

Carrying Capacity Candy Bars. An In-class Activity.

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The topic of Resource Management at our college usually evokes an image of long lists and outlines on the blackboard (or whiteboard) of a variety of government agencies and structures. This is generally presented in such a way as to guarantee student inattention. As we strive to impress upon them the importance of conserving and allocating scarce and valuable resources, they text message one another and nod off. After all, they have just about anything they want, and they believe they are entitled to whatever is left. Thus there is the need to demonstrate the reality that some resources are scarce, and that they need to be distributed or allocated in ways that are not entirely based on affordability or entitlement. The following activity serves to keep student attention and give the allocation of resources a relevance to the student that is clear and demonstrable.

The methods of resource allocation come from Ibrahim and Cordes, *Outdoor Recreation: Enrichment for a Lifetime* and they are as follows:

Allocation of limited resources to a desiring public.

1. Merit
2. Lottery
3. Fees
4. Queuing

Preparation for this activity involves three things:

1. Request that students bring various amounts of change (paper or coin) for the day of the activity.
2. Purchase a bag of candy bars or other items desired by students (I've used small Snickers bars in the past, but check for peanut allergies first).

3. Have a means of randomly selecting students with the chance of winning/ being selected 50% or less. Playing cards can separate students into included and excluded groups by red and black (50%) or by suit (25% - 75%). Colored rocks in a bag drawn at random can provide any percentage you have in the proportion of colored stone, etc.

The candy bars represent a limited quantity of a resource that a large number of people desire.

Stage one: Everyone in class compares how long it has been since the last time they ate, the person (or up to 10% of the class if you have a large class and a lot of candy bars) who has gone the longest without food gets a candy bar based on need or merit.

Stage two: Everyone who desires a candy bar draws a colored stone from a bag, or a card from a deck of cards, or some other random (without replacement) means to achieve a 50% (or smaller if you have more than two colors) selection of who gets a candy bar. This represents the lottery system.

Stage three: offer four to ten (depending on the size of your class, fewer for a smaller class) candy bars for sale to the highest bidders in an auction. The highest bidder gets the option of one or more at their price, then the second highest bidder gets the option, and so forth. This represents a fee market system set by supply and demand. Don't forget to collect your money to offset the expense of the candy bars.

Stage four: Identify those students who have not yet received a candy bar, and still want one, and in alphabetical order (or some other pre-determined order) hand out one candy bar to one student every minute until the candy bars are gone or each student finally has one of their own. This represents queuing.

If there are candy bars left over, they should be saved for the future when there is another need driven by hunger. This would be conservation of the resource.

If there are no candy bars left over, this would represent exhaustion of the resource and the need to develop resource alternatives if the class is still hungry or ever hungry in the future. If you run out of resources and this elicits cries of "Unfair!" from the students, then maybe the lesson worked and they are ready to learn that not everyone gets everything they want in a resource limited world.

Bibliography

Ibrahim, Hilmi and Cordes, KathleenA.. (2002). Outdoor Recreation: Enrichment for a Lifetime. Sagamore Publishing, Champaign, IL.