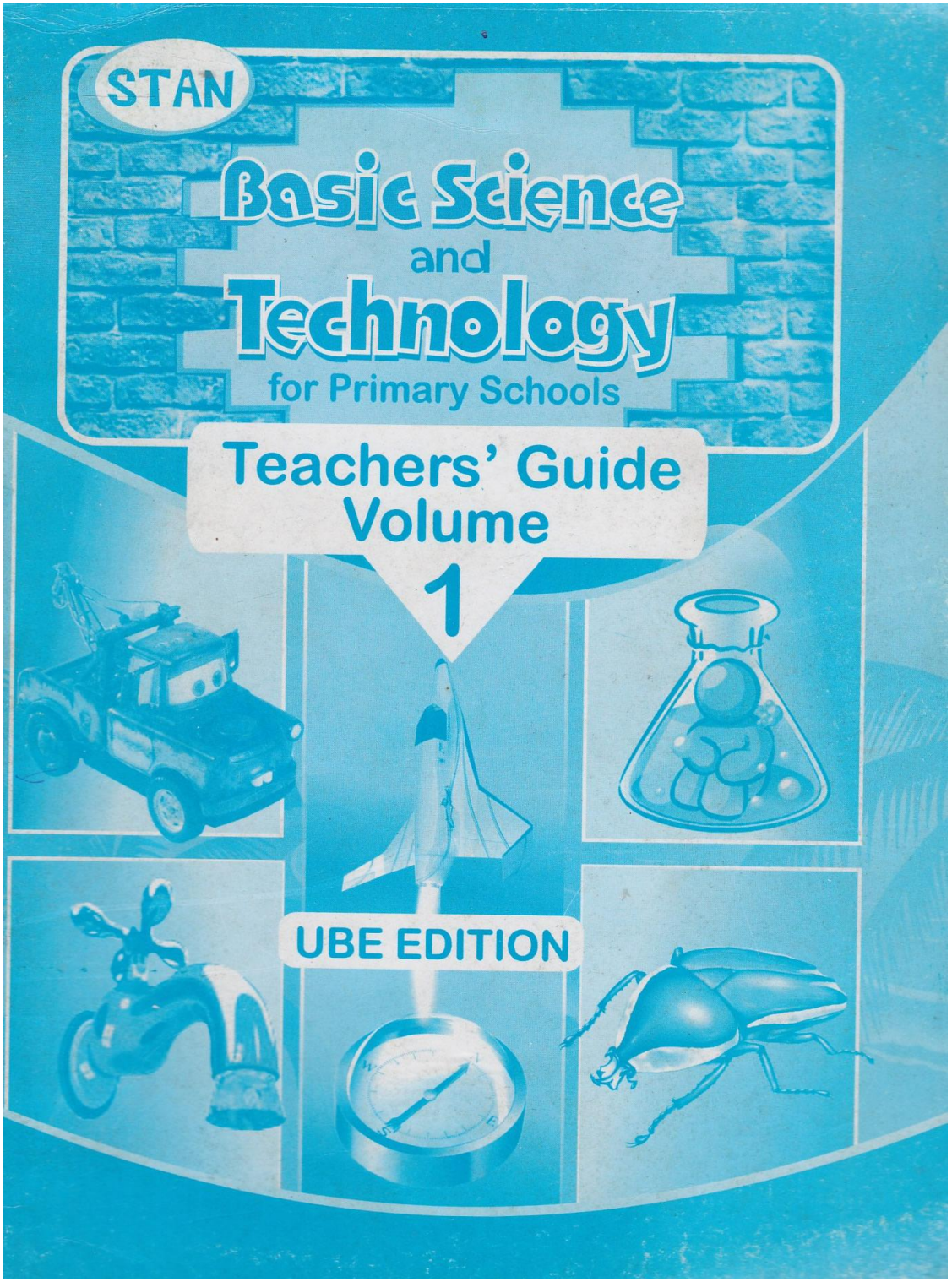
STAN

Basic Science and Technology for Primary Schools

Teachers' Guide Volume 1

UBE EDITION



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Fax: 02-2412056 E-mail: unipress@universitypress.com
Website: www.universitypressplc.com

The Review Team

Barbanas Gankon
FCT College of Education
Zuba, Abuja

Hajia Hadiza Yero
College of Education
Gindiri, Plateau State

Essien Udo
Mobil Pegasus Primary School
Eket, Akwa Ibom State

Idris Yusuf Anchau
Government Secondary School
Mayere, Kaduna State

Ime Joseph Ukpong
Q I C Primary School, Usung Inyang,
Eket, Akwa Ibom State

Patience Eyetsemitan
Nezerpat Schools
Warri, Delta State

Remi Olaniran
NESTO College
Oyo, Oyo State

Foreword

The 9-Year Basic Education Curriculum for basic and technology has been published by the Nigerian Educational Research and Development Council. Among other objectives, the curriculum seeks to lay a solid foundation in science and technology education at the lower and middle basic (primary) level. This provides a link with the Upper Basic Science and Upper Basic Technology Curricula and it takes care of the diversities of the different ecolo-geopolitical sections of the country. The challenges posed by the new curriculum necessitated the setting up of a team of experienced primary science and technology educators from different parts of the country to produce textual materials for both the pupils and the teachers. I am proud at this development and satisfied at the continued contribution of STAN towards the achievement of scientific and technological literacy.

In all, six pupils' textbooks, six workbooks and two volumes of teachers' guide have been written. A learner's motivated approach anchored on the process approach has been given prominence. Our pupils should therefore be able to study the materials presented with minimal assistance from teachers. Much of the materials should, in fact, form the basis for after class assignments. And because of the simplicity and clarity of presentation, parents who may not be experts in science and technology can easily read and guide their children in their study of these books at home.

On behalf of the Association, I congratulate the writing team for their marvellous effort. As they already know, STAN strives for excellence and I am particularly happy that they have given us just that.

I recommend these books to every primary science and technology teacher in the country for use in the six years of lower and middle basic (primary) education.

Dr Lawrence Achimugu, *FSTAN*
President, STAN
November 2009

Preface

The STAN Basic Science and Technology textbook Review Committee was commissioned by Dr Lawrence Achimugu, STAN President (2008/2010) in August 2009. The composition of the Review Committee/Writing Team reflected the combination of expertise, experience and geographical spread. This was predicated on the need to achieve relevance and so ensure that the books possess the cultural as well as environmental flavour of the different parts of the country.

The thematic, as well as modular approach is used and each theme is broken down into module and units which have been carefully sequenced and arranged.

Books 1, 2 and 3, meant for the lower basic level (years 6 - 8), are mainly pictorial with simple, verbal statements or expressions being progressively introduced. Books 4, 5 and 6, meant for the middle basic level, are also clearly illustrated and are written in simple English that is easy to read and understand.

There is a corresponding pupils' workbook for each year. There is one teachers' guide for Books 1 to 3 and another for Books 4 to 6.

The authors are aware that science and technology at the basic level or any other level for that matter is a human activity and relies heavily on the process approach which deals with observation, manipulation, inquiry/raising questions, experimenting, classifying or grouping, etc.

We expect the teacher to use the child's immediate environment as a major teaching/learning resource. Teachers should possess desirable professional attitudes, which predispose them to instil in the pupils (through teaching and modelling) positive attitudinal changes.

The teacher's role remains that of a facilitator of learning. The teacher organises the interactions between the pupils and the objects or learning resources. The teacher contrives situations and learning activities that are capable of stimulating pupils to ask questions and provide 'answers' to these questions. The teacher should allow the pupils to discuss among themselves or in groups and communicate their results in ways appropriate to their level of thinking.

Specialists and well-prepared teachers for primary school science and technology are most desirable. These are expected to be resourceful, committed, skilful and be prepared to make collections of objects/specimens, improvise charts, aquarium, animal cages, mounted pictures, models (e.g. machines), etc. Intellectual freedom in the science and technology classroom should be permitted by teachers.

I wish to commend all members of the Review Committee/Writing Team for their hard work, cooperation, devotion to duty and their strong determination to complete the project on schedule. We are all grateful to the STAN Executive Board for giving us this opportunity to contribute to the development of effective basic science and technology education in Nigeria.

Barnabas A Gankon, *FSTAN*
Chairman, Review Committee/Writing Team
November 2009