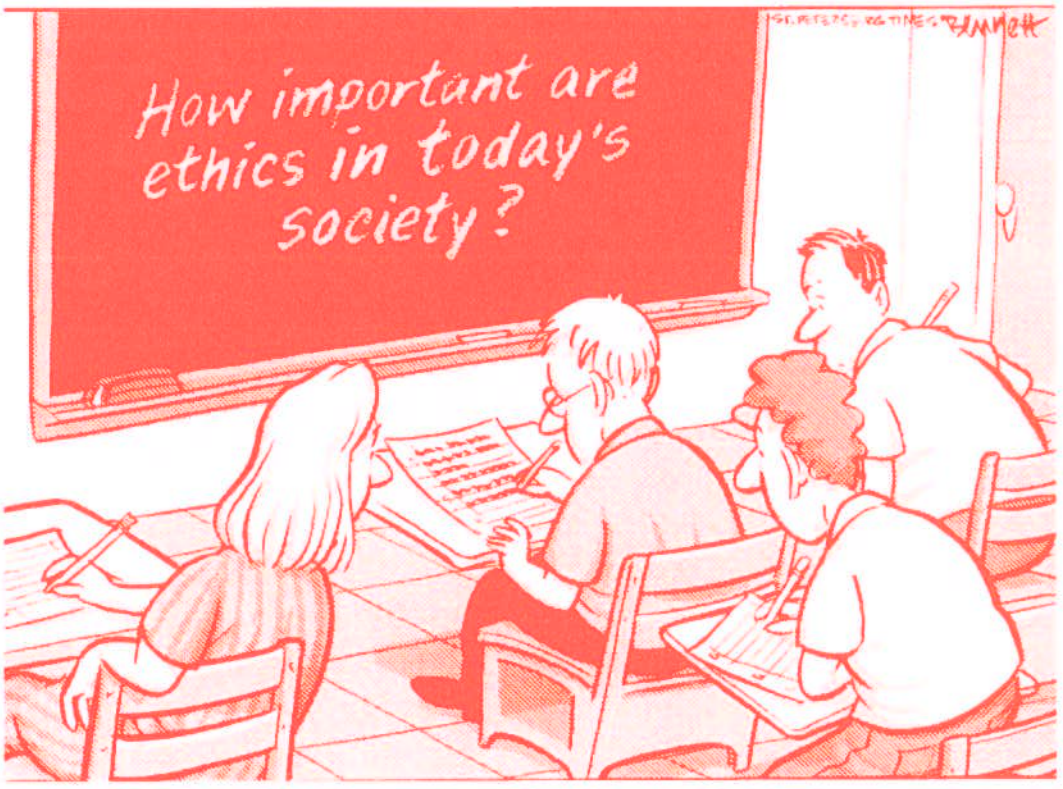
LESSON 3

ETHICS IN MY COMMUNITY: NOW AND IN THE 21ST CENTURY



Clay Bennett, North American Syndicate

Ethics in My Community: Now and in the 21st Century

Prework for students: Read "There's Only Ethics . . ." Bring in at least one story from a local newspaper, magazine, or television or radio news that has something to do with ethics.

Objective

By the end of this lesson, students will have gained greater insight into the role of ethics in their own community and in society at large.

Opening

"In the essay, 'There's Only Ethics,' Dr. Kidder makes the point that we will not survive the 21st century with the ethics of the 20th century. What do you think he means by this statement?"

Strategies

- Discuss the opening question and the stories students have brought to class.
- Then complete the Ethical Barometer Exercise. As students do the exercise in small groups, have them also take notes in preparation for the homework assignment. Be sure to keep the flip-chart pages—these will be used again in Lesson 4.
- Notebooks: Students may want to keep a copy of the "ethical barometer up" and "ethical barometer down" lists in their notebooks as references for future assignments.

Reflection Questions

- What does Dr. Kidder mean when he says technology leverages ethics in new ways?
- Why does Dr. Kidder say that we will not survive the 21st century with the ethics of the 20th century?
- What do we mean by an ethical barometer? Do we have any personal responsibility to improve the ethical barometer (or is it just too much to deal with)?
- What new issues might we be faced with in the future?

Supplemental Activities

- Show and discuss the video *Personal Ethics and the Future of the World.*
- To extend the Ethical Barometer Exercise, try the 21st-Century Issues Exercise.
- Discuss the article, "What May Happen in the Next 100 Years." What does that say about our ability to predict the future?

Closure and Transition

"We have talked about a number of ethical problems facing our community as well as some of the positive trends counteracting those problems. Which, if any, of these problems do we think we can help solve right now? What community assets will be helpful to us? In the next lesson, we are going to identify some possible projects that we might do as part of this service-learning class."

Homework Assignment

Ask students to complete the Ethical Barometer Worksheet. See also Suggested Subject Adaptations at the end of this lesson.

Lesson Assessment: Revisions for Next Time

THERE'S ONLY ETHICS . . .

BY RUSHWORTH M. KIDDER, PRESIDENT, THE INSTITUTE FOR GLOBAL ETHICS

The following reading is based on a speech given by Dr. Rushworth Kidder.

ETHICS IS ESSENTIAL TO SURVIVAL

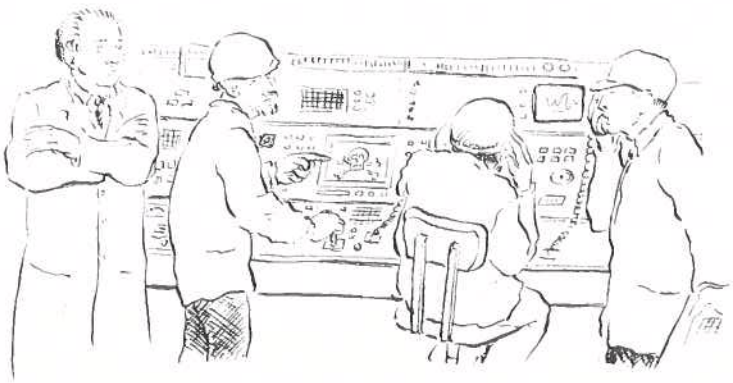
Ethics is not a luxury or a choice. It is essential to our survival. To support that point, let me give you three statements, two definitions, and one conclusion.

STATEMENT ONE: We will not survive the 21st century with the ethics of the 20th century.

Why do I say that? Well, several years ago, in 1989, I visited Reactor Number Four at the Chernobyl nuclear power plant in the Soviet Union. Three years earlier, in 1986, the reactor had exploded, causing the worst nuclear disaster in the history of the world.

Looking back later, I discovered that I was probably the first western journalist ever to get that close to Chernobyl. I was taken there in the company of two of the engineers who had come in right after the accident on April 26, 1986, to help clean up the mess.

The radioactive fallout from that disaster was detected in hundreds of countries all over the world. The explosion and its aftermath killed thousands of Soviets.



Why did it happen? That night in 1986 there were two engineers in charge of the control room. It seems they decided to "play" with this gigantic nuclear reactor. As they continued to experiment, they ignored six separate computer-driven

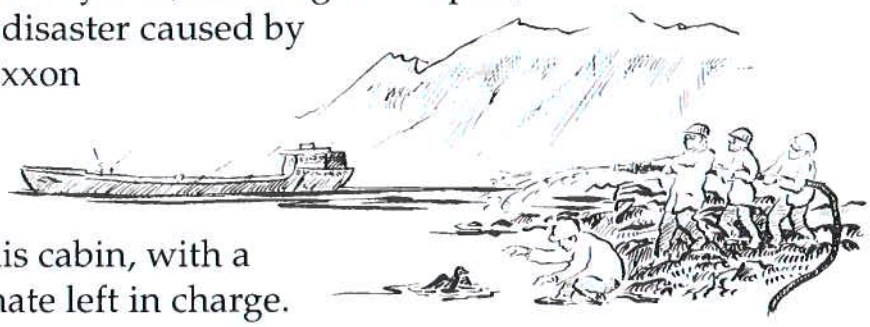
alarm systems. Each system would come up and say, "Stop! Don't do this! Terribly dangerous!"

But instead of shutting off the experiment, they shut off the alarms.

When my friends got in there, they discovered there were valves padlocked in the "open" position to keep them from shutting down and turning off this experiment. That is how deliberate this whole thing was. Now, the question to me is, what was going on in the minds of those engineers? Obviously, these were bright people. Jobs at Chernobyl go to the very best Russian students. These two engineers were well educated. Why did they decide to do something so terrible?

I think their consciences had to shut down before the alarm systems could be turned off. They must have known the possible consequences of what they were doing. What blew up Chernobyl was not a lack of knowledge. It was a lack of ethics.

That's a very important point for the 21st century. There is no machine you could have put those individuals in front of in the 19th century and said, "Do the worst thing you can with this machine," that would have produced the damage of Chernobyl. Or, to change examples, let's think about the 1989 disaster caused by the American oil tanker Exxon *Valdez*, a large ship that hit bottom in dangerous waters while the captain was drinking in his cabin, with a less experienced subordinate left in charge.



The oil spill from this ship killed thousands of animals and took millions of dollars and many years to clean up, and the effects will be felt for decades. Ships as big as the *Valdez*, carrying millions of gallons of oil, were not in use just a century ago. Back then, no one imagined that such enormous destruction might, one day, be the result of one person's thoughtless behavior.

Or consider the 1978 controversy over Love Canal, where a school and some houses were built on top of a toxic dump site, despite warnings of the serious long-term dangers involved. Today, decades later, only a small area of this site is considered safe for houses, and much of the area will be uninhabitable forever.

The point here is that the very scale of our systems, the scale of our technology itself, is multiplying the importance of ethics in brand-new ways. Whether the people making decisions are the decision makers at the top or the people who work for them, our increasing reliance on technology almost guarantees that every worker will face many more difficult challenges today than were faced in the past. And what is going on in the consciences of those individuals directly determines the use of that system.

In the 21st century, Chernobyl and the Exxon *Valdez* will seem small. Imagine, for example, the future possibilities of genetic engineering or cyberspace. Then imagine the ethical sophistication needed to manage them.

Not only will we need to learn complex new technologies that demand intelligence and expertise. We will also need to develop the ethical awareness to avoid the misuse of such systems, because ethical mistakes could lead to large-scale disaster.

That is why it seems to me we will not survive the 21st century with the ethics of the 20th century. Something significant has to change.

Reading the Moral Barometer

Statement Two: While we know we need to make some changes in our ethical behavior, we are not in good shape to make those changes.

Why? Well despite some good signs, many surveys point to some unsettling trends. Before looking at those trends, what are the good signs?

- A 1994 *Parents Magazine* survey found that 98 percent of their readers placed teaching right versus wrong as number one on the list of the top ten values to teach kids.
- A 1996 annual survey of high achievers published by *Who's Who Among American High School Students* identified "the decline of social and moral

values" as today's greatest national crisis, as well as the biggest problem facing the teen generation.

In other words, there is increasing interest in the question of ethics, and increasing evidence that we want stronger ethics. But even though we are more *interested* in ethics, there is a serious question about whether we're *doing* anything about it.

Consider these statistics:

- In a survey a few years ago by the Pinnacle Group in Minnesota, 59 percent of the high-school students surveyed said they would willingly face six months probation in order to do an illegal deal worth $10 million. Sixty-seven percent of them said, "Yes, I plan to inflate my expense account when I get out in the business world."
- A more recent survey by the Louis Harris organization, done for the Girl Scouts, found that when you asked high-schoolers, "Would you cheat to pass an important exam?," two-thirds of them said yes.
- In a 1992 poll sponsored by Shearson-Lehman, 37 percent of 18- to 29-year-olds named "corruption" and 39 percent named "deceit" as important ways to succeed.

You may think we are only talking about students. We're not. We are talking about America's middle managers in the year 2020—and about the top business leaders, the senators and representatives, the heads of schools and charities in the year 2030.

We are talking about the people who are going to be piloting *your* airplanes while you sit back wondering, "Does this guy really know how to fly, or did he just fake his way through his exams?" We are talking about the people who are going to be managing *your* money.

But Are Kids to Blame?

I don't think so. There was a story reported in one of the New York newspapers a while ago about a ten-year-old child who found on the street a wallet full of money, full of credit cards, and full of identifi-

cation. He reportedly took the wallet to school, where he could find no one—no teacher, no administrator—willing to tell him what was the right thing to do with that wallet.

Essentially they all said, "Gee, I can't impose my values on you, kid. I mean, if I told you what to do, that would not be right. You have to sort it out for yourself—otherwise it's my ethics and not yours. Besides, you're poor and this guy is obviously rich. Your mother might be mad if I told you to send the wallet back. No, you figure it out for yourself."

What's going on? Why do they feel this way? Why has our educational system delivered us into a situation where even the most basic concepts of honesty, responsibility, and respect for others are not being taught?

Why Ethical Relativism Fails

That question brings me to Statement Three, which is simply this: The principal difficulty we face is the idea that there are no absolutes, no common values, no standards, no core set of moral ideas out there that can be shared and understood. It is the notion that all ethics is relative, negotiable, fluid, intensely personal.

Let me give you an example of how it surfaces. Let's say that at a school committee meeting, the committee members get thinking about the big issues facing the world in the next century. They want to shape an educational system to prepare students to meet those challenges.

Pretty quickly someone realizes that teaching in schools has been mostly about the facts—about biology, or math, or history. And they realize that that's good, but it's not enough—that we will not survive the next century without better ethics. So someone suggests that we teach values and ethics.

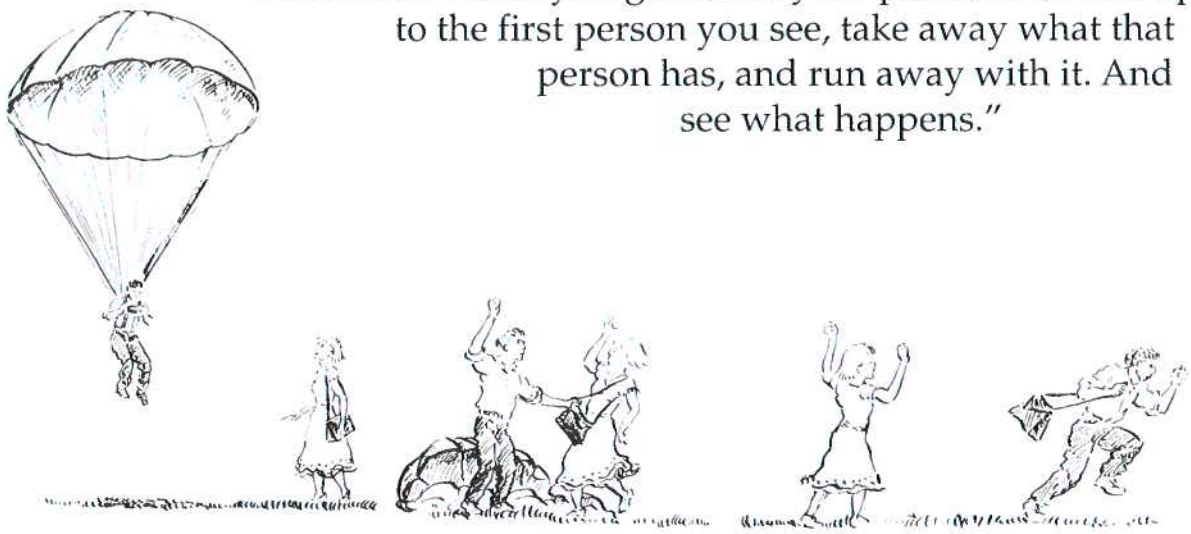
And immediately somebody in the back of the room stands up and says, "But whose values will you teach?" When someone asks this question, he or she may be trying to stop the discussion, thinking, "if you dare to teach ethics, you are imposing *your* values on *my* kid, and I don't like that!"

So let's examine this issue a little more. When people imagine that all values are relative and no standards exist, they sometimes use the famous scientist Albert Einstein to support their arguments. "See," some people are fond of saying, "Einstein proved that everything is relative. There are no absolutes out there in the physical world. So how do you expect there to be absolutes in the moral realm? This is the 20th century: We no longer believe in absolutes and constants."

Einstein would be horrified to hear that his ideas are being used this way. And so would your friendly local research physicist. The next time you see her, ask her what would happen if, when she went into her laboratory tomorrow, she said, "Okay, everything is relative. Today I think we will set the speed of light at sort of . . . well, about here! And I've always thought pi was too large, so let's call it 2.8 for today. And we'll say Planck's Constant is this, and Avogadro's number is that, and the acceleration due to gravity is right about here for today."

Ask her how successful she's going to be in physics if she really believes that Einstein was saying that all things are relative and there are no constants.

Don't believe that argument. There are constants in the physical realm. But are there any constants in ethics? A friend of mine who teaches at Stanford University argues there are constants by using this example: "Okay," he says, "I am going to parachute you into some country, and you don't know where it is. When you get out of your parachute, walk up to the first person you see, take away what that person has, and run away with it. And see what happens."



Unless the person is a Buddhist monk who thinks everything is fated to happen, says my friend, you'll get a strong objection. Why? Because you will have broken a property law. People summarize it in the Ten Commandments as "Thou shalt not steal." But you will find property laws in any culture into which you drop. Culture by culture, people by people, there is thorough agreement that stealing is wrong.

We need to recognize that there is a core set of moral concepts that can be and must be taught. What are they? We've found one—the idea of not stealing. Are there others? Well, what about the Golden Rule?

We usually think of the Golden Rule as "treat other people the way you want them to treat you." Jesus said it like this: "All things whatsoever ye would that men should do to you, do ye even so to them: for this is the law and the prophets" (Matthew 7:12).

But who said, "That which you hold as detestable, do not do to your neighbor. That is the whole law: the rest is but commentary"? That's how the Talmud puts it.

Islam says it this way: "None of you is a believer if he does not desire for his brother that which he desires for himself" (Sunnab).

Or, as Confucius said, "Here certainly is the golden maxim: Do not do to others that which we do not want them to do to us" (Analects 15:23).

And so it goes, down through Hinduism, Buddhism, Taoism, Zoroastrianism, and the rest of the world's great religions.

Common ethical ground? I would say so! Teachable? Certainly!

Two Definitions of "Ethics"

Now, I promised you two useful definitions of "ethics," so here they are.

The first comes from Lord Moulton, a British lawmaker in the 19th century, who described ethics simply as "obedience to the unenforceable."

He contrasted that idea to obedience to the *enforceable*. That's what law is. And law is an important part, but only a small part, of the reason we behave as we do. Obedience to the enforceable is what usually makes us drive at the speed limit. If we drive too fast, we may get fined by the police.

Obedience to the *unenforceable*, however, is what keeps you from going into a supermarket, and just as an elderly woman ahead of you is about to put her hand on the last shopping cart, you rush up, push her away, grab the cart, and run off down the aisle with it.

There is no law that says, "Thou shalt not steal shopping carts from elderly women." You don't do it because "people don't do those things"—because of the very real but ultimately unenforceable rules of society.

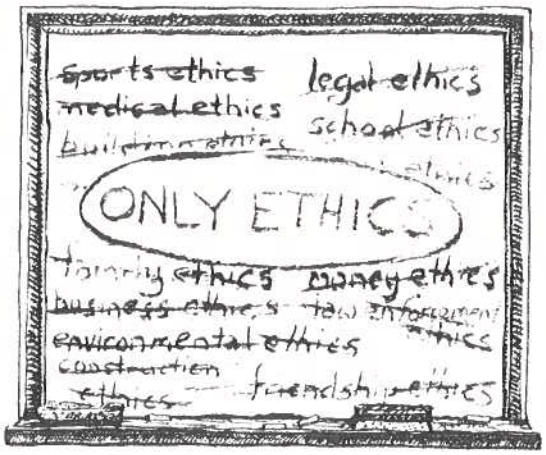
This concept of ethics as obedience to the unenforceable helps explain some of the things we see going on around us in the world today. When I was growing up, we didn't throw litter out of the car window because "people don't do those things." Now you don't throw litter out of the car window because there is a $500 fine if you do. Why? Because it was discovered that people *did* do those things. As the ethics of not littering disappeared, in other words, the law rushed in to take its place.

And that will always be the case. When ethics collapses, what used to be obedience to the unenforceable becomes obedience to the enforceable. Face it: We're going to be regulated. Our choice is simple: Will we self-regulate, or will we have regulation imposed on us by outside authority? Self-regulation is ethics. Imposed regulation is the law.

The second definition I want to share with you grows out of our concern over dictionary definitions of the word *ethics*. They usually talk about ethics in relation to the difference between right and wrong. But for most of us, most of the time, ethics is the battle of right versus right. Few people, facing an ethical dilemma, say to themselves, "Here, on one hand, is the great, the good, the wonderful, and the pure thing to do. And there, on the other hand, is the awful, the evil, the miserable, and the terrible thing to do. And here I stand, incapable of deciding which to do."

We don't do that. Once we define one side as evil, we choose the other side. We don't usually get into huge debates with ourselves, for example, by thinking, "I've got this real problem with my friend. Should I talk it out with her, or poison her food?" We talk with her to try to work things out.

There's Only Ethics



Now, I also promised you a conclusion, so here it is. After all we've talked about, it may not surprise you to learn that there really is no such thing as education ethics. There is no such thing as sports ethics, or medical ethics, or business ethics, or legal ethics, or journalism ethics, either. There is only *ethics*. It should apply in all kinds of ways, and it should apply across the board. It can't be divided up into personal and public categories. Anything short of that is called hypocrisy.

Don't be under any illusion that somehow one can be unethical in personal financial matters, or in relationships, or in academics, but perfectly ethical at work or in one's profession. It may sometimes seem possible, but you can only have one set of values. When people operate with more than one, they contradict themselves and create a double standard.

So a corporate executive can't really be virtuous at work, but terrible in family matters.

A politician can't really claim, "Oh, that is my private life. You should not take that into account. Judge me as a politician."

The public no longer believes that line of reasoning. It's becoming obvious that who we are in private is who we are in public. It's too easy to spot the hypocrite. It's too easy to tell when someone isn't walking the talk.

There is no dividing up ethics into the compartments of private ethics and public ethics. There's only ethics.

The Ethical Barometer Exercise

Purpose

- To develop an awareness of the ethical aspects of day-to-day events
- To begin to ask if ethics is any more important today than it was in earlier times

Preparation and Materials

Have available at least one flip chart, several markers, and masking tape. Prepare copies of The Ethical Barometer handout and the Ethical Barometer Worksheet and distribute to students. Divide the class into groups of five or six students.

Process

- Open the lesson by following up on the homework assignment. Divide students into small groups or pairs and ask them to discuss the ethical content of each news story: What does each story have to do with ethics? Circulate among students and listen to their discussions.
- Introduce the concept of an ethical barometer, using The Ethical Barometer handout. Ask: What might we mean by an "ethical barometer"?
- Divide the class into small groups of five or six students, giving each student a copy of the Ethical Barometer Worksheet for their personal use. Advise students to take notes in preparation for completing the worksheet. Assign each group of students the task of coming up with a list of possible answers for each of the three questions. Allow 10 to 15 minutes for each question on the worksheet. Then, *either:*
  - —Have each group list their answers, which will be discussed by the whole class, on flip-chart-sized paper taped on the wall, *or*
  - —Solicit ideas from each group and record them on flip charts at the front of the room. Label three flip-chart pages as follows: "Ethical Barometer UP," "Ethical Barometer DOWN," and "What Each of Us Can Do."
- Finally, discuss the overarching question: Is our community's ethical barometer rising or falling? (Are people any different today than in the past? Are we just more aware of things now than we used to be? Is there anything about today that is significantly different from the past?)

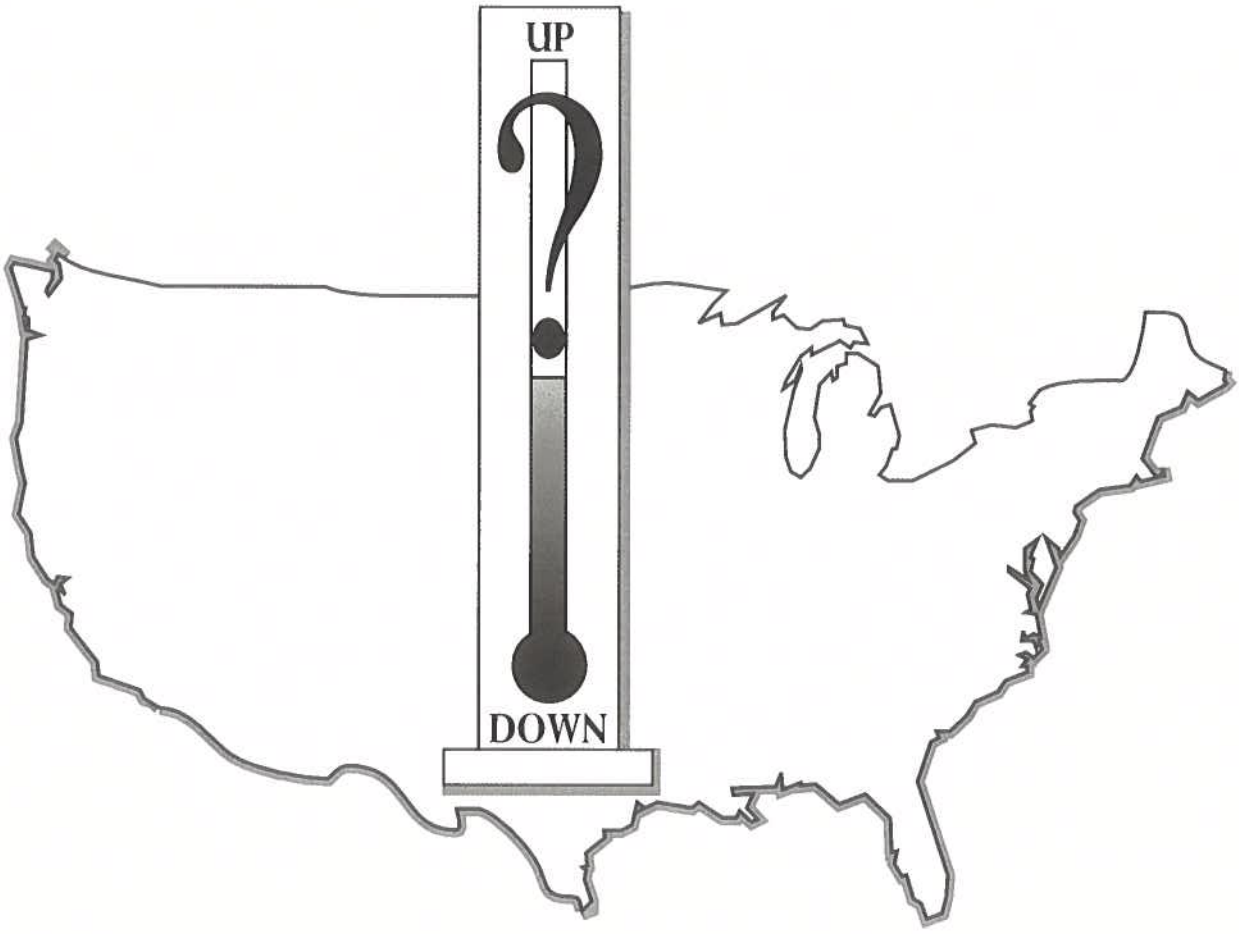
- For homework, ask students to complete the Ethical Barometer Worksheet. Tell students these papers will be collected, but assure them that their responses will not be judged or graded. These papers will provide a valuable look at your students' scope in ethical thinking and may suggest ways to shape how you will present the rest of the curriculum.

THE ETHICAL BAROMETER

ETHICAL: Having to do with standards for right and wrong.

BAROMETER: 1) Instrument for measuring atmospheric pressure to forecast changes in weather. 2) Anything that indicates change.

ETHICAL BAROMETER: Instrument to indicate change in standards of right and wrong.



Ethical Barometer Worksheet

Is Our Community's Ethical Barometer Rising or Falling?

▶ *What evidence do we have that it is rising? (What are our sources of hope?)*

▶ *What evidence do we have that it is falling? (What are our greatest areas of concern?)*

▶ *What can each of us do about it?*

▶ *In my view, the ethical barometer in my community is:*

- ❑ rising
- ❑ falling
- ❑ just about the same

because:

21st Century Issues Exercise

Purpose

- To deepen students' understanding of significant changes the world will most likely face during their lifetimes and alert them to the ethical challenges these changes will pose

Preparation and Materials

This is a research activity and access to a library, as well as time to work there, will be necessary. Be sure your library has access to a number of future-oriented resources. See "21st Century Issues Bibliography" for some suggestions.

Process

- Have students spend one or two periods in the library. Provide them with a list of future-oriented resources. You also might want to research, ahead of time, what is available in your library. Ask students to complete the 21st Century Issues Worksheet by the end of the period.
- For homework (see 21st Century Issues Worksheet), ask each student to select one trend they have read about and imagine what might happen in the short, medium, and long terms. Does the issue they selected have an ethical aspect? If so, describe it.
- Debrief student findings in class and post a list of the new issues they have identified for the future, as a reminder that "we will not survive the 21st century with the ethics of the 20th."
- For homework, distribute copies of "What May Happen in the Next Hundred Years." Ask students to draft an essay summarizing their reactions to the article, or to write their own article for one hundred years from now.

21st Century Issues Worksheet

One of the most significant factors of our time is the *speed* at which things now change. And each of these changes poses new, often troublesome, questions. Here are some examples:

- *In 1930, there were 2 billion people on the planet Earth, a total that had taken about 250 million years to attain. Today, there are about 6 billion people, and by 2025, there could be as many as 10 billion people living on Earth. Can the world hold all of us?*
- *Between 1988 and 2000, the body of knowledge doubled* four times. *Students graduating in the year 2000 will have been exposed to more information in a year than their grandparents were in a lifetime. Can we process that much information?*
- *Right now, we are losing between 50 and 100 species of animals a day, but by 2020, the numbers might well grow to thousands of species every day. What will this mean?*
- *Meanwhile, after 10,000 years of natural reproduction, with relatively few opportunities to manipulate the process, we now have the capability to invent life itself. Is this a good or a bad thing?*

In this research exercise, your assignment is to select one area of change that you believe will have a significant impact on the future of the world. Some examples of change areas are: new technologies, population growth or redistribution, environmental challenges, lifestyle, knowledge and communications, and so on. Remember that some changes may yield both good and bad results.

Using the resources available in your library, see what you can learn about your selected topic: What were things like 100 years ago? How have they changed since then? What do you predict will happen in the future?

Then complete the back of this worksheet.

▶ *Selected topic (describe briefly):*

▶ *What were things like 100 years (or more) ago?*

▶ *How have they changed since then?*

▶ *What do you think will happen in the future, and why?*

a) In the short term (less than five years):

b) In the medium term (5 to 20 years):

c) In the long term (more than 20 years):

21st Century Issues Bibliography

From the Futurist Bookstore Catalog *(Web site: www.wfs.org/bookstor.htm).*

The Future in Plain Sight: Nine Clues to the Coming Instability by Eugene Linden. Simon & Schuster, 1998. 275 pages. "Science writer Eugene Linden draws subtle connections among such phenomena as the rise of infectious disease, population growth and migration, climate, economic instability, and fanaticism and describes how these disruptions will combine to cause chaos and instability in our future. Scenarios of the year 2050 include prospects for London, the Philippines, California, New York City, Central Africa, Antarctica, and more."

Immortality: How Science is Extending Your Life Span—and Changing the World by Ben Bova. Avon Books, 1998. 275 pages. "Ben Bova . . . provides a lucid overview of the exciting research leading to longer and healthier lives. Biomedical breakthroughs will also have tumultuous societal consequences, impacting economics, politics, education, work, religion, and marriage."

1999 State of the Future: Global Challenges We Face at the Millennium edited by Jerome C. Glenn and Theodore J. Gordon. American Council for the United Nations University, 1999. 340 pages. "The United Nations University Millenium Project's annual report brings together the research and ideas of 350 futurists from around the world. New features of this edition include updated descriptions of the 15 Global Issues and 15 Global Opportunities described in previous volumes, integration of the issues and opportunities to find synergies among the recommended actions, and the creation of software to help individuals interact with the scenarios."

The Macmillan Atlas of the Future edited by Ian Pearson. Macmillan Reference, 1998. 128 pages. "Full-color maps and graphics provide a clear, vivid, and authoritative overview of where we are headed in the next millennium. Drawing from the most up-to-date research, an international team of leading analysts predicts developments in such areas as space exploration, economics and finance, life expectancy, artificial intelligence, biodiversity, democracy, military strength, nanotechnology, and more."

Betrayal of Science and Reason: How Anti-Environmental Rhetoric Threatens Our Future by Paul R. and Anne H. Erlich. Island Press, 1996. 335 pages. "Biologists Paul and Anne Ehrlich

challenge those who downplay the reality and importance of global environmental problems such as population growth, desertification, and loss of biodiversity."

State of the World 1999 by Lester R. Brown et. al. W. W. Norton, 1999. 256 pages. "The Millennium Edition of the Worldwatch Institute's indispensable annual report includes chapters on the future of oceans, forests, energy systems, biodiversity, and on reinventing cities and ending violent conflict."

Stuff: The Secret Lives of Everyday Things by John C. Ryan and Alan Thein Durning. Northwest Environment Watch, 1997. 86 pages. "North Americans consume their body weight every day in natural resources. This book provides a fascinating account of the hidden impacts of everyday consumption."

The True State of the Planet edited by Ronald Bailey. Free Press, 1995. 472 pages. "In this challenge to the environmental movement, scholars question the dire warnings that have been heard since the early 1970s. Topics: global warming, fresh water, the oceans, air pollution, biodiversity, and more."

Vital Signs 1999: The Environmental Trends That Are Shaping Our Future by Lester R. Brown et. al. W. W. Norton, 1999. 200 pages. "These statistics compiled by the Worldwatch Institute put the world condition—and its prospects—into perspective. Trends covered include food, agriculture, energy, atmosphere, economics, transportation, communication, society, and the military."

Exploring Your Future: Living, Learning, and Working in the Information Age edited by Edward Cornish. World Future Society, 1996. 160 pages. "Anthology of important articles from *The Futurist*. Topics: how to be a career strategist, the impacts of infotech on careers, investing for the next century, the secrets of innovative corporations, crime in cyberspace, and much more."

2025: Scenarios of U.S. and Global Society Reshaped by Science and Technology by Joseph F. Coates, John B. Mahaffie, and Andy Hines. Oakhill Press, 1997. 516 pages. "What will the world look like in the year 2025? Here are 15 scenarios that will help you anticipate the dramatic effects of science and technology on the world to come."

What May Happen in the Next Hundred Years

BY JOHN ELFRETH WATKINS JR.

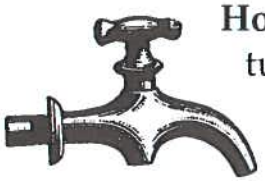
A journalist from 1900 wrote some surprisingly accurate forecasts at the turn of the last century

These prophecies will seem strange, almost impossible. Yet they have come from the most learned and conservative minds in America. To the wisest and most careful men in our greatest institutions of science and learning I have gone, asking each in his turn to forecast for me what, in his opinion, will have been wrought in his own field of investigation before the dawn of 2001—a century from now. These opinions I have carefully researched.

FIVE HUNDRED MILLION PEOPLE. There will probably be from 350,000,000 to 500,000,000 people in America and its possessions by the lapse of another century. Nicaragua will ask for admission to our Union after the completion of the great canal. Mexico will be next. Europe, seeking more territory to the south of us, will cause many of the South and Central American republics to be voted into the Union by their own people.

THE AMERICAN WILL BE TALLER by from one to two inches. His increase of stature will result from better health, due to vast reforms in medicine, sanitation, food, and athletics. He will live fifty years instead of thirty-five at present—for he will reside in the suburbs. The city house will practically be no more. Building in blocks will be illegal. The trip from suburban home to office will require a few minutes only. A penny will pay the fare.

THERE WILL BE NO *C*, *X*, OR *Q* in our everyday alphabet. They will be abandoned because unnecessary. Spelling by sound will have been adopted, first by the newspapers. English will be a language of condensed words expressing condensed ideas, and will be more extensively spoken than any other. Russian will rank second.



Hot and Cold Air from Spigots. Hot or cold air will be turned on from spigots to regulate the temperature of a house as we now turn on hot or cold water from spigots to regulate the temperature of the bath. Central plants will supply this cool air and heat to city houses in the same way as now our gas or electricity is furnished. Rising early to build the furnace fire will be a task of the olden times. Homes will have no chimneys, because no smoke will be created within their walls.

No Mosquitoes nor Flies. Insect screens will be unnecessary. Mosquitoes, house flies, and roaches will have been practically exterminated. Boards of health will have destroyed all mosquito haunts and breeding grounds, drained all stagnant pools, filled in all swamp lands, and chemically treated all stillwater streams. The extermination of the horse and its stable will reduce the house fly.

Ready-Cooked Meals Will Be Bought from establishments similar to our bakeries of today. They will purchase materials in tremendous wholesale quantities and sell the cooked foods at a price much lower than the cost of individual cooking. Food will be served hot or cold to private houses in pneumatic tubes or automobile wagons. The meal being over, the dishes used will be packed and returned to the cooking establishments where they will be washed. . . .

No Foods Will Be Exposed. Storekeepers who expose food to air breathed out by patrons or to the atmosphere of the busy streets will be arrested with those who sell stale or adulterated produce. Liquid air refrigerators will keep great quantities of food fresh for long intervals.

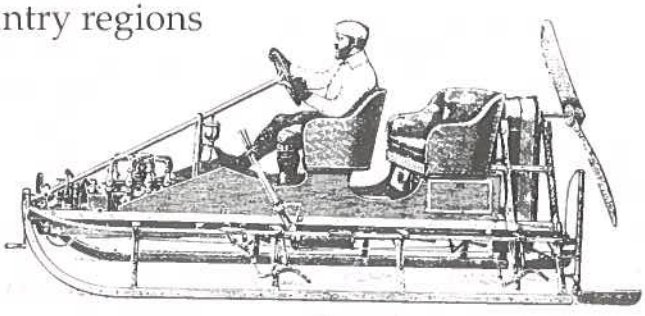
Coal Will Not Be Used for Heating or Cooking. It will be scarce, but not entirely exhausted. The earth's hard coal will last until the year 2050 or 2100; its soft-coal mines until 2200 or 2300. Meanwhile both kinds of coal will have become more expensive. Man will have found electricity manufactured by water power to be much cheaper. Every river or creek with any suitable fall will be equipped with water motors, turning dynamos, making electricity. Along the seacoast will be numerous reservoirs continually

filled by waves and tides washing in. Out of these the water will be constantly falling over revolving wheels. All of our restless waters, fresh and salt, will thus be harnessed to do the work which Niagara is doing today: making electricity for heat, light, and fuel.

There Will Be No Street Cars in Our Large Cities. All hurry traffic will be below or high above ground when brought within city limits. In most cities it will be confined to broad subways or tunnels, well lighted and well ventilated, or to high trestles with "moving sidewalk" stairways leading to the top. These underground or overhead streets will teem with capacious automobile passenger coaches and freight wagons, with cushioned wheels. Subways or trestles will be reserved for express trains. Cities, therefore, will be free from all noises.

Photographs Will Be Telegraphed from any distance. If there be a battle in China a hundred years hence, snapshots of its most striking events will be published in the newspapers an hour later. Even today photographs are being telegraphed over short distances. Photographs will reproduce all of Nature's colors.

Trains One Hundred and Fifty Miles an Hour. Trains will run two miles a minute, normally; express trains one hundred and fifty miles an hour. To go from New York to San Francisco will take a day and a night by fast express. There will be cigar-shaped electric locomotives hauling long trains of cars. Cars will, like houses, be artificially cooled. Along the railroads there will be no smoke, no cinders, because coal will neither be carried nor burned. There will be no stops for water. Passengers will travel through hot or dusty country regions with windows down.



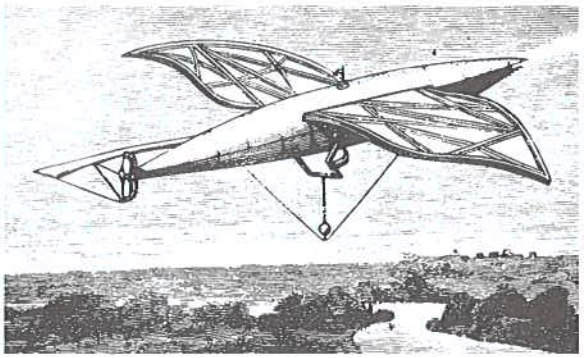
Automobiles Will Be Cheaper Than Horses are today. Farmers will own automobile hay wagons, automobile truck wagons, plows, harrows, and hay rakes. A one-pound motor in one of these vehicles will do the work of a pair of horses or more. Children will ride in automobile sleighs in winter. Automobiles will

have been substituted for every horse vehicle now known. There will be, as already exist today, automobile hearses, automobile police patrols, automobile ambulances, automobile street sweepers. The horse in harness will be as scarce, if, indeed, not even scarcer, then as the yoked ox is today.

Everybody Will Walk Ten Miles. Gymnastics will begin in the nursery, where toys and games will be designed to strengthen the muscles. Exercise will be compulsory in the schools. Every school, college, and community will have public gymnasiums. A man or woman unable to walk ten miles at a stretch will be regarded as a weakling.

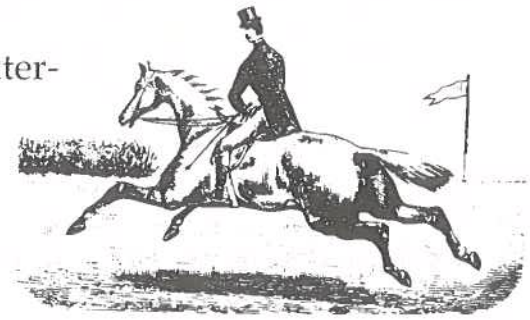
To England in Two Days. Fast electric ships, crossing the ocean at more than a mile a minute, will go from New York to Liverpool in two days. The bodies of these ships will be built above the waves. They will be supported upon runners, somewhat like those of the sleigh. These runners will be very buoyant. Upon their undersides will be apertures expelling jets of air. In this way a film of air will be kept between them and the water's surface. . . . In storms they will dive below the water and there await fair weather.

There Will Be Air Ships, but they will not successfully compete with surface cars and water vessels for passenger or freight traffic. They will be maintained as deadly war vessels by all military nations. Some will transport men and goods. Others will be used by scientists making observations at great heights above the earth.



Aerial War Ships and Forts on Wheels. Giant guns will shoot twenty-five miles or more, and will hurl anywhere within such a radius shells exploding and destroying whole cities. Such guns will be aimed by aid of compasses when used on land or sea, and telescopes when directed from great heights. Fleets of air ships, hiding themselves with dense, smoky mists, thrown off by them-

selves as they move, will float over cities, fortifications, camps, or fleets. They will surprise foes below by hurling upon them deadly thunderbolts. . . .



There Will Be No Wild Animals except in menageries. Rats and mice will have been exterminated. The horse will have become practically extinct. A few of high breed will be kept by the rich for racing, hunting, and exercise. The automobile will have driven out the horse. Cattle and sheep will have no horns. They will be unable to run faster than the fattened hog of today. A century ago the wild hog could outrun a horse. Food animals will be bred to expend practically all of their life energy in producing meat, milk, wool, and other by-products. Horns, bones, muscles, and lungs will have been neglected.

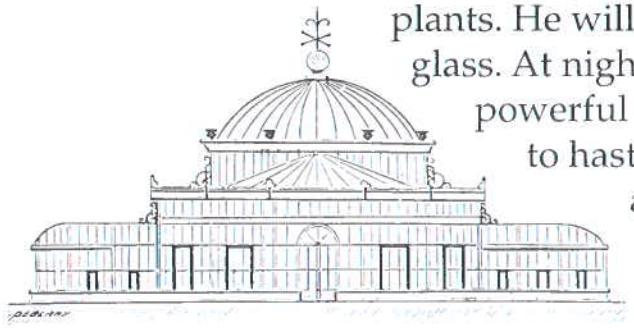
Man Will See Around the World. Persons and thing of all kinds will be brought within focus of cameras connected electrically with screens at opposite ends of circuits, thousands of miles at a span. American audiences in their theatres will view upon huge curtains before them the coronations of kings in Europe or the progress of battles in the Orient. The instrument bringing these distant scenes to the very doors of people will be connected with a giant telephone apparatus transmitting each incidental sound in its appropriate place. Thus the guns of a distant battle will be heard to boom when seen to blaze, and thus the lips of a remote actor or singer will be heard to utter words or music when seen to move.

Telephones Around the World. Wireless telephone and telegraph circuits will span the world. A husband in the middle of the Atlantic will be able to converse with his wife sitting in her boudoir in Chicago. We will be able to telephone China quite as readily as we now talk from New York to

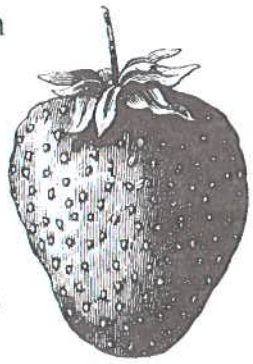
Brooklyn. By an automatic signal they will connect with any circuit in their locality without the intervention of a "hello girl." . . .

How Children Will Be Taught. A university education will be free to every man and woman. Several great national universities will have been established. Children will study a simple English grammar adapted to simplified English, and not copied after the Latin. Time will be saved by grouping like studies. Poor students will be given free board, free clothing, and free books if ambitious and actually unable to meet their school and college expenses. . . .

Vegetables Grown by Electricity. Winter will be turned into summer and night into day by the farmer. In cold weather, he will place heat-conducting electric wires under the soil of his garden and thus warm his growing plants. He will also grow large gardens under glass. At night, his vegetables will be bathed in powerful electric light, serving, like sunlight, to hasten their growth. Electric currents applied to the soil will make valuable plants grow larger and faster, and will kill troublesome weeds. Rays of colored light will hasten the growth of many plants. Electricity applied to garden seeds will make them sprout and develop unusually early.



Oranges Will Grow in Philadelphia. Fast-flying refrigerators on land and sea will bring delicious fruits from the tropics and southern temperate zones within a few days. The farmer of South America, South Africa, Australia, and the South Sea Islands, whose seasons are directly opposite to ours, will thus supply us in winter with fresh summer foods that cannot be grown here. . . .



Strawberries as Large as Apples will be eaten by our great-great-grandchildren for their Christmas dinners a hundred years hence. Raspberries and blackberries will be as large. One will suffice for the fruit course of each person. Strawberries and cranberries will be grown upon tall

bushes. Cranberries, gooseberries, and currants will be as large as oranges. One cantaloupe will supply an entire family. Melons, cherries, grapes, plums, apples, pears, peaches, and all berries will be seedless. Figs will be cultivated over the entire United States. . . .

Black, Blue, and Green Roses. Roses will be as large as cabbage heads. Violets will grow to the size of orchids. A pansy will be as large in diameter as a sunflower. A century ago the pansy measured but half an inch across its face. There will be black, blue, and green roses. It will be possible to grow any flower in any color and to transfer the perfume of a scented flower to another that is odorless. Then may the pansy be given the perfume of the violet.

Few Drugs Will Be Swallowed or taken into the stomach unless needed for the direct treatment of that organ itself. Drugs needed by the lungs, for instance, will be applied directly to those organs through the skin and flesh. They will be carried with the electric current applied without pain to the outside skin of the body. Microscopes will lay bare the vital organs, through the living flesh, of men and animals. The living body will to all medical purposes be transparent. Not only will it be possible for a physician to actually see a living, throbbing heart inside the chest, but he will be able to magnify and photograph any part of it. This work will be done with rays of invisible light.

—*Reprinted from* Ladies Home Journal, *December 1900*

Subject Adaptation Suggestions

History and Social Studies

- Review legislation for recently passed laws, especially ones in which there might have been some controversy (e.g., wearing a seat belt). Explore the pros and cons of passing the law. Ask: Why did this law have to be passed?
- Have students prepare to debate the assertion that "we will not survive the 21st century with the ethics of the 20th century."

Language Arts

- Ask students to write an essay based on either the Ethical Barometer Worksheet or the 21st Century Issues Worksheet. Encourage them to incorporate outside perspectives, in the form of quotes and excerpts, from the news articles and library materials they have reviewed.
- Have students select a topic from the essay, "There's Only Ethics . . . ," such as obedience to the unenforceable, ethical relativism, right versus right, or public-versus-private ethics. Ask them to write an essay or develop an oral presentation that explains the meaning of the terms.

Math and Science

- Focus the Ethical Barometer Exercise on technology and scientific trends: nuclear power, medicine, biotechnology, alternative energy, global communications, environmental challenges. The focus can be narrowed or broadened depending on how you define the scope of the exercise.
- Likewise, use the 21st-Century Issues Exercise to dig deeper into these issues. This exercise is particularly suited to the sciences, as many of the special challenges of the future will result from scientific discoveries. Be sure to focus, though, on the *ethical* questions raised by such discoveries.

Visual Arts

- After discussing the meaning of the phrase *ethical barometer,* ask students to construct their own vision of what such an instrument might look like. Use the resulting pictures in conjunction with the flip-chart pages the class will be completing.