

# Topple and Tinker: Domino Trade Challenge

A Learning Activity for Grades 3-5

## Overview

Learners will complete a series of quick domino-building challenges as they measure, plan, build, and test. Each challenge encourages learners to think on their feet, solve problems, and work as a team with their partner. Along the way, they'll practice the same kinds of skills used every day in skilled trades and manufacturing - where precision, creativity, and quick problem-solving are essential.

## NB Curricular Connections

### Grade 3-5 Learning Areas

#### Mathematics:

- *Strand:* Shape and Space - Skill Descriptor: Demonstrate an understanding of various uses of standard measurement.
- *Strand:* Patterns and Relations - Skill Descriptor: Demonstrate an understanding of increasing and decreasing patterns

#### Personal Wellness:

- *Strand:* Career Connected Learning – *Big Idea:* Thinking about Potential Career Pathways – *Skill Descriptor:* Demonstrate an informed vision for the future linked to own interests, preferences, values, and abilities.

#### English Language Arts:

- *Strand:* Interactions – *Big Idea:* Exchanges - Skill Descriptor: Ask and respond to questions to clarify information, explore possibilities, or identify solutions to a problem. Skill Descriptor: Give and follow directions or instructions.

## What You'll Need

- 300+ dominoes (20–25 per group minimum)
- One ruler for each group
- One small weighted object for testing per group (i.e., toy car, wooden block, etc. )
- Common classroom materials that act as obstacles.

## Instructions

### Introduction: Skill Trades and Manufacturing

Ask students what kinds of trade and manufacturing careers involve planning, measuring or building? Can you name trade and manufacturing careers where people use tools to measure, cut, or assemble things? Have you ever built or made something at home or school? What were the skills needed to build it? How do you think teamwork helps when people are building or manufacturing something?

Think, pair, share!

Highlight how these careers use skills such as planning, creativity, problem-solving, collaboration and teamwork. Explain that today, learners will take on quick domino-building challenges and missions that mirror the work done in the trades. Encourage learners to think creatively and collaborate - just like real-world builders and problem-solvers.

### Career Connected Domino Challenges

Each of these challenges is to be completed in groups of 2-3 learners with each group having 20-25 dominoes per group. Each group should have the same number of dominoes allocated.

#### **Challenge 1: Carpenter's Foundation**

##### *Mission One:*

- Build a closed frame using a minimum of 10 dominoes. This will represent the foundation of a house.
- Measure the perimeter with a ruler. Hint: Think about the length of one domino to help find your perimeter.

##### *Mission Two:*

- Build a second frame with the same number of dominoes to create a new house foundation
- What is your new perimeter? Is it the same? Is it different?

##### *Career Connection:*

Carpenters measure and cut lumber precisely when building houses, furniture, and structures. Foundations are the start of building a house and must be accurately measured. Other house building careers (jobs) are plumbers, electricians, roofers and finishers.

##### *Extension Mission:*

- Build a third different frame with dominoes stacked to represent a true basement foundation.
- What is the height of your basement foundation? What is your new perimeter?

## **Challenge 2: Tower of Trades**

### *Mission One:*

- Using all your group's dominoes, build the tallest free-standing tower possible.
- Before building, estimate the height of your tower.
- After your tower is built, measure its height.

### *Mission Two:*

- Place a small toy/object on your tower.
- Adjust your tower to support your toy/object.
- Did the height of your tower change?

### *Career Connection:*

Architects and engineers design tall structures that must be stable and safe. Steelworkers, welders, crane operators are all careers to help build a tower.

### *Extension Mission:*

- Combine two groups to build the tallest free-standing domino tower they can without it falling/collapsing.
- Your tower must include a platform to hold a testing toy.
- Measure its height before it collapses!

## **Challenge 3: Delivery Routes**

### *Mission One:*

- Build a single lane domino road/route/path (lay dominoes flat) that travels from Point A to Point B using 10 dominos.
- Estimate the length of your road/route/path. Hint: Remember the length of one domino.
- Now measure your road/route/path.

### *Mission Two:*

- Build a different single lane domino road/route/path (lay dominoes flat) that travels from Point A to Point B using 20 dominos.
- How has your road/rout/path changed?

*Career Connection:*

Urban planners and engineering technicians design roads, bridges, tunnels and roundabouts. Heavy equipment operators build roads and bridges that are safe and strong. Truck and delivery drivers navigate these roads and bridges.

*Extension Mission:*

- Add a bridge or tunnel. You may use the remaining dominos or reduce the length of your road/route/path.
- Has your road/route/path changed?
- Build a double lane domino road/route/path from Point A to Point B with at least 2 obstacles to build around.
- Has your road/route/path changed?

**Challenge 4: Factory Line Pattern Builder**

*Mission One:*

- Create a domino “factory line” using a pattern.
- What is your pattern rule?
- Invite another group (or teacher) to inspect/check and explain your pattern.

*Mission Two:*

- Compete with another group.
- Create a new factory line with a new pattern rule.
- Your competing group is to guess the pattern rule and predict the next step in your pattern sequence.

*Career Connection:*

Production line workers and supply chain managers use patterns to keep machines running smoothly and ensure products are built correctly. Quality control inspectors and occupational safety members check for mistakes or breaks in the sequences.

*Extension Mission:*

- Create a frame “Carpenter’s Foundation” pattern.
- Create a vertical “Tower of Trades” pattern.
- Create a road/route/path “Delivery Routes” pattern.

### Pair and Share

After completing the challenges, have learners share:

- Which challenge/mission did they enjoy the most – why?
- One success, one challenge, and one improvement idea.

### **Reflection Activity**

Please see the attached PDF for several choices on how you and your learners can reflect upon today's activity.

### **Acknowledgement**

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