

## Chess Sets

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| Tools, materials, technology options:                                                                     | Experience level required |
|-----------------------------------------------------------------------------------------------------------|---------------------------|
| 3D Printer and 3D modeling software<br>Laser cutter and 2D modeling software<br>Craft tools and materials | Beginner                  |

**Grade Level** (of this example): 5 - 12

**Content Standards:** Defined by teacher, any subject - see **Possible Content Explorations**



**Summary of Project:** Students design and make chess pieces to create their own unique set with a common theme. The chess set can be made using almost any process and material combination, such as general craft materials, laser cut wood, 3D printed pieces, or rigid foam cut with a hot wire cutter. Students work individually or in a group to develop the concept and details of their set.

They can present their finished work to the class and even take turns playing each others' sets.



In any content, challenge students to design pieces keeping in mind the power, movement, abilities, and constraints of each piece. Who do they make into the Queen, who can sweep across the board in any direction? The King, who can move in any direction, but only move one space? Who is a pawn that while they can only go forward but can make a big difference in the game? What do specific moves symbolize such as castling or when a pawn makes it to the other side of the board and reincarnates into another piece? What strategies would be used?

## Possible content explorations:

### **Social Studies:**

- Represents important personalities from a given era, geographic region, or movement.
- Memorializes a given person, event, or movement.

### **Sciences:**

- Shows the members of an ecosystem, components of a larger organism, a habitat, or multiple members of a taxon
- Shows less well known /unacknowledged scientists

### **ELA:**

- Represent characters from a reading
- Is based on a genre or a theme of study
- Embodies principles of research, essay writing, or grammar

### **Math:**

- Represent mathematical ideas, shapes, theorems, etc.

***Gamify everything!*** Have students create alternate moves for each piece that reflect something about its characteristics, develop game strategies