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[**Arrays, Ranges, and Hashes in Ruby**](http://www.peachpit.com/articles/article.aspx?p=1278994)

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**Removing Elements**

Just as you can add new elements to existing arrays, you can remove elements, too. To remove the last element from the array, use pop:

a = [1, 2]

a.pop # a = [1]

To remove an item from the beginning of the array, use shift:

a = [1, 2, 3, 4]

a.shift # a = [2, 3, 4]

To remove an item from the middle of the array, use delete\_at, providing it the index position of the item to be deleted:

a = [1, 2, 3, 4, 5, 6]

a.delete\_at(2) # a = [1, 2, 4, 5, 6]

To remove an item from the array based upon its value, use delete:

pets = ['cat', 'dog', 'rabbit', 'parrot']

a.delete('dog')

# pets = ['cat', 'rabbit', 'parrot']

Each of these methods not only removes the element from the array but also returns the removed value (just like slice!).

**Multiple Array Interactions**

If you have two (or more) arrays, what you can do with them is even more interesting. The +, &, and | operators perform difference, intersection, and union, respectively. Start with two arrays:

a = [1, 2, 3, 4]

b = [4, 5, 6]

The difference between the two will be a copy of a with any elements also in b removed:

a - b # [1, 2, 3]

The intersection of the two returns a new array containing only those elements found in both (with any duplicates removed):

a & b # [4]

The union of the two will be the creation of a new array containing every unique element found in both:

a | b # [1, 2, 3, 4, 5, 6]

**To remove elements:**

1. Create a new array: groceries = %w{milk kiwis carrots
2. → tofu steak beets salt turnips} Using the %w technique discussed in the first section of the chapter, I’ll quickly create a list of words (the %w means that each array element is separated by a space, so that quotes are not required).
3. Remove the second item from the array ([**Figure 4.11**](javascript:popUp('/content/images/chap4_9780321553850/elementLinks/fig_04-11.jpg'))): groceries.delete\_at(1)
4. puts groceries.inspect
5. [](javascript:popUp('/content/images/chap4_9780321553850/elementLinks/fig_04-11.jpg'))
6. [Figure 4.11](javascript:popUp('/content/images/chap4_9780321553850/elementLinks/fig_04-11.jpg')) An array is created and one value removed.
7. Remove tofu from the list: groceries.delete('tofu')
8. puts groceries.inspect
9. Remove the first and last items ([**Figure 4.12**](javascript:popUp('/content/images/chap4_9780321553850/elementLinks/fig_04-12.jpg'))). groceries.pop
10. groceries.shift
11. puts groceries.inspect
12. [](javascript:popUp('/content/images/chap4_9780321553850/elementLinks/fig_04-12.jpg'))
13. [Figure 4.12](javascript:popUp('/content/images/chap4_9780321553850/elementLinks/fig_04-12.jpg')) More array elements are removed using three different methods.

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