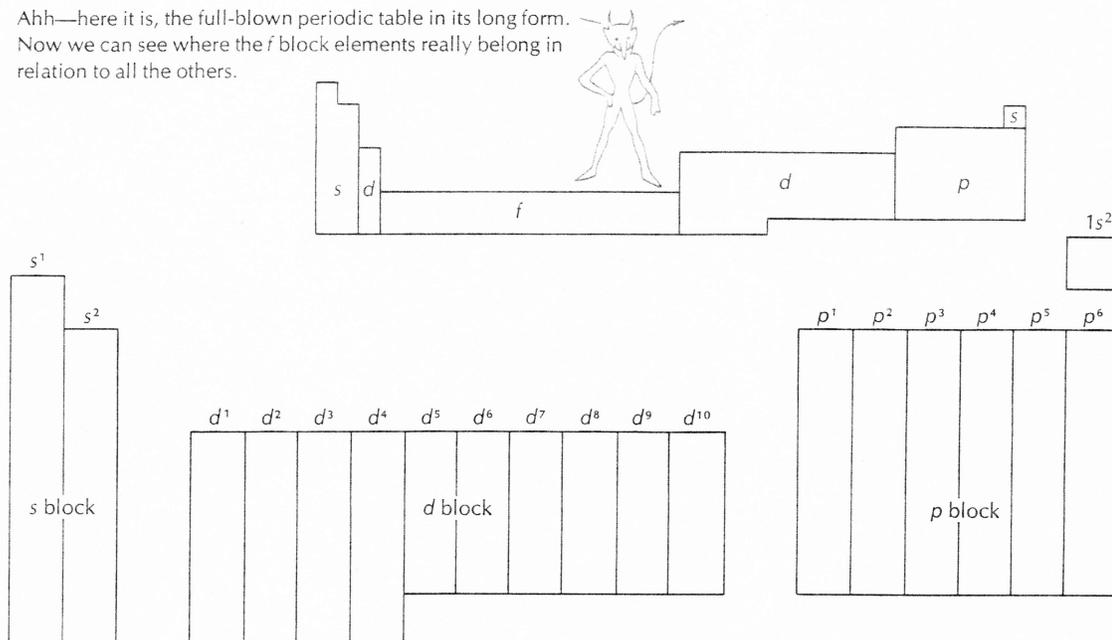
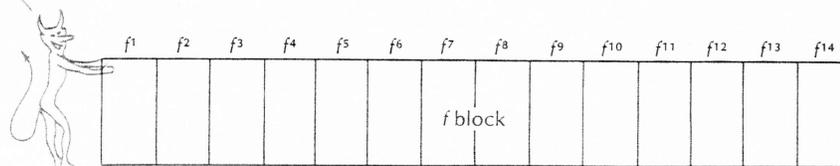


FIGURE 9.8
Periodic table showing sublevel blocks

Ahh—here it is, the full-blown periodic table in its long form. Now we can see where the *f* block elements really belong in relation to all the others.



I've taken this periodic table apart, and put the *f* block back at the bottom, so we can really see the blocks that represent the different sublevels.



it, it's easy now that we understand how the sublevel blocks and the periods work. This is best illustrated by the example below.

EXAMPLE 9.1: Write the configuration for yttrium. Use spectral notation with the noble gas core.

Solution: First, locate the element on the periodic table. Second, find the noble gas in the period above it: this is krypton. Third, decide what block the element is in: yttrium is in the *d* block. Fourth, count over from the left of the block to find out how many electrons are in that sublevel: yttrium is the first element in the *d* block; so it has one electron in the $4d$ sublevel. Fifth, decide whether there are any filled sublevels: yes, the $5s$ sublevel is filled since it comes right before the $4d$.

Answer: $(\text{Kr}-36)5s^24d^1$.

