

Sorting	# item # comps	# swaps/shifts
Bubble	$\frac{n(n-1)}{2}$	$0 \dots \frac{n(n-1)}{2}$
Improved Bubble	$n-1 \xrightarrow{2n-3} \dots \frac{n(n-1)}{2}$	$0 \dots \frac{n(n-1)}{2}$
Selection	$\frac{n(n-1)}{2}$	$0 \dots n-1$
Improved Selection	$n-1 \xrightarrow{2n-3} \frac{n(n-1)}{2}$	$0 \dots n-1$
Insertion	$n-1 \dots \frac{n(n-1)}{2}$	$0 \dots \frac{n(n-1)}{2}$
Improved Insertion	? *	$0 \dots \frac{n(n-1)}{2}$

$i_L$   
 $\downarrow$   
4 5 3 0 2 1

$\downarrow^c$   
4 5 3 0 2 1

$\downarrow^c$   
3 4 5 0 2 1

$\downarrow^c$   
0 3 4 5 2 1

$\downarrow^c$   
0 2 3 4 5 1

0 1 2 3 4 5

$\geq$   $\nwarrow$  Does not hold  
 for \*