# Arrays vs ArrayLists

| Arrays | ArrayLists |
| --- | --- |
| random-access, linear data structure | random-access, linear data structure |
| fixed size once created | dynamic size; grows automatically |
| can contain objects and primitives | can only contain objects |
| must declare element type | element type is Object |
| safe: run-time bounds checking | safe: run-time bounds checking |
|  |  |
| Fish[] myArray = new Fish[15]; | ArrayList myList = new ArrayList(); |
| myArray[index] = new Fish(loc); | myList.add(new Fish(loc)); |
|  | myList.set(index, new Fish(loc)); |
| Fish f = myArray[index]; | Fish f = (Fish) myList.get(index); |
| myArray[index].move(); | ((Fish) myList.get(index)).move(); |
|  |  |
| for ( int k = 0; k < myArray.length; k++ )     System.out.println(myArray[index]); | for ( int k = 0; k < myList.size(); k++ )     System.out.println(myList.get(k)); |
|  |  |
|  | **Subset of Methods:** |
|  | boolean add(Object obj) |
|  | void add(int index, Object obj) |
|  | Object get(int index) |
|  | Object set(int index, Object obj) |
|  | Object remove(int index) |
|  | boolean remove(Object obj) |
|  | int size() |