

Teacher Overview

Communities are challenged to provide resources that suit the needs of their community members. Chances are, you or your students can think of a business or feature constructed in your community and wondered the reasoning behind it. Maybe your community lacks a certain resource and you've wondered why it's missing. In Tinker Toy Challenge, your students will act as though they are members of the economic development council for a community. Their task is to create a feature, amenity, or business structure that meets the needs of their community. Each council will receive special details about their community, as well as a budget. This activity will challenge your students to use design thinking to deliver and pitch an outcome that meets specific criteria in hopes to be awarded grant funding.

When to Use This Lesson

This lesson can be used at any time to teach budgeting and/or reinforce design thinking skills.

Time



BEFORE CLASS PREPARATION

- > Familiarize yourself with the activity guide and other supporting worksheets.
- > Sort the Tinker Toys by type and label them with each cost (see "Tinker Toy Price Sheet") or have the Price Sheet handy to use for selling the materials.
 - NOTE: You may need to update this Price Sheet to match what the TinkerToys you have.
- > Print YE currency for the budgets for each community and place inside the envelopes for seed funding. Label each envelope with the name of the community and the total budget amount.
 - You will also want to have YE dollars available as the "bank" to make change and pay out the property tax revenue.
- > **Pro-Tip:** This activity can be facilitated by one person; however, there are benefits to bringing in another individual to help. Consider inviting administration, staff, YE alumni or even utilizing a student to help act as a Compliance Officer or the grant reviewer for this activity.

LEARNING OBJECTIVES

- > PE LO 1a, 2b, 3a, 3b, 3e, 5e
- > Innovation LO 1e
- > Business Finance 1

MATERIALS

- > 200 pc. Set of TinkerToys®
- > Copies of:
 - Community Cards (1 per group)
 - Budget Ledger (1 per group)
 - Job Responsibilities (1 per group with extras of Marketing Assistants and Construction Workers)
 - Pricing Sheet (1 per group)
 - Scoring Guide (1)
- > Envelopes for seed funding (1 per group)
- > YE dollars (including higher denominations)

KEY TERMS

- > Scarcity
- > Subjective Value
- > Sunk Cost
- > Design Thinking
- > Customer Focus
- > Revenue
- > Expenses

FOUNDATIONAL VALUES

- > Sound Judgment

ACTIVITY INTRODUCTION

Your team is the economic development council for your community. Your task is to create a feature, amenity, or business structure that meets the needs of your community. Each council will receive special details about their community, as well as a budget.

In constructing your design, your council must meet the following goals:

- > Meet or stay below budget
- > Deliver a high-quality product
- > Is visually appealing
- > Meets the needs of your market (is a customer-focused design)

ACTIVITY DIRECTIONS

- > Organize students in groups, ideally of 3-5 students.
- > Allow 2 minutes for each group to determine roles:
 - Each group **MUST** have: Accountant, Marketing Consultant, Construction Manager
 - If you have additional students, they can choose to be one of the following: marketing assistants, construction workers. (There is no limit to the number of each of these roles per group – It is fine to have more than one marketing assistant and/or construction worker per group).
 - **Pro-tip:** Assign roles to the group members as a classroom management strategy to engage all students.
- > Hand out the “Job Responsibilities” cards to each position.
 - Allow time for each group to review the individual responsibilities of each role.
- > Hand each group a community card.
 - Allow three minutes for the group to review the details of their community.
 - Hand out envelopes of seed funding – These will correspond with the budget given on the community card they selected.
 - The Accountant needs to record the budget amount on their “Budget Ledger”.
- > Review the purchasing rules:
 - All purchases from the manufacturer are final.
 - Explain that you will act as the manufacturer.
 - Purchasing is only done by the Accountant with the assistance of the Construction Manager.
- > **STRATEGY ROUND (2 minutes):** Groups will review the community card details and brainstorm what they would like to build. No purchasing of resources is available during this time.
- > **BUILDING BEGINS (20 minutes):**
 - Groups may now begin purchasing supplies. The Accountant will keep record of all purchases (and potentially revenue) that occur during the building phase on the “Budget Ledger” worksheet.
 - **Note:** Supplies are scarce! Once purchased, they cannot be returned to the manufacturer. Allow students to discover that this does not mean that groups cannot sell or trade their materials with the other councils. If a group does sell or trade, this activity should be recorded in the Budget Ledger.
 - **Pro-tip:** For ease of selling the pieces, ask the Accountant to outline the number of pieces and have their total money ready to pay when they come up to purchase.
 - **5 MINUTES:** Workers are tired of the long hours and low pay and decide to go on strike. Until you are advised, building can only be done with their left hand.

- **8 MINUTES:** Property taxes have been collected from your community members. Accountants should add the “Potential Property Tax Revenue” from the Community Card to your budget.
 - Hand out the tax revenue in YE dollars to each group so they can add it to their remaining funds for use in future purchases.
 - **Pro-Tip:** Are you students unfamiliar with property taxes? Be sure to dive into property taxes and what they are as part of your debrief.
- **11 MINUTES:** The Construction Manager is informed by the resource manufacturing facility that certain materials are faulty and need to be recalled immediately. Remove all red parts and do not continue to use them for the remainder of the construction.
 - **NOTE:** It is your decision of whether the groups are refunded, faulty parts are replaced, etc. It is absolutely fine if you do not replace or refund them.
- **14 MINUTES:** The weather station has alerted you of high winds in the area. No construction can continue until the winds subside. You may not touch your structure until advised. However, you may continue to talk.
- **20 MINUTES:** All individuals must stop working and back away from the structure.
- > **PITCH PRESENTATIONS (10 minutes):** Each council’s Marketing Consultant will deliver their pitch.
 - While listening to each pitch, use the “Scoring Guide” to evaluate whether the group met the criteria.
 - After each pitch, debrief whether the council met the criteria and award the grant funds.

ACTIVITY DEBRIEF

- > Why did your team decide to build what you did?
- > How did your team use Sound Judgment to overcome the challenge of scarce resources (both financial and materials)?
- > How did subjective value influence the design of your structure? Were you customer-focused in your design?
- > Did anyone purchase materials and not end up using them? What did you do with those supplies? Was the money you spent on them a true sunk cost?
- > How did the addition of the property tax revenue impact your design? Did you pivot?
- > Did anyone purchase supplies from or trade with other groups? Why or why not?
- > What kind of competition existed in this challenge? Were you competing with the other groups?
- > How important was communication in this activity?
- > How did the roles and their responsibilities influence how this activity played out for your group? What impact did the constraints on some of the roles have?
- > What would you do differently if you played this again?

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