

SCARCITY, ALLOCATION METHODS

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**BECAUSE MANY THINGS ARE
SCARCE, PEOPLE NEED
WAYS TO ALLOCATE THEM.**



**Economics
Arkansas**

EDUCATION FOR REAL LIFE

CONCEPT STATEMENTS FOR ELEMENTARY ECONOMICS

1. People consume goods and services to help satisfy their wants.
2. Resources are used to produce goods and services.
3. **Because many things are scarce, people need ways to allocate them.**
4. Scarcity requires people to make choices that involve trade-offs and have opportunity costs.
5. Specialization and division of labor increase people's productivity and dependency on one another.
6. People are willing to make exchanges when what they receive is worth more to them than what they give up.
7. Money makes trading easier.
8. The price of a good, service, or resource is determined by buyers and sellers in that market.
9. People earn income when they sell their resources.
10. People incur expenditures when they buy goods and services.
11. Entrepreneurs and businesses incur costs when they buy resources and earn revenues when they sell the goods and services produced with those resources
12. Governments provide goods and services and collect taxes.

BECAUSE MANY THINGS ARE SCARCE, PEOPLE NEED WAYS TO ALLOCATE THEM.

SCARCITY: having less of something than is desired

Examples:

- ❖ People do not have enough time to do everything they want, enough money to buy all the goods and services necessary to satisfy their wants, and/or enough space in a suitcase to fit in all the clothes they want.
- ❖ Societies face a general scarcity of resources (not enough resources to produce all the goods and services required to satisfy everyone's wants).

ALLOCATION METHODS: ways to ration or distribute something that is scarce

Examples:

- ❖ chance (random draw)
- ❖ personal characteristic (height, birthday, age)
- ❖ performance-based (test, competition)
- ❖ authority (parent, teacher, dictator)
- ❖ equal shares
- ❖ bargaining
- ❖ first-come-first-served
- ❖ auction (willingness and ability to pay)

Concept Statement Examples

- ❖ There are three new outfits Dora would like to have to satisfy her desire to be in style, but she only has enough money (scarcity) to buy two. Josh wants to read, go bowling, watch a movie, and go to a party, but he doesn't have enough time (scarcity) to do all four things.
- ❖ A school wants more parking, more playground space, and a baseball field, but it doesn't have enough land (scarcity) for all of them.
- ❖ In each round of musical chairs there are not enough chairs (scarcity) for all the players. The chairs are "won" by the players who sit down the fastest (performance-based allocation).
- ❖ A painting that several people want, but only one can have (scarcity), is sold to the highest bidder (auction allocation).
- ❖ At the intersection of two roads, drivers on both roads want to cross, but only one may cross at a time (scarcity). Four-way stop signs at the intersection allocate the use of the intersection (first-come-first-served allocation).

GETTING STARTED

- ❖ Prior to the lesson use masking tape to create an outline of a square (or other simple shape) in the teaching area. Make it only large enough for one-half to two-thirds of the total number of students to sit inside. It is important that there is not enough space for all students to fit inside the outline.
- ❖ Have each student draw a picture of some good or service that would satisfy a want they have. Once students have completed their drawings, tell them that you have created a production square that will produce any good or service drawn by a person sitting in the square. Ask: Who would like to sit in the square? (*Likely everyone*)
- ❖ Have students line up along a wall and start filling the square with sitting students (no sitting on top of each other!). Keep adding students until it is clear no more students can fit (even though there are still many in line waiting for a space). Tell students who are still standing that it looks like there just isn't any room for them. Let them vent their frustrations.
- ❖ Explain: When there is not enough of something we want it is called scarcity. In this situation, there is a scarcity of space for all students to sit inside the outline. When scarcity exists it means some people's wants will simply not be satisfied. In this case, it is the students left standing. Have students return to their seats.
- ❖ Display illustration on front of the guide. Ask: What do you see? (*It looks like people were swimming and need towels to dry off.*) Ask: How many people do you see? How many dry towels? Do you think there is a problem? What is it?
- ❖ State: There are only 6 towels and 7 people. If each person wants a towel there will not be enough. There is a scarcity of towels, so someone is not going to get their own towel.
- ❖ Students will write a paragraph describing a scarcity situation they have encountered.

USING IS THERE ENOUGH?

- ❖ Distribute the activity page and provide each student with 21 small items like discs (or paper clips, beans).
- ❖ Remind students that scarcity exists when less of something is available than is desired. In other words, scarcity occurs when there is not enough of something to satisfy all wants for it.
- ❖ Read or show various scenarios (see below). Have students place one disc in each square of the upper table to represent the number of things that are desired and one disc in each square of the lower table to represent the number of things that are available.
- ❖ Have students compare their two tables and determine whether or not scarcity exists by placing another disc on the appropriate face. Discuss answers and repeat with other scenarios.
- ❖ **Math extension:** After each scenario have students write the number sentence that represents the situation using the "greater than" symbol ($>$), the "less than" symbol ($<$), or the "equal" symbol ($=$). For example, for the first scenario this would be: " $8 > 5$."

Possible scenarios (numbers can be changed to create scenarios with different results):

You want 8 more pieces of candy. There are 5 pieces of candy left.

You want to play games for 4 hours. There are 2 hours before your bedtime.

You want to take 7 outfits on your trip. There is room in your suitcase for 7 outfits.

You want \$8 to buy a toy. There is \$9 in your piggy bank.

Each person in a family of 4 wants their own bedroom. There are 3 bedrooms in the family's house.

Jack wants 3 cookies and Jill wants 4 cookies. Their mom made 8 cookies.

Gayle and James each want 3 apples. There are 3 apples in the refrigerator.

9 students each want their own desk. There are 8 desks in the classroom.

4 people in a group of 6 want to rent a bike. There are 5 bikes available to rent.

Holly wants to go on 4 rides that cost \$2 each. There is \$6 in her purse.

Moe, Larry, and Curly each want 3 pancakes. The mix they have makes 8 pancakes

TEACHER THOUGHTS

1. Do not use the term “shortage” when talking about scarcity. Shortage is a price-related concept, scarcity is not. Scarcity simply compares how much of something is desired to how much of it is currently available.
2. Allocation methods do not eliminate, reduce, or “solve” scarcity. They provide ways of distributing whatever is scarce, but still leave some people with less than they want.
3. The auction allocation method is based on willingness and ability to pay (i.e. things are allocated to the highest bidders). This makes it difficult to simulate in a classroom setting unless students have earned different amounts of “classroom dollars” or “teacher reward points” that have other valuable uses (so bidding with them is actually costly). However, it is important to describe how it works as this allocation method is the basis of how prices allocate scarce resources, goods, and services in a market economy.

MONSTER MUSICAL CHAIRS

Read *Monster Musical Chairs* by Stuart J. Murphy or view online at www.youtube.com. Discuss what is scarce in the story (*not enough chairs for everyone who wanted one*). Play musical chairs with students and discuss what allocation method is being used to allocate chairs (*performance-based: fastest to sit down*).

HOME/SCHOOL CONNECTION

Parents will work with their child to recognize and record scarcity situations they face. These might include not enough of one particular breakfast item for all, not enough time for all after school activities, or not enough room in their suitcase for items when spending the night with their friend. Record the times when a scarcity situation occurred and exactly what was scarce. Return to school to discuss with the class.

When did a scarcity situation occur?	What was scarce?

DISCUSSION OR WRITING PROMPTS

- ❖ Select an allocation method. Explain a scarcity situation in which it would work well and another one where it would not.
- ❖ Explain how the phrase “You can’t always get what you want” applies to the concept of scarcity.
- ❖ Write a short story in which the main character and a few friends experience a scarcity situation. Describe an allocation method they use and its results. Create an illustration to display with your work.
- ❖ Create a poem or jingle about scarcity or allocation methods.

LITERATURE & ONLINE CONNECTIONS

- ❖ Scan the QR code to the right or go to www.economicsarkansas.org
Click on *For Teachers - Grab & Go Economics - Online Connections*

SCARCITY IN THE PAST

Have students use historical documents, artifacts, first-person accounts, etc. to document scarcities that people in a past period or situation would have faced and how they dealt with them.

- ❖ Example: a scarcity of space (or a scarcity of drinkable water) faced by immigrants traveling to the United States by ship or settlers traveling west in covered wagons
- ❖ Example: a scarcity of time for early settlers to produce enough food and other goods to survive
- ❖ Example: a scarcity of desirable plots during a land rush in U.S. western expansion.

SCARCITY OF TIME

What do you do when there are 40 minutes of time during the day that needs to be filled? Ask the students for suggestions! Divide the class into small groups. Each group will brainstorm ideas of what the class can do during this time. Suggestions might include free reading, working on tablets, drawing, social time, etc. The students will return to large group to share their ideas. Create a class chart of ideas given by the students. There should be too many ideas to do in the 40 minute time slot. Tell the students that the time can be divided into two 20 minute periods but there is still not enough time to do everything everybody wants to do...time is scarce. Have the students return to their groups to discuss which allocation method they would like to use to determine which two activities will be done. Discuss the allocation methods with the class. Follow up questions: Did any groups use the same allocation methods? What methods were the most common? Use the most common allocation method to show what two activities would be selected.



IS THERE ENOUGH?

This many are wanted:

This much is all there is:



No Scarcity!



Scarcity!

YOU CAN'T ALWAYS GET WHAT YOU WANT

		4	
		4	
2	2	1	1
		1	1
2	2	1	1
		1	1

WHO GETS THEM?

Allocation Method	They Get Them

USING YOU CAN'T ALWAYS GET WHAT YOU WANT

- ❖ Distribute copies of the activity page to individual students or small groups. Describe this scenario: Robinson Crusoe has 8 hours each day to use his human resource to produce tools and food. It takes him 4 hours to produce one tool, 2 hours to catch one fish, and 1 hour to gather one cup of berries.
- ❖ Have students write his options in the appropriate numbered boxes (e.g. in all the “2” boxes, representing 2 hours of fishing, write “one fish”). Next have students cut out all the boxes and place the large shaded box in front of them. Explain that this box represents all the time Robinson has to work (8 hours).
- ❖ Have students investigate possible ways Robinson could spend this time working by fitting various numbered boxes totally in the shaded box with no overlap (e.g. 0 tools, 2 fish, and 4 cups of berries). Share and discuss.
- ❖ Remind students that goods satisfy wants. Tell them that to satisfy all his wants, Robinson needs 1 tool, 2 fish, and 3 cups of berries. Have students place these in the shaded box. When they can't, describe the situation as scarcity: Robinson does not have enough time to produce all the goods needed to satisfy all his wants.
- ❖ Other scenarios (each with options for the 4-2-1 boxes and wants that create a scarcity situation):
 - Jacob has \$8 to spend at the amusement park (Options: \$4 for one ride; \$2 for one box of popcorn; \$1 for one carnival game). 2 rides, 1 box of popcorn, and 3 carnival games would satisfy Jacob's wants.
 - Julia has 8 hours of free time available this week (Options: 4-hour hiking trip; 2-hour movie; 1 hour spent reading). Going on 1 hiking trip, watching 3 movies, and reading for 6 hours would satisfy Julia's wants.
 - A school has 8 units of land to develop (Options: 4 units for one soccer field; 2 units for one playground; 1 unit for one basketball court). 1 soccer field, 3 playgrounds, and 7 courts would satisfy students' wants.
 - A river has a flow of 8 million gallons of water per day (mg/d) (Options: 4 mg/d to irrigate one crop; 2 mg/d for one industrial use 1 mg/d for one city's use). Irrigating 2 crops, having water for 2 industrial uses, and having water for 4 cities to use would satisfy the wants of people living near the river.

USING WHO GETS THEM?

- ❖ Divide class into groups of 4 or 5 students each. Distribute three identical, indivisible, and desirable items to each group (pens, free passes for something, toys, lunch with teacher, etc.). Ask groups if there is enough of the items for everyone in the group who would like one. If the item is desirable enough the answer should be “No”. Describe the situation as a scarcity of the item (or describe the item as a scarce good).
- ❖ Distribute one copy of the activity page to each group. Explain that the activity will determine which three students in each group will get the items and which will not.
- ❖ Choose an allocation method below (underlined) and describe one of the ways of doing it. Have each group of students do what is described and determine who in their group would get the items. Have one student in the group record the method and the first names of the students who would get the items. Repeat with other methods until each student has a turn as the recorder and at least four different methods are demonstrated.

Allocation Methods (with alternative ways of doing them):

Chance or Luck: place names in a box and draw three; assign each student a number on a die and roll until three different numbers are rolled; use a spinner until three students have been selected

Personal Characteristic: the tallest three; the first (or last) three alphabetically by first name; the three whose birthdays are coming up the soonest after today

Authority: the teacher just picks three; one student in the group just picks three; someone from another group just picks three (*Note: The picker does not have to have or give any reason.*)

Performance-based: the three who perform some task the best: most pushups or sit ups; fastest solving a math problem correctly; most wins playing rock-paper-scissors once with each other member of the group

Bargaining: each group discusses and decides which three in their group gets the items

- ❖ Discuss the results: Did any student always get the item? Did any student never get the item? Which method do you think worked the best and why? Lead additional discussion by asking which method they believe is the fairest? ...the easiest to use? ...allocates the items to the three students who want it the most?