STEMMOZ LDA

3D PRINTING CURRICULUM – LEVEL 1

Sl. no	TOPIC	SUBTOPIC
1	Introduction to 3D printing	a. History b. Applications & Uses
2	Basics of 3D printing	a. Software introduction b. Hardware introduction
3	Online Software layout	a. Tinkercad introduction b. Creating account and connecting with classroom c. Layout and interface of Tinkercad
4	Basics of Tinkercad	a. Work plane and coordinates b. Types of views in 3D space c. Understanding 10 basic 3D shapes (only basic like spare, cube, prism etc) d. Advance 3D shapes and uses e. Understanding basic designing f. Edge, trim, cut, bend, exclude, twist functions
5	Tinkercad tutorials	a. Starting with inbuilt tutorials b. Modifying the sample projects c. Exporting to printer format

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6	3D printer	a. Understanding basic components of 3D printer b. Types of 3D printers c. Understanding 3-dimensional space of 3D printer d. XY & Z axis movement of printer e. Motors functioning and precision f. Setting up 3D printer plotter g. Feed loading and troubleshooting h. Display reading and control unit of printer i. Types of feeds for 3D printer
7	Starting steps	a. Identify the requirement b. Do the research for model c. Imagine and draw plan on paper
8	Modeling	a. Fixing dimensions of model b. Material (feed) estimation of the model c. Understanding practical limitations of printer for model d. Starting with design and drawing base e. Completing the model design f. Analyzing possible errors g. Giving output in desired format (Export)
9	Printing	a. Testing the printing b. Watching the printer till print completes for error correction
10	Finishing	a. Cleaning the extra material b. Polishing and cutting c. Coloring the model
11	Troubleshooting software	Hands-on
12	Troubleshooting 3D printer	Hands-on