

Create a Creature

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Technology/tools used	Experience required
3D Printer	beginner
3D modeling software such as Tinkercad	intermediate - best if students have used at least once

Grade Level: 4-8

Technology: 3D Printing and/or hand-sculpting

Content: In this classroom, students synthesized their knowledge about ecology to extrapolate the life histories, ecological niches, and physical adaptations of theoretical animals.

Summary of Project: Students design and 3D print parts to assemble a creature or another object that meets classroom objectives. They will use software compatible with the 3D printer to build or modify 3D models. They can work individually or in a group to gather information and experiment with different features and dough recipes to produce something that meets student expectations and teacher criteria. Students present to class with supporting graphics and information.

For spaces without a 3-D printer, consider providing different forms of polymer clay or recipes and ingredients for homemade dough.





Possible Content Explorations and Design criteria:

- **STEM:** Mimic a real organism
 - can your creature “look alive” enough to startle a passerby? make a rabbit freeze? etc. (camouflage, biomimicry)
 - students judge which creature shares the best mimicry features
 - can your creature float on water?
- **STEM - ecosystems**
 - design creature bodies with visible adaptations to fit a given habitat
 - have students design a habitat to go with their creature
 - assign groups of students a habitat and individual students a niche (predator, parasite, scavenger, prey, nocturnal, diurnal, etc.), have them design a creature with appropriate adaptations
 - students create a fictional extinct creature and provide written, oral, or video story to explain the circumstances that brought about its demise
 - students research and model a real [extinct creature](#)
- **Social Studies:** creature featuring common design motifs of a given culture/time period, or telling about an important aspect of the culture/time period
- **ELA/Social Studies:** Students create a creature reflecting an imaginary character from literature or folklore with physical features that match a verbal-only description (Baba Yaga’s house, Anansi, big bad wolf, chupacabra, etc.) or incorporate relevant folk-art motifs to design their creature (a scorpion native to Mexico or the Southwest USA inspired by [papel picado](#))

Extensions:

- **Electronics:**
 - For habitat-based projects, wire the creature so that it completes a circuit when placed in certain parts of the habitat - e.g. a creature that flashes lights when placed in a mating arena, shivers when not placed in its shelter, etc.