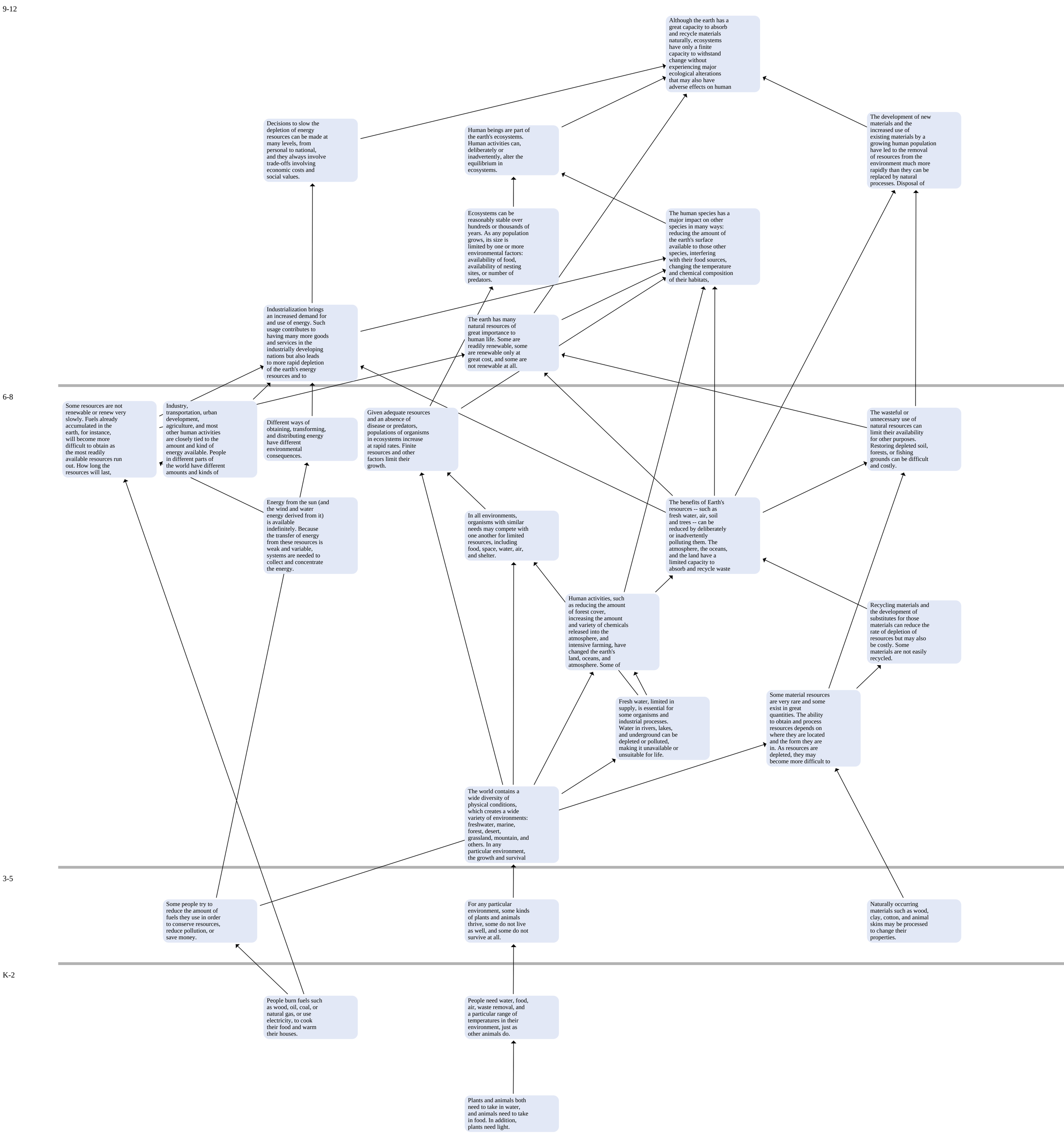
use of energy resources
needs of organisms for Earth's resources
human impact on the environment
use of material resources
9-12
6-8
3-5
K-2
Although the earth has a great capacity to absorb and recycle materials naturally, ecosystems have only a finite capacity to withstand change without experiencing major ecological alterations that may also have adverse effects on human
Decisions to slow the depletion of energy resources can be made at many levels, from personal to national, and they always involve trade-offs involving economic costs and social values.
Human beings are part of the earth's ecosystems. Human activities can, deliberately or inadvertently, alter the equilibrium in ecosystems.
The development of new materials and the increased use of existing materials by a growing human population have led to the removal of resources from the environment much more rapidly than they can be replaced by natural processes. Disposal of
Ecosystems can be reasonably stable over hundreds or thousands of years. As any population grows, its size is limited by one or more environmental factors: availability of food, availability of nesting sites, or number of predators.
The human species has a major impact on other species in many ways: reducing the amount of the earth's surface available to those other species, interfering with their food sources, changing the temperature and chemical composition of their habitats,
Industrialization brings an increased demand for and use of energy. Such usage contributes to having many more goods and services in the industrially developing nations but also leads to more rapid depletion of the earth's energy resources and to
The earth has many natural resources of great importance to human life. Some are readily renewable, some are renewable only at great cost, and some are not renewable at all.
Some resources are not renewable or renew very slowly. Fuels already accumulated in the earth, for instance, will become more difficult to obtain as the most readily available resources run out. How long the resources will last,
Industry, transportation, urban development, agriculture, and most other human activities are closely tied to the amount and kind of energy available. People in different parts of the world have different amounts and kinds of
Different ways of obtaining, transforming, and distributing energy have different environmental consequences.
Given adequate resources and an absence of disease or predators, populations of organisms in ecosystems increase at rapid rates. Finite resources and other factors limit their growth.
The wasteful or unnecessary use of natural resources can limit their availability for other purposes. Restoring depleted soil, forests, or fishing grounds can be difficult and costly.
Energy from the sun (and the wind and water energy derived from it) is available indefinitely. Because the transfer of energy from these resources is weak and variable, systems are needed to collect and concentrate the energy.
In all environments, organisms with similar needs may compete with one another for limited resources, including food, space, water, air, and shelter.
The benefits of Earth's resources -- such as fresh water, air, soil and trees -- can be reduced by deliberately or inadvertently polluting them. The atmosphere, the oceans, and the land have a limited capacity to absorb and recycle waste
Human activities, such as reducing the amount of forest cover, increasing the amount and variety of chemicals released into the atmosphere, and intensive farming, have changed the earth's land, oceans, and atmosphere. Some of
Recycling materials and the development of substitutes for those materials can reduce the rate of depletion of resources but may also be costly. Some materials are not easily recycled.
Fresh water, limited in supply, is essential for some organisms and industrial processes. Water in rivers, lakes, and underground can be depleted or polluted, making it unavailable or unsuitable for life.
Some material resources are very rare and some exist in great quantities. The ability to obtain and process resources depends on where they are located and the form they are in. As resources are depleted, they may become more difficult to
The world contains a wide diversity of physical conditions, which creates a wide variety of environments: freshwater, marine, forest, desert, grassland, mountain, and others. In any particular environment, the growth and survival
Some people try to reduce the amount of fuels they use in order to conserve resources, reduce pollution, or save money.
For any particular environment, some kinds of plants and animals thrive, some do not live as well, and some do not survive at all.
Naturally occurring materials such as wood, clay, cotton, and animal skins may be processed to change their properties.
People burn fuels such as wood, oil, coal, or natural gas, or use electricity, to cook their food and warm their houses.
People need water, food, air, waste removal, and a particular range of temperatures in their environment, just as other animals do.
Plants and animals both need to take in water, and animals need to take in food. In addition, plants need light.