



Road To Roota, The

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Grade Levels: 2,3,4,5,6,7

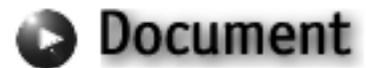
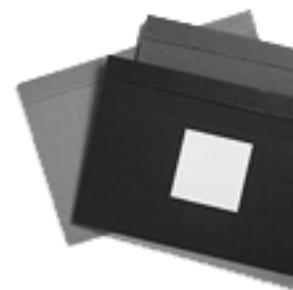
Document Type: Instructional Unit

Description:

A teacher's guide designed to accompany the comic-style booklet, "Wishes & Rainbows." Provides background information, an analysis of the economic themes in the comic book, discussion questions, a glossary of economic terms, and classroom activities.



This document may be printed.



THE ROAD TO ROOTA



A Guide to Classroom Use of Wishes & Rainbows

The **Wishes & Rainbows** booklet is published by the Economic Education Section of the Federal Reserve Bank of Boston's Public Services Department. It is intended for the reading enjoyment of children in grades one through seven, and may be appreciated as simply a captivating fairy tale or as an economics teaching device. **Wishes & Rainbows** can be a valuable tool for acquainting elementary and junior high school students with many economic concepts, including scarcity, supply, demand and allocation. This guide is designed to aid the teacher in bringing out these underlying themes.

BACKGROUND

(Terms followed by an asterisk appear in the Student Glossary.)

Scarcity* is the constant which underlies all economic problems. People, with unlimited wants and needs, live in a world of limited resources. Since there is not enough of most resources to satisfy everyone, all societies face the problem of how to allocate scarce resources. They must choose, among many alternatives, the ways in which to use their scarce resources.

In the United States (or, as some might argue, throughout the world), allocation of resources is determined mainly through supply,* (demand) through their purchasing choices. Producers respond by using resources to supply those goods and services. When supply and demand are equated through the mechanism of prices, equilibrium is said to exist. If demand for a product increases so as to exceed supply, **price*** should theoretically begin to rise, thus both lowering amounts demanded and ultimately stimulating producers to increase supply. Similarly, should supply exceed demand, producers may reduce prices so that consumers will purchase increased amounts of their product. In this way, the price of an item both influences, and is influenced by, supply and demand.

Demand for some items is more sensitive to price change than for other items. Demand which is very responsive to a change in price is called **elastic**;* if demand remains relatively constant despite price changes, it is said to be inelastic. Since people have to eat, demand for food in general is inelastic. However, people often alter their diets to reflect food prices, so that the demand for a specific food item is often quite elastic.

On some occasions, such as during war, a government may decide that allowing prices to be set purely by supply and demand would cause intolerable hardship. It therefore intervenes in the distribution process, through either price controls or **rationing**.*

Rationing is the allotment of set amounts of scarce items to each individual. As such, it is an attempt to control demand because allowing prices to rise to equilibrium levels is deemed contrary to the national interest. However, unlike rising prices, rationing does nothing to allay demand, and often results in an illegal underground market.

When prices, for whatever reason, are not set at equilibrium, the resultant distortion causes an imbalance between supply and demand. If a product is priced at an artificially high level, it will not all be consumed and a **surplus*** will be created. If the price is set too low, demand will be stimulated and production depressed, resulting in a **shortage**.*

Natural resources* are the raw materials necessary to satisfy people's needs and wants. Natural resources can be divided into three categories: exhaustible resources, such as fossil fuels; renewable resources, such as plants, animals and soils; and inexhaustible resources, such as sunlight or wind. Not all natural resources are available throughout the world.

A society's economic way of life is largely determined by its available natural resources; people who live near the ocean may tend to rely on fishing, those who live on rich soil become farmers, and so on. But wants and needs are not necessarily limited to those items which are readily produced by available resources. This fact motivates people to attain scarce resources by a variety of different methods.

One means of adding to the supply of a scarce resource is to increase **production**. This can sometimes be accomplished through **investment**.*

In the United States, for instance, a shortage and rising prices of energy in recent years resulted in increased investment in exploration and recovery techniques.

A second method of augmenting the supply of a scarce resource is the use of a **substitute**.* Increased coal and gas production and new techniques for exploiting solar energy resulted from the oil shortage of the 1970s.

A third, and extremely important, way of solving the problem of limited resources is trade. The simple practice of **barter*** and other exchange among individuals, and complex trade agreements among nations, are attempts to adjust to resource shortages or abundance.

Finally, the search for limited resources often causes population shifts. The mobility of the Great Plains Indians in search of buffalo, the California Gold Rush, and the increase in Alaska's population as a result of the oil pipeline are all examples of such quest-inspired migration.

MONEY

One function which scarce commodities have often served, particularly in primitive societies, is as commodity money. The scarcity of an item is one quality which makes it suitable for use as money, since limitations on supply serve to enhance its value. In addition, rarity precludes a sudden influx of the commodity, which could trigger a decrease in the money's value and result in inflation. Some items which have been used as money because of their scarcity include gunpowder, tobacco, animal skins and precious metals.

Money may have value simply because people believe it will be accepted when they need to use it, not because the substance used as money has some special worth. It can be merely a tool, serving as a unit of account, a medium of exchange, a standard of value, and a store of value. Through the use of money (in whatever form), people can trade, compare values, and save. To be most useful, therefore, whatever type of money is used should be not only relatively scarce, but also easily carried, able to be divided into smaller amounts of proportional worth, and durable rather than spoiling or rusting after a time.

WISHES & RAINBOWS is the story of one society and its attempts to assimilate, with least disruption, a rare and much coveted new resource.

The scarcity of the colored flowers is the critical element to the story. Because of the lack of the essential natural resource, sunlight, the supply of colored flowers is acutely limited. The demand, however, is overwhelming; not only is the flower which Roota brings from Colorland the first flower in Pebbleton, it is also the only color that any of the Pebblepeople have ever seen!

On the first page of the comic book, the reader is told that, except for the lack of color, Pebbleton is much like any other town. Presumably, therefore, the Pebblepeople have a built-in distribution system for allocation of resources. Just how this system works the reader can only guess: it may be capitalism, or socialism, or feudalism (so that the flowers would belong to the nobility). The flowers could all be publicly owned and shared (which seems to have been Roota's original idea when she planted the first flower in the town square); they could be auctioned and sold to the highest bidder; or they could be given "to each according to his needs." Some of these methods are suggested on page 14 of the comic book, and one can readily imagine many others (lottery, contests, rewards for public service, etc.).

Why is Pebbleton's traditional distribution structure abandoned in the case of the colored flowers? The anomalous nature of the new resource, along with the overwhelming disproportion between supply and demand, create a politically sensitive situation. The mayor, who is at first perfectly willing to expropriate one of the flowers for himself, realizes from the clamor for flowers that whatever distribution method is chosen is if he declares public ownership and sharing, he may be accused of asserting too much governmental control. The demand of the color-starved Pebblepeople for the flowers seems both urgent and insatiable. The mayor therefore assigns to Roota the unenviable task of deciding upon a method of distribution that will satisfy everyone.

Roota's distribution system is ingenious, for several reasons. First, the older members of a society are often resistant to change. The introduction of color is likely to transform the traditions and customs by which they have always lived. By using an allocation system which is based on seniority, Roota establishes good will with an important segment of society.



Meanwhile, since aging is an inexorable process, those who are younger and therefore must wait to receive flowers are nevertheless comforted by the knowledge that their turn will come.

Finally, mention should be made of the fact that Roota's decision to distribute the flowers on the basis of age satisfies Roota's personal desire to add color to her grandmother's life. After all, her grandmother, who first told her of Colorland and whose "dream is someday to see ... a flower's softly tinted petals," will be one of the earliest recipients of a flower.

That Pebbleton will never be the same again following the appearance of the colored flowers seems clear. On the basis of what we know about economics and the way societies tend to react to the scarcity of important resources, is it possible to predict what changes seem likely to occur?

For one thing, it is quite possible that Roota's "rationing" system will either have to be modified or will cease to work. What will happen if the wealthiest person in town decides that he does not want to wait his turn and offers to pay huge sums of money for flowers? Will the elderly citizens be allowed to sell? If not, will an illegal market develop?

Will the Pebblepeople try to develop new ways of obtaining colored flowers? Will they form corporations to explore the caves thoroughly in hopes of finding new entrances to Colorland? Will local carpenters race to build ladders tall enough to reach the hole in the ceiling of the sunlit cave? Will engineers compete in developing new drilling methods to bore more holes in the ceiling, thus letting in more sunlight for a larger crop of flowers? And will the lure of simply being able to own as many flowers as one wants be enough to stimulate all this economic development? Or will the incentive of being able to sell the flowers garnered by these new methods be an essential ingredient? Or, finally, should the mayor of Pebbleton announce that the town itself will undertake some of these projects, raising taxes to finance them and equitably distributing all the proceeds from the venture?

Will the town's scientists and engineers start investing their time and energy to develop substitutes, seeking ways of synthesizing colors and perhaps ultimately making artificial flowers? If any of the above means of increasing the supply of color and flowers succeeds, what will happen to demand for them? To their value? Will there be a surplus? Will Pebbleton start to export colored flowers to the nearby communities of Gopher Junction and Boulder's Ridge?

These potential scenarios represent only a small fraction of those imaginable. Many other "futures" of equal validity may be suggested in classroom discussion. WISHES & RAINBOWS is a fantasy and, as such, may be best explored through the unrestricted imagination of teacher and students.

A final note for any who might feel that our analysis of the social and economic implications of WISHES & RAINBOWS may have somewhat overstretched the metaphor: we would like to call attention to a rather strange occurrence in seventeenth-century Holland. The following is a quotation from Sir Kenneth Clark's CIVILIZATION:

"It is really rather touching that the first classic example of boom and slump in capitalist economy should have been not sugar or railways or oil, but tulips. It shows how the seventeenth-century Dutch combined their two chief enthusiasms—scientific investigation and visual delight. The first tulip had been imported from Turkey in the sixteenth-century, but it was a professor of botany at Leiden, the first botanical garden in the north, who discovered its attribute of variation which made it such an exciting gamble. By 1634 the Dutch were so bitten by this new craze that for a single bulb of a tulip called the Viceroy, one collector exchanged one thousand pounds of cheese, four oxen, eight pigs, twelve sheep, a bed and a suit of clothes. When the bottom fell out of the tulip market in 1637, the Dutch economy was shaken."*

* Harper & Row, 1969, p. 197. Reprinted with permission of the publisher.

STUDENT GLOSSARY

barter	The direct trading of one good for another without using money.
consumer	An individual who uses goods or services.
demand	The desire to obtain a good or service.
elasticity of demand	The degree to which amount demanded varies in response to price change.
export	To ship merchandise abroad, particularly to foreign countries.
import	To receive merchandise from abroad, particularly from foreign countries.
investment	The use of resources to increase future productive capacity.
natural resources	Wealth supplied by nature, such as mineral deposits, soil, sunlight, timber, water and wildlife.
price	Value expressed in terms of money.
production	The process of providing goods and services.
rationing	The allocation of goods and services among users. Rationing may be by price or some other means.
scarcity	The limited quantity of resources in proportion to human wants and demands.
shortage	Insufficiency of supply in relationship to demand.
substitute	A commodity or service which can replace another.
supply	The quantity of a commodity or service available.
surplus	Excess of supply in relationship to demand.

DISCUSSION QUESTIONS FOR YOUNGER STUDENTS

1. According to Roota's grandmother, what are the two reasons why no Pebblepeople ever go to Colorland?
2. How does Roota find Colorland?
3. What does Roota's grandmother tell her to do with the flower? Why?
4. Why did the first flower die?
5. What were some of the methods of distribution suggested by the Pebblepeople on page 14? Can you think of any other methods that could have been used?
6. What two things limit the number of flowers Roota and Rockie can grow?
7. Will the Pebblepeople ever have enough flowers?
8. Why is the story called Wishes & Rainbows? What other possible titles can you think of?

DISCUSSION QUESTIONS FOR OLDER STUDENTS

1. Why does Roota choose to distribute the flowers by age? Is this a fair system? What other possible systems might she have chosen?
2. Will the Pebblepeople accept Roota's distribution system? What might happen if they don't? Should those who have been given flowers be allowed to sell them? How should the price be set?
3. If color becomes easily obtainable in Pebbleton, what new products will be available to consumers? What old products would become more desirable?
4. What other changes might take place in Pebbleton as a result of the introduction of colored flowers? What economic changes? What industries might benefit? What new jobs might be created?
5. What ways might the Pebblepeople find to reduce the shortage of color and flowers? What industries and occupations might help in these efforts? What sorts of investments might be called for? How might the town's government help?
6. In what circumstances might the Pebblepeople consider exporting flowers to Gopher Junction and Boulder's Ridge? Will citizens of those towns have as great a demand for colored flowers as Pebblepeople have? Do you think that **every** resident of Pebbleton will own at least one flower before trade with other towns occurs?
7. What resources are scarce in the United States today? What happens to the price of scarce resources? What steps have been taken to ease such scarcity?
8. What are some important resources whose introduction helped make our economy what it is today? What would happen if one of these resources (oil, steel, dynamite, electricity, computers, airplanes, television, fish, cotton, maple syrup) could no longer be produced in this country? What substitutes might be found? What industries would disappear? What would happen to the value of such resources?
9. The mayor of Pebbleton announces that, since the colored flowers are so rare and valuable, they are going to be used as money, with petals for change. Is this a good idea? What qualities does a good form of money have? Why? Which of these qualities do flowers have and which do they lack? What would happen to Pebbleton's economy if someone then discovered a new sunlit cavern with thousands of flowers growing in it? Should someone control the growth of those flowers? Who?

ACTIVITIES

1. Have students make a list of products which used to be always black-and/or-white but now are often colored (e.g., autos, tuxedos, linens, movies, television, soap, telephones, underwear). Why was color introduced for these items?
2. Have students trace pictures of Roota standing on the ledge (see page 6 of the comic book). Then, instead of a field of flowers before her, have them draw numerous man-made items. Have each student choose from among those items which one Roota should take back to Colorland, and write a paragraph explaining why.
3. Have students ask their parents and grandparents about what products have been scarce at various times during their lives. Was there any particular reason for the scarcity? Were any special arrangements made for distributing the scarce goods? Introduce and discuss the concept of rationing.

THE COLOR MONEY GAME

This game is designed to illustrate the mechanics of barter, the forces of supply and demand, different theories of price setting, and the distinction between personal values and those dictated by society.

Cut out and place in front of the class the five color strips on the enclosed flower sheets: blue, red, green, orange and purple. Have the students vote, by secret ballot, listing all five colors in order of preference. Next, issue each student three to five of the paper flowers of each color. Give them plenty of time to exchange flowers among themselves, explaining that the main idea is not necessarily to get the **most** flowers, but the **best**. At some point, end all trading and begin a class discussion about what has taken place. Introduce and define the words "barter," "supply," and "demand" (see Glossary). Try to get a consensus about the relative values of the colored flowers as they were exchanged during the trading session (e.g., three blues equal two purples, etc.). Write these ratios on the blackboard.

Now tally the ballots, giving five points for each first place vote, four for each second, and so on. Reduce the totals to approximate ratios and write these on the blackboard. Compare the ratios from the ballots with the ratios that came out of the trading session.

Discuss which set of ratios is a better reflection of how the class feels. Why? How would the trading be different if values based on the ballots had been introduced before the trading session? Why?

What might be the advantages and disadvantages of using a fixed value for each flower? Discuss wage/price controls.

Finally, give scores to the students for the flowers they now have, allotting points according to the ratios based on the balloting. It would seem that the student with the most points is the winner of the game, and whoever has the least points is the loser.

But now discuss whether this conclusion is really valid. If orange were the favorite color of only one student, Marybeth, so that she finishes with several orange flowers but the least number of points, is she really the loser? Doesn't she have those flowers she prefers, those which have the greatest value for her? What does this mean in real life? If an individual has a different value system from that shared by most of society, and treasures items of little or no cash benefit, is that person a "loser"? Is there a difference between "value" and "price"? In life, what really does decide the "winners" from the "losers"?