



*Small Group
Mathematical
Modeling*



Model-Eliciting Activity: Potato Chip Delivery

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PURDUE
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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.



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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,

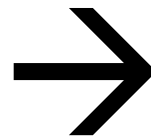




Reflection on Procedure

Report Out:

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



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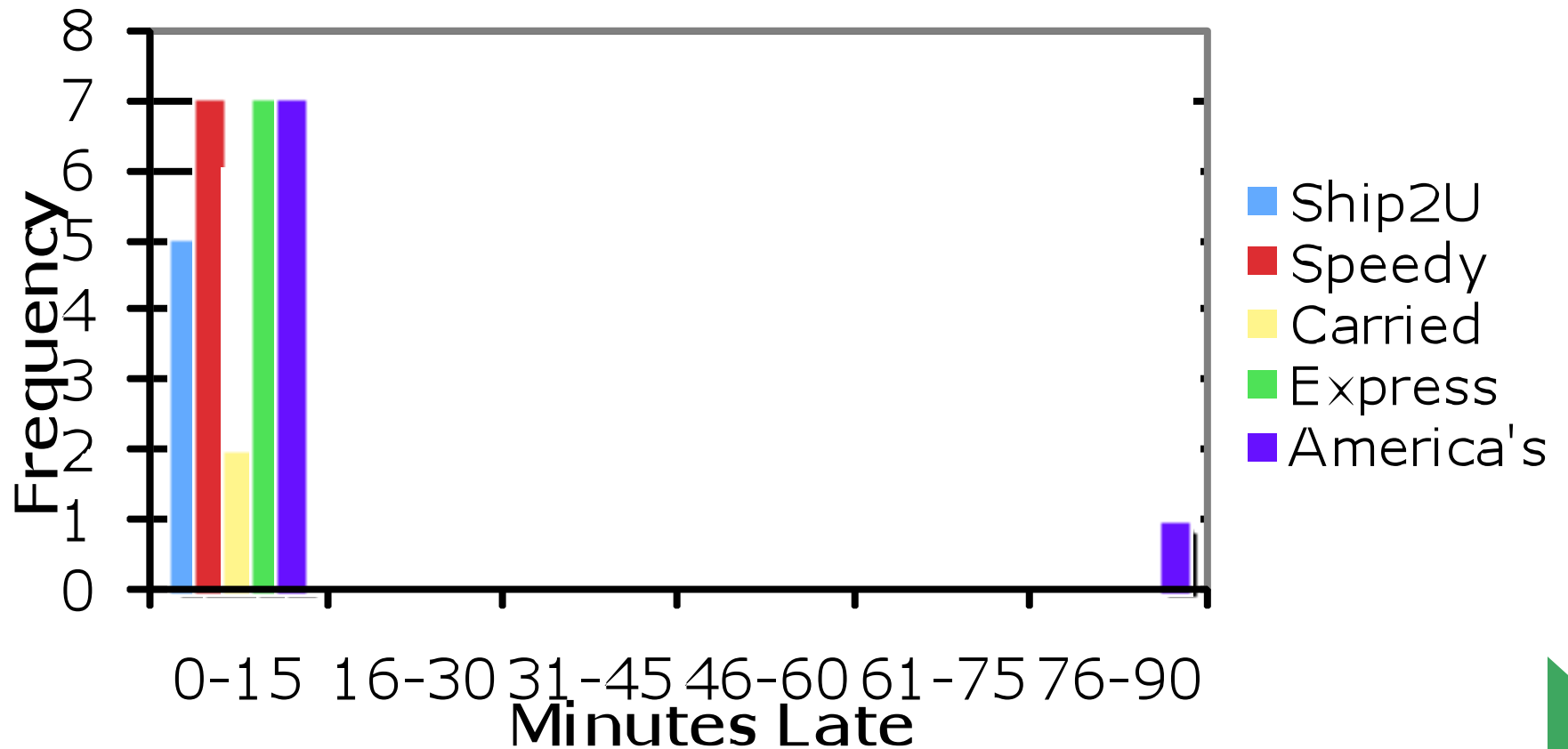
Reflection on Use of Data

- 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?



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What Will Your Students Learn From This Modeling Activity?



What is an MEA?





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