

OAK GROVE CITY HIGH SCHOOL

Home of the Wildcats

Dr. Stanley Campbell, Principal

TO: Student Council, Oak Grove City High School via Bart Stravinsky, Student Council President

FROM: Dr. Stanley Campbell, Principal, Oak Grove City High School

REGARDING: Food Court in the New Student Center

As you know, the School Board unanimously voted last night to allow the Student Council to select the restaurants for the Food Court that will be housed in our new student center. We advertised widely throughout the city inviting restaurants to apply for a space in the Food Court. Twelve restaurants have applied for space. Unfortunately, we have space for only five restaurants. The School Board has set the following parameters to help you make your decision as to which five restaurants should be allowed space in the Food Court.

- 1) Restaurants will share a percentage of their profits from food sold at the Food Court with the Student Council. The Student Council will be allowed to spend this money in any way they see fit subject to the guidelines set by the Student Council by-laws. Since this revenue is the only money the Student Council has in its budget, your first task might be to determine which restaurants will yield the most profit. The more revenue you generate from the Food Court, the more clubs, student activities, and social events you can afford to fund.
- 2) Each of the twelve restaurants has agreed to pay the Student Council 20% of its profits for space in the Food Court. Should the restaurant not make a profit, no money will be paid to the Student Council. The less money paid to the Student Council, the more you will have to cancel, or charge fees, for events you sponsor.
- 3) There will be no set-up fees for the restaurants and each restaurant requires the same space allocation.
- 4) You are free to use whatever criteria you wish to select the five restaurants that will ultimately operate in our Food Court. However, keep in mind that you are, as members of the Student Council, representatives of all the interests in the school. You need to take into account the needs of all the students when making your restaurant selections. This is particularly important since we have a closed campus and students must buy their lunch at our Food Court.
- 5) The President of our Board is an economist. So, remember that regardless of your decision, the rationale must be grounded in sound economic thinking.
- 6) Your selection will be in effect for four years as each restaurant you choose will be given a four year contract.
- 7) You must justify your selections to the School Board at its meeting in one week.
- 8) The School Board will vote on whether to approve your recommendation. They must reach a consensus on your recommendation, which means that the Board members must all agree that the plan is acceptable. Their vote will be based upon how compelling your presentation is. You must be able to justify your choice of restaurants based upon whether they meet the needs of students and are profitable. If the School Board does not accept your proposal and its justification, they will ask you to return the following week with a revised proposal. Your visual presentation, with posters and graphs, must be given to the Board's secretary two days before the meeting for its inclusion in the meeting agenda.

Restaurant Bidders

1. **Taco Villa:** Taco Villa is a fast-food franchise that will serve meat-filled tacos at the Oak Grove High School Food Court. Outlets are located in virtually every mall in the United States. High school students always enjoy a quick, cheap meal at Taco Villa.
2. **The Wildcat's Den:** Our student-run enterprise offers good food at reasonable prices. By purchasing our processed meat and cheese submarine sandwiches, you will be helping your fellow students learn about running a restaurant. Profits from the Wildcat's Den will go back to the School-to-Work program and will help support additional course offerings.
3. **Veggie Vittles:** Veggie Vittles bases its cooking in the philosophy of eating low on the food chain. Its menu is limited to whole grains, raw fruits and vegetables, and no animal products. Veggie Vittles will serve a veggie sandwich at the Oak Grove High School Food Court. Your good eating habits are our major concern.
4. **Home Economics Kitchen:** The Home Economics Kitchen offers good food at low prices. To keep our prices low we work closely with the Department of Agriculture's County Extension Office and purchase our cans of meat and bags of potatoes in bulk. Although our food may not be as taste tempting as our fast-food competitors, our nutritionally balanced meals are cheap and approved by the FDA. Profits from the meat and potatoes entree sold at the Food Court will support students in the Home Economics program.
5. **Fleur de Lys:** Fleur de Lys' nationally acclaimed chef, Pierre Gerard, serves traditional Northern French cuisine. Enjoy Pierre's famous crab crepe at the Food Court. Add a touch of elegance to your high school experience.
6. **Bubba's Steak House:** This popular steak house serves generous portions of prime rib, T-bone and Porter House steaks. Our Montana raised, grass fed beef packs more protein per pound than any other lunch around. When you've been to Bubba's, you've been well fed.
7. **Sally's Soups and Salads:** Healthy, low calorie soups and salads are Sally's specialties. We will offer a wide variety of vegetable, fruit, and pasta salads at the Food Court. Low fat does not have to be low taste.
8. **Bennie's:** Bennie's has attracted customers all across the United States by offering great food at great prices. Bennie's is known as a popular high school hangout serving its signature hamburgers in a friendly, informal setting. Bring Bennie's hamburgers to the high school Food Court for that "at home" feeling.
9. **Hunan Wok:** Hunan Wok has been serving fast food for over thirty years. Its lemon chicken and pork chow mein are favorites among teenagers. Oak Grove students will love the low prices and flavorful choices at the Hunan Wok.
10. **The Borsch Palace:** Beets, cabbage, and vinegar in a beef broth never tasted so good. Our borsch won the Cleveland Founders Day Cook Off three years running. Eat like a czar at the Borsch Palace.
11. **The Pizza Place:** The Pizza Place offers family-style, Italian fare, lots of food, and cheap prices. Every teen will love the spaghetti in a meat sauce served at the Food Court by the Pizza Place.
12. **The Roastery:** Enjoy chicken that has been spit-roasted over a hickory and apple wood fire. Because gourmet magazines are raving about our special cooking techniques, we know that our half chicken on a bed of rice will be a tasty meal for the discerning palate.

Table 1: Demand for Entrees at Oak Grove High School

Restaurant	Taco Villa	Wildcat's Den	Veggie Vittles	Home Ec Kitchen	Fleur de Lys	Bubba's	Sally's	Bennie's	Hunan Wok	Borsch Palace	Pizza Place	Roastery
Entree	meat tacos	sub sandwich	veggie sandwich	meat and potatoes	crab crepe	steak	salad	hamburger	lemon chicken	borsch	spaghetti	chicken
Price	Quantity Demanded Daily:											
\$10.00	0	0	0	0	1	1	0	0	0	0	0	3
\$9.50	0	0	0	0	2	1	0	0	0	0	0	3
\$9.00	0	0	0	0	3	1	0	0	0	0	0	3
\$8.50	0	0	0	0	4	1	0	0	0	0	0	3
\$8.00	0	0	0	0	5	1	0	0	0	0	0	4
\$7.50	0	0	0	0	6	1	0	0	0	0	0	5
\$7.00	0	0	0	0	7	1	0	0	0	0	0	6
\$6.50	0	0	0	0	8	3	0	0	0	0	0	7
\$6.00	0	0	0	0	9	4	0	0	0	0	0	8
\$5.50	0	0	0	0	10	5	0	3	0	0	0	10
\$5.00	0	0	0	0	11	10	0	10	5	0	3	12
\$4.50	0	0	4	0	13	15	5	25	15	0	7	15
\$4.00	10	0	7	0	15	20	10	40	25	0	25	20
\$3.50	20	5	10	0	18	30	14	55	45	0	35	30
\$3.00	35	10	15	0	25	45	18	70	55	0	50	60
\$2.50	50	20	17	0	30	60	25	100	75	0	80	100
\$2.00	100	37	20	10	55	100	35	150	150	0	100	150
\$1.50	150	63	25	15	70	200	84	188	250	0	140	275
\$1.00	200	75	30	25	80	250	150	225	300	5	200	425
\$0.50	300	100	30	25	120	350	200	350	350	10	250	500

Table 2: Cost Data

Restaurant	Taco Villa	Wildcat's Den	Veggie Vittles	Home Ec Kitchen	Fleur de Lys	Bubba's	Sally's	Bennie's	Hunan Wok	Borsch Palace	Pizza Place	Roastery	
Entree	meat tacos	sub sandwich	veggie sandwich	meat and potatoes	crab crepe	steak	salad	hamburger	lemon chicken	borsch	spaghetti	chicken	
Cost Item	Unit												
Variable Costs													
labor	per serving	\$0.20	\$0.05	\$0.20	\$0.10	\$0.60	\$0.30	\$0.40	\$0.20	\$0.20	\$0.20	\$0.40	
ingredients	per serving	\$0.20	\$0.75	\$0.50	\$0.025	\$2.80	\$2.20	\$0.75	\$1.00	\$0.20	\$0.10	\$0.75	\$2.15
Fixed Costs													
stall rental	daily	\$25.00	\$25.00	\$25.00	0	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	
equipment rental	daily	\$5.00	\$5.00	\$5.00	0	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	

Total Revenue

Restaurant	Taco Villa	Wildcat's Den	Veggie Vittles	Home Ec Kitchen	Fleur de Lys	Bubbab's	Sally's	Bennie's	Hunan Wok	Borsch Palace	Pizza Place	Roastery
Entree	meat tacos	sub sandwich	veggie sandwich	meat and potatoes	crab crepe	steak	salad	hamburger	lemon chicken	borsch	spaghetti	chicken
Price												
	Total Revenue at Each Price:											
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\$8.00												
\$7.50												
\$7.00												
\$6.50												
\$6.00												
\$5.50												
\$5.00												
\$4.50												
\$4.00												
\$3.50												
\$3.00												
\$2.50												
\$2.00												
\$1.50												
\$1.00												
\$0.50												

Total Revenue = Price X Quantity Sold at that price (All information is contained in Table 1 in Appendix IV.)

Daily Costs

Restaurant	Taco Villa	Wildcat's Den	Veggie Vittles	Home Ec Kitchen	Fleur de Lys	Bubba's	Sally's	Bennie's	Hunan Wok	Borsch Palace	Pizza Place	Roastery
Entree	meat tacos	sub sandwich	veggie sandwich	meat and potatoes	crab crepe	steak	salad	hamburger	lemon chicken	borsch	spaghetti	chicken
Price												
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	\$3.50											
	\$3.00											
	\$2.50											
	\$2.00											
	\$1.50											
	\$1.00											
	\$0.50											

Total Daily Costs at Each Price:

Daily Costs are computed by multiplying the amount sold at each price (for a given restaurant)—information located in Table 1 in Appendix IV—by the variable costs (labor and ingredients costs) and adding it to the fixed cost (stall and equipment rental). The cost information for each restaurant is located in Table 2 in Appendix IV.

Daily Profit

	Restaurant	Taco Villa	Wildcat's Den	Veggie Vittles	Home Ec Kitchen	Fleur de Lys	Bubb's	Sally's	Bennie's	Hunan Wok	Borsch Palace	Pizza Place	Roastery
Entree	meat tacos	sub sandwich	veggie sandwich	meat and potatoes	crab crepe	steak	salad	hamburger	lemon chicken	borsch	spaghetti	chicken	
Price													
	Daily Profit at Each Price:												
\$10.00													
\$9.50													
\$9.00													
\$8.50													
\$8.00													
\$7.50													
\$7.00													
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\$3.50													
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\$2.50													
\$2.00													
\$1.50													
\$1.00													
\$0.50													

Profit is computed by subtracting total cost from total revenue at each price for each restaurant.

TRANSCRIPT OF THE AUDIO TAPE

1. FROM THE PRINCIPAL TO BART AND THE STUDENT COUNCIL

Bart, I've received some voice mail messages about the new Food Court and I'd like you to share them with the Student Council. They are from people who are concerned about the restaurants you are considering for the Food Court. These are important people in our community so I know you'll pay close attention to them.

2. FROM RITA PRICE, EXECUTIVE DIRECTOR OF THE GROVE AREA SCHOOL-TO-WORK PROGRAM

Dr. Campbell, this is Rita Price from the Grove Area School-to-Work Program. I've been thinking about the Board's decision to let the Student Council pick the restaurants for our new Food Court. I think that is a big responsibility for students. That kind of hands-on decision making is what we try to advance in our school-to-work classes. So, I think that's good. But I hope your Student Council knows that our own Wildcat's Den is one of the restaurants proposed for the new site. Wildcat's Den, if it gets into the Food Court, will be owned and operated by our students here at Oak Grove High School. The restaurant will be operated through our school-to-work restaurant class. Kids who take the restaurant class will get hands-on experience running Wildcat's Den. They'll learn how to prepare food, order inventory, set prices and serve the public. Currently, 25% of all Oak Grove students are involved in our career classes, so this opportunity would help many of them. Many of these kids can move into jobs in hotels and restaurants once they have experience, and the Wildcat's Den will give them excellent work-related experience. Please remind the Student Council for me that the Wildcat's Den will be a student operated restaurant, for the students and by the students.

3. FROM EDITH CASH, PTA PRESIDENT

At our last PTA meeting you mentioned that the Student Council was picking the restaurants for the new Food Court. Wow! I just looked at the list of choices. The quality of food served by some of these bidders is just awful. Meat-filled tacos? Fast food hamburgers? Spaghetti with meat sauce? Where are the fresh ingredients? I really don't think these are healthy foods for growing young people. We're parents and we're worried about the health of our children. And quite frankly, many of the PTA members question the ability of teenagers to make wise decisions about what to eat for lunch. We talked about this at length at the recent PTA meeting and we think that limiting the options students have to only healthy food would encourage our kids to eat well when we are not there to influence their choices. Please let the Student Council know that the PTA parents don't want to see any fast food or franchised restaurants in our student Food Court.

4. *FROM THE GALLOPING GOURMETS CLUB*

Mr. Campbell, the Galloping Gourmets Club just wanted you to know that we were extremely happy to see that two outstanding restaurants (Fleur de Lys and the Roastery) were on the list of bidders for Food Court. We take eating seriously at the Gourmets Club and we are tired of cardboard hamburgers and fat-filled tacos. Just because we're teenagers doesn't mean we want tasteless garbage as the mainstay of our diet. If money is an issue for bringing in decent restaurants, no problem. Our parents will gladly give us more allowance so we can eat appetizing food. And please remind the Student Council that our parents are very active members of the Booster Club. They do a lot for this school. Students who play in the band, take drama, and receive college financial aid - should know that funds are provided by the Boosters. As a matter of fact, because of the good will and hard work of our parents, the Student Council members will be attending the national leadership conference - a trip sponsored by the Booster Club. Please remind the Student Council to keep the Galloping Gourmets Club's gastronomical interests in mind when making their selections.

5. *FROM VITAL VEGETARIANS*

Hi Dr. Campbell. I am calling in regards to the new restaurants that will be going into the school's Food Court. Vital Vegetarians are members of this student body and we are committed to preserving the planet and avoiding needless animal sacrifice. I don't want to preach to you, but if you have ever befriended a helpless animal and then watched it be slaughtered, you will know where we are coming from. We want to see a Food Court that respects animals, one with vegetarian meals that emphasize grains and legumes. These foods are nutritious and they reduce the chance for animal extinction. The Food Court needs a vegetarian alternative. Vegetarian students are entitled, just like any other student, to a place on campus where they can eat lunch. We want to encourage the Student Council to include Veggie Vittles as a restaurant in the new Food Court.

As you may know, both Taco Villa and Hunan Wok are being boycotted by people concerned about the environment. These restaurants are responsible for the destruction of the rain forest. They are cutting down the rain forest at an alarming rate in order to graze cattle and they are using the trees they cut to produce their throw-away food containers. As Oak Grove High School students and members of the Vital Vegetarians, we are concerned about having such environmentally irresponsible restaurants in our Food Court. Please pass our concerns on to the Student Council.

6. FROM MS. LOER, SCHOOL COUNSELOR

Dr. Campbell this is Ms. Loer from the counseling office. It has been brought to my attention by a number of parents and community folks, who want to remain nameless at this time, that prices of food sold in our new Food Court may be out of reach for many of our students. Twenty five percent of our students are considered low income. These students aren't likely to bring up the fact that they can't afford the food but it is true. It's going to cause some of these kids to go hungry since they are not allowed to go off campus during school hours. Students shouldn't be forced to go hungry and certainly students shouldn't be singled out and stigmatized because they can't afford our food. I think that would be an unacceptable situation. I hope that our Student Council understands that the Home Economics Kitchen is the only place these kids can afford to eat. Student Council representatives took an oath to serve all students and they have a responsibility to consider the needs of lower income kids.

7. FROM THE PRINCIPAL REGARDING MS. STRAVINSKY

This message is for Bart and the Student Council members from Dr. Campbell. As you know the Borsch Palace, one of the restaurants bidding for space in our new Food Court, is owned by Tanya Stravinsky. Ms. Stravinsky donated the money used by the School District to build our new Student Center. Those wonderful facilities - the game room, study hall, Food Court, the computer lab, and the theater - would not be yours to enjoy had it not been for Ms. Stravinsky. Now, in the last conversation I had with her, she said that she would love to stay in contact with this school by cooking food from her native land. Money is not the issue. She doesn't care if the restaurant makes money. She would just like to be a part of the project she helped build. We are hoping Ms. Stravinsky will contribute heavily to the construction of the swimming pool and tennis courts that we have planned for the Student Center. So, I'm asking you to keep that in mind when you are making your decisions.

OAK GROVE CITY HIGH SCHOOL

Home of the Wildcats

Board of Directors

Dr. Leslie Tucker, Board President

TO: Student Council, Oak Grove City High School via Bart Stravinsky,
Student Council President

FROM: Mr. Eric Wong, Board Secretary

REGARDING: Food Court Restaurant Selections - Presentation to the Board

At the upcoming Board meeting you will be giving a presentation to the Board discussing the restaurants you think should be included in the new Food Court. You will be giving your presentation to the following Board members:

Dr. Leslie Tucker, an economist, is President of the Board of the Oak Grove City Schools. As an economist, Dr. Tucker is concerned about maintaining profitable restaurants in the Food Court so that the students are able to afford their clubs, student activities, and social events.

Mr. John Cash, husband of our PTA president, Ms. Edith Cash. Like his wife, Mr. Cash is concerned about the health and well-being of Oak Grove City High School students. He wants to see healthy food served in the Food Court and he wants Oak Grove students to have the opportunity to learn valuable job skills through running and operating a restaurant in the Food Court. Mr. Cash is also concerned about low-income students who cannot afford high priced lunches.

Mr. John Muir, is a staunch environmentalist. His concern is for the right of vegetarian students to have a non-meat source of food on campus. He is also boycotting Hunan Wok and Taco Villa because of their dismal environmental record. As a no-growth advocate, Mr. Muir does not consider building the tennis courts or the pool a high priority.

Ms. Tanya Stravinsky is a non-voting, honorary member of the School Board. As one of the school's major contributors, she is interested in the long term well-being of the school, including the building of the tennis courts and pool. She has a special interest in cooking from her homeland and in gourmet food from around the world. She supports the Galloping Gourmet Club's desire to have quality food on campus.

The three voting members of the Board, Dr. Tucker, Mr. Cash, and Mr. Muir must reach a consensus on your plan. They must all agree that the plan is acceptable.

Please remember that your presentation is to be five minutes long. The Board will not allow you to exceed your time limit. Make sure that your visual presentation, with posters and graphs, is delivered to me two days before the meeting so that your materials can be included in the meeting agenda.



Appendix III: Concept Definitions

The curriculum was designed to teach the following concepts:

Concepts in **boldface** are defined below. Concepts in *italics* are defined elsewhere in the definition list.

Competing Needs: Because resources are *scarce*, the redistribution of goods often means that one group (or individual) often gains only at another's expense. That is, to make someone better off, someone else must be made worse off because individuals are competing for the same resources.

Costs: (of production): The measure of what has to be given up in order to achieve or produce something. Total costs include both *opportunity costs*, or the cost of alternative uses of resources, and *direct costs*, or total money outlays.

Demand: Purchases of a good or service that people are actually able and willing to make, given price and choices available to them. The "**law of demand**" states that there is a negative (or inverse) relationship between price and quantity demanded. That is, as price increases (decreases) the amount of a good purchased decreases (increases). Consumers' demand is determined by their tastes, income, and price of other goods. The **demand schedule** is a table showing the quantities of a good that will be purchased at various prices. The **demand curve** is a curve that relates the price of a product and the quantity of the product that individuals are able and willing to purchase. **Aggregate Demand** is the total demand for goods and services in the economy by households (for consumer goods), by firms and government (for investment goods), and by other countries (exports).

Economic Profit: A firm's *total revenue* (price times number of items sold) minus the total *cost* of production, which includes both *direct* and *opportunity costs*. Negative *economic profits* are called losses. Economic profits indicate that a firm is generating revenue above and beyond the next best use of its productive resources.

Equilibrium Price: The price at which the quantity of the product that buyers are able and willing to purchase exactly equals the quantity of the product that sellers will sell.

Equilibrium Quantity: The quantity at which the amount that buyers are able and willing to purchase exactly equals the amount of the product that sellers will sell. This occurs at the *equilibrium price*.

Opportunity Costs: The real sacrifice involved in achieving something. The value of the next best opportunity that would have to be foregone in order to achieve a particular thing.

Profit: *Total revenues* minus total *direct costs*. This is distinguished from **economic profit** which is the residual of *total revenue* minus *total costs* when a normal rate of return on investment is included as a part of cost.

Scarcity: A condition where less of something exists than people would like if the good had no cost. Scarcity arises because resources are limited and cannot accommodate all of our unlimited wants.

Total Cost: The sum of *fixed cost* and *variable cost*.

Total Revenue: The total amount of money brought in by a firm. This is computed by multiplying the unit price of the product times the number of units purchased.

Tradeoff: An exchange relationship denoting how much of one good (or resource) is needed to get another good (or resource).

Teachers can also demonstrate the following concepts using this lesson:

Direct Costs: The accountant's definition of cost. The total money expenditure or outlays necessary to achieve a resource or good/service.

Elasticity: The measure of responsiveness of one variable to changes in another. For example, the **price elasticity of demand** is the change in the quantity demanded of a good as a result of a change in its price.

Fixed Costs: *Costs* to the firm that do not vary with output. These *costs* are borne even though no output is produced and are often referred to as "overhead."

Indirect Costs: See *Opportunity Cost*.

Supply: The amount of a good or service that firms are prepared to sell at a given price. The firm determines how much to supply using its marginal cost curve. **Industry supply** is the summation of an individual firm's marginal cost curves (in a constant cost industry). The **supply schedule** is a table showing the amount of a product that will be produced at a given price. The **supply curve** relates the quantity of a good supplied by a firm (or market) at each price. The **law of supply** dictates that the curve is upsloping, indicating that more will be produced as the price of the good increases. **Aggregate Supply** is the total amount of goods and services available for consumption and consists of both domestically produced goods and services and imports.

Variable Costs: *Costs* that vary with the amount of production.

DEMAND

Table 1, which shows and the comparison of the demand curves for different restaurants, can be used to illustrate movement along the demand curve, shifts in curves, and computations of elasticity. For example, you could:

- Draw a **demand schedule** for all (or selected) restaurants from Table 1. (See discussion below). Discuss the relationship between price and *quantity demanded* that occurs as one moves up and down an individual curve.
- Discuss **changes in demand** that might occur with differing student demographics. (See description below). For example, if the student body is “rich,” the demand for Fleur de Lys or the Roastery might be greater. The demand for Taco Villa might be reduced should students discover that the cornmeal in taco shells is carcinogenic.
- Compute **elasticities**. This will show students how consumers respond to price changes at each initial price. This should be done only for advanced students or classes. Simply pick two prices and associated quantities for a particular restaurant and plug into the following formula for an arc elasticity:

$$\frac{\frac{Q_1 - Q_2}{(Q_1 + Q_2) / 2}}{\frac{P_1 - P_2}{(P_1 + P_2) / 2}}$$

where:

P_1 = the first price selected

P_2 = the second price selected

Q_2 = the quantity associated with the second price

Q_1 = the quantity associated with the first price

Changes in Quantity Demanded

A fundamental characteristic of demand is the law of demand: *all else being equal, as price falls, the **quantity demanded** increases*. There is an inverse relationship between price and quantity demanded, and this is shown for each restaurant in Table 1. Because the total amount of money brought into the firm (i.e. total revenue) is the number sold (quantity) times the price, the law of demand means that total revenue will change as price changes. This is shown for any particular restaurant in the Total Revenue computations on Table 3.

Changes in Demand

The basic determinants of demand are:

- tastes or preferences of consumers
- consumers' income
- prices of related goods and services (complements and substitutes)
- expectations about future prices and income
- (for market demand) number of consumers

Each of these determinants can be illustrated using Table 1 and the audio tapes. The demand for food in each restaurant (at any given price) varies. At a price of \$.50, few students demand borsch but 500 kids want chicken. This is because of taste and preferences. Income as a determinant of demand can also be illustrated. For example, few students will purchase food at any restaurant when meals are priced at \$10. This is due to the lack of "ability" to pay. The price and availability of other meals (substitutes) can also be shown in this table. For example, the demand for Hunan Wok might be greater if Taco Villa were not operating or if Taco Villa charged \$5.00 for a taco. Expectations also impact demand. For example, demand for Hunan Wok might be greater today if students knew that the prices were going to double tomorrow. Finally, demand will always increase as the number of students in the market increase. For example, Bennie's could sell many more hamburgers at a high school with 3,000 students than at one with 760 students.

On the audio tape, the school counselor tells of kids' ability to afford food (income), while other callers show the varying tastes for food among students.

COSTS AND SUPPLY

Costs

The data on quantity sold at each price (Table 1) are combined with the per unit costs of each firm's production to derive a firm's total cost curve. Just as a firm's total revenue is associated with the demand curve, the firm's total cost is associated with the supply curve.

In the short run, costs are either fixed or variable. Because **fixed costs** do not vary with output, they are associated with the very existence of the firm and must be paid even when the firm is not producing. In our example, the firm must pay the rental to the Food Court and for the equipment (because of lease agreements) and these costs will not vary with production. Other examples include interest on a firm's bonded indebtedness, insurance premiums, and the salaries of top management and key personnel. Fixed costs cannot be avoided (in the short run) or controlled by the firm.

Variable costs, which change with production, increase with each one-unit increase in production. Thus, such costs continue to rise as output increases. In our example, variable costs include labor and ingredient costs. It is fairly clear that as one sells more food one must buy more ingredients and hire more labor (to cook it and serve it). Other examples of variable costs may include fuel, power, transportation, and other services. Variable costs are those that can be controlled by the firm by controlling the amount produced.

A firm's **total cost** of producing is the summation of its fixed and variable costs.

Supply

Because the market, and not the firm, determines revenue in the competitive market, the amount produced at each price (its supply) is determined by each firm's cost of production. This is an important relationship for students to recognize. Thus, the firm's "supply" curve is simply its (marginal) cost curve. Assuming factor costs do not vary with the number of firms in an industry (constant cost industry), the market supply curve is simply the summation of each firm's supply curve. The cost factors that determine a firm's "supply" curve, also determine the industry supply curve.

PROFIT

Given how much will be sold at each price (i.e. demand for a firm's product), the firm is faced with three related questions: 1) Should it produce? 2) If so, how much of a product should be produced (and at what price, unless the firm is in a *perfectly* competitive market)? and, 3) What profit or loss will be realized?

1. A firm should produce if it makes a profit. This is obvious. However, if it is not making a profit, it should still operate in the short run as long as its loss is less than its fixed costs. In this case, it loses less money by operating because firms must pay fixed costs even if they shut down. In our example, firms also might operate at a loss because of noneconomic motives (e.g. Tanya Stravinsky). Alternatively, firms might operate at a loss today because they expect to gain customers in the future (i.e. long-run profit maximization). For example, Fleur de Lys might be willing to operate at a loss in the Food Court because it expects to capture young customers, who will develop a taste for Fleur de Lys' food.
2. A firm will set price at the amount where profit is greatest. For example, Veggie Vittles will price at \$3.00, the Home Economics Kitchen will price at \$1.00, and Taco Villa will price at \$1.50. [Note: the maximum profits (or minimum losses) that each restaurant can make are in bold face on Table 5 in Appendix IV]. The quantity sold at the profit maximizing price is determined from Table 1 in Appendix IV (Demand for Entrees), which shows how much students will purchase at the profit maximizing price. At \$3.00, Veggie Vittles will sell 15 veggie sandwiches, the Home Economics Kitchen will sell 25 meat and potato meals, and Taco Villa will sell 150 tacos.
3. Profit or loss realized at each price is shown on Table 5 in Appendix IV, which can be used to illustrate how profits or losses will vary with changes in price, total revenue (Table 3, in Appendix IV), and total costs (Table 4, in Appendix IV).

GRAPHS AND THEIR MEANINGS

A graph is a visual representation of the relationship between two variables. The table below illustrates the relationship between price and quantity demanded for tacos at Taco Villa. Although this information is obtained from Table 1 in Appendix IV (and hence is merely a different representation of the same information), the graphic representation of price and quantity demanded illustrates the concept of a demand curve. That is, it shows visually or graphically how consumption varies with price of the good. In the graph below, we illustrate a linear (straight line) and nonlinear (changing slope) approximation of the demand curve for tacos that is depicted in tabular form in Table 1 in Appendix IV.

In the graph below, price is presented on the vertical axis and is the determining factor or independent variable. Consumption (quantity demanded) depends on price and is represented on the horizontal axis. (Actually, the demand curve differs from the traditional graphic portrayal of relationships, which typically show the independent variable on the horizontal axis and the dependent variable on the vertical axis.)

We first arrange the vertical and horizontal scales of the graph to reflect the range of values on price and consumption, as well as mark the steps in convenient increments. We then locate the various points that reflect the information on quantity demanded at a particular price that is provided in Table 1 in Appendix IV. Each of the points illustrated in Table 1 can be used to plot a demand curve for a particular restaurant. For example, at a price of \$4.50, no tacos will be purchased; at \$4.00, 10 tacos will be purchased; at \$3.50, 20 tacos will be purchased.

The downsloping demand curve illustrates the negative or inverse relationship between the two variables (price and quantity demanded). These two variables move in opposite directions. As price goes up, demand goes down. The supply or (marginal) cost curve illustrates a positive or direct relationship between cost and quantity produced. Should cost information be plotted on a graph, an upsloping curve would result because cost and production move in the same direction.

The simple two-variable graph ignores many other factors that might affect the amount of tacos purchased. These other factors (e.g. income, tastes and preferences, price of other goods and services, number of people in the market) are illustrated by shifting the curve. For example, should Oak Grove High School double in size, the demand curve would shift to the right, demand would increase, indicating that at every price more tacos would be purchased.

Demand Curve for Tacos from Taco Villa

