Report

	EQUAL INTEGERS			RANDOM INTEGERS			INCREASING INTEGERS			DECREASING INTEGERS		
	1,000	10,000	100,000	1,000	10,000	100,000	1,000	10,000	100,000	1,000	10,000	100,000
heapSort	592800	1771901	8407300	862500	6820500	28897200	847400	5374599	29995700	764200	5862499	28225600
shellSort	588200	8230301	39938300	536200	12049601	25208500	638900	8589300	24326799	584401	7371799	25123400
introsort	2819001	17893901	41596601	1406200	9955900	35206800	1097201	9986199	31702100	1435800	8433200	34252801

I keep the random integer value is 1000. I think Shell sort speed is better when less or much size of the array. Also, heap sort speed is better when middle size of the array and has equal integer values. And intro sort speed is increased when size of the array is higher.

I use Shell sort for the scenario because of it's left of the behind other sorts, seeing in the table. But we use max grade 100, heap sort will be better because there will be many same grade.

References

- https://www.geeksforgeeks.org/heap-sort/
- https://www.geeksforgeeks.org/shellsort/
- https://www.geeksforgeeks.org/introsort-or-introspective-sort/
- https://bilgisayarkavramlari.com/2008/08/09/yiginlama-siralamasi-heap-sort/
- http://cagataykiziltan.net/algoritmalar/1-siralama-algoritmalari/7-shell-siralama-shell-sort/