

LessonTitle: Graphs from Stories	Pre 5.6
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Utah State Core Standard and Indicators Pre-algebra Standard 2 Process Standards 1-5

Summary
In this lesson, students interpret a graph which tells the story of a TV dinner from freezer to dinner—the graph relates temperature and time. Then they create a another temperature/time graph about meat purchased, brought home and placed in the freezer. Finally, they create graphs from stories about lemonade sales.

Enduring Understanding Coordinate graphs tell stories about numeric patterns and relationships. By using the graph variables and examining the type of line, direction of slant, slope and placement of the line, one can read the stories about the variables and their relationships.	Essential Questions How can a graph tell a story? What kinds of stories do different coordinate graphs tell?
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Skill Focus <ul style="list-style-type: none">• Interpreting graphs	Vocabulary Focus
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Assessment

Materials

Launch

Explore

Summarize

Apply

Directions: Follow the directions on the worksheet.

Part I below was taken from the [Algebra Utah Core Curriculum Performance Assessment Program](#)

Part II below was taken from Math Teaching in the Middle School, May 2003, Lisa’s Lemonade Stand by Esther M.H. Billings and Tracy Lakotos

Pre 5.6

Graphs from Stories

Part I: TV Dinners

1) This graph shows the change in the temperature of a TV dinner while it is in the freezer, taken out for microwave cooking and served at the table. The food was removed from the freezer at time 0.

For each labeled point on the graph, explain what is happening to the dinner at that time.

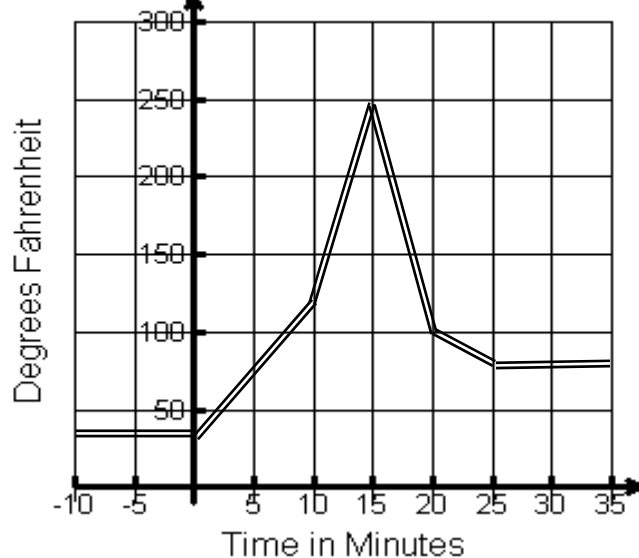
A

B

C

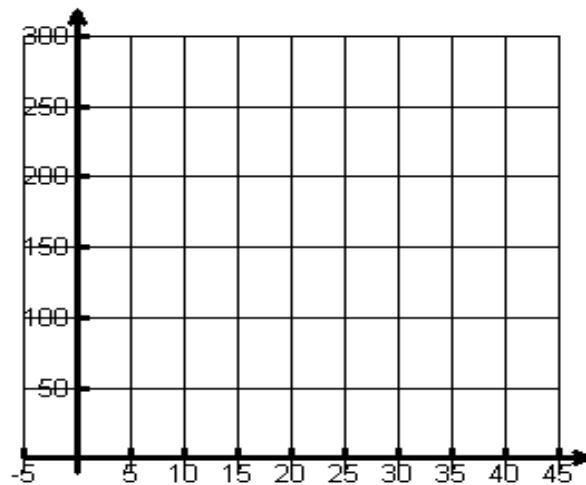
D

Change in Temperature of a TV Dinner



2) People buy fresh meat at the store and put it in the freezer when they come home. On graph paper, draw a pair of axes, sketch the pattern of a graph showing the temperature of a steak as time passes. Begin the graph when the steak is purchased—let the moment the steak is taken from the meat case at the store be time 0. Label the axes properly.

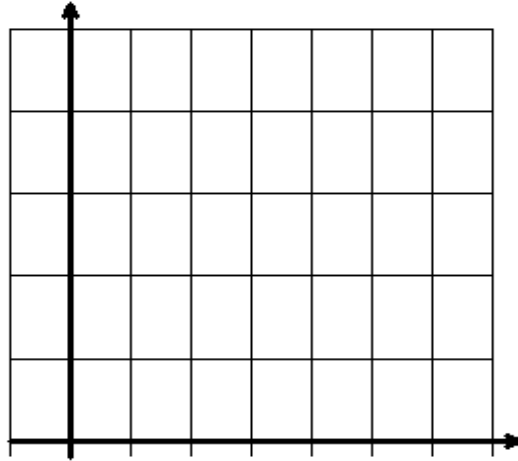
Explain your graph.



Part II: Lisa's Lemonade Stand

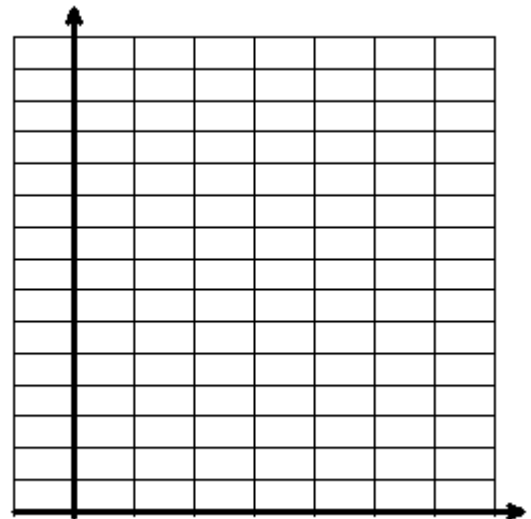
3) Lisa opened her Lemonade Stand on the first day of May. Her average number of glasses sold per day rose at a steady rate between May and June and remained constant until mid-August. The average number of sales per day decreased through late August until the stand closed about mid-September.

Create a graph to show what Lisa's average lemonade sales per day probably looked like between April and October of her first year in business. Be certain to label the graph and the axes and create an appropriate scale.



4) Lisa loves being outdoors and usually reads or does light gardening when not serving her customers. Her stand is usually open between 11:00 AM and 6:00 PM. In the months of June and July Lisa sells around twenty glasses of lemonade on an average weekday, and she sells around forty glasses of lemonade on average on Saturdays and Sundays. Make a possible table and bar graph to show the glasses of lemonade sold from day to day according to Lisa's notes (below). Be sure to label the axes, title the graph, and create an appropriate scale on the axes.

Monday: Cool, rainy weather, combined with the beginning of the workweek, resulted in low sales. **Tuesday:** The rain was gone, and sales were slightly higher than normal. **Wednesday:** The flu bug bit hard, and I was left in bed all day. No sales were made. **Thursday:** Today was a bit cloudy, but very humid. Sales were average. **Friday:** the humid air was cleared by a tremendous storm. I watched from my kitchen window, but my only customers were earthworms escaping their flooded homes. **Saturday:** Beautiful weather and a local charity walk-a-thon made for phenomenal sales—almost double the average. **Sunday:** Because of a family picnic which lasted all afternoon, I only worked for an hour between 11:00AM and 12:00PM. Sales were high for that hour.



Part III. You write a story that could be made into a graph. Think of the things you or your parents or friends do every day. Then make the story and the graph.