



Imagine an empty room. In the middle of it place a child who is poorly co-ordinated, has little speech, lacks social skills and has poor self-esteem. Look closer into the corner of the room and there, near a BBC Master 128 computer, is a box 6" by 9" by 2". Out of the top protrudes a flexible metal arm with a small black sensor attached.

The room is quiet. If you strain your ears, you become aware that the little black box is ticking softly.

The child in the middle gets bored and moves. There is a wave of sound. The child freezes, apprehensive. No sound. Tentatively a hand stirs. The music, softer this time, responds. Worried, the child runs out of the room, chased by a cacophony.

There is a pause. All quiet but for the gentle ticking in the corner. The return of the child, accompanied by a teacher, is met by more sound. The teacher takes the child's hand and, swinging it backwards and forwards, generates a rhythmical pattern of sound. The child, no longer afraid, laughs, claps his hands, and attempts to jump about, creating his own sounds, tunes and music.

This is not science fiction. The little black box is the Hybrid Music 6000 Sensor attached to the computer via the analogue port. In the disc drive is a *Sound Stage* disc, and a Hybrid System ROM must be plugged in to the computer. Also connected to the computer via the 1 megahertz bus is the Hybrid Music 5000 Synthesiser.

Two amplifiers are attached to the synthesiser so that the room is filled with stereo sound. If you want complete control of the sounds, it is advisable to have the Hybrid Music 1000 Keyboard. This is not essential, though.

The little black box can be com-

## Sound out the black box

A bat-like device that emits music in response to movements offers new hope to children with autism and behavioural difficulties. **Caroline Gray** reports

pared to a bat. It both emits and receives a narrow ultrasonic beam, and is sensitive to anything that moves within a certain space along a line (up to 10 metres). Some people feel a slight tingle when standing near the sensor. However, ultrasound at these frequencies (50 KHz) is not known to have any ill effect. The range of the beams can be decided by the teacher. Once the two side parameters are set, the sensor will pick up any movement within that area and the walls and ceiling.

By selecting a large area, mobile children can be encouraged to explore and use space. Selection of a narrow band encourages those children who keep a great distance from their peers to come closer. Movement does not have to be around the floor; it is possible for wheelchair-bound children to generate exciting sounds just by moving their hands, limbs or body a few millimetres.

All the instructions come on the disc and can be read off the screen if help is needed. There is a range of previously stored sound patterns - wind and waves that enable you to hear the Atlantic Ocean pounding the cliffs in your classroom, or the rich chords of film music.

Either the teacher, the child, or another child who shows interest and aptitude with sound can alter the quality of the sound to create the impression of different instruments or effects.

This system could be used in one-to-one work with children with learning difficulties, encouraging more awareness of their bodies by giving them additional feedback when movements are made. It would also fit well into a "Snoezelem" sensory leisure environment.

For those showing autistic types of behaviour, the ritualised stereotyped movements will cause an auditory response from the environment when the system is working. For some autistic individuals this might cause a negative reaction, for others it could be a way of breaking through.

● The Hybrid Music System is available from Hybrid Technology, 273 The Science Park, Cambridge CB4 4WE.

● The Hybrid 6000 Sensor costs £139 excl VAT and the soundtrack software which goes with it, £29 excl VAT.

● For details about Snoezelem, contact Rompa, Goyt Side Road, Chesterfield S40 2PH