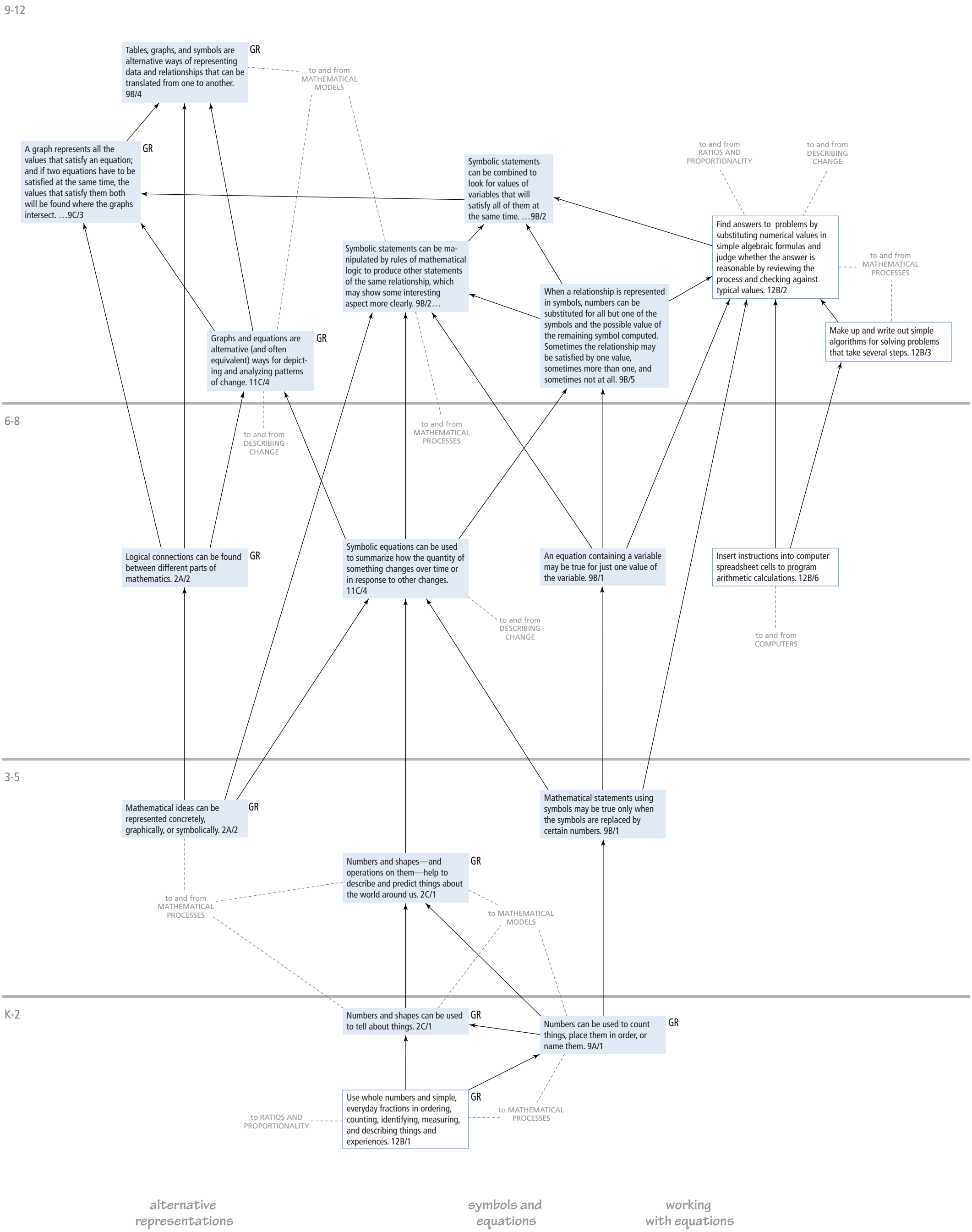
9-12
Tables, graphs, and symbols are alternative ways of representing data and relationships that can be translated from one to another. 9B/4
GR
to and from MATHEMATICAL MODELS
A graph represents all the values that satisfy an equation; and if two equations have to be satisfied at the same time, the values that satisfy them both will be found where the graphs intersect. …9C/3
GR
Symbolic statements can be combined to look for values of variables that will satisfy all of them at the same time. …9B/2
to and from RATIOS AND PROPORTIONALITY
to and from DESCRIBING CHANGE
Find answers to problems by substituting numerical values in simple algebraic formulas and judge whether the answer is reasonable by reviewing the process and checking against typical values. 12B/2
to and from MATHEMATICAL PROCESSES
Symbolic statements can be manipulated by rules of mathematical logic to produce other statements of the same relationship, which may show some interesting aspect more clearly. 9B/2…
When a relationship is represented in symbols, numbers can be substituted for all but one of the symbols and the possible value of the remaining symbol computed. Sometimes the relationship may be satisfied by one value, sometimes more than one, and sometimes not at all. 9B/5
Make up and write out simple algorithms for solving problems that take several steps. 12B/3
Graphs and equations are alternative (and often equivalent) ways for depicting and analyzing patterns of change. 11C/4
GR
6-8
to and from DESCRIBING CHANGE
to and from MATHEMATICAL PROCESSES
Logical connections can be found between different parts of mathematics. 2A/2
GR
Symbolic equations can be used to summarize how the quantity of something changes over time or in response to other changes. 11C/4
An equation containing a variable may be true for just one value of the variable. 9B/1
Insert instructions into computer spreadsheet cells to program arithmetic calculations. 12B/6
to and from DESCRIBING CHANGE
to and from COMPUTERS
3-5
Mathematical ideas can be represented concretely, graphically, or symbolically. 2A/2
GR
Mathematical statements using symbols may be true only when the symbols are replaced by certain numbers. 9B/1
Numbers and shapes—and operations on them—help to describe and predict things about the world around us. 2C/1
GR
to and from MATHEMATICAL PROCESSES
to MATHEMATICAL MODELS
K-2
Numbers and shapes can be used to tell about things. 2C/1
GR
Numbers can be used to count things, place them in order, or name them. 9A/1
GR
Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences. 12B/1
GR
to RATIOS AND PROPORTIONALITY
to MATHEMATICAL PROCESSES
alternative representations
symbols and equations
working with equations