Know Your Resources

- **Grade level:**
  Middle School, High School
- **Subject areas:**
  Economics, English Language & Literature, Math, Science, Social Studies
- **Instructional strategies** (from *Classroom Instruction That Works—Research-Based Strategies for Increasing Student Achievement* by Robert J. Marzano, Debra J. Pickering, Jane E. Pollock)
  Identifying similarities and differences
  Summarizing and note taking (in assessment)
  Nonlinguistic representations
  Cooperative learning
  Cues, Questions and Advance Organizers
- **Estimated duration:**
  Preparation time: 30 minutes
  Activity: 20 minutes for introduction to the lesson, 15 minutes for the role-playing, and 30 minutes for discussion (more or less, depending upon the depth of discussion)
- **Setting:**
  Two classrooms (another room or outdoor area may be substituted for one of the classrooms)
- **Skills:**
  Comparing similarities and differences, discussing, interpreting, investigating, generalizing, listening
- **Vocabulary:**
  biomass, disparity

Summary
Students learn about the limited supply of natural resources in the world and, by role-playing, begin to understand some of the equity issues related to the use of those resources.

Objectives
Students will:
- Learn about the world's supply of resources.
- Compare lifestyles and consumption habits of rich, middle and poor people throughout the globe.

Materials
- 5 different types of candy or other items (pennies, beads, paper clips, etc.)
- Scale (optional)

Background

Earth's resources are finite, and the world's wealthiest countries are consuming a disproportionate share of those resources.[1] At the same time, surveys gauging the relative "happiness" of populations reveal that happiness does not necessarily correlate with wealth.

According to an article from the *BBC News World Edition* reporting on data collected by the World Values Survey[2], the happiest people in the world live in Nigeria, then Mexico, Venezuela, El Salvador and Puerto Rico.

The least happy? They are from Russia, Armenia and Romania. U.S. ranked 16th in overall satisfaction, Austrialia 20th and Britain 24th. World Values Survey researchers say "happiness levels have remained virtually the same in industrialised countries since World War II, although incomes have risen considerably."[3] The study does mention, however, that money is a factor in happiness, along with a variety of other indicators, some of which include genetic propensity to happiness, marriage, desiring less, friends, and faith (religious or not).[4]

This lesson introduces students to the limited supply of natural resources in the world, and equity issues related to the use of those resources.

Procedure
1. *The Activity*
   Before students arrive to class, hide candy or other items in a second room (not your classroom) or in an outdoor setting. Hide some materials very well, and keep some like-materials (such as chocolates) in large groups to represent concentrated mineral deposits or forests. The materials may represent various resources. Below is an example:
   Tootsie rolls……………..Oil
   Butterscotch candies…….Natural gas
   Lollipops..………………Water
   Smarties…………………Trees
   Chocolate kisses..…………Aluminum

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[1]For example, according to the Worldwatch Institute, about one-fourth of the world's cars are found in the United States—more cars than people licensed to drive them. The world's richest use about 25 times more energy per person than the world's poorest.
  On average, a U.S. citizen uses five times more energy than an average global citizen, 10 times more than the average Chinese, and about 20 times more than the average Indian. The U.S. consumes about 25 percent of the world's fossil fuel resources, but has less than five percent of the world's population.
  Other consumption statistics may be found in the *State of the World 2004* by the Worldwatch Institute, published by W.W. Norton and Co., New York.
[2]The World Values Survey is headed by Ronald Inglehart, a political scientist at the University of Michigan and originator of the idea of materialist versus post materialist values.
[3]*BBC News World Edition*. "Nigeria tops happiness survey," Thursday, October 2, 2003 Retrieved on January 14, 2004 at http://news.bbc.co.uk/2/hi/africa/3157570.stm].
[4]Ibid.

2. Ask the class to tell you what they know about renewable resources. Then ask what they know about non-renewable resources. Encourage examples of each. (Renewable resources—such as trees, and solar and wind power—will replenish themselves at least as fast as they are used; non-renewable—such as oil, iron ore, copper, bauxite crude oil and natural gas—are finite, often taking millions of years to re-establish).

3. Then, ask students what they know about countries around the world, and if they could classify them according to an economic standard. Be sure to give students time to think about this, as it may increase the depth of their answer. One possible classification might be "rich," "middle" and "poor." (An overhead master about rich, middle and poor countries follows this lesson plan.) Although the differences between these countries are changing—especially with the rise of large multinational mining corporations—the following definitions are still generally applicable.

   Rich countries consume most of the world's resources—the U.S., Germany, Japan and the United Kingdom, for instance. These countries have the money and political influence to do things like mine the earth for minerals. Representatives can afford to travel great distances to search for minerals.

   Transportation: private cars
   Diet: meat, packaged foods, sodas
   Materials: disposables

   Middle countries are less wealthy—Russia, Eastern European nations and China, for instance. Residents of these countries consume fewer goods, generally have a more moderate standard of living and have less cash/influence to buy/lease equipment.

   Transportation: bicycles, buses
   Diet: grain, water
   Materials: durables

   Poor countries like Mexico, many Central American nations and African nations are where poverty and hunger are common. Citizens of these countries can't afford to travel far to explore for minerals, and often do not have the means to mine the resources they do have. Frequently, when mineral resources are found in poor countries, they are mined and exported by Rich and Middle countries.

   Transportation: walking, animals
   Diet: insufficient grain, unsanitary water
   Materials: local **biomass**

4. To represent the world's unequal distribution of population and resources, divide students into Rich, Middle and Poor Income Groups. A class of 25 students might have 4 in the Rich group, 7 in the Middle group, and 14 in the Poor group.[5]

5. Students search for objects, with the rich group getting more time to hunt, and the poor group getting the least time. If a sufficient quantity of objects are hidden, students representing Rich countries get approximately 60 seconds to look; students representing Middle countries—20 seconds; students representing Poor—5 seconds. (Note: Times can be reduced if fewer items are hidden.)

6. Optional: Weigh the materials collected for each group, and calculate ounces of materials available per person in the respective groups.

7. Discuss. How do students feel about the amount they found (the resources they have access to)? How would students use the resources they found? How would they gain access to resources they need but don't have? What might happen if people who do not have the means—or desire—to mine a rich mineral resource? How does the stuff people own affect their quality of life? What makes you happy? Does "stuff"? Do you think "stuff" make others happy? (See Background information.)

Assessment
See a sample assessment at the end of this lesson plan.

Extensions
1) Write a compare and contrast paper about the life of a person from a poor or middle-class country, and compare it to your own life. How is there life different? How is it the same? See *Resources,* below.

2) In Think, Pair and Share groups, identify factors that contribute to **disparity** around the world. Then, in a large group, write those factors on the blackboard and discuss.

3) Investigate the gross national product (GNP) for specific countries around the world. Page 44 of the 2001 *World Bank Atlas* lists approximately 200 countries and their GNP. It also provides classification information—Low income: $755 or less; upper middle income: $2,996-$9,265; high income: $9,266. (*World Bank Atlas,* International Bank for Reconstruction and Development, © 2001, p. 44). In addition, review *Material World: A Global Family Portrait* for visuals from selected countries. (See *Resources*, below.)

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[5] For more information about rich, middle and poor countries, see "Economic Statistics [Gross National Income, Gross Domestic Product, **Agriculture**, Capital Formation, Inflation Rate, Account Balance, And External Debt; By Country, 1990-1999] [Part 02: Luxembourg-Zimbabwe]," *World Bank Atlas*, 2001. Issued by International Bank for Reconstruction and Development. © 2003: Congressional Information Service, Inc. p. 45.

4) Conduct a service-learning project. Heifer International, a non-profit organization, has developed a program where youth read books to feed hungry children around the world. For more information, order the free *Read to Feed Leader's Packet* at www.readtofeed.org. The program is outlined in detail in the *Read to Feed* Leader's Guide, which comes with the packet. Heifer International helps families in more than 128 countries, providing food- and income-producing animals, training in animal management, environmentally-sound farming and community development.

5) Teach several lessons from Heifer International's *Lessons from a Village Called Earth* (www.readtofeed.org).

Resources

Heifer Project. Read to Feed website, curriculum and service-learning project. [readtofeed.org].

Hollyer, Beatrice. *Wake Up, World!* Henry Holt and Company, 1999.

Kindersley, Barnabas and Anabel. *Children Just Like Me*. DK Publishing, Inc. 1995.

Lewis, Barbara. The Kid's Guide to Service Projects. Free Spirit Publishing, 1995.

Menzel, Peter. *Material World: A Global Family Portrait.* Sierra Club Books, 1994.

Smith, David J. *If the World Were a Village*. Kids Can Press Ltd., 2002.

United Nations Statistics Division, *Indicators on income and economic activity.* [Retrieved November 28, 2003, @ http://unstats.un.org/unsd/demographic/social/inc-eco.htm.]

U.S. Census Bureau, U.D. Department of Commerce, Table 16, Population: 1790 to 1990. [www.census.gov/population/censusdata/table-16.pdf].

U.S. Census Bureau, U.D. Department of Commerce, *World population at a glance: 1998 and beyond.* IB/98-4, issued January 1999. [www.census.gov/ipc/prod/wp98/ib98-4.pdf].

World Bank Atlas, International Bank for Reconstruction and Development, © 2001, p. 44.

Assessment

Dr. Mary Bigler, an internationally known educator and humorist, is a professor in the Dept. of Teacher Education at Eastern Michigan University. At the 2003 Midwest Middle Level Educator's Association conference, Mary shared ideas about creating strategic readers in middle school classrooms.

The following idea was gleaned from her presentation. The purpose of this "Research Report Pattern" is for students to be able to identify distinctive characteristics about something they've learned—the essence of the lesson, in this case. It could be used as a stand-alone exercise, or eventually become the first page of a research paper.

Provide students with the following "fill in the blank" sentences:

If I were …
I would be…
I would be…
But I would not be…
Because that would be…

One example for the Know Your Resources lesson could read like this:

If I were rich,
I would be well-fed.
I would be lucky.
But I would not be malnourished,
Because that would be poor.

	Transportation	Diet	Materials
Rich	Private cars	Meat, pkg. foods, sodas	Disposables
Middle	Bicycles, buses	Grain, water	Durables
Poor	Walking	Insufficient grain, unsanitary water	Local biomass