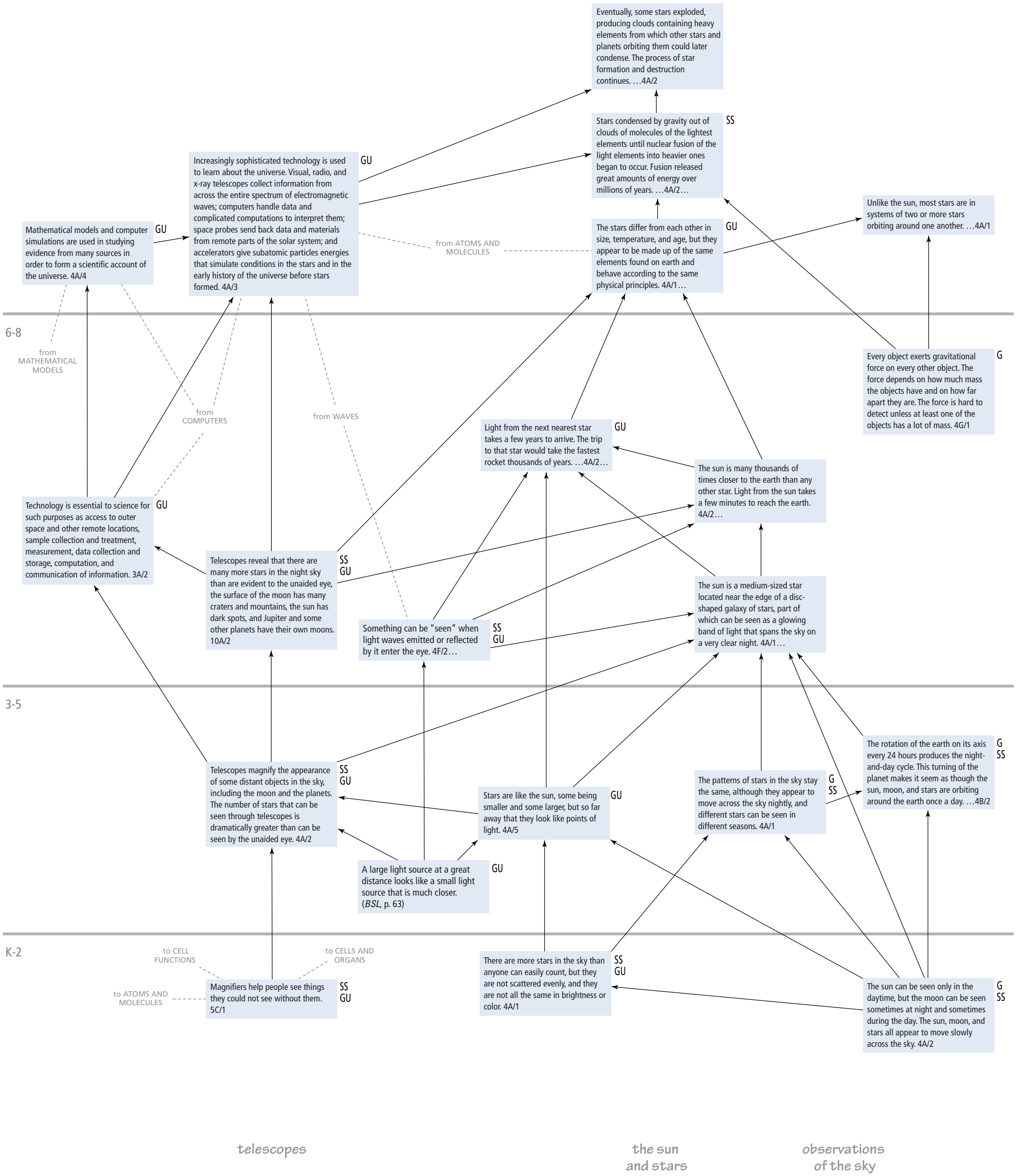
9-12
Eventually, some stars exploded, producing clouds containing heavy elements from which other stars and planets orbiting them could later condense. The process of star formation and destruction continues. …4A/2
Stars condensed by gravity out of clouds of molecules of the lightest elements until nuclear fusion of the light elements into heavier ones began to occur. Fusion released great amounts of energy over millions of years. …4A/2…
SS
Increasingly sophisticated technology is used to learn about the universe. Visual, radio, and x-ray telescopes collect information from across the entire spectrum of electromagnetic waves; computers handle data and complicated computations to interpret them; space probes send back data and materials from remote parts of the solar system; and accelerators give subatomic particles energies that simulate conditions in the stars and in the early history of the universe before stars formed. 4A/3
GU
Mathematical models and computer simulations are used in studying evidence from many sources in order to form a scientific account of the universe. 4A/4
GU
from ATOMS AND MOLECULES
The stars differ from each other in size, temperature, and age, but they appear to be made up of the same elements found on earth and behave according to the same physical principles. 4A/1…
GU
Unlike the sun, most stars are in systems of two or more stars orbiting around one another. …4A/1
6-8
from MATHEMATICAL MODELS
from COMPUTERS
from WAVES
Every object exerts gravitational force on every other object. The force depends on how much mass the objects have and on how far apart they are. The force is hard to detect unless at least one of the objects has a lot of mass. 4G/1
G
Light from the next nearest star takes a few years to arrive. The trip to that star would take the fastest rocket thousands of years. …4A/2…
GU
The sun is many thousands of times closer to the earth than any other star. Light from the sun takes a few minutes to reach the earth. 4A/2…
Technology is essential to science for such purposes as access to outer space and other remote locations, sample collection and treatment, measurement, data collection and storage, computation, and communication of information. 3A/2
GU
Telescopes reveal that there are many more stars in the night sky than are evident to the unaided eye, the surface of the moon has many craters and mountains, the sun has dark spots, and Jupiter and some other planets have their own moons. 10A/2
SS
GU
The sun is a medium-sized star located near the edge of a disc-shaped galaxy of stars, part of which can be seen as a glowing band of light that spans the sky on a very clear night. 4A/1…
Something can be "seen" when light waves emitted or reflected by it enter the eye. 4F/2…
SS
GU
3-5
The rotation of the earth on its axis every 24 hours produces the night-and-day cycle. This turning of the planet makes it seem as though the sun, moon, and stars are orbiting around the earth once a day. …4B/2
G
SS
Telescopes magnify the appearance of some distant objects in the sky, including the moon and the planets. The number of stars that can be seen through telescopes is dramatically greater than can be seen by the unaided eye. 4A/2
SS
GU
Stars are like the sun, some being smaller and some larger, but so far away that they look like points of light. 4A/5
GU
The patterns of stars in the sky stay the same, although they appear to move across the sky nightly, and different stars can be seen in different seasons. 4A/1
G
SS
A large light source at a great distance looks like a small light source that is much closer. (BSL, p. 63)
GU
K-2
to CELL FUNCTIONS
to CELLS AND ORGANS
to ATOMS AND MOLECULES
Magnifiers help people see things they could not see without them. 5C/1
SS
GU
There are more stars in the sky than anyone can easily count, but they are not scattered evenly, and they are not all the same in brightness or color. 4A/1
SS
GU
The sun can be seen only in the daytime, but the moon can be seen sometimes at night and sometimes during the day. The sun, moon, and stars all appear to move slowly across the sky. 4A/2
G
SS
telescopes
the sun and stars
observations of the sky