



*Small Group  
Mathematical  
Modeling*



## Model-Eliciting Activity: Potato Chip Delivery

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## ASK - Understanding the Context of the Problem / System to be Modeled

### Individual Activity

- Read the letter from Malcolm Belmont
- Respond to the “Questions to get you started”





## ASK - Understanding the Context of the Problem / System to be Modeled

### Questions

- How do you think potato chips are made?
- How do you think potato chips get to the store?
- Why would a potato chip factory want to get their potato chips to the store as quickly as possible?
- What is your favorite flavor of potato chip?





## ASK - Understanding the Context of the Problem / System to be Modeled

### Individual Activity

- Refer back to the letter from Malcolm Belmont
- Answer the MEA:
  - Who is the client in this problem?
  - What 3 things does the client want in the letter?
  - What might be difficult about solving this problem for the client?



# IMAGINE / PLAN / CREATE

## a Working Model

### Team Activity

- Using the Sample Data Table for the Shipping Companies, develop a procedure to rank the companies and select the best company.
- Using your procedure, rank the companies from best to worst and select the best shipping company.
- Write a letter to Malcolm Belmont (using template – next slide) including your choice for best shipping company, your ranking, and your procedure.



INSPIRE!



# Letter to Malcolm Template

Date: \_\_\_\_\_

Dear Malcolm Belmont,

Our Team, \_\_\_\_\_, has determined that your company should use the shipping company \_\_\_\_\_.

The order of the shipping companies from best to worst is: 1. \_\_\_\_ 2. \_\_\_\_ 3. \_\_\_\_ 4. \_\_\_\_ 5. \_\_\_\_

Our procedure for ranking the shipping companies is:  
\_\_\_\_\_.

Sincerely,



# IMPROVE a Working Model

## Team Activity

- Using the Sample Data Table for the New Shipping Companies, apply and improve your procedure to rank the companies and select the best company.
- Using your procedure, rank the companies from best to worst and select the best shipping company.
- Write a letter to Malcolm Belmont (using template – next slide) including your choice for best shipping company, your ranking, and your procedure.



INSPIRE!



# Letter to Malcolm Template II

Date: \_\_\_\_\_

Dear Malcolm Belmont,

Our Team, \_\_\_\_\_, has determined that your company should use the shipping company \_\_\_\_\_.

The order of the shipping companies from best to worst is:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_

Our procedure for ranking the shipping companies is \_\_\_\_\_

The changes that we made to our first procedure are \_\_\_\_\_

Sincerely,

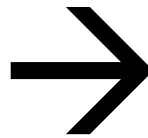




# Reflection on Procedure

## Report Out:

- What is your procedure?
- Did your procedure change when you were given the new data set? If so, why?



INSPIRE!



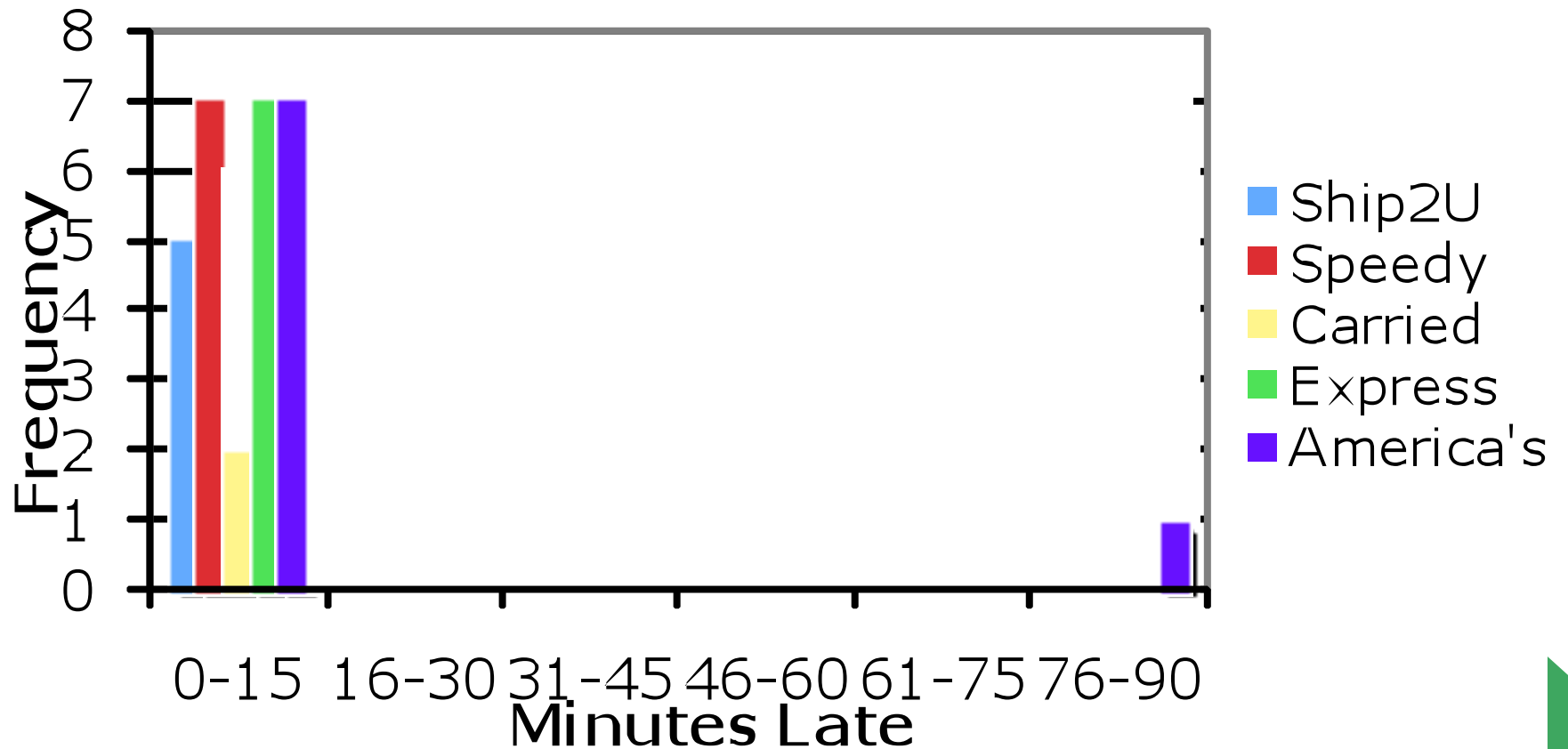
# Reflection on Use of Data

- What did you notice about the data?
- How did you decide what to do with the data?
- Were there any data you wish were provided that weren't and why?



# Data to Consider

## Shipping Companies' Times





# Reflection on Engineering

- How did your team think like engineers to solve this problem?



**INSPIRE!**



# What Will Your Students Learn From This Modeling Activity?



# What is an MEA?





# Contact

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