Lesson 1: Designing With Empathy

Overview

Question of the Day: How can we choose products based on the needs of a user?

To kick off a unit devoted to group problem solving and developing products for other users, students begin by investigating the design of various shoes. Students look at a variety of shoes and attempt to match each shoe with a potential user. Students also provide feedback on these designs, using an "I Like..." / "I Wish..." / "I Wonder..." structure that will be repeated throughout the unit. To conclude the activity, students are asked to propose some changes to one set of shoes that would make it more useful or usable.

Purpose

Students will enter this unit with an understanding of the problem solving process from prior units.

The problem solving process used throughout CS Discoveries is:

- Define
- Prepare
- Try
- Reflect

In this lesson, students look at real-world objects to understand how the problem-solving process can be applied to help others. Starting with this lesson, we will be reframing this process to include a layer of empathy, encouraging students to consider how others will experience and use the things they create.

We are purposefully starting out by looking at non-technical objects to encourage students to think more broadly about what it means to consider the end-user of a product before honing in on how it specifically applies to software design

Assessment Opportunities

1. **Critically evaluate an object for how well its design meets a given set of needs**

In the discussion at the end of the activity, ensure that students are connecting specifics of the user descriptions to the features of the shoes that they have chosen for those respective users.

Objectives

Students will be able to:

- Critically evaluate an object for how well its design meets a given set of needs
- Identify empathy for the user as an important component of the design process

Preparation

- Print a copy of the activity guide for each student (or prepare to distribute the document digitally).

Links

Heads Up! Please make a copy of any documents you plan to share with students.

For the teachers

- **CSD Unit 4 - The Design Process** - Slides

For the students

- **Designing with Empathy** - Activity Guide
- **Problem Solving Process with Empathy** - Image

Vocabulary

- **Empathy** - In design, paying attention to a user's feelings and needs when designing a product.
- **User** - Someone who uses an object, including software and hardware.

2. **Identify empathy for the user as an important component of the design process**

In the discussion at the end of the activity, check that students are referencing the user descriptions for their explanations, rather than the general advantages and disadvantages of each shoe.

Standards

Full Course Alignment

CSTA K-12 Computer Science Standards (2017)

- **CS** - Computing Systems

Agenda

Warm Up (5 minutes)

Activity (35 minutes)
Design Feedback

Wrap Up (5 minutes)
Journal

Teaching Guide

Warm Up (5 minutes)

Display: Show the Problem Solving Process graphic, which now includes an *Empathize* section in the background of the entire process.

Journal

Prompt: We've used this Problem Solving Process several times throughout this course. In this unit, we're adding a new element: **Empathize**. What does it mean to empathize? Where else have you heard this term before?

Discuss: Students should write their responses in their journal first, then share their ideas with a partner before discussing as a full class. Eventually, direct conversation towards the fact that to empathize with other people means to consider their wants, needs, or concerns.

Discussion Goal

Goal: This discussion can be fairly free-flowing and open-ended. While you want to eventually arrive at a shared understanding of what it means to empathize, students will be working on their understanding of the word over the entire unit. There's no need to settle on a single fixed definition, so treat this discussion as an introduction to a theme of the unit.

Vocabulary: Display the following vocabulary as a transition to the main activity:

- Empathy - In design, paying attention to a user's feelings and needs when designing a product
- User - Someone who uses an object, including software and hardware

Remarks

> This unit we are going to start thinking a lot more about designing for other people. This is still largely a problem solving process, but we will now need to think a lot more closely about the needs of our users. In other words, empathy will be an important theme as we learn more about design.

Question of the Day: How can we choose products based on the needs of a user?

Activity (35 minutes)

Distribute: Hand out copies of the Determine the User Activity Guide.

Teaching Tip

Reducing Printed Materials

Unit 4 contains a lot of printed materials. Classrooms with limited ability to print can choose one of the following options instead.

Option 1: Online Activity Guides

All of our activity guides are available in editable Google Doc and Microsoft Doc formats. Classrooms using Google or Microsoft products can distribute digital copies to students, who can complete most of the activity guides entirely online.

Option 2: Student Journals

Many of the activity guides can be converted into journal activities. Teachers can project the instructions and prompts or allow students to view them online, then complete the activity itself in a journal.

Look for teaching tips on relevant lessons to indicate when you may avoid printing by using one of these options.

Designing with Empathy

Determine the User

Overview: Have students read through the Determine the User section of the activity guide. The first part of this activity asks students to match different shoes with the most likely user. Have students work through this activity in pairs, encouraging discussion about why exactly they are choosing to make each connection. This is a great place to discuss the design of shoes and the needs of users.

Circulate: Monitor students as they complete the first page of the activity guide, asking students to justify some of the decisions that they made. It's okay if students disagree about a particular shoe choice. There are no right or wrong answers here - the discussion and ability to reasonably justify a decision are what matter.

Share Out: Have students discuss the following questions in small groups before bringing to a full class discussion:

- Which users were the easiest to find matches for?
- Which users were the hardest to find matches for?

Based on your observations while circulating, you should also identify a few specific users to ask the class to discuss, especially users where multiple students chose different shoes. Encourage students to hear different justifications for their choices, emphasizing that the rationale is more important than the

choice itself.

Assessment Opportunity

As students discuss their reasoning for their choices, check to ensure that they are identifying the particular user's needs and characteristics, rather than general reasons to prefer a certain shoe. You may want to challenge students to distinguish their own needs and preferences from those of the described users.

Design Feedback

Remarks

> We're now going to learn how to give feedback on a design. We're going to give our opinion about the good and bad parts of these shoes. It's important to give feedback that acts as a positive step towards improvement, rather than feedback that is negative and judgemental that doesn't help make the product better.

Design Feedback: Have students read the Design Feedback section of the activity guide on the second page. This second activity gives students an opportunity to provide feedback on four of the shoes. The structure of this page reflects the general approach we will be using for feedback, using the three statements:

- I Like... (a strength)
- I Wish... (a weakness)
- What if... (a suggestion)

Circulate: Monitor students as they complete this activity, ensuring that students are giving actionable feedback that can lead to improvements rather than generic or unhelpful feedback that feels more like a judgement than a suggestion.

Teaching Tip

The first step towards creating a design that can be effectively used by many people is to understand that not everyone thinks the same, or looks at an object or design in the same way. This is the first exercise in the students thinking outside of themselves and at how others may perceive items in the world

Share Out: Have students discuss the following questions in small groups before bringing them to a full class discussion:

- Which shoe was your favorite? Why?
- Which of these shoes do you think would be the favorite for someone in your family? Why?

Encourage students to think about both themselves and other people in their lives, such as a family member. This helps emphasize that designing means thinking about more than just your own needs and desires, but considering how other people will react to a product as well.

Remarks

> An important part of this activity is thinking about how different products are made for different people, and how there's always room to improve a product so it is helpful to more users. Throughout this unit, we'll continue to think about how different people use objects for different reasons so that we can design apps for as many users as possible!

Wrap Up (5 minutes)

Journal

Prompt: Pick one or two of the objects you analyzed today. What could you change to make this object more usable for you? Feel free to use words, pictures, or a combination of both