

# Candy Auction Teacher Guide

15-20 minutes total

## Quick Overview

**What:** Auction sets of 5 candies (peppermints/jolly ranchers) at different prices

**Why:** Collect real price vs demand data to show inverse relationship

**Setup:** 3-4 groups, each with \$20 virtual budget, one worksheet per group

## Materials Needed

- Bag of peppermints or jolly ranchers
- 1 copy of **Candy Auction Data Table** per group
- Board/markers for class data
- Projector for Desmos demo (or students use devices)

## Setup (2 minutes)

1. Form 3-4 groups of 3-4 students each
2. Give each group:
  - One auction worksheet
  - \$20 virtual budget (they track this themselves)
3. Have groups write all member names on worksheet
4. Designate in each group:
  - One person to record data on worksheet
  - One person to track their \$20 budget
  - One person to do Desmos later

## Draw This on Board

Round	Price for 5 Candies	Groups Buying
1	\$	
2	\$	
3	\$	
4	\$	
5	\$	
6	\$	

## Running the Auction (8-10 minutes)

### Each Round (1-2 minutes)

**Say:** “Round [X]. The price for 5 candies is \$[PRICE]. Groups have 10 seconds to decide.”

**Wait:** Let groups discuss quickly

**Ask:** “Groups buying at this price, raise hands!”

**Count:** Count buying groups (0-4)

**Record:** Write price and number of buyers on board

**Groups:** Record the data on their worksheets

**Note:** Groups can only buy ONE set per round (if they choose to buy)

## Suggested Prices (adjust as needed)

**Goal:** Get varied data showing demand drops as price rises

### Sample Sequence:

- Round 1: \$8.00 (high - expect 0-1 buyers)
- Round 2: \$2.00 (low - expect 3-4 buyers)
- Round 3: \$5.00 (medium - expect 1-2 buyers)
- Round 4: \$1.00 (very low - expect all buyers)
- Round 5: \$6.50 (medium-high - expect 1 buyer)
- Round 6: \$3.50 (medium-low - expect 2-3 buyers)

**Adjust if:** All groups always buy → raise prices. No one buys → lower prices.

## Desmos Analysis (5-8 minutes)

### Whole Class or Per Group

#### Option A - Teacher Demo (faster):

1. Project Desmos on screen
2. Enter:  $P = [8, 2, 5, 1, 6.5, 3.5]$  (your prices)
3. Enter:  $Q = [0, 4, 2, 4, 1, 3]$  (number of buyers)
4. Type:  $(P, Q)$  to see scatter plot
5. Type:  $Q \sim mP + b$  for regression line
6. Discuss: “The slope is negative. What does this mean?”

#### Option B - Groups Do It:

1. Each group enters their collected data
2. One person per group handles Desmos
3. Groups find their own regression equation
4. Share equations - should all be similar!

## Quick Discussion (2 minutes)

- “What pattern did you notice?” (Higher price  $\rightarrow$  fewer buyers)
- “Why is the slope negative?” (Inverse relationship)
- “Which price generated the most revenue?” (Price  $\times$  Quantity)
- “Could we use this to predict buyers at \$4.00?” (Yes, using the equation)

## Wrap-up & Collection

**Collect:** One worksheet per group with all names

**Announce:** “Tomorrow we’ll add costs and see how profit changes with price”

**Optional:** Actually give out some candy to groups that participated well

## Quick Fixes

- **Groups overspend budget:** Remind them they only have \$20 total
- **Too slow:** Skip to teacher demo of Desmos
- **Absent students:** Just redistribute into existing groups
- **No devices:** Do Desmos as whole-class demo only
- **Flat data:** Use more extreme prices (\$0.50 vs \$10.00)