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BOOK REVIEW

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The Science behind Jeans for Genes Day: Teaching Packs for Primary (Key Stage 2) and Secondary (Key Stage 4) Schools. M Pembrey. The Progress Educational Trust.

It is often suggested that if genetics teaching within the national curriculum could be focused on practical issues that could affect students themselves (such as genetic diagnosis and screening), this change in emphasis could help them to learn by involving their natural interest, and also prepare them for the impact of current genetic advances on their adult lives. However, teachers need help from expert geneticists if this is to come about.

Professor Marcus Pembrey has an unusual ability to communicate genetic concepts in imaginative ways, and has put his ability to work in creating these two teachers' packs, adapted to specific stages of the national curriculum. The packs are intended to support teachers in teaching genetics in a realistic way that will be useful for students in later life as well as supporting educational objectives. Each pack consists of (1) a resource book for teachers, the "Progress Guide to Genetics", and (2) a file of four case studies, which can be photocopied for the children: these are the same in both the primary and the secondary packs. There are also (3) teachers' notes, and (4) four worksheets, also to be photocopied: these differ between packs.

The materials are imaginative and attractive. For example, the worksheet for primary schools shows a picture of Professor Pembrey's own family, with clues for drawing up a family tree, the common symbols used, and hints to help young children learn the principles of pedigree drawing. One worksheet explains the structure of DNA, the way it is packed into chromosomes, and the location of the chromosomes in the nucleus of the cell. Another shows some organs of the human body, challenges the students to place them in a body outline, and explains which of the organs can be affected by the genetic disorders outlined in the case histories. The teachers' notes include suggestions for games that can be used to illustrate, for example, the pairing principle that permits faithful replication of DNA. The secondary school pack uses the same basic resources to develop the basic concepts of genetics further. Subjects tackled include Mendelian inheritance and inheritance of sex, replication of DNA and the function of genes, inheritance of genetic disease, and genetic testing in the family and its uses. The teachers' pack includes information to assist teachers in discussing complex issues, such as prenatal diagnosis and other difficult choices.

The progress guide to genetics also illustrates Professor Pembrey's flair for simple, benign, and graphic illustration, and includes the images used on the worksheets. However, the text is not as clear and simple as the diagrams. It uses a conversational tone, which may be helpful for people who have no previous understanding of genetics, but does not quite match the simplicity and clarity of the worksheets.

This is an excellent resource, not only for teachers, but for nurses, genetic counsellors, and others who sometimes go into schools to help teach pupils about genetic issues.

BERNADETTE MODELL

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