

previous proposals for a mixture of "major" and "minor" subjects in the sixth form, is that externally examined A-level subjects should be restricted to two, even for intending candidates for university entrance. In addition, the Schools Council proposes that there should be a number of "elective" courses designed by schools to reflect the interests of staff and students and able to support and sometimes complement the remainder of students' work in the sixth form. It is intended that elective subjects should be examined or assessed internally by the schools and not externally by the existing examinations boards. One feature of the proposals is that the Schools Council has outlined ways in which elective studies could form a part of the sixth form curriculum for students not bent on university entrance but who continued to follow courses at Ordinary level instead of at Advanced level. The Schools Council also emphasizes the need somehow to diminish the pressure of competition for university places and much of its concern is with the conditions on which universities may be prepared to give students suitable assurances.

The argument is sustained by statistics which illustrate the changing pattern of the sixth form in British secondary schools. For one thing, for example, the population in the sixth form is growing rapidly, at least as far as can be seen from the increase of the proportion of seventeen year olds staying on at school from 8.1 per cent in 1955 to 11.1 per cent in 1960 and 13.8 per cent in 1965. At the same time, the proportions of sixth formers not following A-level courses seem to be increasing—the Schools Council has been given access to figures collected by the Inner London Education Authority which show that non-A-level pupils in the first year of the sixth form accounted for 7 per cent of the age group in 1963 and 10.5 per cent in 1967, only four years later.

Mathematics for the Less Talented

MUCH of the current interest in the reform of the school curricula has been concerned with the more talented pupils. In mathematics, the range of experimentation in the United Kingdom is unprecedented, with four large projects in progress, and a number of smaller ones, but again there is a danger that the less talented pupil will be overlooked. The Schools Council has now produced a pamphlet—*Mathematics for the Majority*, by Mr Philip Floyd—which sets out to remedy the deficiency. (In the introduction he does point out that the Schools Mathematics Project is undertaking a revision of its texts to cater for the less talented, and that the Midlands Mathematical Experiment could be used for below average pupils by extending the time scale.)

The report begins by establishing the greatest limitation to progress—the dismal lack of mathematics teachers in the schools. Because this deficiency does not seem likely to be made good within the next few years, any scheme which is devised has to be appropriate to the teaching talent available—talent which does not always correlate closely with the actual mathematical ability of the teacher. The report suggests a variety of ways in which the interest of children can be sustained by relating the teaching of mathematics to things which they understand, and by the use of equipment—calculating machines, conic

sections, equipment for simple surveying—which can help to make mathematics seem less dry and theoretical. Collaboration between mathematics departments and departments of English, history, geography and science can also help to relate arithmetic to real life. The Stock Exchange, opinion polls, wages and systems of payment, old people's budgets, defence costs—all these can be incorporated into a general scheme which brings mathematics to life. "It might be said," Mr Floyd writes, "that this is, overall, very ordinary mathematics; but these are very ordinary children, and this is the world of mathematics they see around them." But schemes such as this, he emphasizes, do not close the door to the more imaginative mathematical world which the children do not see around them.

Fortunately, the adoption by a number of schools of the Mode II and Mode III forms of examination for the Certificate of Secondary Education enables much more freedom with syllabuses than would otherwise be possible. (In Mode II, the syllabus is determined within the school, but examined outside; in Mode III, the syllabus and the examination are both the responsibility of the school, subject to an external moderator.) This offers a real opportunity for variety, and Mr Floyd makes some suggestions—the mechanics of flight, a study of the computer, the construction of logical circuits, the study of gears, the mathematics of betting and gaming, more respectably called actuarial science. He also provides a series of charts which provide a basis for planning syllabuses. But the final word in the report goes to A. W. Whitehead—"The whole of mathematics consists in the organization of a series of aids to the imagination in the process of reasoning." Teachers, as well as pupils, need these aids to the imagination, Mr Floyd concludes.

Architects

TALKS are in progress between the Architectural Association and the Imperial College of Science and Technology over the proposed link-up, whereby the AA will become the fourth constituent college of Imperial College. To some, this statement might seem as old as the Albert Memorial, but at last it seems that light is beginning to dawn, and it is hoped that agreement will be reached early in the new year. The University Grants Committee, the third party in the discussions, has agreed to its part of the bargain, which is to provide a recurrent grant, as part of its allocation to Imperial College, for the running of the architectural school. A letter from Sir John Wolfenden to this effect, sent to the AA in August, broke through the deadlock that had been reached. Up to that point, the UGC had promised the grant only if the AA had enough money for the necessary new building in South Kensington, while the AA in its turn felt unable to raise the building money unless the recurrent grant was assured. Now that this part of the problem has been solved it remains to the AA and Imperial College to agree over the building funds. Once the merger has gone through, the AA will cease to be a private institution and will instead be financed by government money. In this way it will be the second private institution of any size that has joined the UGC fold, the other being the Institute of Estate and Farm Management which has just been incorporated into Reading University.