope and capability of computer labs. They have been transformed into AI Labs, indicating a shift towards more advanced and contemporary areas of technology. This upgrade includes not only a complete coverage of traditional ICT subjects but also incorporates extensive training and education in Coding, Artificial Intelligence (AI), and Data Science.

This means that students are now exposed to a wider range of technological skills and knowledge. They learn programming languages and coding techniques, which are essential for creating software, apps, and websites. The AI component of the program introduces them to the principles of artificial intelligence, machine learning, and data analysis, providing them with insights into how intelligent systems are designed and function.

Overall, the “Digital Wizards” program represents a modern and forward-thinking approach to technology education in schools, preparing students for a future where digital literacy, programming skills, and an understanding of AI will be increasingly important.

2. What classes does the Digital Wizards Program cater to?

This program is meticulously structured for students across a wide age range, specifically targeting those in Class 1 through Class 8. It is crafted to suit the learning capabilities and educational needs of each age group, gradually building complexity and depth as students progress through their school years.

3. Which concepts are covered in the Digital Wizards Program?

The program covers a diverse range of technological and computer science concepts. These include the basics of coding and programming languages, the fundamentals and applications of artificial intelligence, machine learning, data science, Python programming, general computer literacy, and an introduction to Windows 10 and various Microsoft Office tools. This wide range of topics ensures a well-rounded exposure to essential technology concepts.

4. How is the Digital Wizards Program aligned with CBSE's skill subjects?

In alignment with the CBSE curriculum, Digital Wizards includes the CBSE Coding Skill Subject for students in Classes 6 to 8 and the CBSE Artificial Intelligence Skill Subject specifically for Class 8. This alignment ensures that students not only engage with the program as an extracurricular learning experience but also fulfil their curriculum requirements.

5. What is the structure of lab activities in the program?

The program emphasizes practical learning, with a significant number of lab activities. For students in Class 1 and 2, there are 15 lab activities. This number increases to 25 for students from Class 3 to 8. These activities are designed to reinforce theoretical knowledge with hands-on experience, encouraging students to apply what they have learned in a practical, engaging environment.

6. How many sessions are included in the program for each class?

The program is comprehensive, with a total of 30 sessions for Class 1 and 2 students and 50 sessions for those in Class 3 to 8. Each session is carefully planned, splitting equally between classroom learning and lab activities to ensure a balanced educational experience.

7. What resources are provided for teachers in the Digital Wizards Program?

Teachers are equipped with extensive resources, including a detailed yearlong session-wise lesson plan, which guides them on how to effectively execute the program. Additionally, lecture slides are provided for every classroom learning and lab activity session, ensuring that teachers have the necessary tools and information to deliver the curriculum effectively.

8. Is there a capstone project in the Digital Wizards Program?

Yes, the program includes a capstone project, offering students an opportunity to work on open-ended projects. These projects are submitted in the Codeavour International Competition, providing a platform for students to showcase their creativity, problem-solving skills, and technological expertise.

9. What are PictoBlox Credits, and how many are provided to each student?

PictoBlox Credits are a unique feature of the program, acting as a currency within the PictoBlox software used for AI modules. Each student enrolled in the program receives 3000 PictoBlox credits, which can be used to access various features and tools within the software, enhancing their learning experience.

10. What certifications are available through the Digital Wizards Program?

Upon completing specific lab activities, students can earn digital certificates accredited by esteemed organisations like STEMpedia, STEM.org, and ARTPARK. These certifications recognise the students' achievements and mastery of the skills learned throughout the program.

11. How does the program integrate practical learning?

Digital Wizards is heavily focused on practical, experiential learning. It achieves this through an extensive array of lab activities that encourage students to apply theoretical concepts in real-world scenarios. This practical approach is crucial for deepening understanding and fostering a hands-on experience in technology and computer science.

12. Are there any competitions associated with the Digital Wizards Program?

Yes, the program offers access to the Codeavour competition, a significant platform for students to apply and test their learning in a competitive and stimulating environment. This exposure not only enhances their learning experience but also fosters a spirit of innovation and competitiveness.

13. What is the role of PictoBlox and Quarky in Enhancing Practical Learning?

PictoBlox plays a pivotal role in demystifying Artificial Intelligence (AI) for students, serving as an accessible and engaging platform. It stands out for its user-friendly interface, making Block Codin, Python programming, ML and AI concepts approachable for learners of various ages. Here's how PictoBlox enhances practical learning:

1. **Intuitive Learning Approach:** PictoBlox simplifies the complexities of AI. It introduces students to Block Coding and Python, a language at the forefront of AI development, in an easy-to-understand manner. This approach helps bridge the gap between abstract AI concepts and their real-world applications.
2. **Interactive AI Activities:** The platform offers a range of interactive activities, from image classification and object detection to natural language processing. These activities not only engage students but also provide a hands-on experience with the practical aspects of AI, enhancing their understanding and retention.
3. **Accessible AI Concepts:** By breaking down AI into manageable components, PictoBlox makes learning AI accessible to a younger audience. It allows students to grasp fundamental AI principles and apply them in creative ways, fostering an early interest in this advanced field.
4. Enjoyable Learning Experience: PictoBlox turns learning into a fun and interactive experience. Its engaging activities captivate students' attention, making the learning process enjoyable and less daunting, especially for complex topics like AI.

As per NEP 2020 and NCF 2023

Digital Wizards

A Textbook of Computer Science with Lab Activities

Windows 10 and MS Office 2016 and 2019

Windows 10

PictoBlox

MS Paint

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IIT ALUMNI

Inside the Book

- Mastering Coding
- Artificial Intelligence
- Computer Technology
- Lab Activities

1

Inventant Education
Present Meets Future

Digital Wizards - Class 1

Feature	Description
Number of Pages	60
Number of Chapters	5
Number of Activities	14
Sessions Required to Complete Course	Total 30 – (15 Lab Activities, 15 Classroom Learnings)
Software and Hardware Used	Notepad, MS Paint, PictoBlox Jr
Competition	Access to Codeavour
Technologies Covered	Computers, Coding, and Artificial Intelligence
Resources Available for Teachers	Lesson Plan, and Lecture Slides (Containing Textual, Images, and Video based Content)
Certification	Yes. Need to submit 5 lab activities online to get digital certificate accredited by STEMpedia, STEM.org and ARTPARK.

Table of Contents – Digital Wizards (Class 1)

As per NEP 2020 and NCF 2023

Digital Wizards

A Textbook of Computer Science with Lab Activities

Windows 10 and MS Office 2016 and 2019

Windows 10

PictoBlox

Tux Paint

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Inside the Book

- Mastering Coding
- Artificial Intelligence
- Computer Technology
- Lab Activities

2

Inventant Education
Present Meets Future

Digital Wizards - Class 2

Feature	Description
Number of Pages	60
Number of Chapters	5
Number of Activities	15
Software and Hardware Used	WordPad, Tux Paint, PictoBlox Jr
Competition	Access to Codeavour
Technologies Covered	Computers, Coding, and Artificial Intelligence
Sessions Required to Complete Course	Total 30 – (15 Lab Activities, 15 Classroom Learnings)
Resources Available for Teachers	Lesson Plan, and Lecture Slides (Containing Textual, Images, and Video based Content)
Certification	Yes. Need to submit 5 lab activities online to get digital certificate accredited by STEMpedia, STEM.org and ARTPARK.

Table of Contents – Digital Wizards (Class 2)

As per NEP 2020 and NCF 2023

Digital Wizards

A Textbook of Computer Science with Lab Activities

Windows 10 and MS Office 2016 and 2019

Windows 10

PictoBlox

Office 16\19\365

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Inside the Book

- Mastering Coding
- Artificial Intelligence
- Computer Technology
- Lab Activities

3

Inventant Education
Present Meets Future

Digital Wizards – Class 3

Feature	Description
Number of Pages	106
Number of Chapters	8
Number of Activities	25
Software and Hardware Used	Windows 10, Notepad, WordPad, MS Paint, Tux Paint, MS Word, MS Excel, PictoBlox
Competition	Access to Codeavour, Sample Paper for Cyber Olympiad
Technologies Covered	Computers, Coding, and Artificial Intelligence
Sessions Required to Complete Course	Total 50 – (25 Lab Activities, 25 Classroom Learnings)
Resources Available for Teachers	Lesson Plan, and Lecture Slides (Containing Textual, Images, and Video based Content)
Certification	Yes. Need to submit 10 lab activities online to get digital certificate accredited by STEMpedia, STEM.org and ARTPARK.

Chapter wise Learning Outcome

1. **Chapter 1: Know Your Computer**: Acquire foundational knowledge of computer systems, including hardware, software, and basic file management.
2. **Chapter 2: Fun with Paint:** Develop artistic skills using digital tools, exploring both MS Paint and Tux Paint functionalities.
3. **Chapter 3: Introduction to Algorithm and Coding**: Understand the basics of algorithmic thinking, programming concepts, and create animations using PictoBlox.
4. **Chapter 4: Introduction to MS Word**: Familiarise with MS Word's interface and essential features, enhancing word processing skills.
5. **Chapter 5: Introduction to MS Excel**: Grasp the basics of spreadsheet management, focusing on cell operations and data organisation in MS Excel.
6. **Chapter 6: Sketch with PictoBlox**: Dive into digital sketching using PictoBlox Pen Extension, creating patterns and shapes.
7. **Chapter 7: Game Development**: Understand the fundamentals of game development and design simple games using PictoBlox.
8. **Chapter 8: Learn About AI**: Gain an introductory understanding of Artificial Intelligence and its applications, particularly in face detection.

Capstone Project: Apply accumulated knowledge to design and execute a comprehensive project, showcasing skills acquired throughout the course.

Cyber Olympiad Sample Questions: Test and reinforce knowledge through sample questions, preparing for potential Cyber Olympiads.

Table of Contents – Digital Wizards (Class 3)

As per NEP 2020 and NCF 2023

Digital Wizards

A Textbook of Computer Science with Lab Activities

Windows 10 and MS Office 2016 and 2019

Windows 10

PictoBlox

Office 16\19\365

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Inside the Book

- Mastering Coding
- Artificial Intelligence
- Computer Technology
- Lab Activities

4

Inventant Education
Present Meets Future

Digital Wizards – Class 4

Feature	Description
Number of Pages	117
Number of Chapters	8
Number of Activities	25
Software and Hardware Used	Windows 10, MS Paint, Tux Paint, MS Word, MS Excel, PictoBlox Block Coding, PictoBlox AI
Competition	Access to Codeavour, Sample Paper for Cyber Olympiad
Technologies Covered	Computers, Coding, and Artificial Intelligence
Sessions Required to Complete Course	Total 50 – (25 Lab Activities, 25 Classroom Learnings)
Resources Available for Teachers	Lesson Plan, and Lecture Slides (Containing Textual, Images, and Video based Content)
Certification	Yes. Need to submit 10 lab activities online to get digital certificate accredited by STEMpedia, STEM.org and ARTPARK.

Chapter wise Learning Outcome

1. **Chapter 1: Know Your Computer**: Understand the evolution of computers, their classifications, memory structures, and gain hands-on experience with the Windows 10 interface.
2. **Chapter 2: Fun with Paint**: Master the art of digital painting using MS Paint and Tux Paint, focusing on design tools, shape editing, and image importing.
3. **Chapter 3: Basics of Coding and Algorithm**: Grasp foundational concepts of algorithms, programming in PictoBlox, decision-making, loops, variables, operators, and debugging techniques.
4. **Chapter 4: Introduction to MS Word**: Familiarise with MS Word 2016's interface and delve into text formatting, thesaurus usage, and WordArt functionalities.
5. **Chapter 5: Introduction to MS Excel**: Navigate MS Excel 2016's interface, and hone skills in formula application, chart creation, and data sorting techniques.
6. **Chapter 6: Sketch with PictoBlox**: Dive into digital sketching using PictoBlox Pen Extension, understanding its blocks and sketching functionalities.
7. **Chapter 7: Fun with AI**: Gain an introductory understanding of Artificial Intelligence, its applications in robotics, and explore human body detection techniques.
8. **Chapter 8: Stepping into the World of Game Design**: Delve into the realm of game design, understanding its foundational rules, the importance of level-ups, and the role of variables in game mechanics.

Capstone Project: Create and apply the knowledge and skills acquired throughout the course to a comprehensive project.

Cyber Olympiad Sample Questions: Test and reinforce knowledge through sample questions, preparing for potential Cyber Olympiads.

Table of Contents – Digital Wizards (Class 4)

As per NEP 2020 and NCF 2023

Digital Wizards

A Textbook of Computer Science with Lab Activities

Windows 10 and MS Office 2016 and 2019

Windows 10

PictoBlox

Office 16\19\365

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Inside the Book

- Mastering Coding
- Artificial Intelligence
- Computer Technology
- Lab Activities

5

Inventant Education
Present Meets Future

Digital Wizards – Class 5

Feature	Description
Number of Pages	120
Number of Chapters	6
Number of Activities	25
Software and Hardware Used	Windows 10, Calculator, MS Paint, WordPad, MS Word, MS PowerPoint, PictoBlox Block Coding, PictoBlox AI, PictoBlox Physics
Competition	Access to Codeavour, Sample Paper for Cyber Olympiad
Technologies Covered	Computers, Coding, and Artificial Intelligence
Sessions Required to Complete Course	Total 50 – (25 Lab Activities, 25 Classroom Learnings)
Resources Available for Teachers	Lesson Plan, and Lecture Slides (Containing Textual, Images, and Video based Content)
Certification	Yes. Need to submit 10 lab activities online to get digital certificate accredited by STEMpedia, STEM.org and ARTPARK.

Chapter wise Learning Outcome

1. **Chapter 1: Know Your Computer**: Acquire foundational knowledge about the CPU, its evolution, the Windows 10 operating system, and essential tools like the Snipping Tool and Character Map.
2. **Chapter 2: Coding & Algorithmic Thinking**: Grasp the core concepts of algorithms, flowcharts, and coding, while exploring advanced features in PictoBlox, including costume editing, cloning, QR code reading, and the physics engine.
3. **Chapter 3: Explore More in MS Word**: Master advanced functionalities in MS Word, such as table creation, spell check, find and replace, and document formatting tools like watermark and drop cap.
4. **Chapter 4: Introduction to PowerPoint**: Navigate the PowerPoint interface, learn to choose themes, edit slides, insert multimedia elements, and effectively present slideshows.
5. **Chapter 5: The World of AI**: Delve into the realm of Artificial Intelligence, exploring speech recognition, text-to-speech functionalities, road safety AI, and advanced projects like self-driving cars and weather monitoring systems.
6. **Chapter 6: Exploring the Internet**: Understand the intricacies of the internet, familiarise with web terminologies, and gain hands-on experience with communication tools and email functionalities.

Capstone Project: Synthesise and apply the knowledge and skills acquired throughout the course to a comprehensive project.

Cyber Olympiad Sample Questions: Test and reinforce knowledge through sample questions, preparing for potential Cyber Olympiads.

Table of Contents – Digital Wizards (Class 5)

As per NEP 2020 and NCF 2023

Digital Wizards

A Textbook of Computer Science with Lab Activities

Windows 10 and MS Office 2016 and 2019

Windows 10

PictoBlox

Office 16\19\365

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Inside the Book

- Mastering Coding
- Artificial Intelligence
- Computer Technology
- Lab Activities

6

Inventant Education
Present Meets Future

Digital Wizards – Class 6

Feature	Description
Number of Pages	151
Number of Chapters	12
Number of Activities	25
CBSE Skill Subject Covered	Class 6 Coding Skill Subject (Chapter 2 - 7)
Software and Hardware Used	Windows 10, Windows Media Player, MS Word, MS PowerPoint, PictoBlox Block Coding, PictoBlox AI
Competition	Access to Codeavour, Sample Paper for Cyber Olympiad
Technologies Covered	Computers, Coding, and Artificial Intelligence
Sessions Required to Complete Course	Total 50 – (25 Lab Activities, 25 Classroom Learnings)
Resources Available for Teachers	Lesson Plan, and Lecture Slides (Containing Textual, Images, and Video based Content)
Certification	Yes. Need to submit 15 lab activities online to get digital certificate accredited by STEMpedia, STEM.org and ARTPARK.

Chapter wise Learning Outcome

1. **Chapter 1**: Basics of ICT: Understand the evolution and components of computer systems, delve into data representation, and master essential Windows functionalities and file management.
2. **Chapter 2: Introduction to Coding**: Discover the mechanics behind everyday systems like traffic lights, grasp the essence of coding, and familiarise with the PictoBlox interface.
3. **Chapter 3: Algorithms with Block Coding**: Comprehend the foundational concepts of algorithms, flowcharts, and the benefits of pseudocode.
4. **Chapter 4: Variable using Block Coding**: Grasp the intricacies of variables, their naming conventions, data types, and operations, with a focus on PictoBlox.
5. **Chapter 5: Control with Conditions**: Dive deep into conditional programming, understanding relational and logical operators, and mastering nested conditional statements.
6. **Chapter 6: Loops using Block Coding**: Understand the concept and types of loops, their entry and exit criteria, and the use of break and continue statements.
7. **Chapter 7: Game Development with Block Coding**: Embark on the journey of game development, understanding its foundational rules and essential design elements.
8. **Chapter 8: Basics of Python Programming**: Dive into the world of Python programming, familiarise with PictoBlox Python interface, and grasp foundational Python concepts and operations.
9. **Chapter 9: Basics of MS Word**: Navigate the MS Word interface, mastering text formatting, table creation, and the mail merge feature.
10. **Chapter 10: Basics of Microsoft PowerPoint**: Familiarise with the PowerPoint interface, slide designs, and the art of crafting and presenting compelling slideshows.
11. **Chapter 11: Fun with AI**: Delve into the world of intelligence, both human and artificial, exploring current AI trends, face detection techniques, and the capabilities of generative AI.

12. **Chapter 12: Internet and Computer Networking**: Understand the vast realm of the internet, computer networks, their types, and the revolutionary concept of the Internet of Things.

Capstone Project: Apply the accumulated knowledge and skills to a comprehensive project, showcasing mastery over the course content.

Cyber Olympiad Sample Questions: Test and reinforce knowledge through sample questions, preparing for potential Cyber Olympiads.

Table of Contents – Digital Wizards (Class 6)

As per NEP 2020 and NCF 2023

Digital Wizards

A Textbook of Computer Science with Lab Activities

Windows 10 and MS Office 2016 and 2019

Windows 10

PictoBlox

Office 16\19\365

AUTHORED BY IIT ALUMNI

Inside the Book

- Mastering Coding
- Artificial Intelligence
- Computer Technology
- Lab Activities

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Inventant Education
Present Meets Future

Digital Wizards – Class 7

Feature	Description
Number of Pages	161
Number of Chapters	10
Number of Activities	25
CBSE Skill Subject Covered	Class 7 Coding Skill Subject (Chapter 2 - 5)
Software and Hardware Used	Windows 10, PicsArt App, MS Excel, MS PowerPoint, PictoBlox Block Coding, PictoBlox AI, HTML Web Designing
Competition	Access to Codeavour, Sample Paper for Cyber Olympiad
Technologies Covered	Computers, Coding, and Artificial Intelligence
Sessions Required to Complete Course	Total 50 – (25 Lab Activities, 25 Classroom Learnings)
Resources Available for Teachers	Lesson Plan, and Lecture Slides (Containing Textual, Images, and Video based Content)
Certification	Yes. Need to submit 15 lab activities online to get digital certificate accredited by STEMpedia, STEM.org and ARTPARK.

Chapter wise Learning Outcome

1. **Chapter 1: Basics of ICT**: Acquire foundational knowledge of computer types, generations, data representation, number systems, and basic Windows functionalities, culminating in a hands-on experience with the PicsArt application.
2. **Chapter 2: Coding and Variables in Block Coding & Python**: Revisit coding concepts, delve into PictoBlox, and understand the essence of variables, arithmetic operators, and user input validation in programming.
3. **Chapter 3: Sequencing with Block Coding**: Refresh loop concepts, explore the core elements of programming, understand bugs, and master loops and conditional statements.
4. **Chapter 4: Fun with Functions**: Dive deep into the world of functions, understanding their significance, parameters, return values, and the concept of events and event handlers.
5. **Chapter 5: Collections and Arrays**: Understand the intricacies of collections, arrays, iteration, sorting, and the distinction between low-level and high-level programming languages.
6. **Chapter 6: Introduction to MS Excel**: Navigate the MS Excel interface, mastering data sorting, filtering, chart creation, and worksheet printing.
7. **Chapter 7: Explore More in PowerPoint**: Revisit the world of PowerPoint, mastering slide aesthetics, themes, content insertion, presentation techniques, and effective presentation tips.
8. **Chapter 8: Fun with AI**: Re-explore the realm of AI, understanding its contribution to national development, various AI techniques like face detection, computer vision, speech recognition, NLP, and the ethics surrounding AI.
9. **Chapter 9: Internet and Security**: Delve into the world of social media, understanding its ethics, safety measures, computer viruses, and protective measures like antivirus software and firewalls.
10. **Chapter 10: Introduction to HTML**: Embark on a journey through HTML, understanding tags, attributes, document structures, styles, images, and the process of creating and saving documents.

Capstone Project: Apply the accumulated knowledge and skills to a comprehensive project, showcasing mastery over the course content.

Cyber Olympiad Sample Questions: Test and reinforce knowledge through sample questions, preparing for potential Cyber Olympiads.

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Inside the Book

- Mastering Coding
- Artificial Intelligence
- Computer Technology
- Lab Activities

Inventant Education
Present Meets Future

Digital Wizards – Class 8

Feature	Description
Number of Pages	160
Number of Chapters	10
Number of Activities	25
CBSE Skill Subject Covered	Class 8 Coding Skill Subject (Chapter 2 - 6) Class 8 Artificial Intelligence Skill Subject (Chapter 9)
Software and Hardware Used	Windows 10, Canva App, MS Excel, PictoBlox Block Coding, PictoBlox Python Coding, PictoBlox Machine Learning, PictoBlox AI
Competition	Access to Codeavour, Sample Paper for Cyber Olympiad
Technologies Covered	Computers, Coding, and Artificial Intelligence
Sessions Required to Complete Course	Total 50 – (25 Lab Activities, 25 Classroom Learnings)
Resources Available for Teachers	Lesson Plan, and Lecture Slides (Containing Textual, Images, and Video based Content)
Certification	Yes. Need to submit 15 lab activities online to get digital certificate accredited by STEMpedia, STEM.org and ARTPARK.

Chapter wise Learning Outcome

1. **Chapter 1: Basics of ICT**: Gain insights into the evolution of computing, understand computer ports, software, networking, and explore the Canva application for design.
2. **Chapter 2: Basics of Python Programming**: Dive into the world of Python programming, familiarise with PictoBlox Python interface, and grasp foundational Python concepts and operations.
3. **Chapter 3: Conditions in Details**: Delve deep into control statements, understand various conditional statements, and master logical and relational operators in programming.
4. **Chapter 4: Get Creative with Loops**: Explore the concept of loops, understand different types of loops, and learn how to sequence with loops and conditions.
5. **Chapter 5: Functions in Depth**: Understand the essence of functions, their parameters, and their implementation in both block coding and Python.
6. **Chapter 6: Understanding Arrays**: Dive into the world of arrays, understand their implementation in Python, and explore sorting techniques and array operations.
7. **Chapter 7: Mastering MS Excel**: Navigate the MS Excel interface, master formatting techniques, formulas, error handling, and delve into the power of pivot tables.
8. **Chapter 8: Basics of Data Science with MS Excel**: Understand the significance of data, explore the realm of data science, its applications, and learn data visualisation techniques in Excel.
9. **Chapter 9: Artificial Intelligence and Machine Learning**: Revisit AI concepts, understand its contributions to national development, explore machine learning types, models, and delve into neural networks and natural language processing.
10. **Chapter 10: Emerging Technologies**: Explore the forefront of technology, understanding robotics, augmented reality, virtual reality, mixed reality, and the revolutionary blockchain technology.

Capstone Project: Apply the accumulated knowledge and skills to a comprehensive project, showcasing mastery over the course content.

Cyber Olympiad Sample Questions: Test and reinforce knowledge through sample questions, preparing for potential Cyber Olympiads.

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