

How to Buy an Electronic Keyboard

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Abstract

Has this ever happened to you: A student excitedly tells you about the new keyboard they purchased & how motivating it will be; later you look it up online, only to see that it's---oh no!---a dud?

Many teachers can recognize a dud (whether used or new), but are less frequently able to describe that dud beforehand so students & colleagues can avoid it.

Learn how to distinguish between, and therefore recommend to students, the three basic types of modern electronic keyboard (Digital Pianos, Synthesizer/"Keyboard", and MIDI Controllers). You'll learn when each type of keyboard is most appropriate, common techniques & methods of use, the pros & cons of practice use, and how to integrate (or exclude) each from your teaching studio.

Outline

- Introduction
- The 3 Types of Electronic Keyboards
- Appropriateness & Common Techniques
- Keys! Action, Style, Touch, and Weight
- Integrate & Exclude
 - o Composition
 - o Performance
 - o Practice
 - o Production
 - o Teaching Studio
- Electronic Keyboard Comparison Chart
- Conclusion

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Electronic Keyboard Comparison Chart

Listed characteristics are for typical electronic keyboard units and are not exhaustive.
 (?) means an option is available but may not come standard on all makes/models.

	MIDI Controller	Synthesizer	Digital Piano
Availability	Many different models available	Great many different models available	Moderate number of models available
Connectivity	PC, Mac, mobile devices (adapter or Bluetooth)	PC, Mac, mobile devices (adapter or Bluetooth), Audio Interface, amps/sound systems	PC, Mac, mobile devices (adapter or Bluetooth), Audio Interface, amps/sound systems
Cost	\$ - \$\$\$	\$\$ - \$\$\$\$\$	\$\$\$ - \$\$\$\$
Dimensions of Unit	Size of PC keyboard	Size of PC keyboard up to organ console up to standard piano manual+	Size of standard piano manual
Key Action	none	typically none	Graded, Hammer (?), Escape-ment (?)
Key Style	Diving Board, Lipped, Waterfall	Diving Board, Lipped, Waterfall	Lipped
Key Touch	none	Ivory (?)	Ivory (?)
Key Weight	Unweighted	Un-Weighted, Semi-Weighted, Fully-Weighted (?)	Fully-Weighted
I/O (Inputs / Outputs)			
- In	<u>In</u> : USB	<u>In</u> : Power, USB, 1/8 inch, 1/4 inch (?), sustain pedal, expression pedal (?), MIDI	<u>In</u> : Power, USB, 1/8 inch, 1/4 inch (?), sustain pedal, expression pedal (?), MIDI
- Out	<u>Out</u> : USB, MIDI	<u>Out</u> : USB, 1/4 inch (?), sustain pedal (?), expression pedal (?), MIDI	<u>Out</u> : USB (?), 1/4 inch (?), sustain pedal (?), expression pedal (?), MIDI
Maintenance	Avoid moisture, dust, dirt, shocks	Avoid moisture, dust, dirt, shocks, may require team move; hard case recommended	Avoid moisture, dust, dirt, shocks; soft or hard case recommended
Portability	Excellent	Depends on model; may require team move or hard case	Moderate; can typically be moved & packed by one adult; soft case recommended
Power Supply required?	No, typically gets power from connected device	Wall power, sometimes battery-powered	Wall power required
Sound	Does not make sound on its own – must be connected to a device	Onboard sound + connectivity	Onboard sound + connectivity
Tuning required?	n/a (does not make sound on its own)	No	No
Weight of Unit	1 – 5 Lbs	1 - ∞Lbs	26 – 60Lbs, newer models are lightest
BEST FOR:	Composition, Production	Performance (popular styles), Production	Performance (classical, jazz, sacred), Practice, Teaching Studio

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Definitions

1/4 inch & 1/8 inch	Standard audio cable sizes. 1/4 inch, sometimes called a “patch cable”, is the standard for musical amplifiers, guitars, microphones, synthesizers, and audio interfaces/sound systems. 1/8 inch is the standard for personal audio such as headphones, handheld video games, and external PC speakers.
Audio Interface	Converts audio signals from amp/microphone into digital signals.
Case	Electronic keyboard cases typically come as either soft (fabric + padding) or hard (fabric + padding + molded plastic on the outside).
MIDI	“Musical Instrument Digital Interface.” A technical standard that ensures a wide range of electronic musical devices can communicate with one another regardless of brand or manufacturer.
Onboard Sound	Has speakers built-in to the unit.
Pedal, Expression	A single pedal or pedal unit that can transmit variable signal levels, like a car’s accelerator pedal.
Pedal, Footpedal/Sustain	A single pedal that simulates the piano’s damper pedal. Typically transmits either a “pedal down” or “pedal up” signal, but more expensive units support half- or quarter-pedaling.
Manual	The “keyboard” or keys of an instrument.
Production	Using software to compose, master, notate, produce, or record music.
USB	“Universal Serial Bus.” A technical standard that ensures a wide range of computer devices can communicate with one another regardless of brand or manufacturer. Comes in different sizes (USB-A, USB-B, USB-C, micro-USB, etc.)

Keys! Action, Style, Touch, Weight

Key Action (only available with Fully-Weighted Keys)	
Graded (also “Scaled” or “Progressive”)	Keys are weighted so that lower keys are slightly heavier and higher keys are slightly lighter. Increases the weight of the instrument & mimics the feel of a grand piano. <u>Fully-Weighted Graded Action</u> feels somewhat like a grand piano.
Hammer Action	A hammer mechanism is attached to each key to mimic the feel of a grand piano. Further increases the weight of the instrument. <u>Fully-Weighted Graded Hammer Action</u> feels more like a grand piano.
Escapement	Mimics the escapement mechanism of a grand piano & increases key response. Further increases the weight of the instrument. <u>Fully-Weighted Graded Hammer Action with Escapement</u> feels the most like a grand piano.
Key Style	
Waterfall	Keys have a triangular shape. Good for synthesizers, but does not feel like a piano.
Diving Board	Keys have a rectangular shape with no lip. Good for organs, but feels only somewhat like a piano.
Lipped	Keys have a lip at the end. Feels the most like a piano.
Key Touch	
Standard	Keys feel plastic.
Ivory	Keys are synthetically coated to feel like the ivory keys of older pianos.
Key Weight	
Un-Weighted	Keys return to initial position after being depressed but do not provide tactile resistance. Does not feel like a piano.
Semi-Weighted	Small metal springs are attached to each key to provide some resistance. Does not feel like a piano, but has more response than Un-Weighted keys.
Fully-Weighted	Keys have weights attached to mimic the feel of a piano. Feels closer to a piano, especially for beginning-intermediate students.

Every manufacturer has their own definitions for the various types of key action and weight. When purchasing a professional-level instrument, I recommend spending time on the phone/online with the manufacturer to understand their terminology, as well as playing instruments with different key actions so you can feel the difference before choosing.