

#iheartshopping

Vendor Data on Graphs

CARS, CRAFTS
AND COMMERCE

QUEST 02
ALGEBRA II

STATE FAIR OF TEXAS
CURRICULUM

Shopping: the action known as a woman's event. However, all people, male or female, shop all the time. The State Fair of Texas has hundreds of vendors that come every year selling all types of items. Some of the most outrageous items can be found at the Fair! You can buy a car, eyelashes, massage chairs, art, cookware (often demonstrated), cell phones, Egyptian themed items, hearing aids, and the list goes on and on. So, let's go to the Fair and investigate the stuff that's for sale!



During this Cars, Crafts, & Commerce Quest, you will:

- ★ Collect data at the Texas State Fair to be represented mathematically on a graph
- ★ Use a graph to determine best items for vendors to sell to maximize profit
- ★ Design your own booth and product based on your observations of what products "move"
- ★ Create a PowerPoint presentation of your interviews with vendors



Standards

- ★ Math (Algebra II) TEKS: A2.2.A; A2.7.I
- ★ Art TEKS: Art I: 1A, 1C, 2B, 4A; Art II: 1A, 1C, 2B
- ★ ELAR TEKS: E3(15)(D), E3(25), E3(26)
- ★ Career Development TEKS: PS.1.G; PS.1.G; PS.1.H; PS.2.B

Source: <http://www.bluelinecaricature.com/>
Blue Line sells their artwork at the Fair!



Before You Go – 10 min prep time, 30 min teaching time

- ★ Collect 10 to 15 different graphs (all types of functions included)
- ★ Use those graphs to teach the attributes of a function
 1. Domain
 2. Range
 3. x and y intercepts pertaining to the scenario of the graph
 4. Continuous vs. discrete data
 5. Increases and decreases on a graph
 6. When there is no change
- ★ Have students go to <http://bigtex.com/fun/shopping/> to pick 6 vendors
- ★ Email those vendors asking for help with a school assignment
- ★ Narrow down to 3 vendors (based on responses) and create 3 separate tables
- ★ x values represent hour of the day and y values represent volume of product sold

STATE FAIR MAP



- ★**For English portion:** From the list of vendors that will be at the Fair, you and a partner will pick one small business vendor and one large business vendor to interview.
- o Email the vendors and ask them if they would be willing to meet with you for about 20 minutes to help with a school project.
 - o Before leaving for the Fair, make a list of questions to ask your interviewees. You need to have at least 15 questions to ask that require more than a yes/no answer.
 - o You need enough information for a PowerPoint project so make sure your questions require the vendors to answer with more than one word.
 - o The questions need to relate to the business: running the business, why they are at the Fair, how the company wants to grow, etc.)



Invitation

- ★There are so many products present and sold at the State Fair of Texas. Let's go and find some interesting things never seen before and get some data to complete 3 tables.



Optional Materials to Bring

- ★Pen/Pencil
- ★Paper with your tables
- ★Technology device



Plan Your Route

- ★Know which vendors you're going to see, and plan ahead, if you can, so you know which locations you need to find. If you don't know, try these:
- ★Grand Place
 - ★Coliseum Market Place
 - ★Gateway Pavilion



While You're There

The objective of your visit is to find out how much product some vendors sell in a day.

- ★**#iheartshopping:** Collect data on product volume sold from each vendor.
- o Get the initial volume of 1 item per vendor that is set out
 - o Collect data from at least 3 different vendors on 3 different items
 - o ONE HOUR LATER: Go back to each vendor and record how much product they have sold
 - o Again, go back an hour later and record what's left
 - o Make 2 more visits to the vendors 1 hour apart for each
 - o Record your results in your phone or in the table (next page):

State Fair Vendor Data Table					
Vendor #1		Vendor #2		Vendor #3	
Product:		Product:		Product:	
Time of Visit	Product Volume	Time of Visit	Product Volume	Time of Visit	Product Volume
1st:		1st:		1st:	
2nd:		2nd:		2nd:	
3rd:		3rd:		3rd:	
4th:		4th:		4th:	



After the Fair – 45 min project

When you return to class following your State Fair visit, you will decide whether this is a sound product to sell:

- ★ Use your data to create 3 separate graphs
- ★ Title each graph and label what the x and y axis represent
- ★ Answer the questions below for EACH of the 3 graphs
 1. What is the initial volume?
 2. Is your data continuous or discrete?
 3. What is the domain?
 4. What is the range?
 5. During which time period was the MOST product sold?
 6. Do you have any increases in your data? Why or why not?
 7. Would you advise the vendor to sell this product next year? Why or why not?

★ **WHAT'S MISSING? (ART):** As you walk through the Fair, pay attention to how the various booths are designed, and what they do to try and catch the attention of fairgoers.

- o Which ones have the longest lines?
- o Which ones appear to be selling the most product?
- o What, in your opinion, is missing from the available products at the Fair?
- o Take notes to bring back for your art project.

★ **INTERVIEW WITH A VENDOR:** Meet with the vendors you set up to see.

- o Interview one of the businesses while your partner interviews the other.
- o Take good notes! You'll need them to complete your PowerPoint in class.
- o Get a couple of good pictures of the vendors and their products before you leave.



ART PORTION

While You're There

See the main portion of the Quest for instructions.

When You Return

Now that you have had time to investigate the various vendors at the State Fair of Texas, it's time to design your own booth/product!

- ★First, decide what it is that you are going to sell. This will be very important in deciding how to go about designing your booth.
- ★Also, think about your target age group. In most cases, things that catch the attention of young 20-somethings is different from what someone from an older generation might find appealing, and that's ok!
- ★In design, simplicity can be everything.
 - o If it's too complicated for the eye, many times people will walk on by.
 - o However, you don't want to bore your consumer.
 - o There's a thin line to straddle, so careful planning is important.
- ★Create both a three dimensional example of your product as well as a drawing of your proposed booth.
- ★When you present your design to your peers, pitch your product as though you were selling it at the Fair.
 - o Then, show your booth design and discuss why you made the design choices that you did.
 - o Do a quick survey to see who would be interested in your product and why.



ENGLISH PORTION

Both small and large businesses are represented at the Fair, and the people representing those businesses are as diverse as the businesses themselves.

After you have conducted your interviews, you will return to class and work on a PowerPoint presentation with your partner. Your presentation must contain:

1. At least 20 slides (including introduction and conclusion slides)
2. Pictures of the two vendors
3. A slide with the list of questions that you asked
4. Slides with the vendor answers