

3D Models by the Slice

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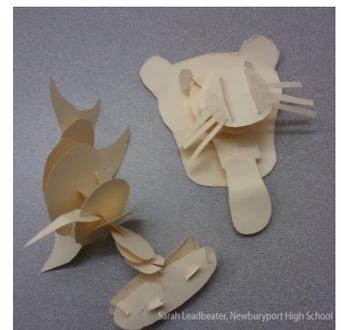
Tools, materials, technologies used:	Experience level required:
craft tools (scissors, exacto knife)	Intermediate
card stock, cardboard, wood sheets etc.	Intermediate
Laser or vinyl cutter (optional)	Beginner but not first-timer
Gravit 2D modeling tool (optional)	Intermediate

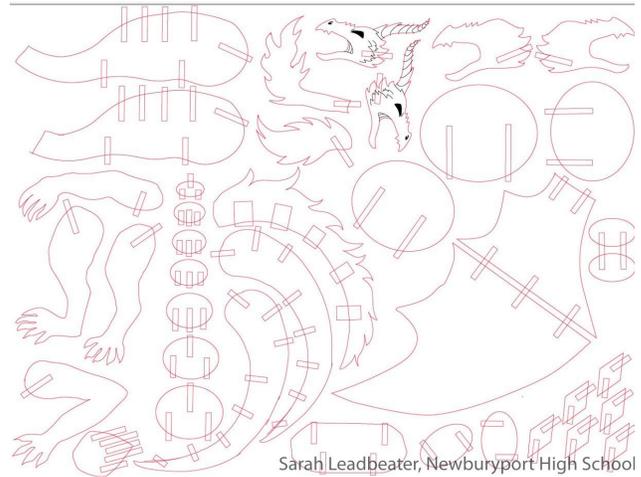
Grade Level (of this example): 3-12

Content Standards (of this example): See below for possible content explorations

Summary of Project:

Students will design and assemble a 3D shape (animals, living things, or inanimate object) out of 2D sheet materials with the goal of showing in 3 dimensions the physical features, overall size, and relative proportions. Students can draw the individual slices of the object by hand or use software compatible that slices a 3D model into 2d pieces. The animals should be constructed out of sheet material (e.g paper or wood) and will have notched parts that slide together. Students can work individually or in groups to gather the necessary background information and create the models. It is expected that the project involves iteration and revision to get to the desired result. Students should develop abilities in visualizing objects in 3D and prioritizing features that best describe an object. Students may present models to class.





Possible Content Explorations

Social Studies / ELA

- Model a character/historical figure or symbol/cultural item - have students explain why each model looks as it does. **Extension:** design each slice to be engraved or decorated with important information about the model - e.g. each slice of a character also has a picture of something that character fears, each slice of a past ruler is engraved with something symbolizing a strength or weakness, etc.

STEM

- **Life sciences** - Model an ecosystem, organism, or organ
- **Math/Physics** - Use slices to model the integral of a curve or solid