

Beers and Diapers Redux

Introduction

- Experimentation is a key component of the resource allocation portfolio.
- It allows us to evaluate the consequence of different marketing actions.
- In this module we will
 - Understand some basic experimental designs
 - Follow a case study of a firm that implemented experiments on TV and the Web

Correlation vs. Causation

- Does skipping breakfast cause obesity?
 - <http://www.webmd.com/diet/news/20080303/eating-breakfast-may-beat-teen-obesity>
- Alternative explanations:
 - Physical activity
 - Lack of sleep

“Half the money I spend on advertising is wasted; the trouble is I don’t know which half.”

—John Wanamaker
Father of Modern Advertising



Marketing Return on Investment

- Why is it hard to measure the return on marketing spending?
 - TV advertisements
 - Promotion
 - Better customer targeting
- **Basic issue: Would you have achieved the same sales increase without the increased advertising spend?**



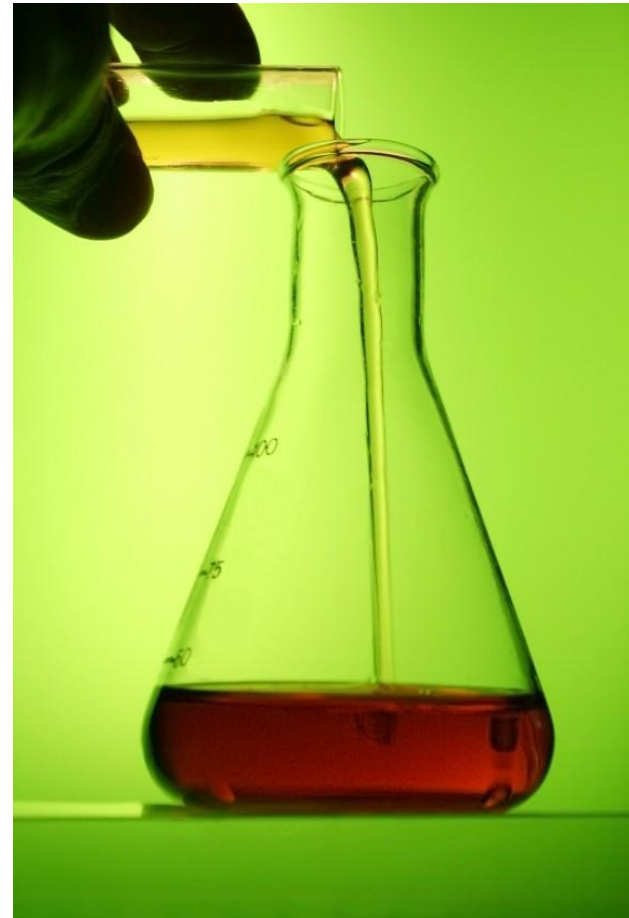
Basic Experiment Design

What Establishes Causality?

- Change in marketing mix produces change in sales
 - Increasing Advertising \$  Increased Sales
- No sales increase when there is no change in the marketing mix
 - No Increase in Advertising \$  Same Sales
- Time Sequence
 - Increased advertising \$ today leads to higher sales tomorrow
- No other external factor
 - When advertising was increased, one of the competitors left the market. So sales increased because of less competition, not because of increased advertising.

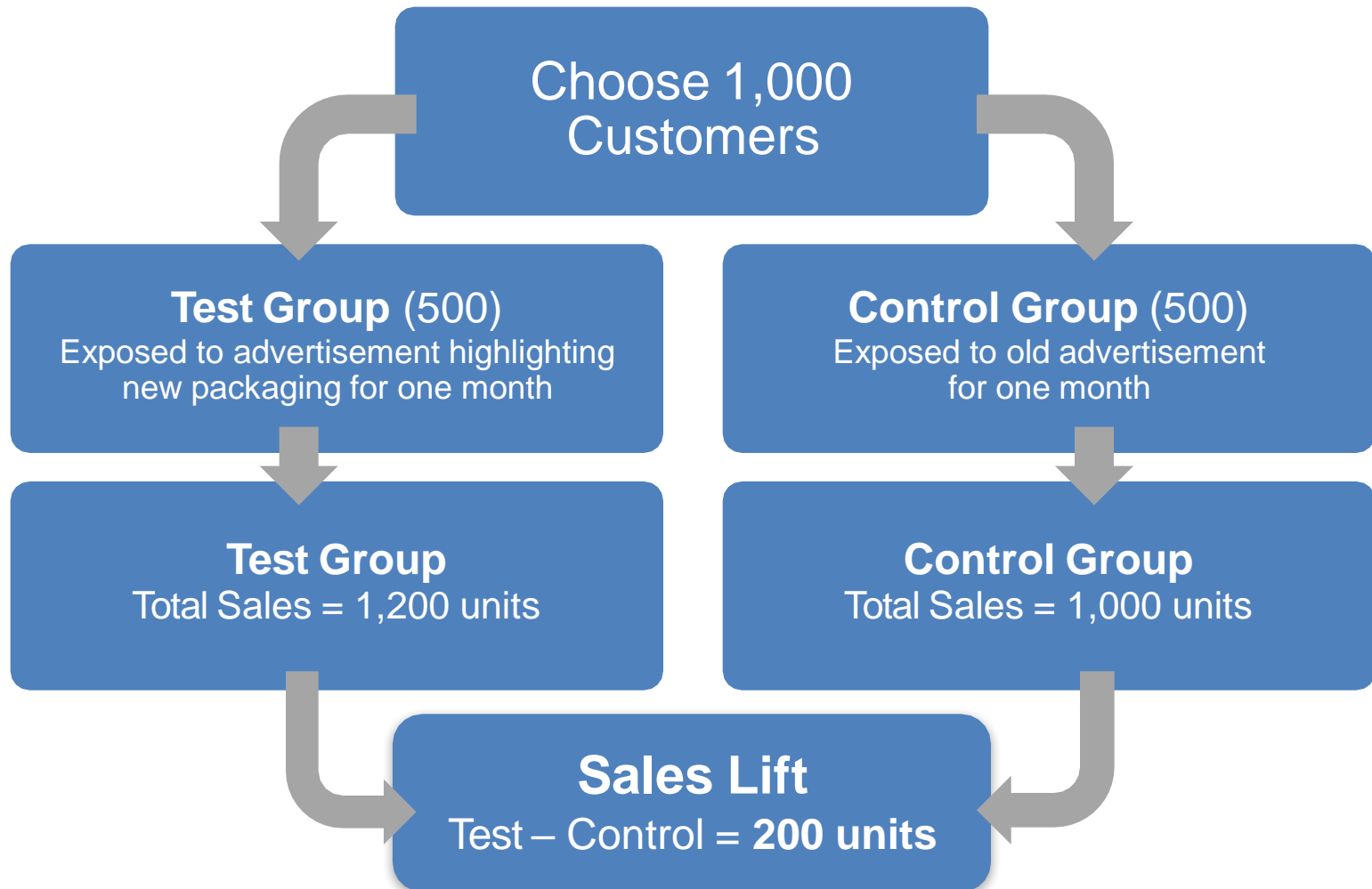
Experiments: The Holy Grail!

One or more independent variable(s) **[Advertising \$]** are manipulated to observe changes in the dependent variable **[Sales or Brand awareness]**



A Basic Experiment

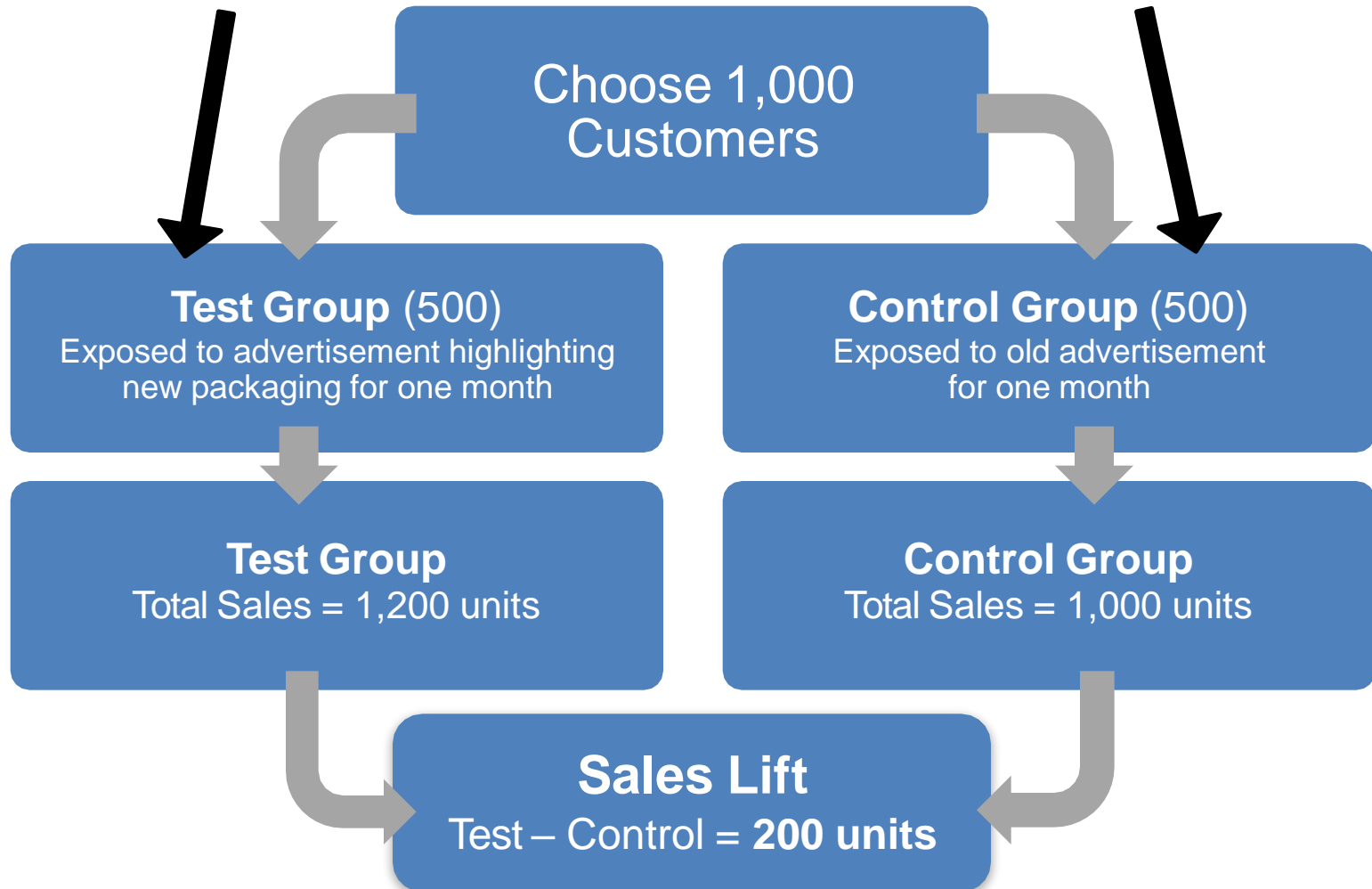
How to assign customers to experiment and control group?



Advanced Experiment Designs

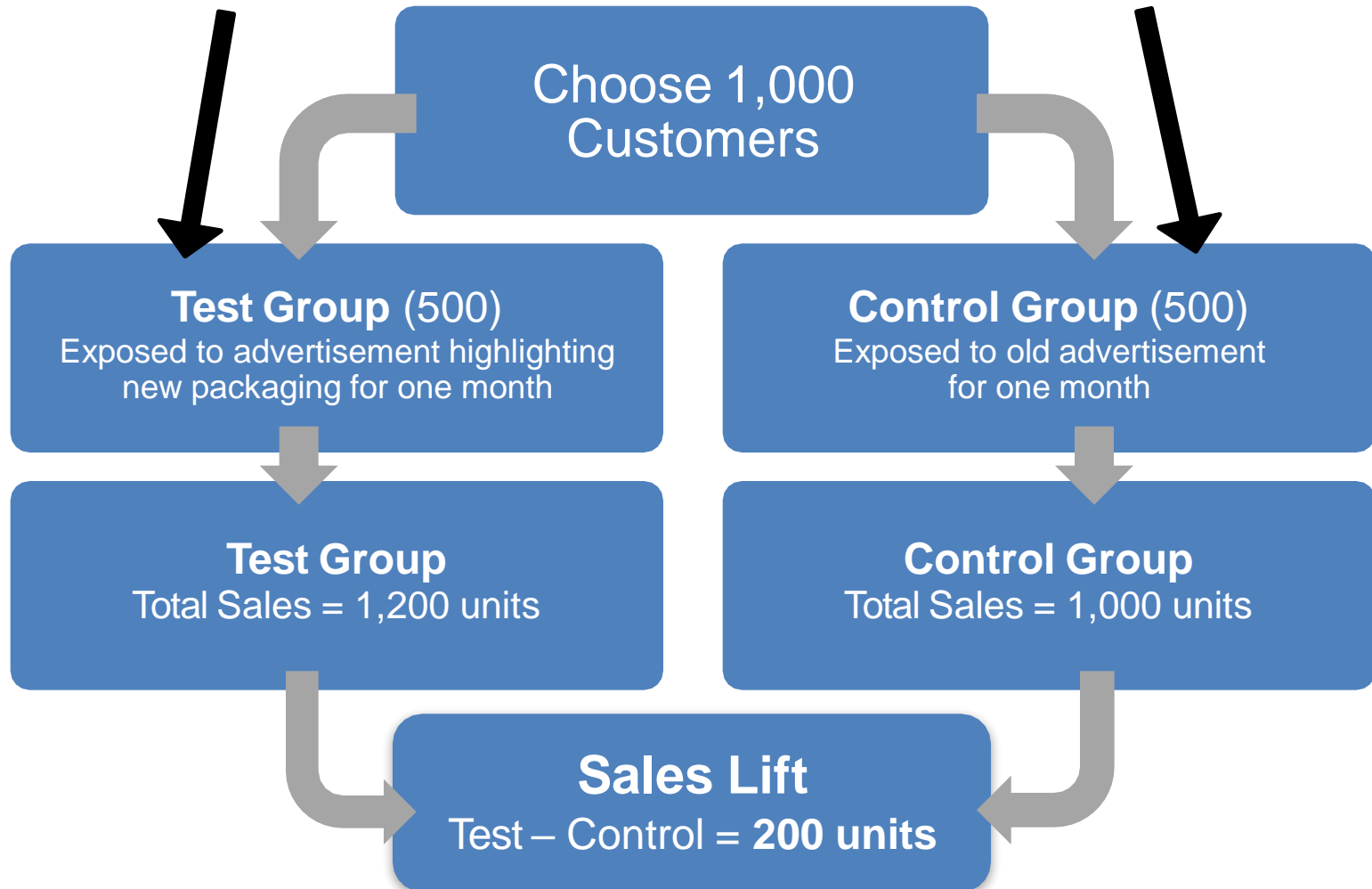
A Basic Experiment

Randomization: can *match* test and control groups on all dimensions simultaneously, given a sufficient sample size?



A Basic Experiment

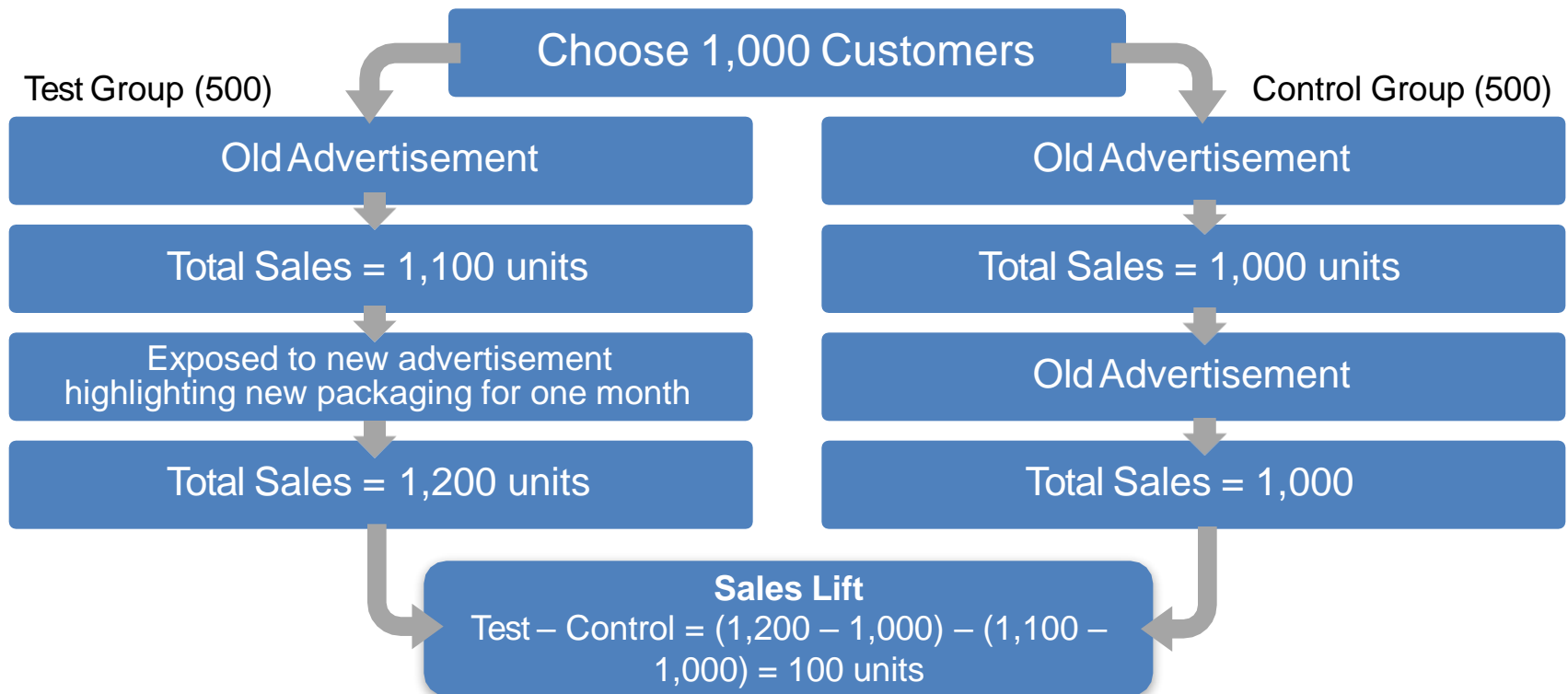
Match: experiment and control groups on known attributes (e.g., demographics). When would this be necessary?



Before–After Design



Before–After Design



Web Experiments: Full Factorial Design

Price		
\$1.59	\$1.89*	\$2.15

* Current conditions, so can be considered controls

Web Experiments: Full Factorial Design

Advertisement Copy	Price		
	\$1.59	\$1.89*	\$2.15
“Lasts Longer”			
“Tastes Better”			
“Good for You”*			

* Current conditions, so can be considered controls

Web Experiments: Full Factorial Design

Advertisement Copy	Price		
	\$1.59	\$1.89*	\$2.15
“Lasts Longer”		\$1,112	
“Tastes Better”		\$1,030	
“Good for You”*		\$820	

* Current conditions, so can be considered controls

Web Experiments: Full Factorial Design

Advertisement Copy	Price		
	\$1.59	\$1.89*	\$2.15
“Lasts Longer”		\$1,112	
“Tastes Better”		\$1,030	
“Good for You”*	\$930	\$820	\$770

* Current conditions, so can be considered controls

Web Experiments: Full Factorial Design

Advertisement Copy	Price		
	\$1.59	\$1.89*	\$2.15
“Lasts Longer”	\$1,315	\$1,112	\$1,206
“Tastes Better”	\$957	\$1,030	\$1,500
“Good for You”*	\$930	\$820	\$770

* Current conditions, so can be considered controls

Ohio Art Company

Part 1

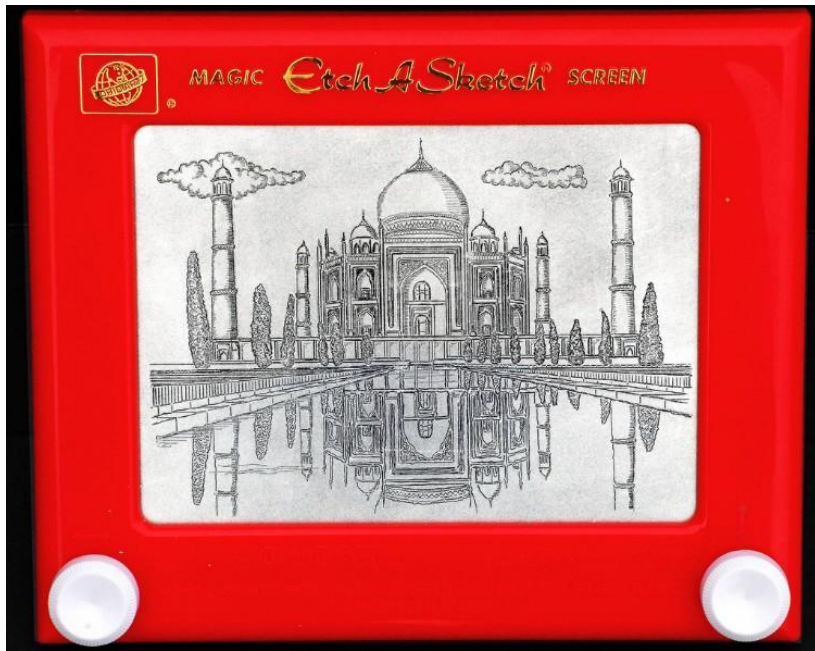
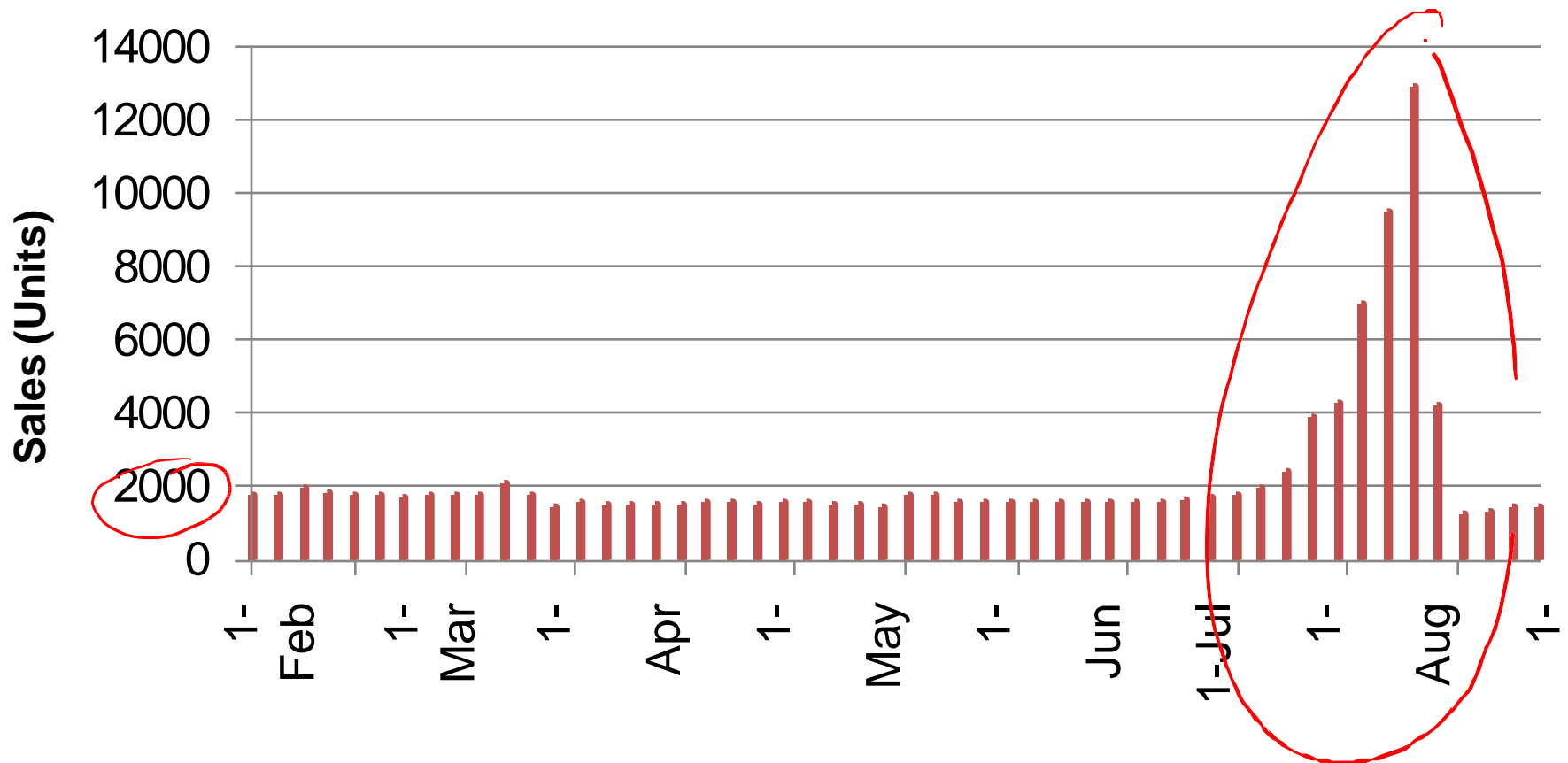


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Sample Retailer Weekly Unit Sales (Etch A Sketch)



Test City
Cincinnati

Control Cities

Cleveland

Charleston

Indianapolis

Pittsburg

Test period
During Nov-Dec
Ads ran during
daytime

Ohio Art Company

Part 2

Etch A Sketch Test Results

Etch A Sketch			
Test Product			
Number of Weeks	Cincinnati Units	Control* Units	Cincinnati Shares (%)

* Control cities included (a) Charleston, South Carolina; (b) Cleveland, Ohio; (c) Indianapolis, Indiana; and (d) Pittsburgh, Pennsylvania.

Etch A Sketch Test Results

Etch A Sketch				
Test Product				
	Number of Weeks	Cincinnati Units	Control* Units	Cincinnati Shares (%)
Pretest 5 Dec 2005–26 Nov 2006	12	162	1526	9.6

* Control cities included (a) Charleston, South Carolina; (b) Cleveland, Ohio; (c) Indianapolis, Indiana; and (d) Pittsburgh, Pennsylvania.

Etch A Sketch Test Results

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Test 27 Nov 2006–16 Dec 2006	3	240	1598	13.1

* Control cities included (a) Charleston, South Carolina; (b) Cleveland, Ohio; (c) Indianapolis, Indiana; and (d) Pittsburgh, Pennsylvania.

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Lift				136.1

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Etch A Sketch Test Results

		Etch A Sketch			Doodle		
		Test Product			Control Product		
	Number of Weeks	Cincinnati Units	Control* Units	Cincinnati Shares (%)	Cincinnati Units	Control Units	Cincinnati Share
Pretest 5 Dec 2005–26 Nov 2006	12	162	1526	9.6	1517	6742	18.4
Test 27 Nov 2006–16 Dec 2006	3	240	1598	13.1	816	3780	17.7
Lift				136.1			96.7

* Control cities included (a) Charleston, South Carolina; (b) Cleveland, Ohio; (c) Indianapolis, Indiana; and (d) Pittsburgh, Pennsylvania.

Etch A Sketch Test Results

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Test 27 Nov 2006–16 Dec 2006	3	240	1598	13.1	816	3780	17.7
Lift				136.1			96.7
Net Lift				39.4%			

* Control cities included (a) Charleston, South Carolina; (b) Cleveland, Ohio; (c) Indianapolis, Indiana; and (d) Pittsburgh, Pennsylvania.

Etch A Sketch

Campaign Finance

Etch A Sketch Test Results

Retail Price	10
Retail Margin	36%
Manufacturer Selling Price	\$6.40
Manufacturer Contribution Margin %	58%
Manufacturer Contribution Margin \$	\$3.71

Etch A Sketch Test Results

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National Budget	5,000,000
Units Break Even	1,346,983
Base Units	3,100,000
Base Units Test Period	1,085,000

Etch A Sketch Test Results

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Manufacturer Contribution Margin \$	\$3.71

National Budget	5,000,000
Units Break Even	1,346,983
Base Units	3,100,000
Base Units Test Period	1,085,000

Break-Even Lift % of Base	124%
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