



Sound

The latest multimedia computer systems can run sophisticated software that is designed for the production and performance of music with sampled sounds, automated notation and literally enough bells, flutes and whistles to satisfy and perhaps even surprise the most jaded of ears. These programs are usually accompanied by their own manuals which include details of technical operation and example activities.

Although such dedicated software can be used to develop IT skills, it is most relevant within the music curriculum. Here we will be exploring communication with sound in a more general sense, using other resources and a wider range of curriculum applications, without reference to specific music programs.

Suitable software

| PC/RM | Acorn |
|----------------|-----------|
| Compose | Compose |
| Music Explorer | Notate |
| Sound Recorder | Music Box |



26 Name and describe sounds

Age
7+

Purpose

To raise children's awareness of sound as a communication medium.

Organisation

Class discussion, then individuals or pairs

Time

30 minutes

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Activity

1 Develop a list of sounds that are used for communication purposes, such as the school bell, phone, foghorn, car alarm, cooker timer.

2 Ask the children to give each sound a name, describe it, say what it is communicating and explain how it is

controlled. You can use pcm 26 as a simple starter, but a classroom wall poster with space for new additions can encourage children to keep their ears open over a longer period of time.

Extension

You can ask older children to explore the usefulness and appropriateness of each sound, and suggest new sound applications.



27 Spot the voice

Age
5-8

Purpose

To experience aspects of storing information as sound.

Organisation

Individuals or pairs

Time

2 sessions several weeks apart

Activity

1 Most schools have a variety of tape recorders which can be used for storing sound, some dating back to the early days of IT when they were used for loading and saving programs. Give each child the opportunity to use one.

2 Help them to make a short recording of their voice, and then play it back to them. How do they think they sound? Let them get used to recording, rewinding and playing back.

3 On another occasion ask each child in turn to record a simple statement about

themselves on a tape or series of tapes. Make sure they do not mention their name.

Carefully label and store the tape.

Later in the term or year, bring out the tape and play it back to the class or groups. Whose voice is this? How can they tell?

Note

► You should warn the children about the difficulty of searching for a specific child or item, especially in a long tape, as well as the difficulty of editing or extending an individual's voice record. Talk about how this is different from working with information stored on disk on a computer.



28 Make a spoken record

Age
7+

Organisation
Groups

Time
40 minutes

Purpose

● To explore the advantages and disadvantages of sound as an information-storage medium.

Activity

1 When you are going on a visit, take some portable tape recorders and ask some children to record their observations as appropriate: the

appearance of a church, the inscriptions on headstones, details of mini-beast behaviour, the smells of flowers.

Back in the classroom, compare these voice records with drawings and written records produced by other groups of children. Which are the most vivid or detailed? Which record was the easiest to make? Which is the easiest to use?



29 Sound effects

Age
7+

Organisation
Groups

Time
Variable

Purpose

To illustrate that in some circumstances recorded sound is the only way to communicate information.

Activity

If you have access to a higher-quality microphone, ask groups of children to try recording sounds that are particularly relevant to the work in hand – perhaps the siren and bells during a visit to a fire-station, or simply the noise of the local traffic and the beeps of the nearby pelican crossing.

Once these sounds are stored, they can be retrieved and communicated to other children who did not go on the visit, giving them a feeling for the topic in a way that cannot easily be achieved in any other way.

Note

► If you can find any, those old six-minute computer tapes are ideal for using in this sort of activity because they take much less time to rewind or fast-forward than C60 or C90 tapes.



30 Cub reporters

Age
8+

Organisation
Whole class or groups

Time
Variable

Purpose

To support the development of language and investigation skills.

Activity

When you are expecting a visitor to the school, have the children prepare a series of questions.

One or more of the children can set up and operate a tape recorder with a microphone. They make a recording of the questions and answers, as well as a couple of minutes of free spoken information from the visitor.

Later the children can use the recording to help them prepare a news report of the visit, combining text with drawings as appropriate. The information can be played back repeatedly until the children are happy that they have accurately reported what the visitor had to say.

Extensions

The same technique can be used for recording interviews on field trips.

Video cameras can be used to combine pictures with the sound information.



31 Long-distance communication

Age Purpose

8+

Organisation

Class activity

Time

At least 3 sessions of 20–30 minutes

To compare sound with other methods of communicating information over long distances.

Activity

If you want to acquire information from someone the children will not have the chance to meet personally – for example, a colleague in another school or a relative or friend who works in an occupation associated with the topic you are studying – ask the children to write to them asking them to tape-record their answers to a series of questions.

The children can then use this record in their work in a variety of ways, as in the previous activity.

Ask them to compare this technique with other methods that people use to communicate without meeting.

Extension

The children could try recording their questions on tape, and leaving appropriate lengths of blank tape for the answers. This is tricky, and will involve the children in considering how long they expect the answers to be. Perhaps they will come up with the solution that each answer must be no more than a certain length, 30 seconds for instance (and they would have to explain that to their correspondent).



32 Use a synthesiser keyboard

Age Purpose

9+

Organisation

Individuals or pairs

Time

Variable

To explore the potential of IT for manipulating sounds and producing music.

Activity

Many schools have access to synthesiser keyboards which are used within the music curriculum. In this activity you will be asking the children specifically to explore the features of a synthesiser which draw on the power of IT to extend and enhance their musical productions. The following are possible exercises.

Repeat a phrase continually so that it becomes a new background.

Replay the previous piece and add or overlay further notes.

3 Compare the same piece as the sound is rendered by different instruments.

4 Replay the same piece at different speeds.

5 Replay the same piece with different enhancements such as echo.

Exactly what you ask the children to do depends on the features of the keyboards to which you have access. All the above examples illustrate that IT allows sounds to be stored, retrieved and altered for a purpose, and that each of the effects needs evaluating before it is thrust onto an unsuspecting and possibly captive audience!



33 Manipulate sound

Age
10+

Organisation

Pairs or threes with headphones

Time

15–20 minutes per group

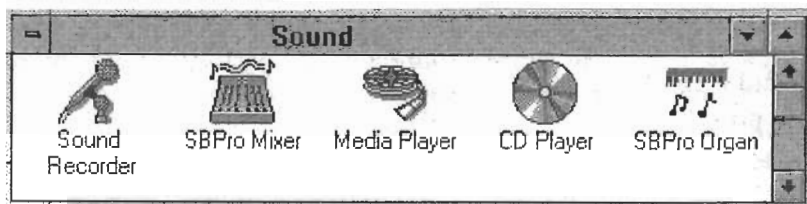
Purposes

To explore the sound facilities of multimedia computers.

To investigate ways of editing sound.

Activity

With a multimedia computer and a simple microphone (which you can buy at low cost from your high-street electronics store if it is not supplied with the computer) you can record and manipulate sound in a wide variety of ways. But you will need to play with this medium yourself to build up your confidence before you try using it with children. Look for a group of sound programs on your multimedia computer which contains items such as Sound Recorder, Media Player, etc.



2 To start, create some files consisting of a series of sound effects. You may find some among the software pre-loaded into the computer; otherwise you can record your own sounds. You can then save these sound files to disk and reload them just like a text or picture file.



Try adding a message such as 'What do you think this is?' in front of each sound effect. This involves editing sounds, which cannot be done on a tape recorder.

Challenge the children to load each sound file, listen to it and try to identify the sound.

5 Give the children the opportunity to record their own voices and then play them back.

6 You can then introduce them to more sophisticated facilities – perhaps replaying their messages with echo, faster or slower, or even backwards.

Note

► If the sound from a multimedia computer is a distraction in the classroom, consider equipping the machine with two or three headphone sets. These are available from high-street electronics stores at a minimal price, as is a 'splitter' unit which will allow you to plug in up to about four headphones at the same time. The cost of this extra hardware could well be less than the cost of a couple of reams of printer paper.



34 Combine sounds and text

Age
10+

Organisation
Groups

Time
2 sessions of 15–20 minutes per group

Purpose

- To combine sound with text to communicate information.

Activity

Sounds that are recorded and stored on a multimedia computer can be handled in much the same way as text and graphics. All these elements can be combined to work together in communicating information. The details below relate to just one method that can be used with any 'Windows' machine with sound capability, but other multimedia machines will have similar routines.

Start your sound recording program (e.g. Sound Recorder).

- 2 Load an old sound or record a new sound (e.g. a tiger's roar).
- 3 Click on 'Edit' and then click 'Copy'.
- 4 Close the sound program.
- 5 Start your word-processor.
- 6 Type in some suitable words.
- 7 Click on 'Edit' and then click 'Paste'.
- 8 Listen to your tiger roar by double-clicking on the sound icon.
- 9 Save your work.

Extensions

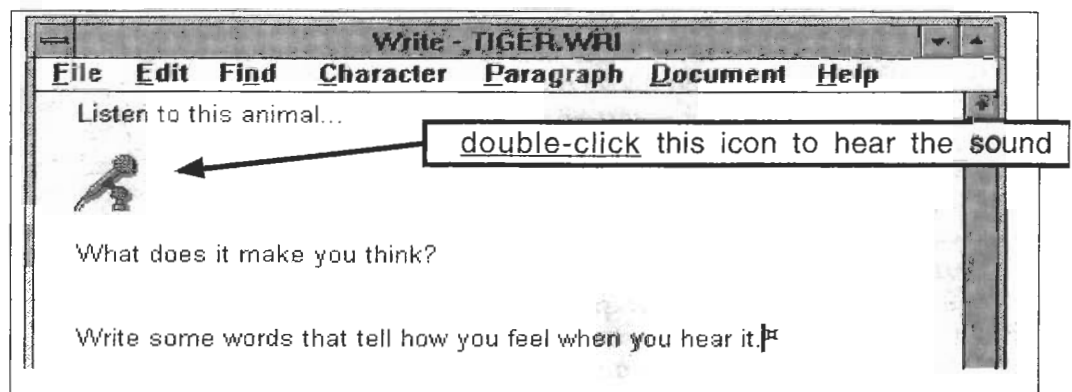
Groups could design and make a sound quiz for others to try out. 'Listen to the sounds and write down what you think they are.'

Children could make a sound word-list for a topic. 'Read the definition and guess the word under the icon.' They choose five words (e.g. steam, energy, coal, etc.), type up the definition as text ('the vapour from boiling water'), record the words and paste them into their document as sound icons. Other children are challenged to read the definitions, guess the words, and double-click on the icons to hear the words and see if they were right.

Older children could plan and create a sound-effect story for younger children to read and listen to.

Note

- ▶ Sound files take up quite a lot of disk space, so it might be advisable to limit the number of sounds used in a piece of work.





Communicating by sound

Think of a sound that is used to communicate information,
then fill in the boxes to tell everyone about it.



Give a name for your sound: _____

What sort of noise does it make?

It sounds... _____

What does it communicate?

It tells... _____

How is it controlled?

What sets it off?

Picture it here...

Another thing about this sound is... _____

by _____