

TRANSFORMING CHALLENGES

Overview: In this unit, learners will create a design to address a challenge that they notice in their community or their own lives. Students will discuss empathy and how it leads to transformation. They will look at and discuss the ALT Limb Project and a class at FIT: Fashion Institute of Technology, where students design clothing for people with disabilities. Students will then discuss how design can transform a “problem” into a positive challenge. Students will look at and discuss Diana Eng’s work as well as Biomimicry and notice that design can be both functional and beautiful. Students will then discuss how they can use design to take action and transform the challenge. As inspiration for action, students will view work by other students their age who have created technology, games, or apps that have helped their own communities. Students will illustrate their design, use Google Sketchup to create a mockup, and create a mini video with the Nutshell app that promotes their product. Our last day will involve a presentation of their designs and video, as well as a critique of its functionality and beauty.

Big Idea: Transformation

- a. *Key Concepts:* Empathy, Design, Action
- b. *Essential Questions:*
 - How does empathy lead to transformation?
 - How can design transform a “problem” into a positive challenge?
 - How can you take action to transform this challenge?

Rationale: By using technology in order to design functional and beautiful solutions to challenges within our community, students are acknowledging difference and taking action. When you are a teenager it is important to recognize the world outside of yourself, be accepting and empathetic of others, and realize that action can be taken towards challenges we all face. This can be exciting when we realize that we have agency over our environment.

Target Student Group: High school: grade 9 but can be adapted to other grades or community settings.

Cultural Responsiveness: This unit contributes to the culture of my classroom by emphasizing empathy and thinking about others. By acknowledging a challenge and designing positive and beautiful solutions to that challenge, students are thinking outside of themselves and taking action. This unit brings about an appreciation for all members of our community.

Specific Unit Objectives: Five, 90 minute classes.

Lesson 1- Taking “Others” into Consideration

Objective: Students will consider empathy and look at the community around them. Students will identify challenges, do research, and begin to draw thumbnails and sketches of possible designs to address challenges within their community.

Lesson 2- Reframing a “Problem”

Objective: Students will take the “problem” that they have identified in their community and reframe it to be a positive challenge. Students will also discuss how design can be both functional and beautiful. Students will have a mini critique to finalize designs that address their challenges and then create an illustration of their idea.

Lesson 3- Making Ideas a Reality

Objective: Students will discuss other artists their age who take action in their communities. Students will finish final illustrations of their ideas and learn how to use Google SketchUp.

Lesson 4- Taking Action

Objective: Students will complete their design in Google SketchUp. Students will print their designs and hand draw any aspects they would like to add.

Lesson 5- Presenting and Critiquing our Designs

Objective: Students will use the app Nutshell to create mini promotional videos for their designs. They will present them to the class and we will have a critique on their functionality as well as beauty. We will reflect on our experiences this unit.

National Art Standards:

VA:Cr1.1.HSIII Visualize and hypothesize to generate plans for ideas and directions for creating art and design that can affect social change.

VA:Cr1.2.HSI Shape an artistic investigation of an aspect of present-day life using a contemporary practice of art or design.

VA:Cr3.1.HSII Engage in constructive critique with peers, then reflect on, re-engage, revise, and refine works of art and design in response to personal artistic vision.

VA:Cn10.1.HSI Document the process of developing ideas from early stages to fully elaborated ideas.

Virginia Art SOLS:

AI.1 The student will maintain and use a process art portfolio (e.g., sketchbook/journal and working portfolio) for planning and as a resource in the art-making process.

AI.2 The student will identify and use steps of the design process, including brainstorming, preliminary sketching, planning, reflecting, refining, elaborating, and researching, in creative problem solving.

AI.4 The student will describe and demonstrate craftsmanship (artisanship) in works of art.

AI.14 The student will describe how the design process is used in various careers.

AI.15 The student will use art criticism skills to interpret, analyze, and evaluate works of art.

AI.18 The student will develop constructive approaches to critique (formative, peer-to-peer, self-reflective, summative) that are supportive in intent and that offer alternative points of view.

AI.21 The student will analyze the functions, purposes, and perceived meanings of works of design.

Lesson 1- Taking “Others” into Consideration

Objective- Students will consider empathy and look at the community around them. Students will identify challenges, do research, and begin to draw thumbnails and sketches of possible designs to address challenges within their community.

Hook- Snapshot! (5 min) In sketchbook: Draw or write about a problem your community faces and that you have noticed or witnessed. This could be something like homelessness, not enough resources for groups of people like ELL or people with disabilities, discrimination, etc.

Instructional Input- (20 min) Look at a variety of artists (see images at end of lesson plan) and ask these questions: What issues did you write about for your snapshot? Have you noticed your community doing anything to help these issues? What is transformation? What is empathy? How does empathy lead to transformation? How does empathy manifest itself in your community? How does empathy transform feelings and actions? What is normal? What is “the other”? How do you notice othering in your community? How can you transform the idea of “normal” in your community? How do these artists address these issues?

Artists, projects, etc.:

- The Alternative Limb Project: dedicated to creating functional and beautiful prosthetics.
<http://www.thealternativelimbproject.com>
- Clothing design for people with disabilities: A class at FIT that designs clothing for people with disabilities.
<http://www.fastcodesign.com/3051709/how-to-make-fashion-more-accessible-for-wheelchair-users-and-the-disabled>
- Bunny with Wheels: A bunny that lost its legs gets wheels to move around!
- The Interventionists: Disrupting everyday life, this artist uses air vents to create pop up shelters for homeless people.
- Gregory Kloehn: This man creates tiny homes for homeless people out of discarded items.
<http://www.gregorykloehn.com>

Guided Practice- (20 min) We will brainstorm as a class different issues that we notice in our community. Each student will choose an issue and then do research on it. They will document their findings in their sketchbook. Students will then begin brainstorming solutions to the issue they identified. We will then work in teams to bounce ideas off each other and get suggestions for furthering our ideas.

Independent practice- (40 min) Students will draw thumbnails in their sketchbooks of possible ideas. I will walk around and help encourage, push ideas, and offer suggestions. Students will be encouraged to ask each other for feedback if they are feeling stuck.

Closure- (5 min) Reflection: Please choose a thumbnail that you are most excited about and write about what issue it addresses and how it does that.

Materials-

Teacher supplies: projector, laptop with slideshow of images, computers for students

Student supplies: sketchbooks and writing utensils

Assessment- Throughout the lesson students will be documenting their process and reflecting within their sketchbooks. I can look at these to assess their thought processes. I will also ask questions throughout in order to gauge understanding.

Media-

The Alternative Limb Project <http://www.thealternativelimbproject.com>



Clothing design for people with disabilities

<http://www.fastcodesign.com/3051709/how-to-make-fashion-more-accessible-for-wheelchair-users-and-the-disabled>



Bunny with Wheels



The Interventionists



Gregory Kloehn <http://www.gregorykloehn.com>



Lesson 2- Reframing a “Problem”

Objective- Students will take the “problem” that they have identified in their community and reframe it to be a positive challenge. Students will also discuss how design can be both functional and beautiful. Students will have a mini critique to finalize designs that address their challenges and then create an illustration of their idea.

Hook- Snapshot! (5 min) In sketchbook: Write or draw about a “problem” or challenge in your life that ended up being a good thing or something that you learned from.

Instructional Input- (15 min) Look at a variety of artists and ask these questions: How can design transform a problem into a positive challenge? How can you reframe a “problem”, meet the challenge, and turn it into something positive. How does design affect your life and the lives of others? What is design? What is the purpose of design? How does design transform challenges? How do these artists and the ones we looked at the other day, design items that are beautiful AND functional?

Artists/design concepts- (see images below)

- Diana eng: Uses technology in innovative and beautiful ways in fashion.
<https://www.dianaeng.com/blog/>
- Biomimicry: Designs inspired from nature.

Guided Practice- (10 min) Discuss how to design something both beautiful and functional. Turn your functional design into something beautiful as well. Explain the importance of being able to effectively illustrate your design in order to communicate your ideas to other people. Create a finished illustration, not in your sketchbook, using colored pencils.

Independent practice- (55 min) Students will work independently on their designs. I will walk around and help problem solve if students are having trouble communicating ideas. I will encourage productive talking between people in order to get feedback on what they are working on.

Closure- (5 min) Group critiques. Can the group decipher what your design is? Do they have suggestions for improvement or praise?

Materials-

Teacher supplies: projector, laptop with slideshow of images

Student supplies: sketchbooks, paper, colored pencils, pencils

Assessment- Throughout the lesson students will be documenting their process and reflecting within their sketchbooks. I can look at these to assess their thought processes. I will also ask questions throughout in order to gauge understanding.

Media-

Diana eng video <https://www.dianaeng.com/blog/>



Biomimicry: is an approach to innovation that seeks sustainable solutions to human challenges by emulating nature's time-tested patterns and strategies. The goal is to create products, processes, and policies—new ways of living—that are well-adapted to life on earth over the long haul.



Lesson 3- Making Ideas a Reality

Objective- Students will discuss other artists their age who take action in their communities. Students will finish final illustrations of their ideas and learn how to use Google SketchUp.

Hook- Snapshot! (5 min) Think about your design as a reality! What would it look like in three dimensions?

Independent practice- (10 min) Take anything you learned from the in class critique yesterday and finish your drawings of your designs. I will walk around and help.

Instructional Input- (10 min) Look at a variety of artists (see images at end of lesson plan) and ask these questions: What action do you see in your community? What can you do to help your challenge? How do real designers make things a reality? Discuss the process: Thinking, brainstorming, researching, drawing multiple items, refining final ideas, making a 3d mockup, presenting the ideas, manufacturing the ideas or putting them into reality, improving upon the ideas in the future. How can you take action to transform this challenge?

Artists/design concepts- (see images below)

- 3d printed limbs by a young person:
<http://6abc.com/news/del-boy-creates-prosthetic-hand-with-library-3d-printer/1058543/>
- “Five-O”: App with a purpose, created by teens:
http://www.huffingtonpost.com/2014/08/18/teens-police-brutality-app_n_5687934.html
- “Protect and Swerve”: Video game with a purpose, created by teens:
<http://anontakhim.github.io/index.html>

Guided Practice- (25 min) Teach how to use Google SketchUp: Show how to start it, what view to use, various tools: select, eraser, arc, rectangle, push/pull, offset, move, rotate, scale, orbit, pan, and zoom. There will be a worksheet where each tool has a description and students check it off when they have experimented with it. I will show students how to make a basic house form. They will first try to make this along with me, and then will experiment with a form on their own. Students will save both their house and experiment for me to evaluate.

Independent practice- (35 min) Students will practice using Google SketchUp by using all the tools we talked about today. I will walk around and help problem solve. I will ask students to help each other when they hit a roadblock or use the “ask three before me” rule.

Closure- (5 min) Create a game plan with how you will use the tools on Google SketchUp to make a 3d model of your design. Describe what tools you will use that you learned about today.

Materials-

Teacher supplies: projector, computer

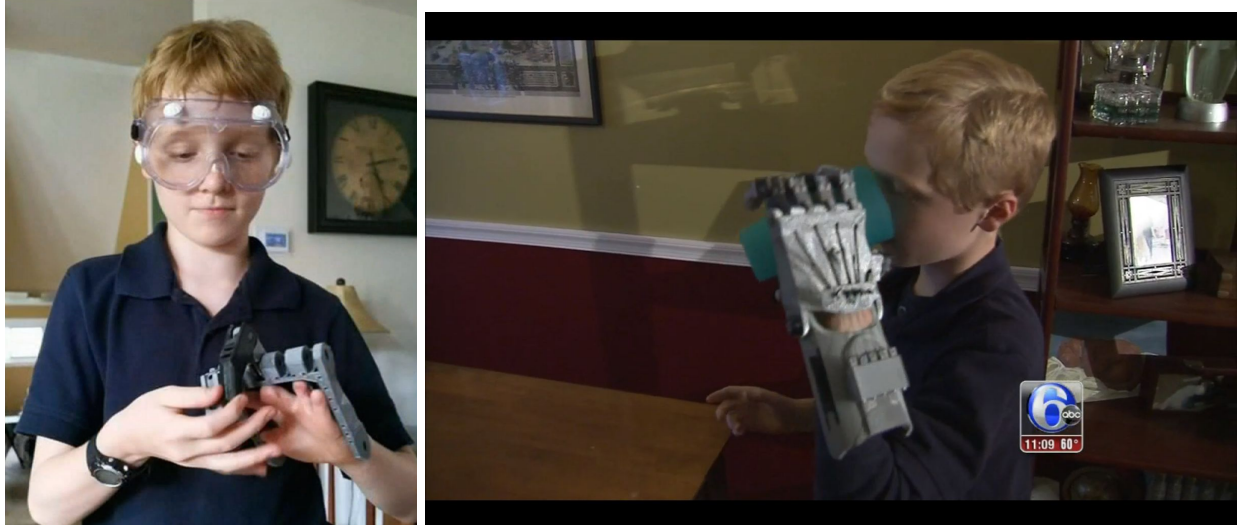
Student supplies: final illustrations, sketchbooks, computers

Assessment- In sketchbook: How will you use Google SketchUp to realize your idea? What is your gameplan? I will also ask questions to assess understanding throughout, and have people save their final Google SketchUp experiment so I may evaluate it.

Media-

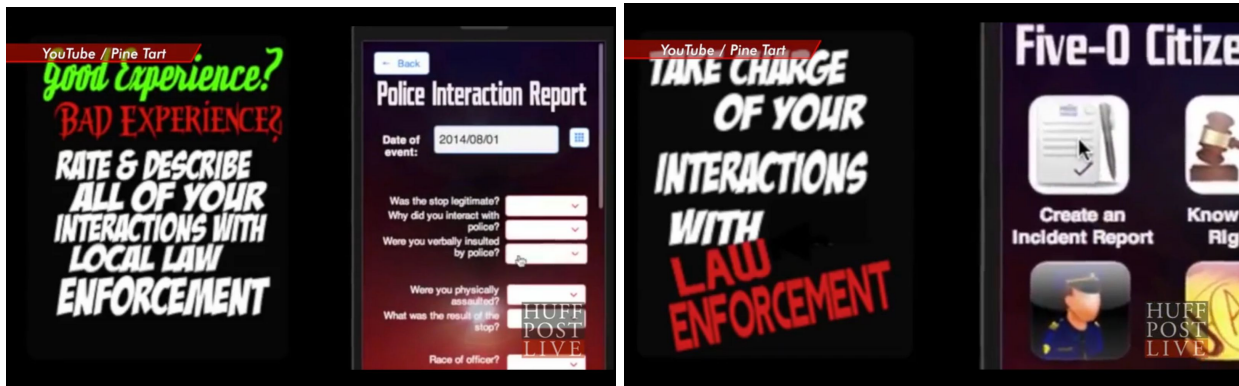
3d printed limbs by young person:

<http://6abc.com/news/del-boy-creates-prosthetic-hand-with-library-3d-printer/1058543/>



“Five-O”: App with a purpose, created by teens:

http://www.huffingtonpost.com/2014/08/18/teens-police-brutality-app_n_5687934.html



“Protect and Swerve”: Video game with a purpose:

<http://anontakhim.github.io/index.html>



Lesson 4- Taking Action

Objective- Students will complete their design in Google SketchUp. Students will print their designs and hand draw any aspects they would like to add.

Hook- (5 min) Snapshot! In sketchbook: Do your best to draw a picture of your design in action in the real world!

Instructional Input- (5 min) Today we will be working on our designs on Google SketchUp. After that we will print our designs and hand draw anything else that is necessary that we could not convey in Google SketchUp.

Guided Practice- (5 min) Have students show each tool in Google SketchUp as a review.

Independent practice- (70 min) Students will work on 3d design in Google SketchUp on computers. When they are finished they will print their designs and add hand drawn details. I will walk around and help problem solve. I will try to encourage helping each other as well as the “ask three before me” rule.

Closure- (5 min) Critique. Hang up everyone’s in process work and have people ask any questions they may have about their work.

Materials-

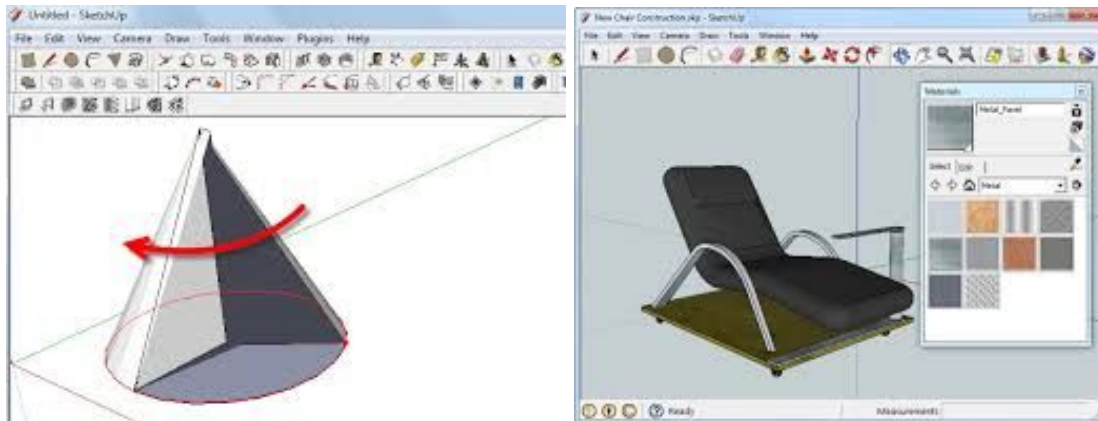
Teacher supplies: My example, computer with projector

Student supplies: Sketchbooks, drawings, computers, colored pencils

Assessment- We will have sketchbook work, and their in process final pieces to evaluate. We will also have a class in process critique to see where everyone is and offer any suggestions.

Media-

Google SketchUp: <http://www.sketchup.com>



Lesson 5- Presenting and Critiquing our Designs

Objective- Students will use the app Nutshell to create mini promotional videos for their designs. They will present them to the class and we will have a critique on their functionality as well as beauty. We will reflect on our experiences this unit.

Hook- (5 min) Hook! Show a small video I made in the app Nutshell about my design

Instructional Input- (5 min) Today we will create small promotional videos for our designs. Why do people make these? What is the point? After that we will have a final critique of our finished works.

Guided Practice- (10 min) I will show how the Nutshell app works and talk about storyboarding. In the app you have three shots. Think about how you can tell the story of your design, what it does, what it is addressing, or how it helps your cause in three shots. The purpose of this is to communicate your ideas in a way that other people can understand.

Independent practice- (30 min) Create Nutshell promotional video. I will walk around and help. I will try to encourage helping each other as well as the “ask three before me” rule.

Critique- (35 min) We will talk about how to present your work: Speak loudly, make eye contact, explain your product, and show your video/design. We can do this in small groups too, depending on the size of the class. (questions will be written on the board) The audience can ask questions, as well as pick any of these questions to ask or answer: Did the person do an effective job of communicating their idea? Is the design functional and beautiful? What do you like about it? If you could add something, what would you add? Could this help the world in some way?

Closure- (5 min) Reflection: Write in your sketchbook. How do you think this project went? Evaluate yourself. Do you think things like this can make a difference? What was the point of this Unit? Did you enjoy it?

Materials-

Teacher supplies: My design and Nutshell example

Student supplies: Computers, phones or iPads for Nutshell app promotional movies.

Assessment- We will have a reflection and a critique. We will also have the students’ finished drawing, Google SketchUp design, and sketchbooks to assess.

Media-

Nutshell App: <https://www.youtube.com/watch?v=oeIPNbEjcYM>

