AFRICAN NATIONAL CONGRESS.(S.A.)
EDUCATION COMMITTEE.
Mathematics panel.

Second draft on Aims and Objectives.

Aims

To educate cadres in mathematical skills and to familiarize them with the language of mathematics so as to enable them to play their part confidently in society and to take a leading role in solving the basic mathematical calculations faced by the liberation movement in its daily struggles.

Objectives

In order to achieve the main aim the following objectives are expected from the curriculum:

1. History, Mathematics and Social Struggle.

Students should be able to relate developments in mathematical thought to developments in the struggles of human beings to master nature and to developments in the history of societies eg
the development of counting systems and the establishment of records;
the establishment of systems of calculation in the economy and in administration;
the development of classical mathematical thought in relation to basic engineering;
the origins of trigonometry to serve the requirements of navigation (trade routes) and
the growth of statistics in response to the complexities of the biological sciences.

2. Mathematical skills:

Students should be able to demonstrate competence in all forms of calculation which are required in the solution of relevant mathematical problems.   It is intended that where applicable work should relate directly to the African situation and the needs of the liberation movement.   Such skills would include:

those necessary for operating the complex at Mazimbu;
those required for application in other subjects studied.   There should be close synchronisation between the mathematics and other science subjects;
studying percentages, ratio and proportion in relation to the African situation;
enabling students to collect, analyse and interpret economic statistics and other census data and to re-interpret current statistics put out by racist regimes;
producing more efficient propaganda work among the people, based on these skills;
attaining competence in handling logistical calculations such as that involved in circulating a newspaper for the movement;
calculating with and without electronic calculators.

3. Formal qualifications and recognition.

Students should be able to demonstrate their acquisition of mathematical skills and, when required by the movement, will pursue formal qualifications prerequisite for further study in institutes of higher education so as to obtain more specialized mathematical skills required by the liberation movement.

MATERIALS FOR USE AT THE SCHOOL.

The Council of the Education Department will be asked to consider the following options and to choose which of these should be used:

1. London Mathematics Panel to produce all materials and send master copies to the school.

    This was our original suggestion, but after careful reconsideration we have come to the conclusion that we would supply a higher standard of materials by using a published scheme and adapting it wherever we deem necessary. We recognize that producing our own scheme in its entirety would be a monumental task and that our time could be better used in adapting a scheme which has already been widely researched and used. Even if, as originally proposed, we did attempt to produce all our own materials we would without doubt find that they covered much the same areas as a published scheme. Schemes have a central core and we noted for instance that the draft outline for a secondary scheme sent to us by Cmrde Zarina Chiba was largely the same as ours. This also applies to the books from the G.D.R. which we have seen.

2. Text books.

    We note that a text book bibliography from Lusaka lists only the Scottish Mathematics Group books. We have not yet been able to look at these as a Panel but we are aware that the work contained in them is of a high standard. We feel that the disadvantage of using text books is that they do not allow for the flexibility which we feel is very necessary, especially in the first two years of study as it may be impossible to ascertain the level of mathematical attainment of the incoming students in advance, and the school population may grow in unexpected ways. Text books may well be suitable in the later stages of study.

3. A programmed scheme of work.

    The Maths. Panel favours the use of a programmed scheme for these reasons:

    The flexibility in such schemes enables entry at any point and, as indicated above, there may be considerable diversity in the students' mathematical backgrounds. The proposed schemes allow for rapid self-assessment and can be used diagnostically. Although each student would begin the work at a suitable point for him/her this does not mean that they will always work individually. Groups and classes form as students progress through the material.

    The flexibility of a programmed scheme will allow for the exclusion and/or introduction of material. It is proposed that we will evaluate each section of the chosen scheme, subtract material we deem unsuitable, write our own when deemed necessary and indicate in what ways specific sections of the scheme relate to our aims and objectives. We intend to keep our proposed objectives constantly in mind as we work through the materials. We would also supplement from other schemes if and when we deemed necessary.

    We would wish to keep close liaison with the teachers at the school and would respond to their comments and requests so that the materials could best be used for the specific purposes of the school. We would also make suggestions with regard to the setting up of a mathematics room.

Our intention is to ask the Council of the Education Department
to choose between the Cambridge Schools Mathematical Programme (S.M.P.)
and the Modular Mathematics Scheme. We will forward the teachers'
handbook which gives the content of the scheme for the S.M.P. and the
tape and film which outline and explain the Modular Maths, together
with samples of the work.   Members of the Panel will also comment on
the two schemes, indicating the comparative advantages and disadvantages
of each.

A member of the Panel has approached a representative of
Heinemans, the publishers of Modular Mathematics, with the suggestion
that they consider publishing an African edition, and he indicated
interest in this. We could ofcourse make a similar approach re S.M.P.

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