Design Thinking: Vibrant Neighborhood
Growing Livable Communities with Green Space

Introduction

Green spaces are the heartbeat and lungs of a community. Whether you live in the middle of a city, in the suburbs, or in a rural place, green spaces are where we play, where our trees and wildlife lives, and where our air and water can become cleaner.

But as our population grows, our cities get bigger, and we need more space for homes and food production. So how do we make enough green spaces? And how do we get our green spaces to do the jobs we want them to do?

We can apply ideas from science, technology, engineering, and math (STEM) to create more productive green spaces. Engineers can design our buildings and cities to help preserve and create new green spaces, sometimes even on the top of buildings! Scientists can create ways to make green spaces do new things, like clean polluted air and water. And we can use technology to keep track of and protect our green spaces.

Scientists and engineers are always working to design better solutions for green spaces and other changes that make our communities better places to live. These are complex problems, and they require complex thinking. Design thinking is a powerful way to develop solutions to complex problems. It starts with defining the problem and understanding how that problem affects people. Then it requires brainstorming many, many ideas and designing and testing prototypes of those ideas. In this type of design, failure is just part of the process. There is room for improvement in every design.

We have made great progress in creating and preserving green spaces in our communities. But there is much more we could do. And that is where you come in. By applying your understanding of STEM skills and knowledge and by using design thinking, you can come up with new and innovative solutions to increase the amount of green spaces and improve the ways in which they are used in YOUR community.

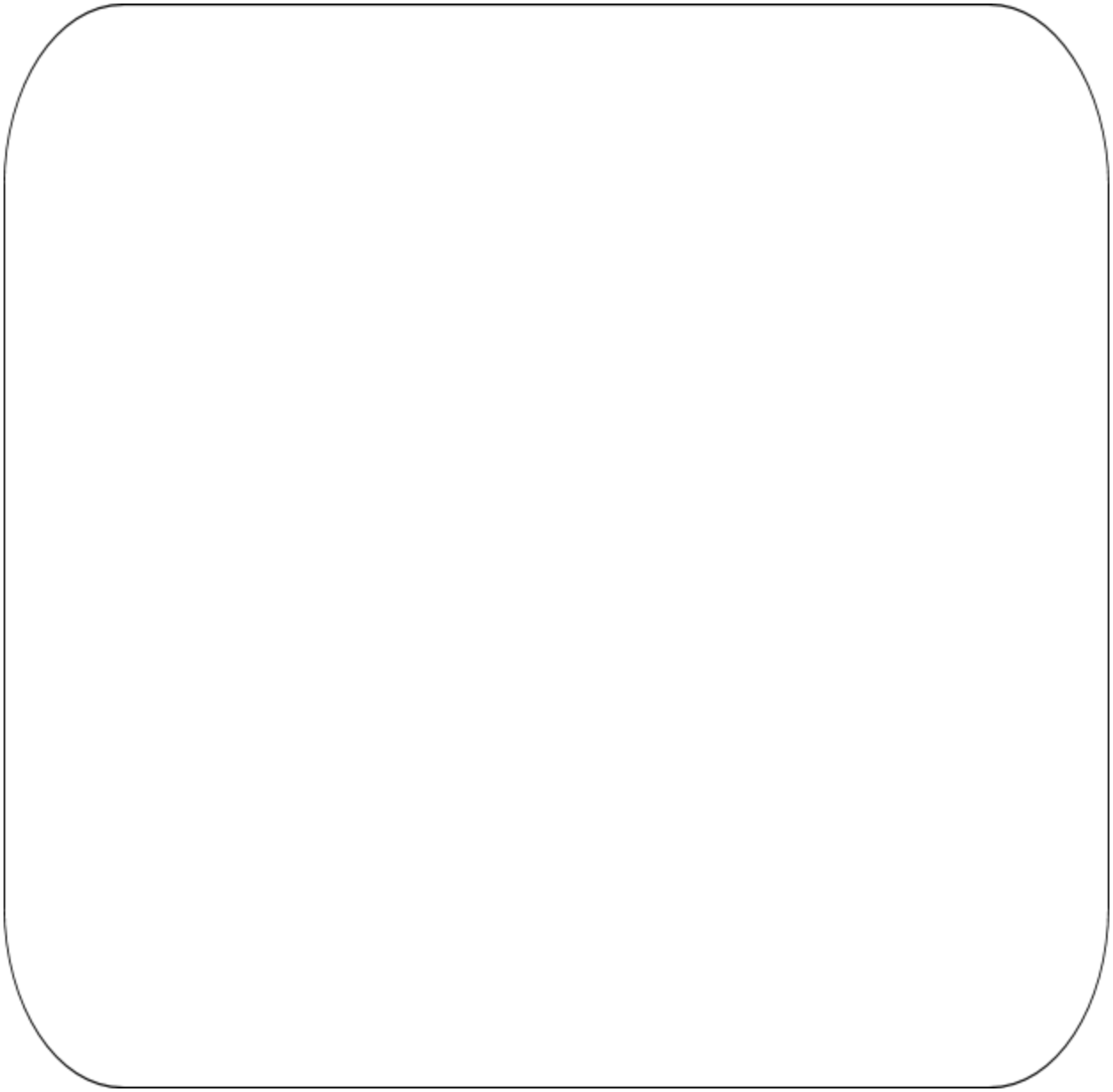
Your **Day of Design Challenge** is to design a solution to increase green spaces to make your community more livable and enjoyable.

PART 1. IMAGINE A SOLUTION

STEP 1. Imagine an "Ideal" Solution

Talk to your team. What do you think the "perfect" solution is to create more green spaces in your community?

Sketch your idea here:



STEP 2. Dig into The Problem

Now do your research on the problem of creating green spaces in your community. Go online. Talk to people who live in your community. If possible, interview someone who is responsible for managing open spaces in your community. These are your "users".

Try to get answers to as many of these questions as you can, and ask other questions that you come up with!

What does your community currently provide for green spaces? What are these green spaces designed for? Do they accomplish this? If no, why? If there are no green spaces, why?

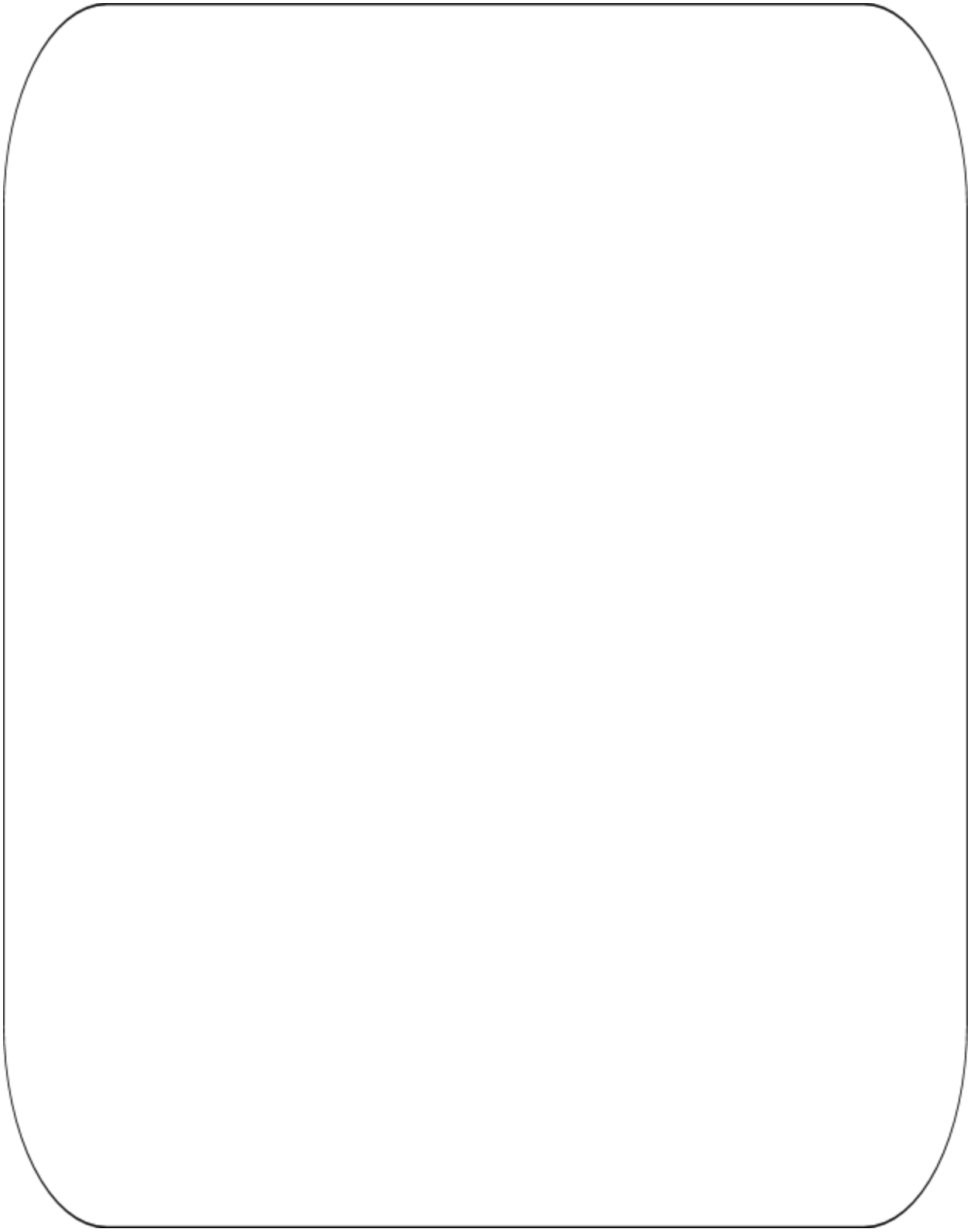
Capture what you learn here:

What is the most important thing your users want green spaces to accomplish?

Capture what you learn here:

What does your users' "ideal" solution to creating more green space look like?

Sketch or describe it here:



What is stopping them from creating their “ideal” solution? Is it money, rules, lack of technology or materials?

Capture what you learn here:

What were the key findings from your research?

Capture what you learn here:

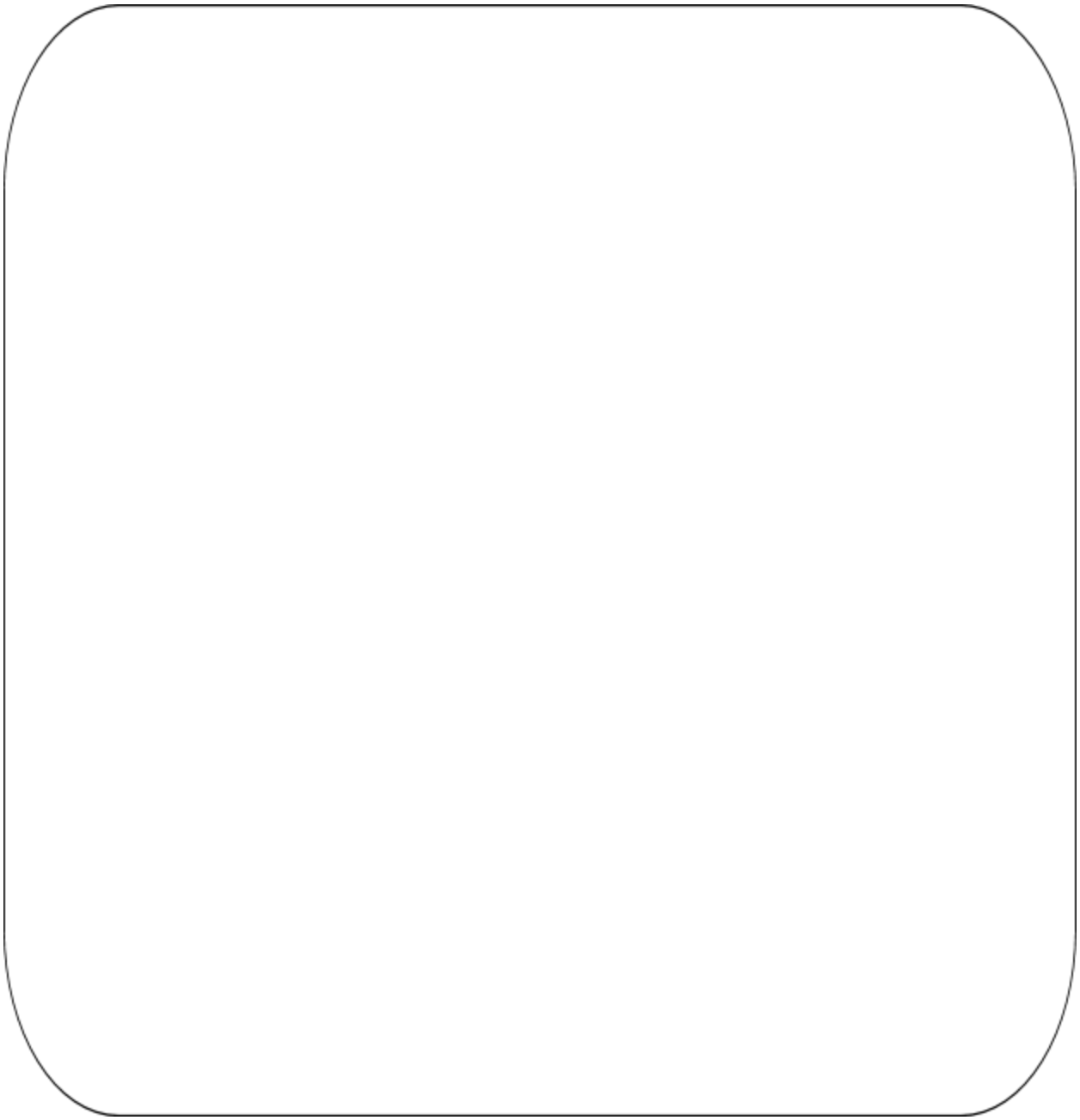
What features of your “ideal” solution do you now think will work and which won’t? Why?

Capture what you think here:

STEP 3. Create Alternatives to Test

Imagine at least 3 different ways to meet your “users” needs. Make sure that each is as different as possible from the next.

Sketch your 3 or more ideas here:



Ask your “users” or other teams in your classroom what they think of your ideas.

Capture what you learn here:

PART 2. PROTOTYPE YOUR SOLUTION

STEP 1. Reimagine Your "Ideal" Solution

Based on all the insights you have gained, what do you NOW think the "ideal" solution is to creating green space in your community?

Sketch your idea here:

STEP 2. Create a Prototype

Using the resources available to you, create a prototype of your solution. It might not match your ideas completely. But it should help bring your ideas to life for your users, and allow you to start testing them.

Describe how you will create your prototype here:

STEP 3. Test Your Prototype

Using the resources available to you, test your prototype. If possible, ask your "users" what they think.

Describe how you will test your prototype here:

Capture what you learn here:

STEP 4. (OPTIONAL). Refine Your Prototype

If you have the time and the resources, use what you have learned by testing your prototype and improve your solution. You can do this once, twice, or as many times as possible.

PART 3. SHARE YOUR SOLUTION

Now it's time to tell your users and your community about your solution. Using the resources available to you, create a presentation (with pictures if possible) or a short (1-minute video) that describes your solution, how it works, and anything you have learned about it. Don't be afraid to share ideas or designs that didn't work. These are important because they tell you what the tough challenges are and help you make better solutions for the future.

Ask your teacher to upload your presentation / video to the **Day of Design** website so that you can get your **Vital Neighborhood Design Thinking BADGE.**

How can you bring your prototype / solution to your community? What do you need to make this happen? Who could you work with? Are there other opportunities to help your community create more green space? Be creative, get involved! Then make and share a video to tell the story of your adventure as a DESIGN THINKER!