

Goal:

Your team has been chosen by a worldwide panel of experts as one of several groups of young scientists who have been asked to design a series of new ecologically balanced communities in which citizens can live and work in harmony and afford to get all the goods and services they need. The panel wants to know if you can design a “perfect” community for the 21st Century.

Role(s):

You are each a [science specialist](#) in one of the areas needed to develop a complete plan for a new community. List the names of who in your group will assume each role:

Earth scientist(s) _____

Social scientist(s) _____

Physical scientist(s) _____

Life scientist(s) _____

Engineer(s) _____

Audience:

A representative of the worldwide panel of experts (your teacher) and some prospective citizens who are interested in possibly moving into your community (your classmates) will be examining your plan at a summit meeting and comparing it to the plans developed by other teams.

Situation:

The year is 2020 and many cities around the world have major problems that include overcrowded neighborhoods, deteriorating buildings, polluted air and water supplies, broken-down transportation and communication systems, outdated power generators, failing schools, antiquated hospitals, and boarded up grocery stores and other businesses that have closed due to high crime rates. They have citizens who face a lack of jobs and feel they have no say in decisions affecting their lives. You will have to discuss some important ideas and make some fundamental group decisions about these issues:

- What factors are necessary in a 21st Century community and what factors are merely desirable?
- How do people learn to solve problems?
- How far should government go in making decisions for the common good of a society?
- How can a community balance their demand for energy with their need to protect the environment?
- What does an ideal community look like?

Product(s):

Your team will be responsible for developing a comprehensive plan for a new community. The various scientists will be responsible for different research questions and designing specific aspects of the community, but the entire team is expected to cooperate and help each other make group decisions in a manner that takes everyone’s opinions into consideration. Everyone is ultimately responsible for the completion of all tasks and is expected to help the other scientists on the team.

The list of required products include those on this checklist of items:

- A map of the exact location (from [Google Maps](#) or [Google Earth](#)) and name of the community marked on it
- A computer generated design model of the community (using [Google SketchUp](#)) identifying the locations of the following items (if they are included in the community):
 - Power generators
 - Transportation system and/or roads
 - Waste treatment facilities
 - Residential areas
 - Businesses
 - Factories
 - Government and public buildings
 - Recreation and entertainment facilities

- Medical and educational facilities
- Natural habitat wilderness areas
- Any agricultural areas in the community
- ☐ A written constitution or charter describing how the government of the community will be organized including who will make decisions about what services to provide and how to pay for them
- ☐ An creative skit or video which describes life in the community and tells/shows what a typical family would eat, where they would work, what they would do for fun, and how children would be raised
- ☐ The following visual aids should be included in the presentation or shown separately:
 - Labeled drawing or diagram of the main energy generation plant
 - Examples of the technology that the citizens will use to communicate and interact with each other and the rest of the world
 - Examples of the vehicles that the citizens will use for personal transportation and transporting products in the community
 - Model or diagram of typical home showing its energy conservation features
 - Any other pictures, artifacts, or action plans that the group wishes to present that would convince the audience why they should want to move there

Standards & Criteria (Indicators)

As designers of the community you will need to research and answer the following questions while modeling mastery of 21st Century thinking skills and technology tools to demonstrate your understanding of science, health, social studies, language arts, and visual arts standards and objectives.

A checklist for these questions appears on the [Group Duty Schedule](#).

- Where is the most advantageous geographic location for your settlement? – *earth scientists*
- How will you dispose of and/or recycle your waste and garbage? – *earth scientists*
- How will you obtain and sustain sufficient clean air and water? – *earth scientists*
- How will various land use areas including natural wilderness areas be arranged in your community? – *earth scientists*
- Who will you try to recruit as your first citizens and why? – *social scientists*
- What type of government will you have and who will make the laws? – *social scientists*
- What jobs will be available and how will your workers be trained and paid? – *social scientists*
- What artifacts or customs, if any, will you bring from your previous communities? – *social scientists*
- How will you raise children and educate them for citizenship? – *social scientists*
- What energy source(s) will you use to generate electricity? – *physical scientists*
- What technologies will you develop to meet communication needs? – *physical scientists*
- What types of vehicles will you use to move about and what fuel will they use? – *physical scientists*
- What will factories in your community manufacture, and what machinery will they need? – *physical scientists*
- What design and construction techniques will you use for buildings in your community? – *engineers*
- How will buildings be heated and/or cooled? - *engineers*
- What materials would be best to use for roads, vehicles, buildings, and furniture? – *engineers*
- What kinds of transportation, communication, and sanitation system infrastructure will you need to build? - *engineers*
- What sort of nutritious foods will people eat and from where will they be supplied?– *life scientists*
- How will people get health care and medicine? – *life scientists*
- What will you do for recreation and entertainment to reduce stress? – *life scientists*
- What are some environmentally safe household cleaning products that families will use? – *life scientists*
- Will pets and other animals live in your community and how will they be cared for? – *life scientists*
- What else will you need to ensure the success of the community and its inhabitants? - *all groups*

During the project, you will work with your group for approximately fifteen 30 – 40 minute work sessions and group activities as outlined on the [Group Duty Schedule](#). You will have to manage time and tasks to complete the project. Each of you will keep an electronic work journal describing your job, your notes on your research, and your reflections on project questions. You will self-assess your journal using a [Rubric for](#)

[Work Journals](#) and evaluate your group's working methods confidentially using a [Rubric for Group Dynamics](#). You will also be evaluated by the teacher using the same rubrics.

You will have the duty schedule and this checklist to help you keep on task. You will have to hold group meetings and devise a method of making important group decisions about your community plan so that each of you can work on your part of the final design project and oral presentation. The teacher will schedule conferences with your group and also conduct a Seeing Reason activity about governments and laws. After that, you will write a [Letter to a Public Official](#) requesting passage of a law. You will also participate in a Showing Evidence exercise about energy sources and then "[Stand Up for Your Beliefs](#)" with the whole class to help you learn about nuclear energy and write about it in your work journal

A [Rubric for a Model Design](#) will be used by your teacher and your peers to assess your final design project and another [Rubric for Oral Presentations](#) will be used for your group's presentation. Following the presentations, you will write a [Final Reflection](#) stating three things you really liked about your group's planned community, two things you think could be improved, and a summary of what you think will be the most important factor to consider when choosing a community in which to live in the future.