

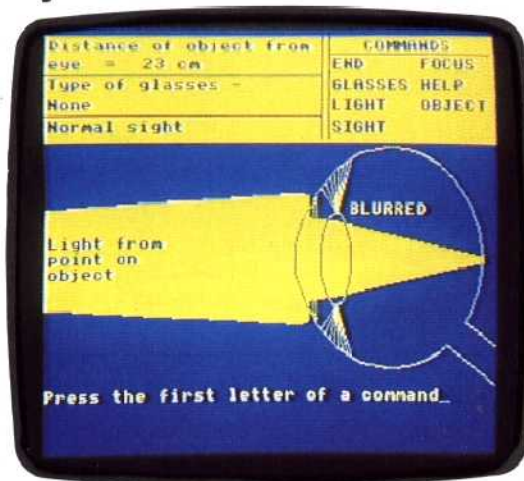
Make Believe

Simulation software allows experiments to be performed without apparatus, specimens or materials, and it is suitable for use at home or in the classroom

Simulation programs, such as the familiar arcade games that put you at the controls of a racing car or aeroplane, are designed to give you an experience as close as possible to the real thing. There is, however, a wide range of simulation software available that aims to educate rather than just exhilarate. Simulation programs are very useful in many areas of school curricula; and especially in those subjects (such as science) where practical experimentation is too dangerous, time consuming, expensive or complicated.

Simulation programs can be used as educational tools in the home as well. For example, in a program called Car Journey, children can use their arithmetic and reasoning skills to 'drive' a car around Britain. Simulation programs are perhaps the most exciting type of educational software currently marketed. Unfortunately, they are available only for a small range of machines — the BBC Micro, the Spectrum, the RML 380Z, and the Apple — the machines most favoured in schools.

Eye



This program demonstrates how the eye works, and how the various parts need to be correctly adjusted in order to see clearly. It simulates the path that light rays take from an object to the retina (the back of the eye where images are formed). You act as the brain, controlling such elements as the object distance, the size of the iris and the focal length of the lens, in order to

focus the image on the retina. You are presented with a cutaway diagram of the eye on the screen, with the relevant parts labelled. By using the command LIGHT, the path of a beam of light can be plotted from an object to the eye. If the other variables are correctly chosen you should get the message IN FOCUS. If not it will be BLURRED.

Once you have mastered the functioning of a normal eye, defects such as short sight can be simulated. When it is discovered that it is impossible to focus on a distant object, you must add an extra lens in front of the eye. If correctly chosen, this lens restores normal vision and you have just prescribed your first pair of glasses. Although developed primarily for physics and biology lessons, this program is often used in general computer literacy courses, to introduce computers to young people. Given the simplicity of the subject matter, the excellent error-trapping and the ease of use, it is easy to understand why. The program is produced by Longmans for the BBC Micro.

Ballooning



Ballooning is a home education program for children of eight to twelve years. It is available for the Spectrum from Heinemann Educational Software. The user is at the controls of a hot air balloon, and has to fly it. On the screen you see a cross-section of the countryside, with the balloon initially sitting on the ground. Also shown are four instruments: rate of climb/fall indicator, air temperature gauge, altimeter and fuel gauge. There are just two controls: a gas burner to heat the air and make the balloon rise, and a vent that lets the air escape and the balloon descend.

A simple 'flying lesson' teaches the user how to use the instruments and controls to take off, fly and land the balloon. After mastering this, you can fly your own 'mission'. This consists of