

Week 7 ArtsConnect Invention Convention

Lessons by Lauryn Shrout

Thematic Summary

Put your thinking caps on and join us for a week of creativity and fun! Learn about some of the most important inventors of all time: Leonardo DaVinci, the Wright Brothers and Thomas Edison. Create your own inventions based on flight, machines, light and entertainment.. Campers will go through the invention process of planning, designing and making a model of their invention. They will work individually and collaboratively using a variety of materials.

Essential Questions:

- Why do we need inventions?
- What is the purpose of inventions?
- What are the 10 most important inventions?
- How are inventions useful to us?

National Standards

- Organize and develop artistic ideas and work. (National Anchor Standard 2, Creating).
- Select, analyze and interpret artistic work for presentation.(National Anchor Standard 4, Performing).
- Apply criteria to evaluate artistic work(National Anchor Standard 9, Responding).
- Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.(National Anchor Standard 11, Connecting).
- Evaluate the usefulness and appeal of various inventions
- Design and invention
- Describe the development of inventions

Wright Brothers Take Flight

Lesson by Lauryn Shrout

Lesson Summary

Explore the Wright Brothers and their life changing invention of the airplane, in this fun and brain expanding lesson! Students will design their very own model plane in the sky, using various materials such as popsicle sticks, toothpicks, glue, paint and cardboard.



Specific Objectives

Students will:

- Learn about the history of the Wright Brothers
- Identify the importance of the airplane and how it has changed over the years.
- Create a 3D work of art using various materials

Materials

Colored pencils, construction paper, craft sticks, scissors, hot glue gun, crayons, toothpicks, glue, recycled shoe box lid or a thick bristol board.

Instructional Aides

“Great Inventors: The Wright Brothers” by Adventure Academy

<https://www.youtube.com/watch?v=w1zDmlIGDWk>

The Evolution of the airplane 1903-2020

<https://www.youtube.com/watch?v=hrXDNTfjmoE>

10 Things you May Not know about the Wright Brothers

<https://www.history.com/news/10-things-you-may-not-know-about-the-wright-brothers>

Top inventions of all time

<https://www.livescience.com/33749-top-10-inventions-changed-world.html>

How to make paper airplanes

<https://www.youtube.com/watch?v=3dbmsdprJoA>

Vocabulary

Aviation, invention, product, services, patent, innovation

Pre class Prep

- Have shoe box lids collected and ready to use OR have thick bristol/ card board cut and ready to use.
- Get all art materials out and ready for the project

Motivation

- Start class by asking students if they have ever made a paper airplane.
- Ask students to make paper airplanes, encouraging students to help each other out if they have never made one.
- Once everyone has a paper airplane, set up a game to see how far each plane can go to figure out who has the best design.
- Talk about what they think made that design so successful and if you did this again how could you improve your plane to fly better.
- Talk about how when they invented the plane the Wright Brothers had a lot of trial and error just like we do when making something new or trying to make our paper airplanes better.
- Next, read a short story about the Wright brothers to your class. Check your local library for different options.
- If you can't find a book on the Wright brothers, play instructional aid video, "Great Inventors: The Wright Brothers" by Adventure Academy.

Art Activity steps

- To begin, students will color the inside of a shoebox lid or a thick piece of bristol board to resemble a sky. Students may use colored pencils, crayons, and construction paper to create their sky.
- Once students have completed their sky, it's time to make the plane.
- In the box glue down 4 popsicle sticks parallel to each other. It should look like if you connected them they would form a rectangle. This will form the plane's body.
- Using four toothpicks connect two of the popsicle sticks. Repeat this to connect the other two popsicle sticks.
- Repeat this process but do not glue these ones to the box. These will serve as the part of the plane wings coming out of the box.
- On construction paper draw out wings to cover the top and bottom frame sections of the wings. Cut them out and glue to the top and bottom of the wing sections.
- Draw and cut out two small, paper wings for the front of the plane and two propellers for the back. Glue in place with toothpicks.

- Draw a small pilot to place in the plane. Cut the pilot out and glue them in the center.

Clean up

- Designate different students to collect certain supplies until all the supplies are off the tables and where they belong.
- Have two students go around and collect the final projects and place them in the area where they belong.
- Have students wipe down their desk or throw away any scraps on the floor under their table or on their table.

Critique

Have students share their airplane designs with the class

Students can say what they like about their peer designs

Ask students what they learned about the first plane or the Wright brothers.

- Ask students to talk about the process of redesigning something to make it better.
- Let students show their work and talk about anything they liked or wished they did differently.

Sources

Adventure Academy. (2020, April, 8). “Great Inventors: The Wright Brothers” by Adventure Academy. Youtube. Retrieved April 8, 2021. From
<https://www.youtube.com/watch?v=w1zDmlIGDWk>

Invent/Design your own Shoe

Lesson By Lauryn Shrout

Lesson Summary

Designers are always expanding their imaginations and discovering new things. Whether that be a new design that's never been done, reinventing an old style, re-using materials, or creating something to solve a problem. In this lesson you will create a new shoe design that tackles one or more of these criteria. Use your imagination and resources to make something that has never been done before, to a shoe. Do you want to create a shoe that makes it impossible to get sweaty feet? Maybe create a shoe that combines some of your favorite shoes? Maybe you just want to redesign a classic shoe that's already on the market. Think like a designer in this shoe filled lesson and go above and beyond to make a product that is unique and desirable.

Specific Objectives

Students will:

- Learn about the design process.
- Create a list of new shoe design ideas.
- Invent a shoe that has a unique quality that others will want
- Use resources to explore shoe designs and ideas

Materials

Pencils, paper, construction paper, colored pencils, markers, scissors.

Instructional Aides

The History of Sneakers - History Lesson w/ Mr.Histor

https://www.youtube.com/watch?v=_sIYD_EzDMM

Exploring the Evolution of Sneaker Culture

<https://www.youtube.com/watch?v=hP8H9SDLic>

ConceptKicks Instagram page

The Engineering Behind shoes

<https://illumin.usc.edu/the-engineering-behind-shoe-design/#:~:text=Efforts%20to%20meet%20his%20concern,%2C%20breathability%2C%20weight%2C%20etc.>

Feature	Function
Kinetic Outsoles	Shock Absorption and Traction
Dual-Density Midsoles	Shock Absorption and Control
Flared Heel	Control and Stability
Heel Counters	Control and Stability
Contoured Support Systems	Control, Stability, and Shock Absorption
Arch Support	Pronation Control
Toe Pitch	Smoother Push Off
Tubular (Moccasin) Construction	Flexibility
Soft Nylon	Lightness and Comfort
Mesh Nylon	Lightness, Comfort, and Breathability
Width Fittings	Fit, Comfort, and Support
Different Last Design (Women's)	Fit, Comfort, and Support
Orthotics and Correction Wedge or Inserts	Support, Control, and Stability
Solid Carbon or Blown Rubber Outsoles	Durability, Traction, and Lightness
Padded Tongue, ATP Collar	Comfort
Perforated Porometric Uppers	Lightness and Breathability
Soft Seamless Linings	Comfort
Tractions Soles	Durability and Grip
Reinforcements	Support and Durability

Vocabulary

Durability, support, flexibility, design, comfort, style

Pre class Prep

- Have instructional aid videos ready to play.
- Have supplies ready at each table.

Motivation

- Begin by asking students if they like shoes, collect shoes, or always are wanting a new pair of shoes.
- Ask students what their favorite pair of shoes are or about the craziest pair they have ever seen.
- Pull up images in your computer, or smart board as students start naming off shoes.
- Talk to students about how designers have to come up with these cool designs and invent new shoes all the time, and that that is a job in the creative field they could do one day.
- What are some major shoe companies that you could work for one day? Nike, Adidas, UGG, Reebok...?
- Show images of cool shoes designs from the Concept Sneakers instagram page.

Art Activity Steps

- With all of this new sneaker knowledge and information students can come up with their own shoe design.
- Students can use paper, makers, colored pencils, etc to draw out and design a new shoe.
- Encourage students to draw big, so they can fit all of their designs in the shoe. No tiny shoes the size of a quarter allowed..use up the whole paper.

- When students have designed their shoe, have them create an advertisement for their shoe including a name and what their shoe is all about, what it does, what the design means, when it would be best worn, who would promote the shoe (famous athlete or actor?), price, where you can buy it, etc.
- Show a shoe advertisement <https://www.youtube.com/watch?v=yshNZIWezDk> to help with the descriptions of their shoes

Clean up

- Designate different students to collect certain supplies until all the supplies are off the tables and where they belong.
- Have two students go around and collect the final projects and place them in the area where they belong.
- Have students wipe down their desk or throw away any scraps on the floor under their table or on their table.

Critique

- Have students take turns sharing their designs. Their classmates can comment on their designs, talk about what they like or what can be improved.

Sources

Cool School. (2013, July, 26). *The History of Sneakers - History Lesson w/ Mr.Histor*. Youtube.
Retrieved April 8, 2021. From https://www.youtube.com/watch?v=_sIYD_EzMm

ABC News. (2021, March, 10). *Exploring the Evolution of Sneaker Culture*. Youtube.
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Name Neon Sign

Lesson By Lauryn Shrout

Lesson Summary

Thomas Edison was one of the greatest and most important inventors of all time. Without him, we would be in a very dark world. One of his most memorable and needed inventions was the light bulb. In this lesson, students will explore the life of Thomas Edison and his creation of the light bulb. Students will investigate the evolution of the light bulb and how it has changed over its lifetime. They will identify the significance and importance of inventions. With their knowledge of light, they will create their own neon sign using a layering painting technique to become their own inventors of light.

Specific Objectives

Students will:

- Learn about the history of light and Thomas Edison.
- Investigate how neon signs are made and their significance to people.
- Apply knowledge of light, to create art using a layering painting technique that mimics the look of a neon sign.

Materials

Colored pencils, paint pens (if accessible to you), paint brushes (thin ones), acrylic paint, large thick white and black paper, paint mixing trays, black sharpies, white paint pens.

Instructional Aides

Creating Fake Neon Signs with Spray Paint

<https://www.youtube.com/watch?v=TOSFmKy2fKA>

How Neon Signs are Made

<https://www.youtube.com/watch?v=YugBkvBB5O4>

Check your local library for kids books on Thomas Edison

Thomas Edison Read Aloud

<https://www.youtube.com/watch?v=Ik7x2HypyLQ>

The History of the light bulb

https://www.youtube.com/watch?v=J66e1X_w6i0

Vocabulary

Depth perception, neon, illusion, typography, shade,

Pre Class Prep

- Have supplies ready.

- Have your own station set up to demonstrate how to create the illusion of a neon sign with paint. (watch instructional aid video, *Creating Fake Neon Signs with Spray Paint*, to get an idea of how you can do it).
- Have books ready to read to the class.

Motivation

- Have students come into a dark classroom. Begin talking to see how long it takes for students to ask about why there are no lights on.
- Tell them that we are going to have class like this, without light. See what their reactions are? Initiate a conversation about life without light bulbs. Does having light make things easier? How do you think life was like before the light bulb?
- Ask students if they know who invented the light bulb.
- Read a short story on Thomas Edison and the invention of the light bulb..
- Talk about how light has even evolved further. We have LED lights, energy efficient lights, colored lights, neon lights, etc ...
- Tell students we are going to explore neon lights more as we create a fake name neon sign.
- Watch instructional aid videos.

Art Activity Steps

- Begin by giving a demonstration on how to do this. Play the instructional aid video, *Creating Fake Neon Signs with Spray Paint*, and pause as you go during your demonstration showing students how to do this with paint, paint pens, colored pencils, etc, instead of with spray paint.
- Once you've gone through your demonstration, ask students to repeat to you the steps on how to do this, so they can be reminded again on how to do this process.
- To begin, students should pick a white or black piece of paper.
- Students should write out their name in the desired font and size that they want.
- Next, students should pick a color they want their name design to be. Whichever color they pick they will be asked to create 3 shades of it.
- In a paint mixing tray students should put 3 drops of their chosen color in individual sections. Students will add white to these to create a gradient.
- Students will also pick the corresponding color colored pencil.
- Using that color pencil students will lightly over their name, creating that glow that a neon sign would.
- Once that is completed it's time to start layering paint.
- Using the darkest color from their mixing pallet go over their name using a paint brush.
- Once it is dry go over that layer with the next lightest color.
- Using a black sharpie or paint pen, or white pen if they chose to use balck paper, re-write your name but slightly from the original writing.
- Use the last color of paint you used to clean up any overlapping black lines.
- Next use your lightest shade of the color to go over your name, use a small brush to just add this lightest color to the inside of your name, leaving the darker color still showing a bit on the outsides. (giving it the overlapping glow effect)

- Lastly add a white line using a paint pen or a really thin paintbrush to mimic the most illuminated part of the neon light.

Clean up

- Have students wash off their paintbrushes and mixing trays and put them in the drying area.
- Assign a couple of students to go around and collect their work and place it on the drying racks.
- Assign another student to collect remaining supplies.
- Have students wipe off their desks if any paint has gotten on it.

Critique

- Ask students to show their work and talk about what they liked or what they wish to improve on next time.
- Ask students to discuss the power of layers and using colors to create a certain effect, like the neon effect.

Sources

Art Insider. (2019, Nov, 5). *Creating Fake Neon Signs with Spray Paint*. Youtube.

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