



PEF Summer, *At Home Edition* – Lesson Plan

Class: 3D Printing	Grade Band: 6th-8th
Teacher: Dr. Brooks	Lesson: Designing Playing Dice
Objectives: This video tutorial will guide students through 3D designing dice. Students will utilize the important work plane feature in order to properly place each of the numbers on their sides. Students will pay close attention to where the numbers are placed and how they are placed.	Materials: CPU Access Website https://www.tinkercad.com/
<p>Process:</p> <ul style="list-style-type: none">-Drag a blank die shape to the area outlined in orange.-Locate the Workplane tool at the top of the shapes panel on the right of the screen.-Click and drag a new Workplane to the top surface of the die.-Drag a number 1 shape to the workplane.-Because the 1 is sitting flat on top of the die we need to adjust it to make it cut away from the surface. Let's move the shape down 1mm to fit in the area highlighted in orange.-Let's repeat the previous steps to place the other numbers on the other sides of the die.-Let's reset the workplane by dragging a new Workplane into the editor and placing it anywhere on the ground (not on any of the shapes). This will place the Workplane back in its original position.-Select all numbers and set them to be holes. You will see the Hole option in the Inspector once a number is selected.-Now, select all the shapes, including the die, and group them by clicking the group button on the toolbar.-Tip: You will know the group was successful if all the shapes become the same color.	
Vocabulary: Placing, moving, grouping, and workplane	



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