



# Soundwaves Case Study

How can a creative approach to music support positive engagement and communication?

St Peter's Primary School in Budleigh Salterton

To find out about Soundwaves Extra visit www.takeart.org or contact jane@takeart.org











This feedback is accompanied by a short video sequence that demonstrates the activity delivered by Richard Tomlinson for the Soundwaves Extra project at St Peter's Primary School in Budleigh Salterton. https://vimeo.com/257690127/fd66cc3f54

# How can a creative approach to music support positive engagement and communication?

My artistic practice is best described as Creative Technologist. This means I explore the creative potential of digital technology to create: still and moving images, sound installations, interactive artworks and multimedia work. I also have many years experience working as a participatory artist, a role that primarily involves facilitating film/photography and media projects with community groups. At least fifty percent of my experience as a facilitator has been within the early years sector, much of which was gained working on Take Art's 'Little Big Bang' project.

Digital media and early years creativity is an unusual combination. There is a perception that digital media involves processing information and staring at a screen whereas, by contrast, early years creativity concerns developing ideas 'in the moment' and is tactile and sensory.

My personal aim was to facilitate an activity that:

- used digital media discreetly (not direct use of computers)
- made use of ordinary objects we encounter everyday (not high tech computers)
- was sensory, specifically exploring touch and sound
- had not previously been explored at the setting
- was experimental
- involved making music with objects that weren't traditional musical instruments

## <u>Why do this</u>

- Digital technology produced for very young children is usually designed with passive engagement in mind, for example: playing a pre-programmed game, sorting pictures on a screen, triggering sounds by pressing a mouse. The aim here was to provide an opportunity for children to manipulate technology to become inventors of their own ideas, rather than simply consumers of digital products.
- Digital creativity is associated with the use of high tech electronic gear. The aim here was to demonstrate that we are able to be creative with digital technology whilst interacting with ordinary objects that we encounter everyday.
- Interaction with computer technology is, in most cases, a solitary activity. The aim here was to creatively explore digital technology and encourage children to work together, collaborate and share ideas.
- The numbers of children attending both Nursery and Reception at Budleigh Salterton is growing and the ratio of adults to children is shrinking. At the beginning of the project it was noted by an early years practitioner that, when resources are stretched, creativity suffers. This project was an opportunity to bring some fresh creativity into the space and allow time for observation by practitioners.

### Making digital technology tactile and playful

The technical set up for this project was simple and inexpensive, it comprised of:

- a laptop computer
- SCRATCH software
- MakeyMakey board
- wires / crocodile clips
- materials including clay, fruit and vegetables

**Scratch** is a free programming language where you can create your own interactive stories, games, and animations. It has an intuitive interface that enables anybody, regardless of their experience in computer programming, to create an application . In this case SCRATCH was used to make a simple application that told the computer to play one of 18 sounds when a key was pressed, i.e. when 'a' is pressed play sound 01, when 'b' is pressed play sound 02, when 'c' is pressed play sound 03 and so on.

It wasn't the intention that very young children would programme with SCRATCH themselves (<u>www.scratch.mit.edu/about</u> suggests running programming projects with children as young as 8). The idea was that practitioners themselves might be inspired to build simple interactive applications informed by their children's interests and the setting environment. Once you're familiar with SCRATCH a simple animation, game or musical instrument can be built in minutes.

**MakeyMakey** (<u>www.makeymakey.com</u>) was initiated by students at MIT Media Lab as an academic and artistic project. The project developed the MakeyMakey board, a small electronic board (not much bigger that a credit card) that connects to the computer via USB cable (the kit can be purchased online for less that £40). It enables the 'inventor' to turn everyday objects into a computer key via a thin wire.

We'd already created a computer programme using SCRATCH that told the computer to make a sound when a key was touched. The next step was to connect the MakeyMakey to the computer so that when an everyday object was touched it too would make a sound. In this case we created a Carrot Piano (18 carrots each trigger a single note when touched).

With the MakeyMakey you can make anything that's even a little bit conductive (anything containing moisture or carbon) into a computer key. Inventions could include: a banana cowbell, a watermelon bass drum or talking plant. All sorts of objects can be turned into computer keys:

- leaves and flowers
- clay works very well as long as it's moist
- people are conductive! (you can trigger sounds when two people shake hands)
- graphite from a pencil can work (you can draw a piano on paper and really play it!)
- foil and other metal objects will work (coins, magnets, nuts and bolts, forks, pots and pans)





Children used clay, buttons, shells and scrap store bits and bobs to create sound inventions

#### The process at the setting

We worked with both the Nursery and Reception class over nine half day sessions. At the start of the process children were encouraged to think of themselves as inventors or scientists using clay to create: amazing noisy machines, weird musical instruments or loud creatures. We ran the clay modelling sessions in the Science Garden, it was a fairly familiar activity for most of the children. Whilst modelling their clay the children talked about the object they were inventing, describing its size and the sound it made. This, tactile, activity was very effective as a means of encouraging collaborative working. Children intuitively shared the clay with each other and understood that some inventions were bigger than others and might require more clay. The children communicated with each other, either verbally or through actions, sharing ideas and inspiration. Some children even combined their models together to create super inventions!

At the end of the modelling session the MakeyMakey was introduced. The children instantly understood its potential and started connecting their clay models to the MakeyMakey. The children realised that when they touched their model it produced a sound and when they touched two models simultaneously two sounds were produced.

Over the course of the 9 sessions the children continued their creative experimentation, producing:

- sound emitting clay inventions
- musical instruments made from fruit and vegetables
- musical instruments made from buckets of water
- objects that, when connected together with wires or wet string, produce noisier sounds





# The children discovered that their inventions made a sound when touched

#### observations and comments made by children and adults/practitioners

- The process encouraged children to use words. Those with little confidence in verbal communication were able to use simple words like: food, shop, carrot, dinner and water. Those with higher levels of verbal communication used words like: scientist, inventor, magician, aubergine, connect and circuit.
- Children, in particular boys, who would not normally participate in group activities collaborated on this project.
- Children understood that, though they were working with everyday objects, they were also creatively exploring digital technology and the idea of completing circuits. The children said phrases like: "attach me to the computer", "join me up", "plug me in" and "I'm an inventor".
- The sensory nature of the activity, and the particular focus on touch and sound, encouraged non verbal play.
- Children who had previously been assessed as having lower organisational skills demonstrated that they were very capable of organising the resources involved in this project, they were clearly able to attach different wires to different objects to create a range of sounds.
- As well as using words associated with technology the children used words and phrases to describe their modelling with clay and the everyday objects: "I'm building a town with a river through it, the water will make the connection", "here's a noisy pie", "the bigger carrots will make a bigger noise".
- The activity encouraged children, particularly the boys, to interact gently with one another. Both nursery and reception classes have a higher percentage of boys and play can often be very physical. The children realised that by gently holding hands they could complete a circuit and create a sound.
- As well as stimulating communication the process also encouraged children to think about: maths, systems and science.





The MakeyMakey enabled children to trigger sounds by touching everyday objects, here children create music using the Carrot Piano.





During the project children also experimented with noisy water buckets and noisy paintings