two factors. Then we test to determine whether the row factor has an effect, and we also test to determine whether the column factor has an effect.

Table 12-3 is an example of data categorized with *two* factors:

1. Sex: One factor is the row variable of sex (male, female).
2. Blood Lead Level: The second factor is the column variable of blood lead level (low, medium, high).

The subcategories in Table 12-3 are often called *cells,* so Table 12-3 has six cells containing five values each.

In analyzing the sample data in Table 12-3, we have already discussed one-way analysis of variance for a single factor, so it might seem reasonable to simply proceed with one-way ANOVA for the factor of sex and another one-way ANOVA for the factor of blood lead level, but that approach wastes information and totally ignores a very important feature: the possible effect of an *interaction* between the two factors.

Table 12-3 Measures of Performance IQ

	Blood Lead Level		
	Low	**Medium**	**High**
Male	85	78	93
	90	107	97
	107	90	79
	85	83	97
	100	101	111
Female	64	97	100
	111	80	71
	76	108	99
	136	110	85
	99	97	93

DEFINITION There is an **interaction** between two factors if the effect of one of the factors changes for different categories of the other factor.

As an example of an *interaction* between two factors, consider food pairings. Peanut butter and jelly interact well, but ketchup and ice cream interact in a way that results in a bad taste, so we rarely see someone eating ice cream topped with ketchup. Physicians must be careful to avoid prescribing drugs with interactions that produce adverse effects. It was found that the antifungal drug Nizoral (ketoconazole) interacted with the antihistamine drug Seldane (terfenadine) in such a way that Seldane was not metabolized properly, causing abnormal heart rhythms in some patients. Seldane was subsequently removed from the market. In general, consider an interaction effect to be an effect due to the combination of the two factors.