

Data Record

Minutes Elapsed	A. Total in Ore Reserves (at start of each minute)	B. Input from Natural World (by minute)	C. Subtotal in Ore Reserves (A + B, at end of each minute)	D. Output to Consumer (by minute)	Total in Ore Reserves (C – D, at end of each minute)
1	120	+ 4	124	1	123
2	123	+ 4	127	2	125
3	125	+4	129	4	125
4	125	+4	129	8	121
5	121	+4	125	16	109
6	109	+4	113	32	81
7	81	+4	85	64	21
8	21	0	25	25	0
9	0	0	0	0	0
10	0	0	0	0	0

Observations

What happened to.....

1. the number of pennies removed by consumer as the minutes passed?

It increased, doubling with each minute

2. the total in ore reserves as the first minutes passed?

It increased.

3. the total in ore reserves as more and more time passed?

It decreased.

Analysis

1. Explain why the total in ore reserves changed as it did. Relate this to a real-world situation.

At first reserves were being consumed at a slower rate than they were being found or developed. Then as demand increased at a faster rate than discovery and development the world reserves were depleted. Population growth accounts for much of the increase in demand for natural resources. Also changes in technology can lead to increased demand.

2. What would have to happen to world demand to make the total in ore reserves reach a constant level? Demand would have to equal the rate of discovery and development of new resources.
3. The supply of pennies from the natural world is constant in this activity, and the real-world demand doubles every minute. How does this correspond to a real-world situation? You could say that population is doubling while the discovery and development of new resources is constant. But humans are ingenious, and are always looking for new ways to use and develop new resources and to recycle resources already consumed. So, although it is potentially a real world situation, it has not been so to date.

Conclusions

1. What does this activity illustrate about supply and demand for natural resources? That over consumption of natural resources will lead to a shortage of that resource and potentially result in the loss of that resource.
2. Give a real-world example of a problem that might arise as a result of a supply-and-demand situation. These will vary. One is the possibility of rationing of power, or water. Another possibility is fighting (war) as a result of demand for certain resources. The cost of the resource could skyrocket, making it impossible for most people to meet their needs. A positive result may be the invention and development of substitutions for the resource that is in short supply.
3. Name three things that could be done to lessen supply and demand problems. These will vary. Recycle, find substitutions, decrease in population, etc.