

**Lesson Plan Title:****Perceptions of Technology: Its Hidden Art and Beauty****Overview:**

Students will be led to understand that there is a relationship between technology and art. They will be shown that technology artifacts and computer components may also be viewed as artistic creations by their inventors. Students will be asked to react with a new artistic appreciation to understand the 'hidden beauty' behind technological objects, and then (optionally) work individually with a variety of materials to create their own abstract piece of technological art.

**Objective:**

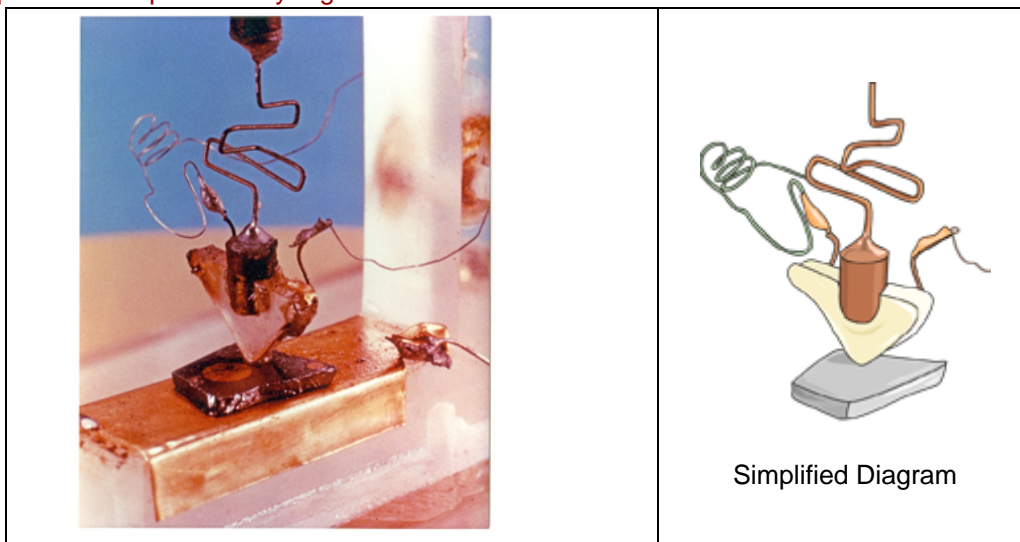
To understand that technological objects can be visually perceived as artistic objects. Students will view a technological object from the online exhibit as an object of art. They will share their perceptions of the piece, with an understanding that colors, forms, shapes, and other visual elements are additional characteristics that should be appreciated and perceived. Students will learn that the artists and inventors of the past (and future) were able to see things differently. Optional activity: they will then make an abstract art object of their own.

**Optional Materials:**

Randomly-located objects to build with, including but not limited to: aluminum foil, wire, paper clips, pipe cleaners, cardboard, paper, metal pieces, tape and glue.

**Teaching Strategy/Procedure:**

1. View (through projection or online) the 1947 timeline image of "Bardeen and Brattain's first point-contact transistor" (pictured below), located in the online exhibit timeline, "The Silicon Engine: A Timeline of Semiconductors in Computers," located at <http://www.computerhistory.org/semiconductor/timeline.html>



2. Ask for reactions to the object, including these suggested questions, or questions of your own. The last few questions may require further research and study:
  - What does it look like?
  - What components is it possibly made from?
  - Is it accidentally or deliberately 'artistic'? Explain your reasoning.
  - What is your reaction to the idea that this crude device was one of the most important discoveries or inventions in modern history?
  - How is this object identified or described on the timeline? What is its function? How do you think it 'works'?
3. Optional activity: Students will use the materials available to them to make an abstract piece of art. When completed, have volunteers share their work with the class.

### Reference: Facts about the Device and Its Functionality

- The 'first' transistor was about a ½ inch high.
- A plastic triangular wedge was lightly suspended or held by a paper-clip spring above a germanium crystal (that served as a good semi-conductor).
- The germanium itself was sitting on a metal base or plate attached to a voltage source.
- A single strip or ribbon of gold foil was wrapped or attached around the point of the plastic triangle. The gold foil was sliced with a razor blade so that the two gold contacts were separated by only a tiny gap of a few thousandths of an inch (or millimeter).
- The contacts at the point of the triangle were gently lowered to lightly touch the surface of the germanium crystal.
- The transistor action (or amplification effect) took place when the two pointed metal contacts were pressed onto the surface of the semiconductor material.
- When a small bit of electric current came through one of the gold contacts, another even stronger, proportionately-amplified current came out the other side of the contact.

