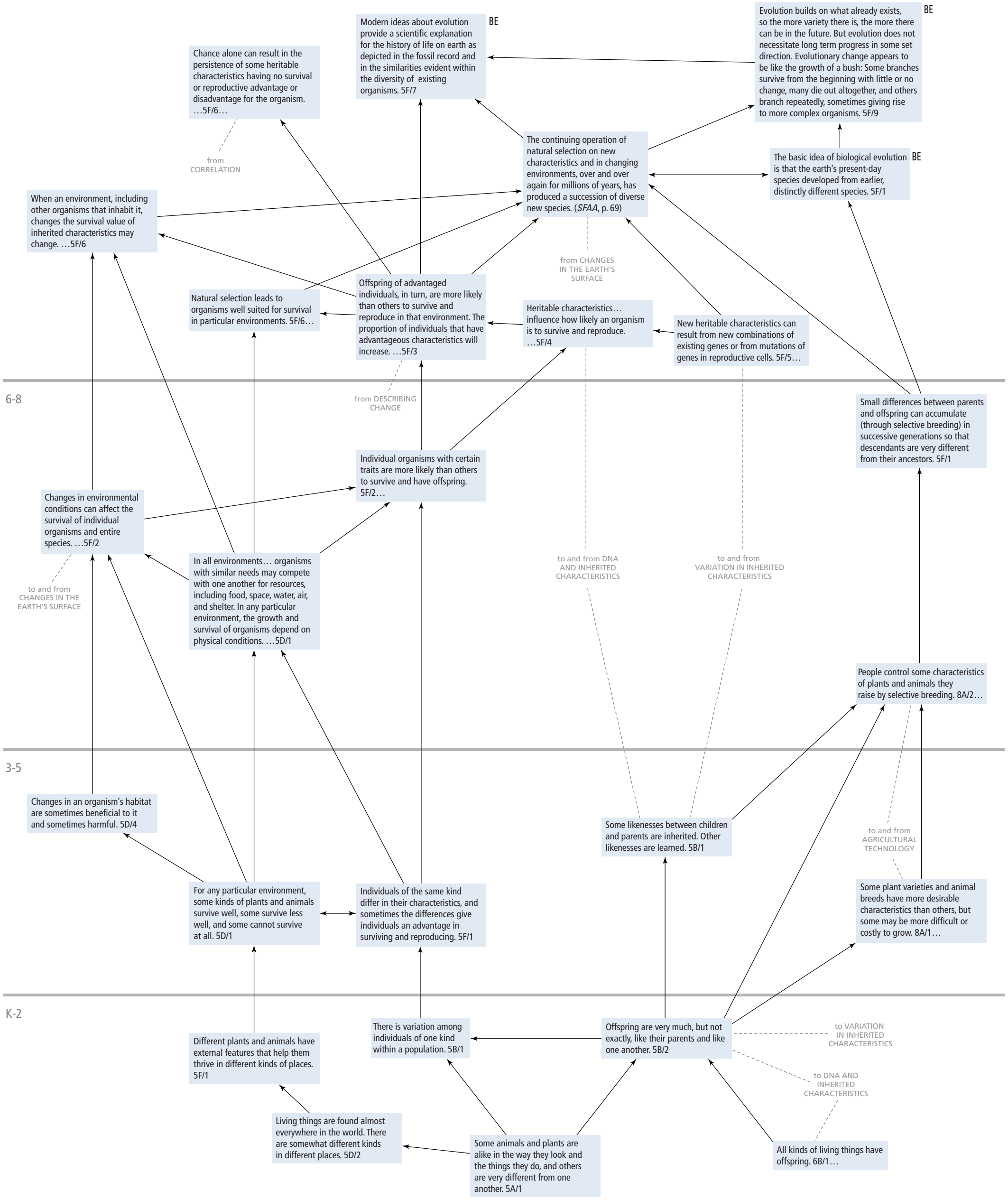
9-12
Modern ideas about evolution provide a scientific explanation for the history of life on earth as depicted in the fossil record and in the similarities evident within the diversity of existing organisms. 5F/7
BE
Evolution builds on what already exists, so the more variety there is, the more there can be in the future. But evolution does not necessitate long term progress in some set direction. Evolutionary change appears to be like the growth of a bush: Some branches survive from the beginning with little or no change, many die out altogether, and others branch repeatedly, sometimes giving rise to more complex organisms. 5F/9
BE
Chance alone can result in the persistence of some heritable characteristics having no survival or reproductive advantage or disadvantage for the organism. …5F/6…
from CORRELATION
The continuing operation of natural selection on new characteristics and in changing environments, over and over again for millions of years, has produced a succession of diverse new species. (SFAA, p. 69)
The basic idea of biological evolution is that the earth's present-day species developed from earlier, distinctly different species. 5F/1
BE
When an environment, including other organisms that inhabit it, changes the survival value of inherited characteristics may change. …5F/6
from CHANGES IN THE EARTH'S SURFACE
Natural selection leads to organisms well suited for survival in particular environments. 5F/6…
Offspring of advantaged individuals, in turn, are more likely than others to survive and reproduce in that environment. The proportion of individuals that have advantageous characteristics will increase. …5F/3
Heritable characteristics… influence how likely an organism is to survive and reproduce. …5F/4
New heritable characteristics can result from new combinations of existing genes or from mutations of genes in reproductive cells. 5F/5…
from DESCRIBING CHANGE
6-8
Small differences between parents and offspring can accumulate (through selective breeding) in successive generations so that descendants are very different from their ancestors. 5F/1
Individual organisms with certain traits are more likely than others to survive and have offspring. 5F/2…
Changes in environmental conditions can affect the survival of individual organisms and entire species. …5F/2
to and from DNA AND INHERITED CHARACTERISTICS
to and from VARIATION IN INHERITED CHARACTERISTICS
In all environments… organisms with similar needs may compete with one another for resources, including food, space, water, air, and shelter. In any particular environment, the growth and survival of organisms depend on physical conditions. …5D/1
to and from CHANGES IN THE EARTH'S SURFACE
People control some characteristics of plants and animals they raise by selective breeding. 8A/2…
3-5
Changes in an organism's habitat are sometimes beneficial to it and sometimes harmful. 5D/4
Some likenesses between children and parents are inherited. Other likenesses are learned. 5B/1
to and from AGRICULTURAL TECHNOLOGY
For any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all. 5D/1
Individuals of the same kind differ in their characteristics, and sometimes the differences give individuals an advantage in surviving and reproducing. 5F/1
Some plant varieties and animal breeds have more desirable characteristics than others, but some may be more difficult or costly to grow. 8A/1…
K-2
Different plants and animals have external features that help them thrive in different kinds of places. 5F/1
There is variation among individuals of one kind within a population. 5B/1
Offspring are very much, but not exactly, like their parents and like one another. 5B/2
to VARIATION IN INHERITED CHARACTERISTICS
to DNA AND INHERITED CHARACTERISTICS
Living things are found almost everywhere in the world. There are somewhat different kinds in different places. 5D/2
Some animals and plants are alike in the way they look and the things they do, and others are very different from one another. 5A/1
All kinds of living things have offspring. 6B/1…
changing environments
variation and advantage
inherited characteristics
artificial selection