

SKILLS MENU

- Defining the Issue
- Researching
- Identifying Alternatives
- Analyzing the Issue
- Defending a Decision
- Communicating
- Evaluating

automation: the replacement of human workers by technology

LINKING TO LITERACY

Using Graphic Organizers

As you read, make a T-chart to show the pros (column 1) and the cons (column 2) of automation. You can add to the chart as you work through the section. Once you have read the section, reflect on what the chart shows.

The Pros and Cons of Automation

Automation is the use of mechanical and electronic equipment to reduce the need for human labour. There are many benefits to automation. Machines can be used for repetitive and boring work. In factories, automation can produce more goods in less time with fewer materials. Dangerous tasks can be done with increased safety. Automation in our homes helps us wash our clothes and dishes, clean our carpets, and search for information around the globe. Specialized automated devices such as the Smart Wheelchair (Figure 1) let persons with physical challenges enjoy greater independence.



Figure 1 One of the benefits of automation is the increased freedom it allows.

Automation also has environmental benefits. Modern heating and cooling system controls help us reduce energy for heating and cooling when we are asleep or away from home. Robots are used in mining, resulting in less waste. Environmental protection—from oil spill cleanup to forest firefighting—relies on various forms of automation.

There are also disadvantages to automation. Traditional skills may be lost as machine-made products replace handmade goods. When this happens, local communities may suffer. Unemployment often results when machines do the work that people can do. Increased demand for energy to run machines consumes additional resources and produces more environmental pollution.

In the agriculture industry, automation has resulted in improved crop yields. However, it has also led to the increased use of chemical fertilizers, herbicides, and pesticides. Automated food delivery systems and animal waste removal systems help livestock production by concentrating animals into smaller and smaller areas. Unfortunately, this can result in groundwater contamination by animal waste. In surface mining operations, automation enables us to move vast amounts of material quickly (Figure 2), but the environmental effects of doing so may be devastating and long-lasting.



Figure 2 Automation allows tremendous amounts of work to be done with little human effort, but at what cost?

The Issue

Young people today have a keen interest in their future as global citizens. Their interests include learning how automation will affect the nature of work, the environment, and relationships between countries and peoples in the future. The student-led model United Nations is an annual event in which students from around the world meet to debate current issues. Participation in this event is one way young people are showing their concern. A discussion will be taking place at this year's gathering to develop a policy on "The Future of Automation in the Workplace." You have been invited as a student delegate from Canada to present your views on the issue.

Your audience will include representatives from developed and developing countries. Also in attendance will be members of corporations, environmental groups, and organizations concerned with human rights, world hunger, and poverty.

Goal

To prepare and present a position paper to the government representatives of the model United Nations, outlining your position on the future of automation in the workplace.



Gather Information

Work in pairs or small groups to learn more about the benefits of automation (Figure 3). Investigate some of the social and environmental issues of greatest concern around the world as industrial automation replaces traditional methods of production (Figure 4). From where and from whom could you find more information? Always be conscious of bias.

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Figure 3 Greater access to goods and services may be a benefit of automation.



Figure 4 Loss of traditional skills may be one of the drawbacks of automation.

Identify Solutions

After analyzing some of the social, economic, and environmental costs and benefits of automation, identify three to five ways in which the benefits can be increased and costs reduced or eliminated.



Make a Decision

Your position paper should

1. Provide a summary of the costs and benefits of automation in the workplace (from various perspectives).
2. Clearly state your position on the Issue.
3. Identify three to five solutions that would minimize costs and maximize benefits.

Communicate

You must communicate your position regarding automation to the model United Nations in an interesting and effective way. You must also demonstrate that you have given some thought to its effects on the economy, society, and the environment.



Consider how you will communicate your position. Will you role-play, write a letter to be read to the United Nations, write a poem, create a photo essay?