

## **Lesson Plan: A More Perfect Product: An Introduction to Industrial Design**

### **Summary**

Introduce students to the field of industrial design as a career and a field of art. Explore the processes used by industrial designers to design useful, safe and appealing mass-produced objects. Students will select an object from their home or classroom and redesign it to improve its function, feel and/or appearance.

### **Online Activities**

If you have a computer with Internet access in your classroom, you can introduce your students to industrial design online. Lifetime of Color web site [www.sanfordcorp.com/artedventures](http://www.sanfordcorp.com/artedventures) offers interactive ArtEdventures, hands-on activities, and teacher resources about industrial design and much more.

### **Objectives**

Students will:

- a) understand that industrial designers are artists who plan manufactured products
- b) identify the criteria for judging mass-produced objects
- c) redesign and draw a picture of an improved everyday object

### **Vocabulary**

These words/concepts may arise during discussion:

- industrial design
- industrial designers
- aesthetics
- materials
- ergonomics
- mass production
- manufactured products

### **Preparation**

#### **Teaching Materials/Resources**

- examples of manufactured products for discussion (stapler, lamp, chair...)
- a collection of extra everyday objects for redesign (for students who forget to bring one)

#### **Student Materials/Resources**

- an everyday object to redesign
- scratch paper
- 9"x12" (23 x30 cm) drawing paper or graph paper
- Design® Drawing 3800 Pencils-HB
- Pink Pearl® Erasers
- Sharpie® Ultra Fine Markers
- Prismacolor® Scholar® colored pencils (optional)
- construction paper or tagboard for display (optional)

### **Schedule**

Two to three class periods

### **Set-up**

- 1 Have students bring from home an everyday object to redesign

- 2 Gather examples of manufactured products for discussion (stapler, lamp, chair...)
- 3 Collect extra everyday objects for redesign (for students who forget to bring one)
- 4 Gather studio materials.
- 5 Arrange classroom furniture to create a discussion area to ensure maximum participation and ability to see visuals and models.

## **Procedure**

### **Introduction: Industrial Design**

Below are suggestions for discussion topics about industrial design. Tailor them to fit your schedule.

#### **Who made it?**

Ask students brainstorm a list of manufactured products they used today. Have them think about who made them. For example, inventors and engineers think of the idea and make it work. Industrial designers are concerned with the look, feel and usability of the objective. Only after industrial designers make an object safe, attractive and functional is it mass produced by factory workers and machines.

You may also want to focus the discussion on the changes brought about by the Industrial Revolution in the making of functional objects (the move from individual artisans and craftspeople to mass production). Students should understand that the career of industrial design came about as a result of these changes. Mass-produced goods needed to have mass appeal to sell in large quantities. Artists were needed to design products that would appeal to many people.

#### **What does an industrial designer do?**

Almost every factory-made object has been designed or planned by an industrial designer. These designers make detailed drawings of 3-D objects to show sizes, shapes and textures of the product. They specify the materials and processes of manufacturing. Often, industrial designers will also make models of the product for testing. Industrial designers try to anticipate all the ways a person might use --or misuse--the object. Industrial designers are artists. It is their job to make products look good because as Raymond Loewy, an influential industrial designer, said, "Ugliness doesn't sell." Henry Dreyfuss, one of the great industrial designers of the twentieth century, sums up the role of the industrial designer, "If people are made safer, more comfortable, more efficient-or just plain happier, the designer has succeeded."

#### **Think like an industrial designer**

Have students examine the examples of manufactured products that you gathered. Ask them to think like industrial designers and consider the following questions:

#### **Functionality**

*What is it? Is it obvious what the object is or does?*

*Is it easy to understand how it works?*

*Does it work as expect? (Have them try it out.)*

*What would happen if the user used it incorrectly?*

*What visual clues does the object have about how to use it?*

#### **Ergonomics**

*How has the object been shaped to fit the human body?*

*Is it comfortable to use?*

*Who is it for? (size, age, ability of the person)*

*Are there people with different body types and and/or abilities that couldn't use it?*

### **Safety**

*Is it safe?*

*Can they anticipate any safety problems?*

### **Durability and Affordability**

*Will it last as long as it needs to?*

*Can the product's intended user afford it?*

### **Aesthetics**

*Is it appealing to look at?*

*Is it pleasant to touch?*

*Does its appearance suggest how to use it?*

*How do they feel when looking at the object?*

*Does it look appealing to use?*

### **Improvements**

*What would they change to make it a better product?*

### **STUDIO: Designing a better product**

1

**This is a plan for the Paper Mate® PhD® pen. It shows all the shapes and sizes for all the pen parts. (Click on an image for a larger view.)**

Ask students to think about the object they brought from home or to chose one from your collection. It could be a kitchen utensil, a door, a chair, a pen, a toy or any other mass produced object. What is it supposed to do? Is it attractive? Does it make you want to use it? What are the problems?

- 2 Divide a sheet a paper in half and make two lists. On one side list all the things the object does well--the things they like about it. On the other side, list the things the object does poorly--the things they dislike about it.
- 3 Think about the two lists. What could they change to improve the object? Have them jot down ideas on the back of their paper.
- 4 Explain that industrial designers draw plans of objects to tell manufacturers how to make them. They draw many views of the object to show how it should be made.
- 5 Have students make a drawing of their original object as it is now. Show the important details. They may want to draw more than one view. This could be an accurate, technical drawing or a more free-form concept drawing. Have students note the changes they want to make on their drawings. They should include changes in size, shape, materials, and color.
- 6 Next, have students draw their redesigned object. They may want to practice a few times on scratch paper before doing a final design on drawing paper. Have them draw with pencil then draw over it with pen and erase the pencil lines.
- 7 Have students write a paragraph about their redesigned object and how their changes improved it. They can mount their first drawings of the object, their drawings of the redesigned objects and their paragraphs together on a pieces of tagboard or construction paper for display.

## Critique

Have students present their industrial designs to the class. They can show their classmates the changes they made and why. Students can give feedback on the changes and suggest other ideas they have about how to improve the product.

### Tips for Successful Critiques

Learning to critique or assess art is a vital part of an artist's growth. Teach your students how to critique themselves, with a partner, in small groups and in large groups. It takes practice and modeling to ensure respectful, beneficial critiquing.

Display the artworks. Pin or tape them to a board so you can get a good look. Be sure everyone has a good view. For a large group display you may choose to critique anonymously. Be aware that some students may be uncomfortable displaying their artworks. You may want to begin by invitation. After the critique process feels safe and friendly, more students will want to participate.

Set the ground rules for the style of questions, comments and suggestions that are courteous and constructive. Encourage positive phrasing and focus on each artwork's strengths. Be inclusive and try to address each artwork. Avoid words like favorite, the best... Focus on the objectives! Emphasize the learning process rather than the final result.

When you are first starting, have students brainstorm and practice appropriate phrasing. Use one of your demos to practice with. Here are some phrases that might help students get started.

- What really caught my eye was\_\_\_\_\_.
- That artwork shows\_\_\_\_\_ really well.
- I think\_\_\_\_\_would improve that artwork.
- I'd like to see more of\_\_\_\_\_.
- That artist is really skilled at\_\_\_\_\_.
- 0 • I am a little confused by\_\_\_\_\_.

