CHAPTER 4

Economics: Exchanging Goods and Services

A major portion of our lives revolves around economics, the practical matter of acquiring a job or profession and earning a living. Hopefully, a job or career is something we really enjoy and gain satisfaction from doing as well, but the economic connections cannot be avoided. Further, beyond family and immediate friends, a large portion of our interactions with other people involve those in the workplace and other economic transactions, the purchasing and/or selling of goods and services. In preparing our students for this "world of economics" two things are vitally important. First, is the self-evident need for students to gain some understanding of job and career opportunities and the practical matters of monetary transactions. Second, and perhaps even more important is the need to bring virtues to bear on economic endeavors and transactions.

We only need to witness the daily news and probably our own experience to know that people's economic self-interests frequently compete against better moral judgment---and all too often self-interest wins. What is particularly troubling, is that sometimes people who seem to be of sound moral character are caught "with their hand in the till" or exercising other tactics of less than virtuous behavior to foster their own advancement. In short, evidence dictates that there is a special need not only to build a strong foundation of moral values but also to make a sound connection between this foundation and our dealings with work and money. A no less important consideration, profound in its moral implications and threatening our own survival, is the conspicuous way in which the pursuit of money has and is continuing to degrade the environment and deplete species sometimes to extinction.

Students may learn the values of different coins and bills and relate currency to written prices in the first grade, and begin solving practical problems using money beginning in the second grade. Some comments regarding such lessons will be found in Chapter 11 (page xref) as they are basically numerical skills. The focus in this chapter is to demonstrate how we might present our "financial" lessons in a way that both makes further economic principles clear and at the same time strengthens their connections with moral values. The essence of tying moral values to economic dealings is simply the realization that, at the core, economic dealings are *not about money*; they are about *exchanging goods and services* (Fig. 4-1).

Civilization: The Exchange of Goods and Services

We have already noted in Chapter 3 (page xref) that the exchange of goods and services is the defining feature of civilization. To develop this point with first graders, goods and services, as they are used in an economic sense, will need to be defined. Every *thing,* from a gum-ball to a new car, is a **good**. On the other hand, every working person,

from janitors to accountants to teachers to lawyers and doctors, are providing some **service**. They are paid for their labor, skill, and knowledge, not for a specific item.

Have students try to imagine (seminar) a "civilization" with no trading of goods and services. There would be no stores because stores are a place of exchange. Every person or perhaps family group would obtain food, make a shelter, and do everything entirely by themselves. Would there be any distinction, behaviorally speaking, between such a group of humans and a family of beavers? This exercise can serve to emphasize that civilization does not hinge on building or creating things—beavers build dams, termites build elaborate mounds, and many birds build intricate nests. Yet we cannot say that such animals are in any way civilized. It is only as things are made and traded on a wider scale within and between communities—a thing only humans do—that we can say that there is a civilization. Then, as labor becomes more specialized and knowledge increases, the diversity, complexity, and quantity of things produced increases and civilization advances accordingly. Nevertheless, the root of civilization remains the exchange of goods and services.

All Employment Is a Service

Every kind of legitimate employment can be seen as providing a service for others. The service provided may be manual labor, such as mowing the grass; completely knowledge oriented, such as a lawyer, accountant, or researcher; or any mix of manual and intellectual. The fact remains that any kind of legitimate employment or self-employment provides a service to others. Whether and how much the employment is paid is a separate issue that will be addressed later.

Do note the proviso of *legitimate* employment. Ways of acquiring money that do not involve the provision of any service, e.g. any form of stealing or conning, are all too evident. Likewise, it is all too possible to sell things that are a detriment to society, e.g., illicit drugs. It is useful and easy for students to see the illegality of such activities in terms of service. Far from providing a useful service such activities are to the detriment of others.

A pertinent exercise is for first graders to name different kinds of jobs or careers and describe the service that is being provided. For example, the teacher is providing the service of educating young people; a farmer is performing the service of providing the rest of us with food. Store people are rendering the service of marketing the food in a convenient way. An automotive assembly line worker is performing the service of putting together part of a car. The entertainer is providing the service of amusing us. In the final analysis then, all legitimate employment, as well as volunteer work, provides a service to humanity. A distinction between goods and services is only in whether the service goes into the production of some item that is later sold or whether the service is used directly, as in teaching.

In a city of any size it may appear, especially to students, that innumerable people are just doing their jobs irrespective of providing a service. Workers themselves may comment, "I am simply doing my job." But invariably, it is a service that the rest of us

want, need, and often depend upon. Consider a line worker for the power company. The line worker has no way of personally knowing the countless people who rely on her or his job (service) in keeping the lines functioning nor do we consumers have any way of knowing the individual line worker. Yet, it is evident that we rely on the line worker's service every time we switch on a light or anything else.

Here is a splendid activity that helps students from first grade up think in terms of jobs as service: Take any thing we use or purchase and bring students to enumerate the different people whose service produced that item and brought it to us. For example, to buy a loaf of bread we may interact directly only with the grocery store cashier for a few seconds. But in an indirect way, we are interacting with and trusting in the service of the store manager, the worker who stocked the shelf, the baker who baked a wholesome loaf, the miller who ground the flour, the farmer who grew the grain, the truckers who made the deliveries, and so on. In turn, the farmer has interacted with and trusted in the services of seed producers, equipment manufacturers, fertilizer producers, and so on up the line.

Similarly, consider such simple, everyday actions as turning on the water, flushing the toilet, making a telephone call, riding in a car, or buying anything. Every case will reveal that we are relying on countless people having provided some service through their jobs. Again, all honest labor is a service of one sort or another regardless of whether pay or how much of it may be involved.

"You can't trust anybody!" is a ridiculous attitude in analysis. Any person espousing it, as well as all the rest of us, is inevitably trusting and receiving the services of millions of people every day. This is not to say that we should place unbounded trust in any individual who comes along trying to sell us a bill of goods. Discretion and critical thinking is always called for.

Another exercise and one that may double as a reading and vocabulary building exercise is to have students browse the yellow pages of the local telephone directory and consider the service being offered under each heading or ad. Conversely, have students consider the service they would be providing if they entered such a job or profession. (Fig. 4-2).

Finally, instead of just asking students to tell us what they might like to *be* when they grow up, we might ask them, "What service would you like to provide when you grow up?" Observe that this simple shift in terminology brings students to start thinking from the perspective of the higher side of human nature as opposed to the side of self-interest alone.

In summary, the essence of any economic system is the trading of services. But money is a significant reality. How should we address issues of money?

Money: A Medium for the Exchange of Services

Students, (first grade) can readily see that goods and services can be traded directly without the use of money. Most will already have indulged in bartering: I'll give you this for that. Additionally, they may enjoy bringing some of their things from home that they no longer need or want for a class trading session. Note that services may

likewise be exchanged, or an item may be traded for a service. “If you do my chore tonight, I’ll do your chore tomorrow,” or, “I’ll give you a candy bar if you wash the dishes for me.” The point to be emphasized is that money is not necessary to make a trade. We can and do on many occasions exchange goods and services directly.

Students may then be asked, Why bother with money at all? With a little probing, they can readily see the answer. Suppose I need a chicken for dinner. You have a chicken but I don’t have anything to give you that you want in exchange. Direct trading has conspicuous limits. How can we get around this problem? Again, students may be prompted to seminar the answer. If I give you something of recognized value for your chicken, something that you can take and exchange for something you want, then the trade will work. What is that “something of recognized value?” We call it money but it can be anything so long as there is agreement regarding the value. Over the course of history, peoples have used shells, beads, colored stones, gold and silver coins, and in modern times paper bills. (The opportunity for a lesson concerning the history of money is evident). Whatever its form, however, the common denominator is that **money** is something of “recognized value” that can easily be traded for a good or service. In any job we are effectively trading our service for an amount of money that we can in turn trade for items and services we want. It may be worth noting that what we use for money (paper bills) has essentially no value in and of itself. It is only our faith and trust in the monetary system that provides the value.

At this point some students may declare that their parent(s) don’t use money at all; they use checks and credit cards. Students may need to be instructed that checks and credit cards are simply a shortcut for exchanging bills and coins. For the most part, we keep our money in an account at the bank. When I write a check (or sign a credit slip) for $20 to you, I am telling my bank to take $20 from my account and give it to you, or to put it into your account. It should be made clear to students that this only works if I have sufficient money in my account. If I don’t, you won’t get paid, and I am in big trouble.

In conclusion, our economic system, our society, and all of civilization is not about money. It is about serving one another. Money only facilitates the exchange of whatever gifts (goods or service) we have to offer. By making this point repeatedly in whatever context it comes up, we might take some of the emphasis off money and put it where it more properly belongs, on the giving and receiving of services. Note the subtle but important distinction this change can make. The idea of making money is impersonal; all by itself it tends to elicit the emotions of lust and greed. On the other hand, giving and receiving services is personal and easily attached to all other virtues. Insofar as we can keep our focus on and instill in our youth that jobs and professions are a means of providing service to one another, we will engender all the other virtues. Insofar as we lose track of the central feature of service and begin to focus on making money it is to our own spiritual detriment and the overall detriment to humanity at large.

Natural Resources and Natural Services

An understanding that everything human-made is derived from minerals and/or biological products termed *natural resources* is conveyed from parallel lessons described in Chapter 10 (page xref). A related idea and more pertinent to our discussion here is the concept of *natural services*. It is best described by example. Consider forested mountains.

Forested mountains are obviously a natural resource of timber for building materials and firewood. Insofar as they are left uncut, however, they provide many other benefits. They protect the soil and prevent its erosion from the hillsides. They enable rainwater to infiltrate into the ground and recharge the groundwater, which in turn, provides for clear, continually flowing streams and rivers supporting fish and other wildlife, and controlling downstream flooding (crosslink Chapter 12, page xref). They are instrumental in freshening the air as they remove pollutants and carbon dioxide and replace it with oxygen (crosslink Chapter 9, page xref). They have a distinct cooling effect on the atmosphere. (Have students note that cities commonly have temperatures 5-10 degrees hotter than those in more rural areas.) This cooling effect actually carries through to moderating and maintaining the climate. Then the forest provides a habitat that supports innumerable species of birds, insects, mammals, reptiles, and countless plant species in addition to the trees. In turn, this "reservoir" of wild plants and animals may be invaluable as a source for genetic traits of untold medicinal or agricultural value. Lastly the forest environment may additionally be used for fishing, camping, and other forms of recreation.

We can think of all these benefits provided by the forest as **natural services**. In a very real sense the forest is providing services of maintaining water flows and water quality, air purification and climate control, and scientific and recreational opportunities. Remove the forest to exploit the immediate value of its timber and all these services are lost. Water runs off causing erosion, downstream flooding, and fouling of fishing beds with eroded sediments, ground water is depleted causing springs and stream beds to run dry. Wildlife is eliminated and its values for the future are lost as are recreational opportunities. This kind of analysis applies to wetlands, grasslands, and other kinds of ecosystems in addition to forests.

The point of the lesson is that it is not just humans who provide services to each other. We also receive and ultimately depend on fundamental services provided by nature. Just as we cannot abuse persons giving us a service and expect them to continue providing the service we cannot abuse nature and expect its services to continue undiminished (Fig. 4-3).

Students should observe that there is a conflict of interest and may seminar the issue. On one side is the immediate economic gain to be had from cutting the timber or clearing the land for development. On the other side is the long term loss of natural services and the consequences (costs) of their loss. This debate is far from abstract. It is really the essence of all conservation-vs.-development controversies in the real word. Thus, students may seminar this issue periodically as they advance in knowledge and understanding and they may center their debate around current issues in their area.

On the exploitation or development side some may argue that humankind would still be living as primitive tribes were it not for exploitation and development, and furthermore, such exploitation and development has generally been to our benefit, not harm. The counter argument has certain parallels to raising a child. At first we give a child everything it needs and do not demand anything material in return, a desire for their love and respect notwithstanding. As the child matures, however, we put restrictions on how much we give them with the intention that they become independent and self-sufficient. In the infancy and childhood of civilization, so to speak, natural resources were abundant, easy to obtain, and not appreciably diminished by the amount taken, because it was a relatively small percentage of the total.

But now, as civilization approaches maturity, amounts taken are a much larger percentage of the total and consequences regarding loss of natural services are clearly seen horizon if not already being felt. In effect, humanity is being told, Now you are old enough; find a way to become less dependent on the exploitation of natural resources and more protective of natural ecosystems.

The environmental movement complete with conservation efforts, pollution control laws, and regulations of all sorts bespeaks that humanity is in the throes of progressing toward a greater appreciation of natural services, their limitations, and accommodations that humanity needs to make on nature's (creation's) behalf. More and more people, from ever more diverse backgrounds, are becoming aware of these issues. Because such change never occurs easily or suddenly, controversy is to be expected as a new understanding concerning the importance of natural services and the links between natural ecosystems and natural services gradually penetrates global consciousness. Our teaching of the new generations has no small part to play in this regard. [1]

In summary, all (legal) economic transactions represent the exchange of services. All our interactions with the natural world reflect our appreciation or lack of appreciation for nature’s services. The next problem that students will need to consider is how much is any particular good or service worth?

The Value of Goods and Services

First graders have no problem with the concept of exchanging goods and services, and they readily indulge in bartering. Second graders grasp the concept that money is used as a medium of exchange. However, the question of just how much a given good or service is worth, and how much money should be exchanged for it, is more difficult. The difficulty is not surprising because all values are relative. Knowing the monetary value of one thing depends on having a general feel for the monetary value of all kinds of other

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[1] A more extensive discussion of natural services (nature) and their value may be found in: Gretchen C. Daily (edited by). *Nature's Services: Societal Dependence on Natural Ecosystems*. Washington, D.C.: Island Press, 1997. www.islandpress.org/books/bookdata/NatServ.html

things that are more expensive, less expensive, and in the same price range. Even then, the monetary value of certain things is not that clear even to professional economists. What is the value, for example, of clean water, clean air, unspoiled rainforests, and other natural services?

These problems aside, students in third grade can begin to be introduced to basic parameters of economics. The efficacy of integrating such lessons with the teaching of math and critical thinking skills will be self-evident. The first basic parameter to address is the concept of profit.

Profits Equal Price Minus Costs

A merchant sells a pair of shoes for $80. How much money did she or he make in the transaction? (Critical thinking!) Students should be brought to respond that there is no way they can answer this question until they know what the merchant paid to acquire the shoes from the distributor or factory. Perhaps this idea seems foolishly simple. However, we often engage children in selling their old toys, books, outgrown clothes, and so on, and allow them to keep the entire proceeds as their own. Similarly, we may provide all the ingredients for a youngster to sell lemonade and let them keep the entire income. Thus, youngsters can easily gain the notion that the selling price of an item is all profit for the seller. It is not that parents shouldn't let children keep the entire proceeds from a sale, but instruction should be given early on that there are costs behind every item sold. Every merchant must pay for all the items he or she sells. If the items are self-made, there are still costs for ingredients and/or materials.

The total proceeds received in the sale of the goods (or services) is termed **gross income**. **Profit** or **net income** is what remains after all the costs have been subtracted (Fig. 4-4):

$$\text{Profit} = \text{Gross Income} - \text{Costs}$$

Any number of math problems of varying and appropriate complexity can be designed to stretch math skills and reinforce this point. Simple subtraction problems may involve buying a single item for one price and selling it for another. Multiplication can be required by giving the buying and selling price for a single item and asking for the net income of selling a certain number of the items. Division might be introduced by asking how many of the items would have to be sold to make a given profit.

In the real world, costs extend beyond the purchase of the raw materials that go into the items for sale. Rent, electricity, telephone, heating and air conditioning, equipment, employee wages, and more are all additional costs. A good exercise is to have students list and put values on all the costs that might be associated with starting and running any kind of business. Thus, the "costs" in the preceding lesson may be expanded to progressively challenge students' thinking and numerical skills.

What if the costs add up to more than the gross income? What then? Students can be introduced to the concept of negative income by seeing that merchants can be poorer for their efforts. The same ideas apply when one is providing a service, e.g., mowing the grass. What one gets paid is gross income. From this must be subtracted the cost of gasoline and maintenance on the mower, to say nothing of the cost of the mower itself.

Older students may be further challenged to perform algebraic manipulations with this equation (Chapter 11). For example, given profit and gross income ask, What must have been the costs? Students should be able to ascertain that

Costs = Gross income - Profit

Students should become aware that it almost invariably costs a certain amount of money, often a very substantial sum, to start a business enterprise. One must purchase the initial inventory, equipment, and materials, rent space, and pay for many other things before the business even opens. To use the cliché, It takes money to make money! This brings up the topic of borrowing and lending money, which I shall address later in this chapter.

For now, it is pertinent to stay with the question, How much money should or can we actually charge for a given good or service? Again, we might emphasize that it is virtuous and valuable to our spiritual growth to give things or services to those in need from the goodness of our hearts with no anticipation of tangible rewards. However, giving oneself into a state of poverty, and thus, becoming financially dependent on others, is not virtuous. It is more virtuous to provide for one's own needs and those of dependent family members through one's honest labors. Therefore, asking for compensation for one's labor or service is not out of line with virtue. It is justice.

An important point to highlight is one's attitude about compensation for service. Is one focused on giving the service and graciously accepting the compensation as reward in return? Or, is one focused on just receiving the compensation and giving as little service as possible? Of course, good service is not distinct from good business. Have students role-play this situation: two people selling the same hot-dogs at the same price. One is focused on providing service—being sure that hungry people get something good to eat—while the other is only focused on making money. How do other students respond to these two "vendors"? Which one is likely to get the most business? Is it surprising how many enterprises stress service as a key aspect of their business?

Still, how much to charge? It should be evident to students that no one can be expected to provide a good or service for under their cost. To do so means that the person receives nothing for his or her service and is giving away money besides. Therefore, costs create a bottom line of what must be charged for an item or service. But what about a "top line"? Is there an upper limit on what can be charged and what profit can be made? The answer to such questions is in large part governed by the law of supply and demand. Third graders can begin to handle it, expanding both their math skills and their understanding of economics in the process.

Supply and Demand Determine Price

Over and above costs, prices in large part are determined by the law of supply and demand. Mathematically, the relationship is

$$\text{Price} = \frac{\text{Demand}}{\text{Supply}}$$

(Price equals Demand divided by Supply)

Have students use arbitrary values for demand and supply, e.g., demand is 10, supply is 10. In this case, price is 1.0. Now have students increase or decrease the value for demand keeping supply the same and see how price varies accordingly. Now, vary the value for supply, keeping the demand constant. Students will find that if supply of an item is small and demand is great, it will command a high price. If the supply is large and the demand slight, its price will be relatively low.

Any number of simple situations can be role-played to illustrate the effect of supply and demand on prices. For example, give students each $20 in play money and have them visualize that they are trekking across a desert, almost dying of thirst. (Note that demand for water is high and supply low.) Along comes someone, not a good Samaritan, with bottles of water, and they are going to hold out for the highest price possible. How much are the students willing to pay for water? Now suppose the students are by a spring and have just refreshed themselves. (Note that demand for water is now low and supply is high.) Along comes the same vender trying to sell bottles of water. How much will the students be willing to pay for water now?

A variation on this theme is to role-play the desert scene with several buyers each in desire of water from a vendor who has fewer bottles than the number wanted. Have the "buyers" bid for the water as at an auction. Students will readily find that when supply is low and demand is high, competition among the buyers will readily bid up the price quite apart from any greedy intent on the part of the seller. In the case of a monopoly in the real world the producer can artificially hold back supply creating an artificial shortage. Buyers bid up the price, and the supplier profits enormously.

A more elaborate activity for third grade and up is to create a virtual supply of items. Have students write the names of things they want on separate cards, e.g., baseball bat, gloves, skates, dress, running shoes. This becomes the "store," each card representing the real item. Now, make the store have more of some items than students want by duplicating some slips, and make other items scarce by removing some slips. (Do not tell the students which items are in excess and which are scarce and keep your records out of sight.)

Initially, set the price of each item in the store at the same amount (e.g., $20), but make prices free to change according to what students are willing to pay. Finally, issue each student a certain amount of play money (e.g., $100) and let the buying or trading

begin. The store can buy merchandise back and resell it at a different price and students can buy and sell things to each other and to the store for different prices. Since the trading will stop when the store ends up with all the money, keep the trading going by periodically redistributing the store's money evenly to the students. There is logic in this practice if we assume the students are also working at and earning wages from the store. In the real economy such recycling of money occurs, although its route is more circuitous.

The objective is for each student to end up with everything he or she wants, and for the store to end up with its shelves clear. As trading continues, students will witness how they effectively bid up the prices for those items in short supply, while the price of those in excess declines. This will be clear when the teacher reveals the hidden written inventory.

A question students may ask (and one that should be posed if they do not) is, Why doesn't the government just print more money and give it to people so that they may buy everything they want? This scenario may be tested as an extension of the same exercise. The fact is, the more money issued, the higher prices will go. Issue millions of dollars and students will soon be paying in the millions for their desired items. This is why in the real world the government does not simply print extra money; it borrows money and pays interest for it when there is the need. Printing additional money would only have the effect of inflating prices or, said another way, devaluing money. The value of money, i.e., how much a dollar will buy, is itself subject to the law of supply and demand.

Obviously, the most lucrative business to be in is one where the demand for your goods or service is high and the supply is low. However, such a situation, even if it exists at the outset, is unlikely to prevail for long. This is because not only does supply and demand affect price; price also tends to affect both supply and demand.

Price Affects Supply and Demand

Suppose, as often happens, that a company comes out with a new product that proves very attractive to consumers. Supply is initially low, demand is high, and the product may be priced to command a very substantial profit. Consider the profits of Xerox, Apple Computer, and McDonalds in the days when they first introduced their products.

However, even when there is only one producer of a desired product, the price cannot be set indefinitely high, because if it is too high no one can afford to buy it. If no one buys the product it means that demand is effectively zero. Lower the price and some people will be able to afford it. Lower the price still more and more people can afford it. Have students observe that lowering the price effectively increases demand, the number of people that will buy the product or service.

One may make more total profit by decreasing price and thus, increasing demand. Let students solve problems of this nature: Suppose that Wanda starts an enterprise making and selling tire swings. It costs her $10 to produce each one. She sets a price of $20 for her swings and is able to sell only three. Later she sets a price of $15 and is able to sell nine. In which situation does she make the most profit? Many people tell her they

would buy the swing if it cost only $12. How many swings would she have to sell at $12 to exceed her profit with the price at $15? (Why are volume discounts offered on almost every product?)

Students should observe that lowering a price from an exorbitant level may have a positive effect on profits by effectively increasing demand. But they should also observe the point of diminishing returns. For example, if Wanda chose to lower her price still more, she would have to sell an unrealistic number to maintain her profit. Obviously, she would have no profit at all regardless of how many items she sold if she lowered her price to $10, and she would have a loss if she lowered her price to less than $10. Also, students may note that the time and effort that Wanda must spend making and marketing her product is not incidental. It is effectively a cost that cuts into her profit margin. Thus, the law of supply and demand tends to generate not a maximum nor a minimum but an optimum price, a price that gives producers a fair but not exorbitant return for their efforts.

Price may be seen to also affect supply. Suppose that Wanda only made three swings and that she readily sold them for $20. Ask students what they would do if they were Wanda. It is likely that Wanda will think, "Here is a lucrative market. If I produce more swings I can make a lot more money." Thus, she will set about making more swings. She may in the process devise ways of producing them more efficiently such that she can produce more without spending more time, i.e., a means of mass production. Now, the increased numbers being produced is increasing the supply. Have students observe what has occurred. A high price (a high net profit) has effectively served—and in the real world does serve—to increase supply. (This assumes that the basic resources are not limited. If they are, e.g., fish in a lake, the pressure to increase supply may lead to tragic over-fishing as described later in this chapter.)

High price (high profit) serves to increase supply through another mechanism as well, namely competition. Suppose Bill sees Wanda making all that money: What is he likely to be thinking? Students may conclude, "Hey, if I start making similar swings, I can make a lot of money too." Invariably, a new product and a lucrative market will invite competition.

Further, Bill may reason that if he charges just $19 for his swings, he will still make a very handsome profit and with his lower price he will also capture customers who otherwise would have gone to Wanda. Some students may declare that this is not fair. But in the real world, it is not only legal, it is encouraged. Have students figure out why by thinking through what occurs next. What is Wanda going to do as she finds Bill taking her market with his lower price? There is still substantial profit, so she lowers her price to $18. Now Bill lowers the price to $17, and so on, back and forth. Have students note, however, that they cannot lower their price below what will generate an acceptable profit. Therefore, both Wanda and Bill will end up offering the swing at essentially the same price, which still generates an acceptable but not "indecent" profit. Consider the number of companies that now sell copiers, computers, and fast foods.

In summary, students should understand how competition serves to both increase supply and drive prices still lower as competitors vie to capture a larger share of the

market. Have students discuss how they themselves participate in the process as they and their parents almost invariably shop for the lowest price other factors being equal.

Finally, lower prices eventually will diminish, or at least constrain, supply. For example, if Wanda and Bill, and perhaps additional competitors, increase production (supply), at some stage they will end up with unsold swings. They cannot lower prices and maintain an acceptable profit. What is another alternative? Students should reason that it makes no sense to produce more items than you can sell. Therefore, the logical conclusion is to cut back on production. Note that cutting back on production is another way of reducing supply.

In the real world, companies are continually adjusting production to keep supply at only the amount that can be readily sold. Keeping a large inventory of unsold goods is, students may observe, an additional cost that will cut further into profits. Finally, students may note that some enterprises go out of business. The biggest reason for going out of business is that an acceptable profit is no longer being generated. But said another way, a low price that forces someone to go out of business is serving to diminish supply. In the real world, there are also constant attempts of find and open up new markets, e.g., selling the product abroad.

Again, students can verify these phenomena mathematically by plugging different values into the price = demand/supply equation. Have students observe how changes in price (if it is assumed to represent profit) will affect demand when supply is held constant and supply if demand is held constant.

Lower Prices Promote Lowering of Costs

There is one additional important consideration inherent in the price = demand/ supply phenomenon or even in the basic net income equation. Students can readily ascertain that profit may be increased not only by increasing price, but also by lowering costs. Thus, a person will have an incentive to lower costs regardless of competition. However, when competition enters the picture, lowering costs as far as possible becomes critical. Students have seen how Wanda and Bill lowered their prices in turn until each is charging essentially the same price, a price that allows acceptable, but not indecent, profit. This scenario contains the assumption that the costs of producing the swings is the same for both Wanda and Bill.

Suppose that Wanda is now able to find a way to produce the swings for only $8 each. This means that she can lower her price another $2 and still have an adequate profit, while Bill cannot. Wanda may win the competition through her cost-cutting measures unless Bill is able to institute similar or even greater cost-cutting measures. Thus, competition is not only an incentive for lowing prices as such; it becomes a powerful incentive for devising and instituting cost-cutting measures that allow prices to be lowered still more. Students can find newspaper articles concerning any number of cost-cutting measures that companies are instituting.

Insofar as cutting costs involves switching to more abundant, lower-cost materials and/or more efficient means of production, such measures are generally to our

advantage. However, cost cutting may also involve many other less socially desirable measures, some of which are discussed later in this chapter.

Distortions Produced by Advertising

When you have a product or service to offer, it is only logical that you must tell people about it; you advertise. Therefore, students should understand that the essence of all TV, radio, print, billboard, and other advertising is to inform us of who has what to offer. However, advertising often minimizes the information and becomes a device of persuasion and manipulation. Any number of ads contain subtle and not so subtle cues that tell us we should use the product to achieve beauty, status, success, or happiness. Have students (fourth grade up) examine ads and compile parallel lists of information (if any) and emotionally persuasive features. They will find much advertising is geared not to give information but to actually *create* demand that would otherwise not exist. The competition among companies with very nearly identical products, e.g., Coke and Pepsi, is not so much making the products better as it is a contest of running advertising campaigns, i.e., who can run the most convincing (manipulative) ads. Whoever wins, more people get sucked into drinking sodas instead of more healthful drinks.

Another case in point is certain designer clothing. Advertising convinces us that we must have the designer brand even though the price may be considerably greater than that of the regular brands. *Consumer Reports* did a study that showed that the designer brands had no significant appearance or quality advantages over most regular brands. In some cases the designer brands were deemed not as good. Most of the extra price paid for the designer brand went into supporting the advertising campaign and into greater profits for the producer. Students should be brought to note the irony in paying for the privilege of being brainwashed into needing the designer brand.

"Truth in advertising" laws make it illegal to state utterly false claims in advertising. However, truth in advertising legislation still does not prevent companies from using all the indirect cues implying the coolness, prestige, or attractiveness that may accrue from using their product, even a useless or harmful one. Tobacco advertising is a prime example. Government does block cigarette advertising on TV and requires a warning label to be included on all print adds. Additionally, government regulations forced withdrawal of Joe Camel ads, which were geared to appeal to young people and get them hooked early. Still, tobacco companies fight on to sell their product through advertising. Students can have a good seminar discussion about how far the government can or should go in controlling or regulating advertising. It should not escape comment that a basic human right given in our Constitution is freedom of speech. How can freedom of speech and freedom in general be balanced against promoting products that are deemed unhealthy?

Borrowing, Lending and Interest

By third grade, a youngster's real-world experience has undoubtedly exposed them to the concepts of borrowing and lending money. It has further taught them that banks are places you can put your money to keep it safe and are places from which you can borrow money. Additionally, youngsters have probably picked up some concept that they earn interest on money kept in the bank and that interest must be paid for money borrowed. Third grade is an appropriate level to flesh out these concepts in students' understanding and develop the math skill of calculating interest. (The calculation of percentages needed to determine interest is discussed in Chapter 11, page xref.)

Lending money, students should understand, is a very important service to society. As noted earlier, it almost invariably requires a certain amount of money to buy the equipment and materials that are needed to start a business. Without being able to borrow that money for start-up expenses, most businesses would simply not get started, and many would be poorer as a result. Likewise, few of us would ever be able to move into our own home without being able to borrow a large portion of the cost, the mortgage. At the same time, one can say that money can be too easy to borrow, especially through credit card and installment purchases. Thus, the opportunity is here give students early lessons concerning responsible use of credit and the ability to borrow money.

Students (third grade up) grasp and understand the concepts of borrowing and lending and logic of interest charges when they are demonstrated as buying and selling money. Now, it is obvious to students that a $100 bill is worth exactly $100 and for anyone to pay more or less than $100 for it is absurd—unless, that is, a factor of time is included. For some immediate need, a person may be willing to pay $115 for the $100 dollars if they can have the $100 now and pay the $115 back later. This is what we do when we borrow money. We are in effect purchasing a given amount of money to spend now on the promise to pay a larger amount for it later. Nor is this unfair as some students are likely to protest. Emphasize again that allowing us to spend money that is not ours is a valuable service being provided by the lender, a service that justifies compensation.

The difference between the amount borrowed and the amount to be paid back is the interest. Note that simple subtraction of the amount borrowed from the amount to be paid back gives the actual amount of interest.

Amount paid back – Amount borrowed = Interest

However, we are seldom informed on what the interest will be in a simple dollar amount. It is important to instruct students on how to ascertain interest from figures presented.

Installment purchases are easiest to deal with, and students may be asked to bring in examples from current advertising if not their own experience. The amount borrowed is the purchase price, and the amount to be paid back is the monthly installment times the number of months. The difference is the interest.

Monthly payment x number of months - purchase price = Interest

More commonly, loans or credit purchases are presented to us in terms of interest expressed as a percent. To determine the amount of interest here, students must first convert the percent to its decimal equivalent by dividing by 100 then multiply the purchase price by that figure. For example, if $200 is to be borrowed at 9% interest for one year the actual amount of interest will be $18.

$$\frac{9\%}{100} = .09 \qquad .09 \times \$200 = \$18$$

Now, an additional factor comes into play. It stands to reason, and students can understand, that the longer the period of time for which the money is borrowed, the higher the total amount of interest should be. By convention, percent interest figures are given in terms of *one year*. Thus, the actual amount of interest will vary with the number of years or the fraction of a year for which the money is borrowed. For example, if a $100.00 purchase is put on a credit card with a 15% interest rate and paid off in six months, the interest paid will be half of $15.00 or $7.50. On the other hand, if the $100.00 is not paid off for five years, the total interest paid will be $75.00 (5 × 15), making the total cost of the $100.00 item (price + interest) $175.00.

An added complexity is that installment payments on loans include paying the interest and a portion of the principal (the amount borrowed) on a monthly basis; the amount of the loan declines gradually, and the interest being paid decreases accordingly. While students can understand this in a conceptual way, I don't believe that it is worth belaboring the actual calculations at the elementary school level. A general presentation and calculations of the sort described are sufficient to give students a clear understanding of the basic principles and appreciation of the amount they pay for the advantage of buying on credit.

Credit cards are so commonly used that youngsters can easily gain the notion that they are essentially free money. It is well to emphasize to elementary school students that credit cards are really a method, and one of the most expensive methods, of borrowing money (unless one pays the balance in full at the end of every month). In a credit card purchase, you are in fact borrowing money from the bank to make the purchase, and the bank is going to demand a larger sum of money in return (the price of the purchase plus interest). Most credit cards have interest rates that range from 15% to 25%.

It is instructive to have students do any number of problems calculating how much they will actually end up paying for things they want when they are purchased via credit. Have them find the actual prices of things they want and the actual percentage rate for cards that their parents may have. Calculations are greatly simplified and the point is still adequately made by assuming that the whole amount of the purchase is borrowed for different periods of time, e.g., 1/2, 1, 2 years. Also, students may bring in actual credit

card statements, with parental permission of course, and find how much interest their families are actually paying for their credit purchases.

Sometimes, the interest may be more than the purchase price of the item. It should help to make the point that in the long run they can actually buy more if they set aside money ahead of time so that they can pay the full price at the time of purchase and avoid any interest payments. Additionally, money set aside in a savings account also earns interest.

The Role of Banks

Banks are the major business institutions that engage in the borrowing and lending (buying and selling) of money. When we put money into a savings, checking, or other account in a bank, students should understand that it does not go into a vault for safekeeping. In effect, we are actually loaning (selling) our money to the bank. The bank pays us for our money by giving us a checking account, paying interest, and guaranteeing that we can retrieve whatever money is in our account at any time. The bank then loans (sells) our money to individuals who wish to borrow money. The bank always charges a higher rate of interest to borrowers than it pays to depositors. In short, the bank always sells money at a higher price than it pays for it, and thus, the bank makes a profit (Fig. 4-5).

Banking, the buying and selling money at a profit, can be a very lucrative business. As with other businesses, it attracts competition, and competition, following the same principle of supply and demand described earlier, tends to bring prices down to reasonable levels. Note how competition will affect both the interest and services provided to depositors and the interest charged to borrowers. If a bank does not meet or beat the competition in terms of services and/or interest paid to depositors, it will fail to get the money it needs to make loans. If it does not meet the competition in terms of low interest rates charged to borrowers, it will fail to make loans (sell the money it has). Either way, the bank will lose out to competition. Thus, the bank's profits are continually squeezed between what it must pay to depositors and what it can charge for loans, a squeeze that tends to result in all competing banks making a reasonable, but not indecent, profit.

In conclusion, letting people be free to provide whatever (legal) good or service they wish, make a profit as they can, and letting the law of supply and demand and competition work its course as it will, is the essence of what we call the free market system. Students should appreciate its advantageous outcomes. Most importantly it is a system that provides incentives for individuals to use their creativity in the development and improvement of products and services. Thus, it fosters the provision of an almost infinite array of goods and services, and it serves to balance the supply and demand of all goods and services at reasonable prices, i.e., minimum prices that still allow the business-person to gain a suitable profit. Finally, it promotes cost-cutting measures that generally (but not always) have further advantage for consumers.

Alternatively, communist nations attempted what were called *planned economies* in which all prices and wages, as well as quantities of each item to be produced, were set by the central government. The result was chronic shortages of some needed items and vast overproduction of certain things of little use. For example, a production quota for a shoe factory specified so many pairs of shoes. Thus, the factory turned out that many pairs of shoes, *but all of one size!* As a result there was a surplus of that size and none of other sizes. Additionally, workers and factories became grossly inefficient since they were paid the same regardless of their performance. The system was an economic disaster, and the main reason for the ultimate collapse of the Soviet Union in 1989.

But the free market system, in all truth, is not perfect either. Left entirely to itself and the foibles of the animalistic side of human nature, it has proven to lead into some socially undesirable and unjust outcomes, and we should guide students to understand these as well.

Pitfalls of the Free Market System

By the end of fourth grade students should have gained a basic understanding of the free market system as described in the preceding section. In fifth grade, they can be moved toward understanding a few of the major pitfalls of an unbridled free market system and the need for certain regulations (Fig. 4-6).

The most fundamental point is that the highest of human virtues, the one toward which humankind is striving, is justice (see Chapter 3). We have seen that in many respects the free market system is in harmony with justice. For example, obtaining a fair wage or profit for one's labors is perfectly just. Likewise, when service becomes the main factor of competition, the result can only be commendable. Also, creativity is fostered.

On the other hand, the free market system tends to take on a life of its own and its highest "value" is that bottom line, profit, which speaks more to the self-interest side of our nature and tends to engender qualities such as greed, lust, and selfishness. Left to itself, then, the free market system can (and still does) lend itself to some major injustices. Therefore, actions in the marketplace need constant surveillance and correction from the perspective of justice.

Let's consider some of the ways in which seeking profit may foster injustice and some of the countermeasures or regulations that are now imposed to make the system more just.

Monopolies

Students have observed that competition is a crucial factor in bringing companies to lower prices to reasonable levels. By the same token, students can see that businesses would like to operate in a climate free of competition. A company operating in a market with no competition is known as a **monopoly**. A company that has a monopoly can set prices much higher and command a much greater profit. This is particularly true if the

company is providing a good or service that is essential, i.e., the need is so great that people are virtually compelled to buy the product regardless of its price.

The early industrial revolution has amply shown that businesses not only take advantage of no competition, they will do anything within legal limits to destroy, merge with, or buy out competition in order to form monopolies. When laws were looser, some individuals became fabulously wealthy through creating monopolies. Such individuals were termed **robber barons** for their lucrative but unjust behavior. Biographies of robber barons and their dubious behavior are certainly worthy of study in this connection as well as history. [2] To their credit, however, a number of such persons turned philanthropic, setting up public institutions and trusts that remain a benefit to society.

Also, have students play the board game *Monopoly*. Have them observe and discuss how injustices abound as one or two players gain control of almost everything and bankrupt everyone else.

The conspicuous injustices perpetrated by monopolies in the 19th century induced the United States government to pass the Sherman Antitrust Act of 1890 and subsequent laws that outlawed monopolies and their unfair competitive practices. An important ongoing activity of the U.S. Department of Justice is to monitor activities and mergers of companies to ensure that an atmosphere of competition remains and that monopolies do not form. [3] Students can readily find news stories illustrating such Justice Department activities and bring them to class for further discussion. Cutting Corners on Quality, Especially Food and Medicines

Students have observed that the free market system with competition exerts a great pressure to cut costs. Insofar as cost-cutting measures consist of increasing efficiency of production and/or substituting lower-cost materials that serve equally well or better, the cost cutting is to the benefit of all concerned. But students should observe that the pressure for cost cutting can very well lead to cutting corners on quality.

To a considerable degree, the free market system provides its own check on quality. Consumers are well aware of quality, how long a product lasts. We may be

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[2] A great book describing the manipulations and times of those who gained the reputation of being robber barons is:

Josephson, Matthew. *The Robber Barons*. Orlando, FL: Harvest/Harcourt Brace & Co., 1995. www1.dragonet.es/users/markbcki/joseph.htm

[3] For further information and examples regarding antitrust pursuits see the home page for "Government Regulation of Monopolies:"
cse.stanford.edu/classes/cs201/current/Projects/corporate-comopolies/government.html
This site provides links to both historic and current issues regarding monopolies.

Another site with links to all aspects of antitrust legislation and also current cases is:
www.stolaf.edu/people/becker/antitrust/antitrust.html
See also: Department of Justice, Antitrust Division:
www.usdoj.gov/atr/index.html

enticed by the low price and fooled into buying the low quality item once, but we are unlikely to buy it again. We are likely to even avoid going again to the store that sold us the poor quality goods. We readily learn that the better buy is paying somewhat more for a given item of better quality. Students may be asked, What does this say to producers and merchants? The evidence is that poor quality does not support sales and profits in the long run. Indeed, there are any number of examples where poor quality has proven to be a road straight to bankruptcy.

Further measures toward quality assurance exist. Consumer advocate groups and *Consumer Reports* test different brands of similar items and assist consumers in selecting the best quality. Also, the very real potential of being sued for huge sums of money if an injury results from a piece of equipment breaking or malfunctioning is highly effective financial incentive toward maintaining quality. Using the example of tire swings given earlier in the chapter, suppose Bill decides to use a rope of lesser quality and strength to cut costs. Then, one of his swings breaks, someone gets hurt and sues. What about Bill's "bright idea" to lower costs ?

Food and medicines, however, are areas of particular importance and concern. Food may appear appetizing, taste delicious, and still have been prepared in unsanitary conditions that taint it with deadly germs (crosslink to germs and sanitation, Chapter 7, page xref). Have students observe that dirty unsanitary conditions are effectively cost-cutting measures. It costs to have workers maintain proper sanitary conditions. But as long as food looks and tastes good, we have little clue as to the sanitation behind commercial food preparation. The only real indication is when people eating the food get sick and perhaps some die, an unacceptable outcome.

In the early 1900s, horrendously unsanitary conditions in the food industry were brought to light, and public outcry persuaded our federal, state, and local governments to address the injustice. The federal government created the Food and Drug Administration (FDA), and health departments were established at the state and local levels. These agencies conduct periodic, unannounced inspections of all commercial food preparation or processing facilities. A failed inspection means fines to the owners or even closure of the facility. Therefore, when this government department does its job properly, we have some assurance that the food we get from grocery stores and restaurants is safe.

In short, students should understand that the impetus to maintain high standards of sanitation in the food industry has proven to require a force outside the free market system. It comes from laws and regulations passed and enforced by government. Even so, things are not perfect. One may bring students to note that people still occasionally become ill from contaminated food. However, considering our U.S. population of some

270 million people, the occurrence of such incidents, to the credit of FDA and related agencies, is relatively rare. [4]

The story regarding medicines is similar. In early days, certain individuals would concoct so-called "patent medicines" and promote them as curing almost every malady known and producing good health in general. You can see how such a pitch speaks to almost everyone. Even if each person bought no more than one bottle to try it out before deciding that it was ineffective, there were still enough sales to make the producer of the patent medicine quite wealthy. Indeed, most of the patent medicines were later found to contain nothing of real benefit and some contained ingredients that in the long term were undoubtedly harmful. Most of the patent medicines were outright swindles. What is to prevent this kind of unjust behavior from occurring now? Students should observe that, again, such prevention must be ensured apart from the free market system itself.

Laws passed in response to the injustice now empower the FDA to stipulate that the ingredient(s) of any medicine must be listed on the label and be proven effective for the condition in question by laboratory and clinical testing. Furthermore, all medicines are periodically tested by the FDA to be sure they actually contain the specified amounts of the particular ingredients. Thus, we now have some protection from the fraudulent marketing of unproved and perhaps outright dangerous medicines. But again, students may observe that the system sometimes fails as certain medicines are later found to have deleterious side effects.

Labor and Wages

Every business that grows in size beyond what the owners can handle themselves requires the employment of additional workers. Wages paid to employees represent a cost, often the largest cost, to a business. From the free market viewpoint, this is a cost like any other that the employer would like to reduce as much as possible. This tends to translate into the employer wishing (and often attempting) to pay employees as little as possible. On the other hand, it goes without saying that employees would like to get paid as much as possible for their labors. Therefore, employers and employees almost inevitably engage in a wage tug-of-war.

Where this tug-of-war ends, what wage is accepted by the employer and the employees, is in large part subject to the law of supply and demand. If workers who can perform a given job are few and the need for them is great, wages are effectively bid up (Fig. 4-7a). Employers find they must pay high salaries to gain and keep workers with those particular skills. Consider the high pay for computer specialists for example. It should not escape students' attention that this is why people who make the effort to

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[4] For further information concerning the activities of the Food and Drug Administration see:
www.fda.gov
This site has both direct links to areas of current concern and a very extensive index to any specific issue. History of FDA and its various activities are included.

acquire sophisticated skills almost invariably command higher salaries. (Almost invariably? It still requires that the skills are in demand by employers. Not all sophisticated skills are.)

At the other end of the spectrum, if the supply of workers is great relative to the demand, workers will effectively bid down their wages. A worker demanding a higher wage will readily be displaced by another who is willing to do the same work for less. The supply of unskilled workers is invariably large relative to demand. Therefore, wages for unskilled labor are low (Fig. 4-7b).

It is worth taking students through a brief history of how this scenario has played itself out in various times. Before the 1850s it was perfectly legal and acceptable to own slaves. Recognize that slavery is essentially a practice of paying the lowest wage possible. Slaves could be required to work for nearly all their waking hours for just the expense of food and shelter necessary for their survival. I don't need to describe how ending this injustice in this country required more than the passage of a few laws; it required the Civil War.

Later in sweatshops, children and young people were required to work 70 to 80 hours a week for a pittance of a wage, situations eloquently described by Charles Dickens. Child labor laws passed and administered by the government were required to bring an end to these practices. [5]

Unskilled and minimally skilled labor was still paid abysmally and these laborers were often required to work in wretched and often dangerous conditions. Most instrumental in effecting change was when laborers themselves organized into unions. [6] The strategy of strikes (i.e., refusal to work) helped workers negotiate with their employers to improve pay, benefits, and other conditions. Have students observe that a strike effectively makes a sudden and dramatic shift in the relative supply and demand of

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[5] An archive of photographs showing and giving brief descriptions of the pathetic situations of child labor in America from 1908-1912 may be found at:
www. historyplace.com/unitedstates/childlabor
A chronological summer of child labor laws may be found at:
www.nando.net/nt/special/child-graph3.html
Numerous links to more specific information regarding various aspects of child labor may be found at:
www.mapnp.org/library/legal/emp_law/laws/chld_lbr.htm

[6] For further information concerning the labor movement see:
www.unionweb.org/history.htm
This site provides a short historical overview of the labor movement in America. See also:
www.uaw.org/Hisotry/index.html
This site while specific to the history of the United Auto Workers, provides an excellent case study of the conflict between labor and management and shows how the labor union gradually brought benefits to workers and, thus, to society at large.

labor. The company is suddenly in the position of having to pay more for labor. Needless to say, the ability of organized labor to strike is still a powerful force in winning better compensation and benefits.

Still there are unorganized workers, people who do not belong to a labor union and who are willing to work for almost any wage whatsoever. Even now there are many employers who would pay such people the bare minimum that they might be willing to accept. The resulting injustice has in this country been addressed to some extent by the minimum wage law, which at the present time (year 2,000) requires employers to pay their workers at least $5.15 per hour. It may be noted that a person working full time at the minimum wage still falls short of an income that is considered necessary to elevate them above the level of poverty. (There is a union-supported campaign to raise the minimum wage to $6.15 per hour. [7])

Two recent trends are visible in the tug-of-war between employers and employees over wages. First, companies are instituting more and more measures that enable them to reduce their number of employees. Such measures include using computers, robots, and implementing organizational changes. (Many would say that the organizational changes simply amount to dismissing half the workers and requiring the remaining half to work twice as hard.) Second, production facilities are moving to foreign, less-developed countries where requirements concerning child labor and worker safety are few and ill enforced. Companies can pay lower wages because these countries have an abundance of people not organized into unions, relatively few jobs, and few if any laws regarding wages or benefits. The people earning the lower wages are often living in conditions we would consider as abject poverty. In short, by moving to a less-developed country, companies are happily jumping back to conditions in North America and Europe in the last century, where they were free to maximize their profits at the expense of exploiting workers.

In conclusion, the issue of labor and wages is far from resolved and all the factors involved can make the picture seem exceedingly complex. It is important that students be guided to see the overall theme: The forces of the free market system by themselves can and do readily lead to some people profiting enormously by exploiting workers. We have seen this in slavery, child labor, and workers paid only starvation wages. It is not the free market system that corrects such abominations. It is humankind's developing and growing sense of justice, described in Chapter 3, that makes these practices unacceptable and demands that corrections be made. The corrections often entail passing and enforcing laws, but they may also involve the offended party simply standing up for justice in their own right, as we saw in the case of labor organizing. The virtue of service notwithstanding, there is no virtue in allowing oneself to be exploited.

How will this all ultimately balance out in the future? I almost wrote, "Time will tell," but that would be a mistake. Such a statement implies that our students will be only

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[7] For information concerning the current status of the minimum wage see:
www.dol.gov/dol/esa/public/minwage/main.htm
This site provides links to a plethora of related issues as well.

passive bystanders, that the future will unfold as it will, regardless of their thoughts and actions. Such has never been and never will be the case. As noted in Chapter 3, history, however it is told, is a story of results stemming from people's actions (or inaction). Therefore, how events unfold in the future will depend on the concept of justice that we instill in our students and to what degree we lead them to feel empowered and confident to bring that concept to fruition.

In this discussion, I have inadvertently made the heads of business seem like bad guys, only seeking profit and having little concern for justice. In all fairness, it should be pointed out that business-people may be trapped in the forces of the market system despite their feelings toward justice. For example, other factors being equal, if one company pays lower wages, a competing company is virtually obliged to pay the same lower wages to remain competitive. You might say that they could elect to pay higher wages and accept a lower profit margin, but this course would cause them to lose the capital they might need to modernize and introduce new products to stay afloat. Either way, in the long run they would lose to the competition. Students can see how regulations set boundaries that are often necessary to "level the playing field" and assure that all competitors are playing by the same rules, rules created to be just and fair to all concerned.

Environmental Considerations

Students can be taught from an early age on to respect the environment by being told such things as "Don't litter," "Don't pollute," "Don't damage trees or hurt wildlife needlessly," and so on. However, after students have gained some understanding of the free market system, the law of supply and demand, and environmental and ecosystem principles (crosslink Chapter 7, page xref), they are prepared in the fifth grade to link these together into a more sophisticated understanding.

We are all well aware of and perhaps frustrated by the plethora of laws and regulations pertaining to the environment, from auto emissions to waste disposal to land development. Environmentalists are continuously pushing for more laws and stricter regulations, while conservatives feel that such laws and regulations have already gone too far. Our objective here is to bring students to understand how the free market system and the environment interact and why regulations have been deemed necessary. (To what degree regulations should be imposed may be left to their own consideration.) I use four topics as examples: *pollution*, *use of resources*, *extinction of species*, and *conservation of land*.

Pollution and Pollution Regulations

One may begin by having students consider how every process from classroom projects to manufacturing cars results in certain things being left over, scraps of unused material, leftover glue or paint, wrapping material, food containers, and so on. These are wastes that must be cleaned up and thrown away. But where is "away?" In our classrooms and homes "away" is simply into proper waste containers or down the sink.

No less important are our body wastes flushed away down the toilet. But where is "away" ultimately? Things never just disappear. Students should be guided to understand that ultimately "away" can only be to one or another place in the environment. Another aspect that is equally important is that any burning, whether it is fuel or wastes, involves the conversion of the burned material into gaseous waste products, which go into the Earth's atmosphere. What then?

Now, reiterate the point that the free market system creates a pressure for lowering costs as much as possible. Students should see that conscientious cleaning up and disposal of wastes requires time and effort; it is a cost. Nothing is cheaper for a producer than just dumping liquid wastes into a nearby stream or river, dumping solid wastes in any convenient location, and venting smoke and fumes from combustion directly into the atmosphere. The same applies to towns and cities handling sewage wastes. Sewer lines commonly fed wastes into a convenient natural waterway. Such indiscriminate disposal of wastes was the common and accepted practice from early times until the 1960s.

What made indiscriminate disposal of wastes seem acceptable in earlier times was that human population and industrial outputs were relatively small compared to the dimensions of the unspoiled environment. While one area might be obnoxiously polluted by wastes, many unspoiled streams and rivers and natural areas were still readily accessible. The *natural services* discussed earlier in this chapter worked to purify the atmosphere, degrade wastes, and cleanse waters. But growing human populations and industrial outputs gradually and inevitably shifted the balance. The natural cleansing processes of the environment were becoming overwhelmed. That is, wastes were being added to the atmosphere and waterways faster than natural processes could degrade and remove them, causing pollutants in air and water to reach unacceptable levels. More and more areas were becoming polluted by wastes and fewer and fewer nearby unspoiled areas remained.

This brief history is important so that students will understand that pollution is not due to wanton destruction of the environment. It is basically the natural result of an unbridled free market system, which doesn't levy a charge for discharging wastes into clean air and waters nor does it include a value for not doing so. It treats the natural environment simply as the lowest-cost place to discard wastes.

To protect the environment, the natural integrity of air, water, and wild areas, requires a force from a different source. The different source was and remains people, individuals from all walks of life, speaking up, forming organizations, and otherwise bringing pressure to bear on government to do something about the injustice of the situation—the injustice of a relatively few, for the sake of profit, despoiling air and water and destroying wildlife for the many. As a result, our federal lawmakers passed legislation in 1972 that created the Environmental Protection Agency (EPA) the arm of the government responsible for developing and enforcing regulations based on the many

environmental laws passed in the 1970s and 1980s. [8] Many kinds of environmentally related rules of which students may be aware (e.g., pollution control devices in cars, required emissions inspections, restrictions on open burning of leaves and other wastes, modern waste treatment facilities) are basically outcomes of the environmental laws initially passed in the 1970s and 1980s.[9]

Most importantly, students should understand that environmental legislation and regulations are not static. They are continually subject to review and, as a result, being made more or less strict. Experience in any number of situations has repeatedly shown that free market forces are continually at work to make environmental legislation and regulations as minimal and lenient as possible. Strengthening of environmental legislation only comes with people speaking up and working to demand environmental protection. Current news will provide any number of examples of this ongoing drama.

Use of Mineral and Energy Resources

We have already observed that a classic feature of the free market system and the law of supply and demand is that high demand, by driving up the price, serves to increase supply. We have seen how this has been the case with computers, copiers, and fast food chains. However, students should now observe that this phenomenon of increasing supply contains the assumption that the raw materials going into the product are essentially unlimited. However, this assumption is not entirely valid. It should be pointed out and emphasized that any amount of price increase is not going to increase the basic supplies that creation has provided.

What an increase or decrease in price does do is influence the exploitation and rate of use of that resource while supplies last. Crude oil is one example. The Earth is endowed with a given amount of crude oil, a large barrel of "honey in the pantry" so to speak. A higher price for crude oil entices “producers” to extract more crude oil (honey) from the barrel and offer it to consumers. The additional supply brings prices down, and with a lower price consumers use more, and so on. Observe, however, the initial amount of crude oil provided by creation (initial amount of honey in the barrel) is not altered by any of this. It is invariably depleted by each and every withdrawal. It is only in the short-term economic context that supply varies. In the long-term depletion is inevitable.

The question is: How soon will the ultimate depletion occur? Or, How much time does humanity have to make accommodations? In the 1970s environmentalists sounded alarms that the Earth’s pantry was running out of a number of key mineral resources, crude oil in particular. But alarmist predictions of mineral and fuel resource depletion

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[8] For more information concerning The Environmental Protection Agency (EPA) see: www.epa.gov/
This site provides links to all of EPA's programs and activities.

[9] A summary of all the environmental laws, which EPA oversees may be found at: www.epa.gov/teacher/environmental_laws.htm

have not come to pass, nor does it seem that they will in the immediate future for the following reasons:

1. Technological advances in prospecting have turned up reserves that are far vaster than anyone anticipated.
2. Technological advances in mining and drilling technologies have reduced costs of retrieval of desired materials from hard to reach locations.
3. Technological advances have enabled reductions in the amounts of scarce materials that are required for various applications (i.e., conservation has reduced demands).
4. Technological advances have enabled substitution of more abundant materials for those in short supply.
5. Recycling programs have facilitated the reuse of mineral resources, e.g., the recycling of aluminum cans. (Note that fuel resources cannot be recycled. When they are burned they are turned into gases, largely carbon dioxide, that cannot be transformed back into burnable fuel without equivalent energy *inputs*. But other energy sources, e.g., solar energy, may be substituted.)

Thus, in a practical, short-term sense, the law of supply and demand worked to perfection. Increases in price have in effect made supplies of mineral and fuel resources fully adequate, even abundant. However, will this continue to be the case? The free market system in its "life of its own" can only see and consider the relatively short-term outlook (approximately the next 10 years). It is incapable of seeing restraints that loom in the longer term (15 years and longer).

But it may require considering the longer term to make suitable accommodations to "nature's pantry" running out. The key resource at point is crude oil, which, refined into gasoline and other liquid fuels, is the major support for the livelihood of the entire world. Observe that obtaining and producing all other resources including food and water as well as virtually all transportation depends to a large extent on burning this fuel (crosslink Chapter 15, page xref). Additionally, fuel and other energy resources *cannot* be recycled. When they are burned they are gone forever. (Waste products from combustion such as carbon dioxide is energy poor and cannot be used to yield additional energy.

A recent analysis [10] predicts that global "production" of crude oil, because of dwindling supply, will be on a downward course by the end of the first decade of the 2,000s causing tension between supply and demand, and driving prices skyward. Thus, better judgment should dictate that accommodations to this situation should be in progress now. Those accommodations largely involve the installation of solar and wind technologies, which are already available (See Chapter 15, page xref). However, our market system sees only the present apparent abundance of crude oil, and thus, the people

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[10] Campbell J. and Laherrere, Jean H. *"The End of Cheap Oil,"* Scientific American, March, 1998, pp. 78-83.

of the world are currently on a course of increasing their appetite for and dependence upon crude oil. From the economic principles outlined in this chapter, the implications should be clear. At the very least supply falling short of demand will cause a dramatic escalation in the price of fuel.

Use of Biological Resources

Farmed species. *Biological* refers to living things of all sorts, the entirety of all the kingdoms of living organisms (crosslink Chapter 7, page xref). Thus, biological resources are those commodities humans use that are derived from living things. Food, a most conspicuous biological resource, is now mostly grown on farms or ranches. Students may be asked to consider other "farmed" biological commodities as well, e.g., cotton, pulp wood for paper, coffee, and so on. Ask students: “How do ranchers ensure that we will not run out of beef?”

It may be necessary to revisit and review a lesson from Chapter 7 (page xref) regarding the fact that all species are capable of reproducing a larger number of offspring than is necessary to replace the parents as they ultimately age and pass away. Then students should be able to reason, correctly, that as the animals reproduce, the rancher sells off only those in excess of the number needed to maintain the breeding population. Given rates of reproduction (e.g., cows produce on average one calf per year over a period of about 10 years), students may do pencil and paper exercises to determine how many this may be for a given breeding population.

Now, if the price of beef goes up, ranchers will want to sell more animals. However, and students can role-play this, they will not be so short-sighted as to sell animals from their breeding population. Conspicuously this would diminish what they could produce to sell in succeeding years. Thus, the prudent rancher will actually first hold back animals and increase the size of her or his breeding population. The same may be said, and role-played, for plant crops. If there is a greater demand for wheat, the initial response will be to hold back more wheat for seed. Thus, students will see another example of how higher demand, through an increase in price, will lead to a greater supply.

Students may observe then that, given the biological reproductive capacity of plants and animals alone, there is no limit to the amount of food or other biological commodities that may be produced. The "alone" is the problem though. Guide students to observe that reproductive biology is far from the only factor. It requires land under suitable climatic conditions of temperature and rainfall—or an adequate source of water for irrigation—to grow crops for both human consumption and livestock. Why are crops not grown in deserts? It is more than likely that water shortages will be a constraining factor on the world’s agricultural production in the years ahead (crosslink Chapter 12, page xref).

Uncontrolled harvests from nature and the extinction of species. The following sections of this chapter are predicated on lessons from Chapter 7, (page xref), which, starting in early grades, develop a student's familiarity with the diversity of plants and animals that exist in different parts of the world and how they interact with each other and their environment to form ecosystems, e.g., tropical forests. The concepts of natural ecosystems and major kinds of plants and animals they contain should be reviewed and refreshed through seminaring and linked with the following lessons as they proceed.

Before about 10,000 years ago, neither agriculture nor animal husbandry existed. All biological resources, which included all food and most building materials, were hunted or cut from the wild. In other words, nature served as both farmer and rancher, producing and maintaining a wide diversity of plants and animals within the context of the natural ecosystem. Humans, like other wild creatures lived on the bounty of nature's production. However, agriculture provides a greater and more reliable food source than hunting and gathering from nature. Therefore, as agriculture was developed starting some 10,000 years ago, humans learned to rely less on hunting and more on their own raising of plants and animals. [11]

But the instincts and opportunities for hunting and cutting natural forests remain with us. Students should ponder the question, Does nature have any way of holding back the breeding population and letting consumers only have the surplus? No! It is as though the rancher just opened the gates and allowed people to take as many of the cattle as they wished. It should be self-evident that if the rancher did this he or she would soon have no cattle left at all—nor would the consumers who depended on the continuing production from that herd.

The unfortunate present state of the world is that countless wild animals and plants are being driven toward extinction through pressures of uncontrolled harvest. The saddest part is that virtually none of such hunting is required to fill basic needs. It is for luxuries: exotic skins, horns, shells, and exotic pets. Some students may argue that they take good care of their exotic pet, and indeed they may. However, it should be pointed out that usually well over half of the animals, often in the order of 90%, collected for the pet trade die before reaching consumers. Even those that do get into the hands of caring individuals are really as good as dead to their native ecosystem. Removed from its breeding population it is no longer contributing to the reproduction and survival of the species. Modern-day zoos are an exception discussed later in this chapter (see page xref).

The economic lesson is that in the "blind" hand of economics, the price = demand/supply equation can have diabolical results when it comes to harvesting from nature. Demand (consumers who desire exotic fur or live animals) is reflected in price, i.e., consumers will pay a high price for the given item. The market in turn responds by

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[11] It should be pointed out all the plants and animals grown by humans have a totally natural origin. They were simply species selected from nature and grown preferentially. However, over the years and still continuing those species have been gradually altered by selective breeding and more recently by "genetic engineering." Consequently many of the varieties grown today have little resemblance to their wild ancestors.

increasing the supply to meet the demand. People go out into the wild to hunt, trap, or otherwise catch as many of the desired specimens as they can to fill the demand—and to profit in the process. But nature cannot control how many are taken and will be unable to maintain a breeding population; thus, a species can be depleted even to extinction, if protective measures are not enacted.

In conclusion, economics with its "life of its own" does not recognize impending extinction of a species, much less offer any means of restraint. Indeed, it is exactly the opposite. The wild population being diminished is seen by economics only as inadequate supply. Therefore, price increases! In turn, there is more incentive for people to capture whatever remains. In short, economics works in a way that can only hasten the extinction of a population that is in decline.

Some students will express bewilderment. Why, they ask, are people not able to see that they are causing the demise of the resource on which their livelihood depends. How can they be so stupid? They can be so "stupid," not because they are intellectually deficient, but because another factor is involved, the *tragedy of the commons.*

The Tragedy of the Commons

Observe that nature (both oceans and land), in the absence of private ownership and/or other regulations, is open to being hunted or fished by anyone with the means and desire to do so. In other words, it is common property or a **commons.** In contrast, have students recognize that the rancher, in the example used earlier, did own the cattle, had complete control over how many to send to market or hold back for breeding, and was in the position to profit accordingly.

Not so when the situation is a commons. There is no one to say, much less enforce, how many may be taken and how many should be held back for breeding. Furthermore, if any individual who hunts or fishes decides to stop because she or he feels that too many are being taken, they only see their own income terminate, while their competitors continue to profit and deplete the population. Therefore, the only rational economic decision for each individual or business in a commons situation is to continue hunting or fishing as long as there is profit to be made, extinction of the species notwithstanding. That is the **tragedy of the commons** (Fig. 4-8). [12]

Observe that this concept applies to many realms, not just to hunting or fishing. It may apply equally to the collecting of wild plants, the cutting of forests, the withdrawal of groundwater, and the pollution of air and water. In each case, seminar to observe the commons involved and how, in the absence of any regulations, it is to the economic disadvantage of any individual harvester or polluter to change the situation. (In the instance of pollution, air and water are free , i.e., commons, dumping grounds to receive

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[12] A very complete site regarding tragedy of the commons from Garret Hardin's original paper can be found at:
www.science.murdoch.edu.au/teach/biotech/tragedy/tragedy.htm

wastes. In the absence of regulations, they are there to receive wastes from anyone who chooses to use them as such.)

Some people see the tragedy of overhunting and blame the greed of the hunters alone. That is too simplistic. It is important that students note that consumers willing to pay the high price are more to blame. Or, in the case of pollution, it is the consumers who reward the lowest cost producer without regard to how much pollution they may be causing. In short, it is consumers who are the basic driving force.

Thus, the tragedy of the commons illustrates another basic failing of the economic system, one that requires certain countermeasures. One may observe that the countermeasures, at least in the United States, are mainly laws and regulations protecting wildlife, conserving land from development, and controlling pollution that are passed and enforced by the government. However, students should be made aware that government does not act single-handedly or autonomously in such matters or in other matters either. Government policy is a reflection of the leaders elected by the voting populace and is further a refection of the pressure of individuals and nongovernmental organizations brought to bear. This issue will be pursued in greater length in Chapter 5 (crosslink Chapter 5, page xref). Here, it is only important for students to understand that as they come of voting age and even before, they may have an impact on the degree to which government protects, or fails to protect the environment and wildlife through writing their representatives and belonging to environmental organizations the number of which will be noted in the following synopsis of the sorts of laws and regulations used to protect the environment.

Measures to Prevent Overhunting

Students in fourth or fifth grade are likely to already be familiar with hunting and fishing regulations (laws). What is significant is to bring students to seminar how these laws protect the species from being over-hunted.

Hunting and Fishing Regulations. State governments set and enforce such regulations as licenses, bag limits, and hunting seasons for each game species. Effectively, the government is declaring ownership, thus, removing wildlife from a commons, monitoring populations, and preventing the number taken from exceeding what is necessary to maintain a breeding population. Have students observe how poaching (the illegal taking for wildlife) makes the task much more difficult.

Restricting Use of Specified Areas. Parks, national forests, wilderness areas, wildlife preserves or sanctuaries, and other such areas have one similarity. The government has removed them from a commons status and controls activities so wildlife has a protected place to live and breed.

Wildlife Conservation. Modern zoos do much more than keep penned animals for display. They are playing an active role in the breeding of endangered species (species in danger of extinction in their own natural habitats). Zoos are frequently spoken of as modern-day arks. They may offer the only hope of survival for many species.

Also note that fees for admittance and accommodations paid by people wishing to see wildlife in its native habitat now far exceeds the profits gained by killing and/or selling the wildlife. This **ecotourism**, as it is called, offers some hope that perhaps the free market will provide an incentive for protecting wildlife sufficient to counterbalance its decimation. Ideally, those who were or might be the poachers may find an alternative source of income in the ecotourism business.

Particularly well known nongovernmental organizations (NGOs) that play an important role in wildlife protection. The World Wildlife Fund, Nature Conservancy, National Audubon Society, Conservation International, and The National Wildlife Federation. [13] These and other organizations, supported by membership, work both independently and cooperatively with governments in efforts to provide protection for wildlife. The National Wildlife Federation has publications and teaching kits that are designed for various levels of elementary school. Students should be made aware that they can become personally involved in such organizations, and they can even make careers out of such involvement.

Pollution Control

One should bring out the fact (seminar) that pollution constitutes more than just a hazard to human health. It adversely effects forests and other plants and animals of natural ecosystems as well. Fish and other aquatic organisms are particularly devastated by water pollution and this results from applications of fertilizer and pesticides, as well as, direct discharges of wastes and extends through streams, rivers, bays and estuaries into the marine (ocean) environment as well. Around the globe, coral reefs, which are particularly fascinating to students for the incredible array of strange organisms they

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[13] For further information regarding these nongovernmental organizations that are specifically dedicated to saving at least sections of the natural environment and the endangered species they house see:
World Wildlife Fund
www.worldwildlife.org/
Nature Conservancy
www.tnc.org/
National Audubon Society
www.audubon.org/
Conservation International
www.conservation.org/
National Wildlife Federation
www.nwf.org/

house and are of great importance to the overall health of oceans, are at risk from pollution as well as other factors. [14]

Thus, the need for pollution control becomes self-evident and most students will be aware of regulations barring the indiscriminate disposal of wastes and burning of refuse that are now in effect. Nongovernmental organization that have been particularly prominent in promoting, supporting, and strengthening pollution laws and regulations include The Natural Resources Defense Fund (NRDC) and Environmental Defense Fund (EDF). [15]

Conserving Land from Development

In earlier times, land itself was a commons and this condition persists to a significant degree. This statement is likely to strike students as paradoxical because property ownership and requirements to respect the private property of others are conspicuous. However, have students relate their history lessons regarding wars to the underlying attitude regarding land. Whatever the political reasons for the war, the attitude toward the land is basically that it is there to be taken, occupied, and defended by anyone with the power and means to do so. That this attitude still exists is seen by the fact that almost every nation maintains a strong national defense. In other words, there is the fear that if we can't defend our territory someone will take it from us. The concepts of establishing national boundaries by mutual agreement and honoring those boundaries out of respect alone is, historically, a relatively recent concept and one that still has a long way to go on the international level.

Within a nation, the government deeds (gives or sells) the land to individuals who then have private ownership and the land can be bought and sold through the free market system. Additionally, our government still retains possession of large tracts, **federal lands**. Much of such land is designated as national parks, national forests, national monuments, wilderness areas, and military bases. But students should be brought to recognize that whoever has title (ownership) to the land is only meaningful insofar as the government upholds and honors the system of ownership. If the government were to disappear, all the land would again be a commons up for grabs.

Even within our system of ownership, however, the free market system still tends to treat land as a commons. It can be taken by anyone with the means to do so, and to a

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[14] For further information regarding the protection of coral reefs see:
www.wri.org/

[15] Nongovernmental organizations particularly active in the area of pollution control and abatement are:
National Resources Defense Council
www.nrdc.org/nrdc/
Environmental Defense Fund
www.edf.org/

marked degree used as the taker sees fit. The only distinction in this case is that the means to take land is sufficient money to buy it.

How should land to be used? Should it be left in its natural state as wildlife habitat, or should it be developed? If development is chosen, what type: farming? mining? housing? shopping malls? industry? In large part the policy has been to let free market forces decide (Fig. 4-9). This policy effectively says that land will be used for what generates the most income for the owner. Observe that no tangible income is to be made by leaving land in its natural state. There is some income in cutting and selling the timber, more in farming, and still more in converting the land to a housing development, but only if there is a demand for the housing. Thus, historically we see this trend; land was originally cleared for its timber, then farmed, and now we are seeing countless farms giving way to housing developments and shopping malls. Economists refer to this trend as land being used for its *highest value,* which, in this context students should understand, only refers to what will enable the owner or user of the land to earn the most profit. Aesthetic values and the values of natural services provided by natural landscapes (see page xref) unfortunately do not enter into economic figuring.

It became evident to visionary people in the late 1800s that the unbridled free enterprise system was capable of using and degrading every natural area on earth in the name of profit. To protect areas in their natural state would require intervention apart from the free market system. Early visionaries, such as John Muir and the Sierra Club[16] he was instrumental in forming, were key in bringing pressure to bear on Congress to pass legislation that created our National Park Service, a system that has been emulated by other countries around the world. We should recognize that setting aside large tracts of land for national parks was not without controversy at the time. Many people predicted economic ruin if the plans for national parks went forward. In retrospect, had the parks not been established, the land would only have benefited the personal profits and bank accounts of a few individuals. As it is, the nation has a priceless heritage of natural wonders, parks such as Yosemite, Great Smoky Mountains, and Yellow Stone, that draw and give pleasure to hundreds of millions of visitors every year.[17] Thus, conflicts

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[16] For further information concerning the history of John Muir and the Sierra Club see:
www.sierraclub.org/

[17] For further information regarding America's national Parks see: National Parks Service at:
www.nps.gov
A complete listing of National Parks and further information regarding them can be accessed by name or location at:
www.nps.gov/parks.html
Also, a listing of all U.S. National Parks on which one click gives further information may be found at:
dir.yahoo.com/Recreation/Outdoors/Parks_and_Public_Lands/United_States/National_Parks/

concerning land use are nothing new, nor are they likely to cease anytime in the near future. Students will be readily able to find and bring in news articles about the ongoing debates over land preservation versus development particularly regarding urban sprawl. Such news can begin thought-provoking discussions and lively seminaring: How do we weigh economic values against the values of natural services? Which direction will ultimately benefit the most people? Which avenue will lead ultimately to the greatest justice? Again, opportunities for personal involvement should not go unnoticed.

A final consideration is that protecting natural areas may require more than restrictions on its use. In particular it should be noted that pollution from far-away sources may severely damage an otherwise protected area. For example, coral reefs and other marine areas are being damaged and destroyed by fertilizer runoff from the land. Chemicals from combustion are causing acid precipitation which damage forests and lakes far from the point of emissions (crosslink Chapter 12, page xref).

It will be important, in discussing these issues, not to lose sight of the central theme. It is that unbridled free market economics, in certain situations, is at odds which what is best for protecting human and environmental health. Students may be asked to research, flesh out, and seminar any number of examples as well as those given here to illustrate this point. However, the conclusion of such research should not be to disparage money or economics, because we cannot do away with these any more that we can do away with exchanging goods and services. The problem is one of devising a system that will place adequate value on nature and natural services. Noble Prizes in economics await the persons who are able devise such a system and we can hope that one or more of our students will grow up to be a winner.

Summary and Conclusion

The key point of this chapter has been that the essence of the economic system, indeed, the essence of civilization itself, is the exchange of services. Money is only a medium to facilitate the exchange. Insofar as we can emphasize this point in our lessons, we stand to take some of glitter off of money and put it where it more properly belongs—on the provision and exchange of services. Recognizing this point and some of the specifics regarding how the monetary system functions can help engender and support responsible attitudes toward the use of money.

By controlling the money supply and maintaining competition, the free market system works admirably to create a self-adjusting balance between prices, supplies, and demands. However, students should also be guided to understand that, left to itself, the free market system can take us into quite unjust and environmentally tragic situations, because it fails to recognize or factor in the value of natural resources or unspoiled landscapes, and that invaluable natural plants and animals can all too easily be pushed into extinction.

Therefore, it has proven necessary to place restrictions and regulations on the free market system. In general these restrictions and regulations are imposed by government, but government itself is only an instrument used to bring thoughts and values of people to

bear. Thus, the restrictions and regulations are not imposed by government as such, at least not a democratic government such as ours. They are imposed by the will of the people acting through government. We can hope that the will of the people manifests a striving for the highest sense of justice and unity. Finally, the free market system is ill conceived to provide such basic service as water, sewer, and roadways. Those services fall to government as will be described in the next chapter.