

**COOPER  
HEWITT**  
DESIGN  
K-12

**DESIGNING  
STORIES**  
**TEACHER  
RESOURCE  
PACKET**



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# COOPER HEWITT DESIGN K-12

January 5, 2016

Dear Educator,

Thank you for registering for Design Field Trips! This exciting program is designed to present Cooper Hewitt, Smithsonian Design Museum's compelling content to your class(es) through an interactive tour and workshop.

Students are invited to discover our temporary installation, *Pixar: The Design of Story*, to examine the animation studio's key design principals of story, believability and appeal. On this 45-minute inquiry tour of the installation and our unique permanent collection, they will learn how various designers tell stories across design disciplines. Also included in the program is a 45 minute workshop where students will be given the opportunity to explore the design principals of story by prototyping a main character and narrative inspired by Pixar films.

This packet provides several resource activities to help your students prepare for the program and ideas to continue integrating design thinking connections into your classroom. We enjoy receiving feedback from teachers about their experience with the program, so within a month of your museum visit you will be e-mailed a brief survey. Thank you in advance for taking time to provide your feedback so that we can continue to offer high-quality programs for all K-12 schools.

Sincerely,

**Kimberly Cisneros-Gill**

Kimberly Cisneros-Gill  
School Programs Manager

**Schuyler Schuler**

Schuyler Schuler  
Education Assistant

## PREPARING FOR YOUR DESIGN FIELD TRIP

During your Design Field Trip, the Design Educator assigned to your group will need your support in helping students stay on task. You must remain with the group at all times with the Design Educator. Please review the following museum guidelines and share them with your chaperones and students.

### ARRIVAL & DEPARTURE

- Please arrive 10 minutes before your scheduled start time to check in; you will be greeted at the main entrance (91<sup>st</sup> Street between Fifth and Madison Avenues)
- Non-NYC teachers with a cash payment, please remit to the Visitor Experience Desk
- Coat check will provide large bins to quickly store and retrieve coats and backpacks
- Please call your bus in advance to meet you in front of the main entrance, and exit through the main entrance

### MUSEUM RULES AND POLICIES

- Please do not touch the objects or lean on the walls; view the objects at a safe distance
- Use only pencils for taking notes or sketching; pens are not permitted
- Food, drinks, and chewing gum are NOT permitted in the museum
- All items entering and leaving the museum are subject to inspection
- Please remain with your assigned group at all times
- Please leave all backpacks and large purses on the bus or at the coat check
- Photography without flash is welcomed; no tripods or selfie-sticks, please

### TAKE AN ACTIVE ROLE

#### TEACHER & CHAPERONES

The classroom teacher and chaperones are essential to the success of a group's visit; they can enhance the success of the tour and the amount of learning that can take place by showing active interest in the objects while supervising student behavior.

- Please ensure that you and your group of students (10 students or fewer per chaperone) stay together during your time in the museum (this includes the Shop)
- You and the group chaperones are responsible for keeping track of each student in your group, and for students' proper behavior (including their respect of museum rules and policies)
- If you have questions, ask a museum staff member for help

#### STUDENTS

- Students will be encouraged to share their ideas and work in teams
- Students must stay with their chaperones at all times while in the museum and Shop
- Please do not allow students to touch anything unless signs, museum staff members, or designated volunteers let you know it's okay

## DESIGN THINKING CONNECTION

The following pages include pre- and post-Design Field Trip activities. The pre-visit activities are suggestions for how to help your students prepare for their trip; they are designed to introduce students to concepts that will be discussed during the program. The post-visit activities are suggestions for how to extend your students' thinking beyond the program and reinforce your classroom curriculum. For teachers who would like additional ideas, we recommend our free Educator Resource Center (ERC), which offers 400 design-focused lesson plans (available at: <http://dx.cooperhewitt.org/lesson-plans/>).

## PRE-VISIT ACTIVITIES

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### TELL ME A STORY | GRADES K-1

*SUBJECTS: ENGLISH, ART | PIXAR DESIGN PRINCIPLES AND TOOLS: STORY & APPEAL*

*ACTIVITY TYPE: Writing, Drawing, Discussion & Presentation | 45 mins.*

#### THE DESIGN CHALLENGE

*How might we tell an appealing story with a clear beginning, middle and end?*

The teacher will choose a familiar story book and gather students to read aloud as a class. Once the story is finished, have the students talk to a partner and discuss their favorite character and what made that character appealing to them. After the students discuss, call on students to tell the class about their favorite character. Chart appealing characteristics that students mention. Next, have students discuss the story as a whole class. What made the story interesting? Why is it important for a story to have a beginning, middle and end? What were the main events in the beginning, middle and end of this story? After students discuss, hand out the worksheet on page 13 and have students create the beginning, middle and end events of their own story with an appealing character. They can write or draw on this worksheet. Afterwards, students present their stories to the class.

#### GUIDING QUESTIONS

- What makes a character appealing?
- How can you design a character that is appealing to someone reading your story?
- What are your main character's physical characteristics and personality traits? What do they like/dislike? How do they spend their time? What kind of world do they live in?
- What makes a story interesting?
- Why is it important for a story to have a beginning, middle, and end?
- What is happening to your character in your story? What happens in the beginning, middle and end of your story? What changes for the character from the beginning to the end?

## VARIATIONS AND EXTENSIONS

- Have students design their story in pairs or groups to explore the Pixar design tool of collaboration.
- Have students use different materials to construct their character. Instead of drawing their character into their beginning/middle/end boxes, have them construct the character 3-dimensionally by making clay characters, paper puppets, sock puppets, etc.
- Have students act out their stories with a partner.

## MATERIALS AND RESOURCES NEEDED

- A picture book of your choice
- Beginning/middle/end story worksheet, page 13
- Pencils, crayons, markers

## VOCABULARY

Story, appeal, collaboration

## COMMON CORE STATE STANDARDS

CCSS.ELA-LITERACY.CCRA.R.1, CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.SL.1, CCSS.ELA-LITERACY.CCRA.SL.4, CCSS.ELA-LITERACY.CCRA.L.6, CCSS.ELA-LITERACY.CCRA.W.2

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## WHAT A CHARACTER! | GRADES 2-5

*SUBJECTS: ENGLISH, ART | PIXAR DESIGN PRINCIPLES AND TOOLS: STORY, APPEAL, ITERATION, AND COLLABORATION*

*ACTIVITY TYPE: Writing, Drawing, Discussion & Presentation | 45 mins.*

## THE DESIGN CHALLENGE

*How might we create an unconventional character and use the process of iteration in order to design one that is the most appealing?*

Have students think about and discuss popular book or movie characters. What made these characters different from characters in other books they have read or movies that they've seen? What made these characters appealing? Have students work in groups to develop a character. Then students will brainstorm physical characteristics and personality traits of their character, and each student in the group will create multiple iterations of this character based on their discussion. Once they have completed these, have them combine their ideas to create a final iteration of their character. Groups will then work together to write a short story starring their character. Groups will present their stories and characters to the class.

## GUIDING QUESTIONS

- What makes a character appealing?
- How can we design an appealing character? What characteristics would they have?
- What is iteration? Why is iteration important when designing a character? What changes with each iteration?
- How does collaborating with classmates change your ideas about your character? Why is collaboration important when designing your character?
- What is happening to your character in your story? How can you make your story appealing?

## VARIATIONS AND EXTENSIONS

- Have students use iteration to create another main character in their story (a sidekick, villain, etc.).
- Have students use different materials to construct their character. Instead of drawing their character, have them construct the character 3-dimensionally by making clay characters, paper puppets, sock puppets, etc.
- Have students write another story starring their character.

## MATERIALS AND RESOURCES NEEDED

- Pencils, crayons markers
- Paper for drawing and writing
- Any 3-dimensional prototyping materials (model magic, popsicle sticks, pipe cleaners, etc.)

## VOCABULARY

Story, appeal, collaboration, iteration

## COMMON CORE STATE STANDARDS

CCSS.ELA-LITERACY.CCRA.R.7, CCSS.ELA-LITERACY.CCRA.SL.1, CCSS.ELA-LITERACY.CCRA.SL.2, CCSS.ELA-LITERACY.CCRA.SL.4, CCSS.ELA-LITERACY.CCRA.L.1, CCSS.ELA-LITERACY.CCRA.L.6, CCSS.ELA-LITERACY.CCRA.W.2

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## HISTORICAL STORIES | 6-12

*SUBJECTS: SOCIAL STUDIES, ENGLISH | PIXAR DESIGN PRINCIPLES & TOOLS: STORY, APPEAL, RESEARCH, and BELIEVABILITY*

*ACTIVITY TYPE: Research, Writing, Discussion & Presentation | Two 45 min. Lessons*

## THE DESIGN CHALLENGE

*How might we write a believable fictional story that is supported by research?*

Have students brainstorm to choose an historical time period for their fictional story to take place in (or if you are already studying a particular time period, assign this). Have students brainstorm their characters and the main plot points of their story. While they do this, make sure that they are considering the time period in which their story takes place, but also the appeal of their story. What elements of the story are affected by this time period? Why is this time period important to the plot of the story? Once they have completed the outline of their story, have them research their topic (research can be done using textbooks, classroom computers, school library, etc.). Make sure that students research facts and imagery so that their story can be as descriptive as possible. After students have completed their research, have them use their materials to begin writing their story. When they are finished, students will present their story along with the research materials that inspired it (this can be done verbally or by using a presentation board that includes images).

## GUIDING QUESTIONS

- Why is research important in the design of your story? What can it do to enhance detail?
- How does research make your story more believable? How can you balance believability and appeal in the telling of your story?
- What historical time period did you choose and why? What was appealing to you about that specific time period? Which elements of this time period will be highlighted in your story?
- What are the different forms of research that you can do for your story?
- What kinds of characters can you create based on your time period? How did research help you create your characters?
- How did images and facts both contribute to the design of your story? Did they make writing your story easier?

## VARIATIONS AND EXTENSIONS

- Have students watch a movie or read a novel based on an historical time period before writing their own stories
- Have students research a different element of their story based on class curriculum
- Have students create a diorama depicting a scene from their story that includes elements that reference the research that they completed
- Students may do research for homework before completing their stories

## MATERIALS AND RESOURCES NEEDED

Methods of research (books, computer, textbooks, etc.)

Pencils and paper

Presentation boards, scissors, glue



## VOCABULARY

Story, appeal, research, believability

## COMMON CORE STATE STANDARDS

CCSS.ELA-LITERACY.CCRA.R.1, CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.7, CCSS.ELA-LITERACY.CCRA.R.10, CCSS.ELA-LITERACY.CCRA.SL.1, CCSS.ELA-LITERACY.CCRA.SL.2, CCSS.ELA-LITERACY.CCRA.SL.4, CCSS.ELA-LITERACY.CCRA.SL.5, CCSS.ELA-LITERACY.CCRA.L.1, CCSS.ELA-LITERACY.CCRA.L.6, CCSS.ELA-LITERACY.CCRA.W.2, CCSS.ELA-LITERACY.CCRA.W.5, CCSS.ELA-LITERACY.CCRA.W.7, CCSS.ELA-LITERACY.CCRA.W.8, CCSS.ELA-LITERACY.CCRA.W.9

## POST-VISIT ACTIVITIES

### TALES OF EVERYDAY OBJECTS | K-5

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*SUBJECTS: English*

*PIXAR DESIGN PRINCIPLES AND TOOLS: STORY, APPEAL, ITERATION, COLLABORATION*

*ACTIVITY TYPE: Discussion, Writing & Presentation | 45 mins.*

### THE DESIGN CHALLENGE

*How can an everyday object inspire an original story?*

During your recent visit to the Pixar exhibition you saw that stories were important to the animation studio. In fact, their first short film, Luxo Jr., was inspired by a lamp. Students will think of everyday objects in their classroom and imagine what would happen if they came to life. They will work with a partner to brainstorm how the object looks and works. After students discuss, hand out the worksheet on page 13. They will create a simple story with a beginning, middle and end about their object. The story can be written individually or in collaboration. Afterwards, students will present their stories to the class.

### GUIDING QUESTIONS

- What are some ordinary objects in your classroom that are used every day?
- How does the object look? What's appealing about it?
- How does it function?
- If this object had a life of its own what would it be?
- What other objects would it interact with?
- What is happening to your object in your story? What happens in the beginning, middle and end?

### VARIATIONS AND EXTENSIONS

- Sometimes when we think of everyday objects we don't consider that they were carefully designed and went through many prototypes before becoming the final

product we use. Learn more about your object by researching the product and designer.

- Make an illustration that references your story. For example, if you choose a backpack that goes on an adventure through NYC, you might draw a backpack on the subway.

## MATERIALS AND RESOURCES NEEDED

- Everyday classroom objects
- Beginning/middle/end worksheet, page 13
- Pencils, crayons, markers

## VOCABULARY

Story, appeal, research, believability, collaboration

## COMMON CORE STATE STANDARDS

CCSS.ELA-LITERACY.CCRA.SL.1, CCSS.ELA-LITERACY.CCRA.SL.2, CCSS.ELA-LITERACY.CCRA.SL.4, CCSS.ELA-LITERACY.CCRA.SL.6, CCSS.ELA-LITERACY.CCRA.L.1, CCSS.ELA-LITERACY.CCRA.L.6, CCSS.ELA-LITERACY.CCRA.W.2

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## WHAT MAKES A HERO? | GRADES 6-12

*SUBJECTS: English Social Studies | PIXAR DESIGN PRINCIPLES & TOOLS: STORY, APPEAL, RESEARCH, and BELIEVABILITY*

*ACTIVITY TYPE: Research, Writing and Presentation |45 mins.*

## THE DESIGN CHALLENGE

*How might we identify a hero and provide evidence for what makes them heroic?*

During your recent visit to the Pixar exhibition you saw that all the stories had a hero. Some heroes like Merida in the movie *Brave* became one accidentally, while others like Mr. Incredible from *The Incredibles* had superhero talents that couldn't be kept hidden. Have students explore heroes by asking students what the word *hero* means to them. Write students' answers on the board. Tell students to think about characteristics or personality traits that they think make someone a hero. (Ex, a hero is brave and strong; a hero stands up for others). List people who have these characteristics (historical figures, fictional characters, athletes, etc.). Have students work in partners to learn more about an identified hero. They will need to research the life of the chosen hero and be able to provide facts about him/her to defend what makes them a hero.

## GUIDING QUESTIONS

- What characteristics does the character have that make them heroic?
- How does your selected hero feel about their heroism?

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- Who decided this person was a hero? Themselves, others, history?
- What is a key event that propelled this person to becoming a hero?

## VARIATIONS AND EXTENSIONS

- Students can reenact one of their hero's key events to the class
- Students can give a speech to the class about their hero

## MATERIALS AND RESOURCES NEEDED

- Methods of research (books, computers, textbooks, etc.)
- Pencil and paper

## VOCABULARY

Story, appeal, research, believability

## COMMON CORE STATE STANDARDS

CCSS.ELA-LITERACY.CCRA.R.1, CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.7, CCSS.ELA-LITERACY.CCRA.R.10, CCSS.ELA-LITERACY.CCRA.SL.1, CCSS.ELA-LITERACY.CCRA.SL.2, CCSS.ELA-LITERACY.CCRA.SL.4, CCSS.ELA-LITERACY.CCRA.SL.5, CCSS.ELA-LITERACY.CCRA.L.1, CCSS.ELA-LITERACY.CCRA.L.6, CCSS.ELA-LITERACY.CCRA.W.2, CCSS.ELA-LITERACY.CCRA.W.5, CCSS.ELA-LITERACY.CCRA.W.7, CCSS.ELA-LITERACY.CCRA.W.8, CCSS.ELA-LITERACY.CCRA.W.9

**BEGINNING**

**MIDDLE**

**END**

## VOCABULARY

<b>Color</b>	Color can convey a message. Designers must understand their audiences' perception of color as part of effective design plans.
<b>Design</b>	To make an object that solves a problem
<b>Design challenge</b>	A difficulty or challenge that can be solved through design
<b>Design process</b>	<p>The steps that you take to solve your challenge:</p> <ol style="list-style-type: none"> <li>1. Defining problem</li> <li>2. Getting ideas</li> <li>3. Prototyping and making</li> <li>4. Testing and evaluating</li> </ol>
<b>Design solution</b>	The way, idea, or answer to a design challenge or problem
<b>Designer</b>	A person who creates a new object, idea, or plan
<b>Form</b>	The shape and structure of any three dimensional object that can be defined by light and dark.
<b>Function</b>	The way something works, or a purpose of an object <i>e.g., the function of a paper clip is to fasten things together</i>
<b>Line</b>	An element of art used to define shape, contours, and outlines. Also to suggest mass and volume. It may be a continuous mark made on a surface with a pointed tool or implied by the edges of shapes and forms.
<b>Materials</b>	The items you are using to represent your ideas
<b>Needs</b>	What the user must have in order to use the design successfully
<b>Pattern</b>	Uses the art elements in planned or random repetitions to enhance surfaces. Patterns often occur in nature.
<b>Prototype</b>	An original model on which something is patterned
<b>Solution</b>	The way, idea, or answer to a problem. There can be more than one
<b>System</b>	A group of related parts that work together
<b>Texture</b>	The surface quality of an object; roughness or smoothness.
<b>Animation</b>	the technique of photographing successive drawings or positions of puppets or models to create an illusion of movement when the movie is shown as a sequence



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<b>Team</b>	A group working together on a common goal or activity
<b>User</b>	A person who operates or experiences the design

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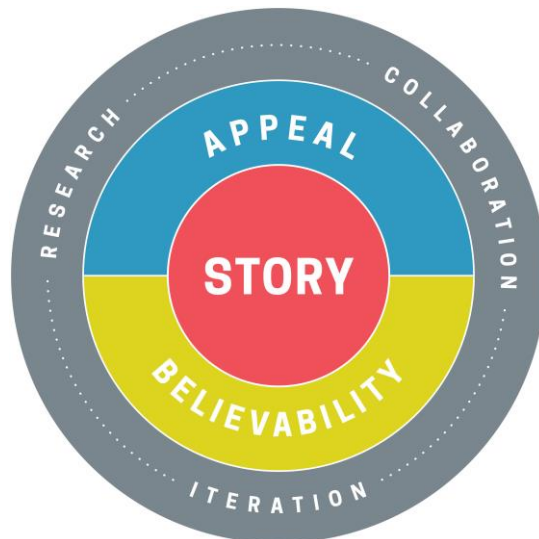
## PIXAR DESIGN TERMS

### 1. Pixar's key design tools:

- **Collaboration:** this is not an individual process; many different people come to together to make a project a reality
- **Iteration:** all possibilities of a characters are explored via drawings, paintings and 3D models (emphasize prototyping). For example, the character Woody was designed in the following manner:
  - a. Start designing on paper
  - b. Then move to refining his shape, first as a sculpture and then in the computer
  - c. Next we move onto color, surfacing, and textures like the pattern and weave of his shirt
  - d. Lastly we do lighting tests to light him to look the most appealing
- **Research:** Looking at the world around us to help inspire our designs (i.e. America's iconic Route 66 was used for landscape of *Cars*.)
- **Simplicity:** the art of simplifying an image down to its essence. The complexity you layer on top of it (texture, design or detail) is masked by how simple the form is (i.e. every shape is a symbol and character design is based on basic shapes: square, circle and triangle).

### 2. Pixar's key design principals:

- **Story:** the desire to engage through characters and worlds effect every design. Shapes and colors are used to depict emotion.
- **Believability:** helping the audience feel that the character exists and they can believe it is possible
- **Appeal:** helping the audience feel connected to a character by making it attractive or accessible (i.e. *Bugs Life* adjusting the body to being more humanlike)



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