



# Developing Franken Toys

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**Target Grade:** 9-10 Visual Arts

**Time Required:** Three 90 minute class periods

**Standards:**

Tennessee Visual Arts Standard

- HS1.VA.Cr1.A Formulate and develop creative approaches to art-making.

NGSS Standards

- HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

**Lesson Objectives:**

Students will:

- Use prior knowledge of the elements of art, safety of specific tools, and the engineering design process to create solutions which answer a specific visual arts question.
- Use a rubric and the below directions to explore the development of toys as a means of artistic design, the use of hand tools and 3-D printers as means for creation, and presentation skills to communicate ideas in a professional manner.

**Central Focus:**

Students will create a Franken Toy by utilizing the engineering design process. This engaging art activity will allow students the opportunity to be creative while developing a potential product. The students will present the final product to the class while focusing on the brainstorming, sketching, developing, and problem solving processes to get to the final Franken Toy product.

Key words: create, develop, solve, solution, research, redesign, improve, engineer



### **Background Information:**

- Students will need to have knowledge of the safety precautions associated with the tools being utilized.
- Students will need to understand the engineering design process:
  - Ask a question that identifies a problem
  - Research the problem
  - Develop possible solutions
  - Plan the solution
  - Build a prototype
  - Test and evaluate the prototype
  - Improve and redesign
- Students will need to understand the concept of research and reliable sources. The students will need to research the toy design process and how artists design toys for the market.

### **Materials**

- Old Toys (Barbies, Stuffed Animals, Hot Wheels, Legos, Dinosaurs, Action Figures etc.)
- Hot Glue Guns/ Glue
- Fabric
- Needles and Thread
- Hack Saw
- Hammer
- Screw Drivers
- Pliers
- Safety Glasses
- Paint
- Paint Brushes
- Dish Soap
- Cleaning Brush



## Preparation

Collect and clean all toys. Use mild dish soap such as Dawn and a stiff brush to scrub and dirt or residue from the toys. Stuffed toys can be surfaced washed or laundered on the gentle cycle and air dried.

## Instruction

- (1) Introduce toy design and allow time for background research. Students need time to familiarize themselves with how artists design toys.
- (2) Students should present a driving question. How can you invent this year's hottest toys on the market? What process should you follow to find your audience, design your toys, and market them to toy companies?
- (3) Have the students present their initial proposal pitch to the class, identifying their driving question and how they intend to find a solution.
- (4) Allow students to choose toys from the collection which interest them. These will be made into their new toy design. Students will need time to play and have authentic conversations as they brainstorm ideas. Creativity happens when students find connection to the visual problems.
- (5) Once toys have been selected and an audience has been identified, the drawing and prototyping can begin. Students should draw a series of sketches (blueprints) where they work through design problems and ideas. Once an idea has been selected and approved, construction on the toy can begin. Students should document the design/engineering process used to create their new toy by following the instructions for their presentation. They should identify the physical characteristics of the toy and thoroughly explain those characteristics in a detailed sketch on paper or by using sketch online.
- (6) Set up an area in the room for deconstruction of the chosen toys and construction of the new toys. Review proper use of tools and directions for using new ones. Allow time for students to deconstruct. It is possible that you will need to set up a separate station for students to construct. Remind students to take pictures of both processes to be included in their presentations.
- (7) Once new toys are created and finished, provide students with a photo area. Here they can take more professional pictures of their creations. They will use these in their final presentation and as a selling point for toy companies to buy the idea. (Pretend companies, of course.)
- (8) Students should construct a slideshow that meets the following requirements:



- Introduction to toy design
  - Brainstorming ideas
  - Research of audience and what they are interested in
  - Prototype sketches
  - Pictures depicting the process
  - Pictures of the final prototype and description of the toy and its components and how they work
  - A budget for possible building of the toy and what price range the toy falls into.
  - Any special interest and learning that took place
- (9) Students should present their final product and slideshow to the class, as if presenting to a toy company. The students should explain all aspects of the Engineering Design Process.

### Differentiation

The beauty of this lesson is that it meets students where they are. Students can choose toys of their liking, develop a series of figures, or design an entire playset. There is always the option for group work.

### Assessment

Formative: Teacher understanding gained through observing the design process, construction, and prototyping

- Identify procedural steps related to a specific art task.
  - Identify problem-solving skills needed to solve visual art tasks. Examine relationships among the visual and organizational components to solve specific visual art problems.

Summative: Grade the initial proposal pitch, the final product, and the final presentation

- Communicate how criteria are used in the creation of a work of art.
  - Integrate visual concepts with subjects, themes, or symbols to improve communication of intended meaning in a work of art. Design visual concepts with subjects, themes, or symbols to improve communication of intended meaning in a work of art.

