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| **Learning Target(s):**1. Summarize, represent and interpret data.
* I can analyze and interpret graphical displays of data.
* I can use statistics appropriate to the shape of the data distribution to compare center and spread of two or more different data sets.
* I can interpret differences in shape, center and spreads in the context of the data sets, accounting for possible effects of outliers.
 | **Pacing:**1 Day |
| **In previous grades, students have:*** In 7th Grade students draw inferences about populations based upon samples.
* In 6th Grade students develop an understanding about statistical thinking.
* In 4th Grade students develop an understanding of fluency with multi-digit multiplication and dividing to find quotients with multi-digit dividends.
* In 2nd Grade students build fluency with addition and subtraction.
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| **Success Criteria** (to be able to do this, students must learn and understand…):* Understand how to represent the constraints and variables mathematically.
* Understand how to select appropriate mathematical methods to use.
* Understand how to make sensible estimates and assumptions.
* Understand how to investigate a real world statistical problem.
* Understand how to communicate their reasoning clearly.
 | **Performance Task** (students will show they can do this by):* Interpret a situation and represent the constraints and variables mathematically.
* Select appropriate mathematical methods to use.
* Make sensible estimates and assumptions.
* Investigate a real world statistical problem.
* Communicate their reasoning clearly.
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| **Suggested Activity:**The purpose of this task is to allow students to demonstrate an ability to construct boxplots and to use boxplots as the basis for comparing distributions. The solution should directly compare the center, spread, and shape of the two distributions and comment on the high outlier in the northbound data set.Students often fail to include context when comparing distributions. Encourage students to be sure to provide the comparison in context. For example, in this task the comparison should be in terms of car speeds of northbound cars and southbound cars.Also encourage students to actually *compare* northbound and southbound speed distributions, and not just describe each distribution separately.Activity Link: <https://tasks.illustrativemathematics.org/content-standards/tasks/1027>**Re-teaching:**Student Focus Questions and Thinking Guide:* What is known and what is unknown?
* What are you asked to find out?
* What kind of representation will help you tackle this problem?

*Try not to make suggestions that move students towards a particular approach to this task. Instead, ask questions that help students to clarify their thinking and encourage checking:* * Can you set out your work using a table or diagram?
* What would be a good way?
* What assumptions have you made?
* How can you check your solution?
* Do you think there is just one solution?

**Extension:*** What was your strategy for solving this problem?
* What do you know now that you did not know before?
* Would you continue to use this strategy on similar problem types?
* Are there any other approaches you could try?

Peer Reflection/Assessment:* If you are visiting another group, read through their work. If their work makes sense, explain it in your own words. If the work does not make sense to you, ask for clarification.
* If you are staying at your desk, either carefully listen to the explanation and check it matches your own thinking or answer the visiting students’ questions.
* You may then want to consider improving your artifact.
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| **EL Accommodations:*** Reading and writing prompts.
* Provide written instructions.
* Provide a vocabulary list.
* Peer support.
* Discourse strategies.
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| **Vocabulary:*** Frequency Table
* Outlier
* Variance
* Spread
* Box Plot
* Interquartile Range
* Median
* Mean
* Mode
 | **Aligned Resources:*** **Lesson Website:**

<https://tasks.illustrativemathematics.org/content-standards/tasks/1027>* **Student Artifact:**

n/a | **Blooms:** Analyze**DOK:** 3**21st Century Skills:**Learning and Innovation Skills:* Creativity and Innovation
* Critical Thinking and Problem Solving
* Communication
* Collaboration

Information, Media and Technology Skills:* Information Literacy
* Media Literacy
* Technology Skills
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| **Test Item Exemplars:**Open Exploration Activity (Ongoing Formative Assessment).  |