# Model Build Plan

**Name:** Arun Joshi **Year:** 2015 (2nd Year)

**Concept:** Concept 30 – Piano Game

**Issue/s to be investigated:**

- Angle of the pedals
- Size of pedals
- Not enough space between two users
- Position of black pedal
- How do pedals connect to each other
- Pedals need to connect to make a sequence for the users to follow which allows for the product to be easily stored away

**Risk:**

- Could be uncomfortable if at incorrect angle
- If too small they may not be able to position foot on the pedal but if they are too large then it will mean extra material and manufacturing costs
- Could cause them to bump into each other
- Cannot push the pedal down in time if it is too far away to reach ( especially if the user is sitting down) also will be very hard to develop two pedals on top of each other
- Pedals need to connect to make a sequence for the users to follow which allows for the product to be easily stored away
- Could cause them to bump into each other

**Category:**

- C
- B
- C
- A
- B
- C

**Description of model:**
This model is closer to what the finished product would look like. There are 6 detachable pedal ports and one main speaker-hub system that they all join to. Each of the pedal ports has a left pedal that is black to represent black pedals on pianos and would be used on by the users left leg, while the right white pedal would be used by their right leg. These pedals are also not hinged at one end to show the type of movement and resistance the pedals would require. There is also a lot more space between each pedal now so that, in theory, users can have more space for chairs or standing up and are less likely to trouble one another.

**Materials Required: material type, size and quantity**

- 1x A3 White card sheet
- 1x A4 White paper
- 1x A3 White 3mm foam board
- 2x A4 Black card sheets

- Double sided tape

**Process of model making:**
First a template had to be made for the wedged shape pedal ports. Using A4 paper to create the shape made the process a lot easier as it was a particularly difficult shape to make a net for. After several attempts the correct net was made and then copied on to the white card 6 times. These were then cut out with a scalpel and the taps were joined to make the shape using double sided tape. To make the pedals to go on these wedges shape ports the template was used to mark out the shape the pedals needed to be, this was done using the foam board. The foam board was then cut out to give 6 pedals. These pedals were then cut in half to form the separate left and right pedals. Using the left pedal foam board cut out as templates, black card was cut out and then stuck down using double sided tape on to the left hand pedals. This produced 6 black pedals and 6 white pedals. The next part that needed to be made were the spring for each of the separate pedals. Since they wouldn't be hinged at one end anymore it meant that the springs had to be stuck to the bottom of the pedals. This meant 12 springs had to be made. These were made by folding a strip of card over on itself 3 times. Each of these springs were then wrapped in tape to make them more rigid and less 'wobbly'. The springs were then attached to the pedals and in turn the pedal ports. To make the central speak hub mean that a hexagon had to be made so that the flat face of the pedal ports could attach to the speaker. This was done using the black card. The flat faces of the pedal ports were measured and the total length was then cut into a strip of 30mm high. At 6 intervals the strip was then folded to form the sides of the hexagon. The top was then cut from the white card and stock on to the top of the black hexagon using taps. The white card represents where the speaker would be. Next was how to make a fastening that meant the pedal ports cold be separated from the central speaker hub. This was simple. Sticking an out sticking flap of paper on to the flat face of pedal ports and a small horizontal bridge type flap on the flat faces of the hexagon, meant that they could simply slot in and out of the central speaker.

**Specialist support?**
None

**Estimated build time:** 4hours
**Required by:** 5 hour