## Hitting

appendix 2: the four actions

Weston Discovery Centre

This part of the station could visually connect to percussion instruments (most associated with a hitting action) by:

* Offering both a **tuned and un-tuned** hitting experience, perhaps exploring materials like drum skin versus metal.
* Encouraging variations of this action (*how you hit*, i.e. hard, soft, and *where you hit*, i.e. edges vs centre).
* Offering **direct and indirect** hitting with a beater or stick, or just hands.

## Connection to the gallery

There are no instruments in the permanent display that involve the hitting action but the act of hitting percussion is universally known.

## What do we learn?

* Hitting causes vibration which makes sound
* Different types of instruments from different cultures and times use hitting as their main technique
* A hitting sound has varied characteristics depending on force, tool and material

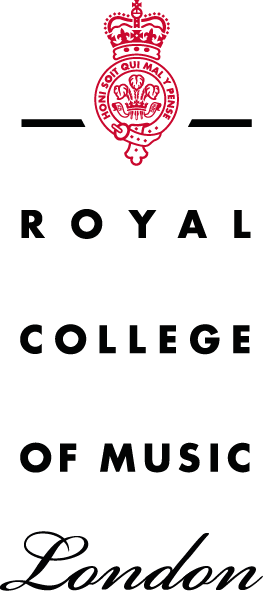
## What do we experience?

* Physical connection to an instrument through an action
* The difference in sound depending on force, tool and material

# Pressing

Pressing is associated with **keys** of different kinds, i.e. the rectangular keys of a keyboard or the circular keys on a wind instrument, and **strings** (as this is the way string players alter pitch).

This part of the station could explore:

* Pressing a keyboard key as an **indirect** experience. The key acts as an interface between the player and the keyboard strings, a lever that triggers a mechanism.
* Exposing the ‘behind the scenes’ workings of a harpsichord and piano. Although the keys on both instruments look the same, the touch and feel is different because harpsichord strings are **plucked** and piano strings are **hammered**. Pressing a harpsichord key in a hard or soft way produces very little difference in sound, whereas the name *pianoforte* implies that you are able to control loud and soft dynamics through touch.
* Wind instrument keys have a different function, opening and closing holes in the side of the instrument pipe thereby shortening or lengthening the resonating tube.
* Pressing different parts of a string lengthens or shortens it. It is a **direct** way of changing the way the string is vibrating, therefore changing the pitch.

## Connection to the gallery

Keyboard keys are explored as interfaces in the permanent display, which features a variety of plucked and hammered keyboard instruments. Wind instruments feature in the display at a point in history where the key feature was being radically developed and extended. All the stringed instruments on display require pressing to change pitch.

## What do we learn?

* Pressing in some contexts starts a process to create sound, and in other contexts stops vibration which changes sound
* Different types of instruments use a pressing action for different functions

## What do we experience?

* The feeling of starting a process by pressing a key
* Surprise at seeing the complex inner workings of instruments, perhaps for the first time
* The difference in sound depending on force used or key pressed

# Plucking

This part of the station could visually connect to stringed instruments (most associated with a plucking action) by:

* Offering an experience of plucking an individual string versus multiple strings at once, at different angles (i.e. down and up like a guitar, across like a harp).
* Encouraging variations of this action (how you pluck, i.e. hard, soft, and where, i.e. edges vs centre)
* Offering **direct and indirect** plucking with a plectrum, or just hands
* Connecting plucking to the mechanism inside a plucked keyboard instrument
* Offering an alternative to a string, i.e. the metal rods of an mbira

## Connection to the gallery

Stringed instruments like guitars, members of the violin family, harp, etc. Plucked keyboard mechanisms of harpsichord, spinet, virginal, clavicytherium.

## What do we learn?

* Plucking produces vibration which makes sound
* Different types of instruments from different cultures and times use plucking as their main technique
* A plucking sound has these characteristics: it is short in duration and bright in timbre

## What do we experience?

* The feeling of generating sound by plucking
* The effect of changing the sound we make by our varying actions

# Pulling and Pushing

This part of the station could explore:

* Creating sustained sound, create longer sounds (very much the antithesis of plucking)
* Bows as tools, the material coming into contact with the string (horse hair)
* Pulling or pushing to create and sustain airflow (accordion or barrel organ)

## Connection to the gallery

Many of the stringed instruments are bowed. The barrel organ requires this action to operate the bellows and turn the barrel.

## What do we learn?

* Pulling and pushing (a harder technique to master) causes vibration which makes sound
* Different types of instruments from different cultures and times use plucking as their main technique
* The aim of the action is normally to create more sustained sound

## What do we experience?

* The feeling of sustaining sound