Detailed Curriculum
3D PRINTING CLUB

01

Create Personalized Keychains

In this lesson, students will be introduced to the basics of Tinkercad by designing personalized keychains. They will learn how to navigate the interface, use basic tools, and incorporate text and simple shapes into their designs.

02

Simple Jewelry Design

Students will delve into the world of jewelry design by creating rings, pendants, and bracelets. They will explore how to use various shapes and patterns to create intricate designs.

03

Bookmarks

Students will design unique bookmarks with customized shapes and cut-out patterns. They will learn to combine and manipulate basic geometric shapes to form their designs.

04

Pencil Topper

Students will design playful pencil toppers in this lesson, choosing from shapes like stars, animals, or initials. They will learn how to create a cylindrical base that fits a standard pencil and add decorative elements.

05

3D Puzzle

This involves creating a 3D puzzle by designing individual pieces using cubes. Students will learn about proper dimensions and alignment to ensure the pieces fit together correctly.

06

Custom Phone Stand

Students will design a functional and decorative phone stand, exploring stability and ergonomic design. They will learn to create a sturdy base and incorporate aesthetic elements like shapes and patterns. This combines practical engineering with creative design.

07

Simple House

In this introductory to MagicaVoxel, students will learn the basic tools and interface of the software. They will create a simple house model, step-by-step, focusing on foundational 3D modeling skills and customization with colors and textures to enhance their design.

08

Detailed Landscape

Students will design a detailed landscape, incorporating terrain features such as hills, valleys, and water bodies. They will add elements like trees and plants, learning how to use MagicaVoxel's tools to create a realistic environment. This emphasizes creativity and attention to detail.

09

Castle

Students will conceptualize and sketch a spaceship before modeling it in MagicaVoxel. They will focus on intricate details and futuristic textures, learning how to create a visually striking and functional design. This encourages imaginative and technical skills.

10

Sci-Fi Spaceship Design

Students will design playful pencil toppers in this lesson, choosing from shapes like stars, animals, or initials. They will learn how to create a cylindrical base that fits a standard pencil and add decorative elements.

11

Fantasy Character

In this advanced lesson, students will explore MagicaVoxel's tools to design and model a fantasy character. They will learn techniques for adding details and textures to bring their character to life, emphasizing creativity and technical proficiency.

12

Architectural Modeling

Students will design a modern building or structure, incorporating architectural elements like windows, doors, and roofs. They will apply realistic textures and materials, learning about architectural principles and 3D modeling techniques.

13

Fantasy Creature

This project involves designing a unique fantasy creature, focusing on adding details and textures to bring the creature to life. Students will learn to use MagicaVoxel's advanced features to create a cohesive and visually appealing design.

14

Vehicle

Students will conceptualize and design a detailed vehicle, such as a car or spaceship. They will focus on adding intricate details and textures, ensuring their design is visually striking and functional. This combines engineering principles with creative design.

15

Simple Toy

In this lesson, students will design a simple toy or gadget, adding moving parts and interactive features. They will learn to ensure their design is suitable for 3D printing, focusing on functionality and creativity.

16

Custom Trophy

Students will design a custom trophy for an event or competition. They will learn about creating stable bases and decorative elements, applying textures and colors for a polished finish. This project emphasizes design for specific purposes and aesthetics.

17

Custom Kitchen Utensil

In this lesson, students will design a unique kitchen utensil, such as a spatula or measuring cup. They will focus on usability and ergonomic design, adding textures and details for a polished look. This project combines practical engineering with creative design.

18

Custom Wall Art

Students will design a piece of custom wall art, using intricate patterns and shapes. They will learn about creating designs suitable for 3D printing and adding finishing touches with textures and colors. This emphasizes artistic expression and technical skills.

19

Themed Storage Container

In this project, students will design a themed storage container with compartments. They will focus on functionality and aesthetic appeal, customizing their design with textures and decorative elements. This combines practical design with creativity.

20

Desk Organizer Set

Students will design a set of desk organizers, such as pen holders and paper trays. They will ensure their designs are both functional and aesthetically pleasing, learning about organizing spaces & adding decorative elements.

21

Custom Desk Lamp

Students will design a set of desk organizers, such as pen holders and paper trays. They will ensure their designs are both functional and aesthetically pleasing, learning about organizing spaces and adding decorative elements.

22

Custom Wearable Accessories

Students will design wearable accessories such as custom watch bands or decorative pins. They will focus on ensuring fit and comfort, applying finishing touches with textures and colors for a polished look. This combines fashion design with technical skills.

23

Mechanical Object Design

Students will design a simple mechanical object with moving parts. They will learn about ensuring functionality and durability, preparing their design for 3D printing. This emphasizes engineering principles and creativity.

24

Board Game Pieces

Students will design custom pieces for a board game, ensuring uniformity and functionality. They will learn about creating cohesive sets and applying textures and details to match the game's theme. This project combines game design with practical modeling skills.

25

Design an Action Figure

Students will design a detailed action figure with movable joints. They will focus on customizing the figure with clothing, accessories, and facial features, ensuring parts fit together properly. This project combines character design with technical modeling skills.

26

Architectural Model of a Famous Building

Students will select a famous building or monument and create a detailed and accurate 3D model. They will learn about architectural principles, adding textures and colors to match the real structure. This combines historical research with technical modeling skills.

21

Decorative Picture Frame

students will design a customizable picture frame. They will focus on incorporating decorative patterns and textures, ensuring the frame can be easily 3D printed and assembled. This project emphasizes both practical design and artistic expression.

22

Desk Cable Organizer

Students will design a functional cable organizer for their desks. They will learn about creating compartments and hooks to keep cables tidy and secure, customizing their design with shapes, colors, and textures. This project combines practical organization with creative design.

23

Custom Phone Case

Students will design a personalized phone case, ensuring a perfect fit and protection for their device. They will focus on adding textures and colors for a unique look, combining practical design with creative elements.

24

Personalized Key Organizer

Students will design a key organizer with multiple hooks, focusing on functionality and aesthetic appeal. They will learn to customize their design with names and decorative elements, ensuring it is both practical and visually pleasing. This project emphasizes organizational design and creativity.