STEM Fuse AP Computer Science Principals: Pacing and Alignment Guide

Unit	Topic	Hours	Total	Big Ideas	Enduring Understandings
0	Intro to Computing	5	5	Big Idea 2: Abstraction Big Idea 3: Data and Information Big Idea 6: The Internet Big Idea 7: Global Impact	EU 2.1 EU 2.2 EU 2.3 EU 3.1 EU 3.2 EU 3.3 EU 6.2 EU 7.3 EU 7.4 EU 7.5
1.1	Simple HTML Sample	1	6	Big Idea 1: Creativity Big Idea 2: Abstraction Big Idea 5: Programming	EU 1.1 EU 1.2 EU 2.1 EU 2.2 EU 5.1 EU 5.4 EU 5.5
1.2	Getting Started With HTML	3	9		
1.3	Lists and Tables	3	12		
1.4	Forms	3	15		
1.5	Style	3	18		
1.6	Color	3	21		
1.7	Layout	3	24		
1.8	Boxes	3	27		
1.9	HTML5	3	30		
2.1	Libraries	1	31	Big Idea 1: Creativity Big Idea 2: Abstraction Big Idea 5: Programming Big Idea 6: The Internet	EU 1.2 EU 1.3 EU 2.2 EU 5.1 EU 5.4 EU 5.5
2.2	CSS Grid / Flexbox	4	35		
2.3	Bootstrap	5	40		
2.4	CSS Design Project	1	41		
3.1	Intro to JavaScript	4	45	Big Idea 2: Abstraction Big Idea 3: Data and Information Big Idea 4: Algorithms Big Idea 5: Programming	EU 2.1 EU 2.2 EU 3.1 EU 3.2 EU 4.1 EU 5.1 EU 5.2 EU 5.3 EU 5.5 EU 6.2
3.2	Programming Fundamentals	5	50		
3.3	JavaScript Game Development	5	55		
3.4	Working with the DOM	5	60		
3.5	D3 JavaScript Data Libraries	5	65		
4.1	Design Cycle	1	66	Big Idea 1: Creativity Big Idea 5: Programming Big Idea 7: Global Impact	EU 1.1 EU 1.2 EU 1.3 EU 5.1 EU 5.4 EU 7.1 EU 7.2
4.2	Initial Pitch and Vote	1	67		
4.3	Problem Statement	2	69		
4.4	Solution Proposal	2	71		
4.5	MVP	3	74		
5.1	AP Explore Performance Task	8	82		
6.1	Software Design	2	84	Big Idea 1: Creativity Big Idea 5: Programming Big Idea 7: Global Impact	EU 1.1 EU 1.2 EU 1.3 EU 5.1 EU 5.4 EU 7.1 EU 7.2
6.2	Principles of Agile	4	88		
6.3	Scrum	4	92		

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Unit	Topic	Hours	Total	Big Ideas	Enduring Understandings
7.1	Fundamentals of Java	2	94	Big Idea 2: Abstraction	EU 2.1
7.2	Variables, Types and Assignments	3	97	Big Idea 4: Algorithms	EU 2.2
7.3	Operators, Boolean Expressions, and If Statements	3	100	Big Idea 5: Programming	EU 4.1
7.4	Writing Methods and Loops	3	103		EU 5.2
7.5	Classes	3	106		EU 5.3
					EU 5.5
8.1	Intro to App Development: Hello World	2	108	Big Idea 1: Creativity	EU 1.2
8.2	Moving Box	2	110	Big Idea 2: Abstraction	EU 1.3
8.3	Button Press	2	112	Big Idea 5: Programming	EU 2.1
8.4	Reading, Reflection, Creation	2	114		EU 2.2
					EU 5.1
					EU 5.2
					EU 5.3
					EU 5.5
9	AP Create Performance Task	12	126		
10.1	Storing and Processing Data	5	131	Big Idea 2: Abstraction	EU 2.1
10.2	Operating Systems	4	135	Big Idea 3: Data and Information	EU 2.2
10.3	Laws and Ethics in Computing	2	137	Big Idea 6: The Internet	EU 2.3
10.4	Models and Simulations	5	142	Big Idea 7: Global Impact	EU 3.1
10.5	Big Data	4	146		EU 3.2
					EU 3.3
					EU 6.2
					EU 7.3
					EU 7.4
					EU 7.5
11.1	Internet	3	149	Big Idea 2: Abstraction	EU 2.1
11.2	TCP/IP	3	152	Big Idea 3: Data and Information	EU 2.2
11.3	HTTP	2	154	Big Idea 6: The Internet	EU 3.1
11.4	IOT	3	157	Big Idea 7: Global Impact	EU 3.3
11.5	Computer Security and Crypto	3	160		EU 6.1
11.6	PicoCTF	5	165		EU 6.2
					EU 6.3
					EU 7.3
					EU 7.4
					EU 7.5
EXAM	EXAM REVIEW	10	175		
12.1	Pong: Paddle and Ball	2	177	Big Idea 2: Abstraction	EU 2.1
12.2	Pong: Refactoring	2	179	Big Idea 4: Algorithms	EU 2.2
12.3	Pong: AI	2	181	Big Idea 5: Programming	EU 2.3
12.4	Pong: Keeping Score	2	183		EU 4.1
12.5	Pong: Game Over	2	185		EU 5.1
					EU 5.2
					EU 5.3
					EU 5.5

Critical AP Deadlines

Explore and Create Tasks	4/30/2019 *
EXAM	5/10/2019 *

* Check with College Board AP for Deadlines as they may have changed