

INNOVATIVE LEARNING MATERIALS IN SOCIAL STUDIES

by

David Spencer Worrall

B.A. University of New England, N.S.W. 1966

Litt. B. University of New England. 1970

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS (EDUCATION)

in the Faculty

of

Education

David Spencer Worrall

SIMON FRASER UNIVERSITY

May 1984

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APPROVAL

Name: David S. Worrall
Degree: Master of Arts (Education)
Title of Thesis: Innovative Learning Materials in
Social Studies

Examining Committee

Chairperson: R. W. Marx

K. Egan
Senior Supervisor

J. Tuinman
Professor

D. C. Wilson
Associate Professor
Faculty of Education
University of British Columbia
External Examiner

Date approved

15/06/84

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INNOVATIVE LEARNING MATERIALS IN SOCIAL STUDIES

Author: _____

(signature)

David S. Worrall

(name)

1984-06-15

(date)

ABSTRACT

The two major themes of the work which is the subject of this thesis were, firstly, the designing and creating of innovative learning materials to fit a new Social Studies Curriculum and, secondly, the informal field testing of the first three sections of a developing text.

The learning materials, under the title DISCOVERIES, were designed and written to match a new Social Studies Curriculum which had been eight years in the planning, and which was published in fourth draft form in 1981. The basic elements of the text grew out of the authors' experiences in teaching children, and out of an appreciation of some of the works of educators such as Piaget, Flavell, Eisner, and Bloom.

The philosophical basis for the designing and writing of learning materials is dealt with in the first two chapters.

The informal field-testing of the text took place in the class rooms of five grade seven classes in School District 23 (Central Okanagan) during the spring of 1983. The field-testing plans, materials, procedures, and results constitute the second half of this study. The details of the field-testing are to be found in Chapters Five, Six and Seven.

The results of the informal field-testing of the DISCOVERIES materials by eighty-two pupils are presented in the form of scores achieved on a pre-test and two post-tests, and the pupils' personal responses to their experiences with the experimental materials.

No claim is made regarding the validity or reliability of the test results, which were intended merely to provide some support for the intuitions which had guided the authors in the composition of the learning

materials. Nor does the author claim to be an unbiased reporter upon the nature and qualities of the DISCOVERIES materials, or the field-testing which involved them. However, all observers agreed that the pupils who shared the field-testing experiences enjoyed the materials and their own learning of new facts and ideas which were presented, sometimes, in novel ways.

ACKNOWLEDGEMENTS

The DISCOVERIES project began in an attempt to design and create innovative new learning materials for pupils in grades seven, eight, nine, ten, and eleven, in response to the development of a Revised Social Studies Curriculum (1980). I am indebted to my co-author, Alfred Ingham Jones, of Okanagan College for the many hours that we shared in this project. The illustrators were Lester Jones and Sandra Jones, who brought their exceptional artistic and cartographic skills to the project.

The professional staff of the Central Okanagan School District - Murlidah Pendharkar, Don Marson, Bert Webb, Austin Raham, and Bob Scherer - are thanked for their strong support in approving the field-testing materials for use in local schools, and for facilitating access to the principals and grade seven teachers of those schools.

Four principals provided ready access to their schools. Their strong support is gratefully acknowledged:

Glen Lownsborough	South Rutland Elementary
Don Campbell	Bellevue Creek Elementary
Dan Armstrong	Hudson Road Elementary
Andrew Craig	Westbank Elementary

Three teachers, and their pupils, did sterling work in field-testing the DISCOVERIES materials, and reporting upon their experiences. During a time of economic restraint, and manifest uncertainties in the educational system, their enthusiastic support was particularly generous, and most especially appreciated.

Pearl Slater	South Rutland Elementary
Harry Weston	Bellevue Creek Elementary
Gordon Ledinski	Hudson Road Elementary

Sheila Ardley provided most tireless and cheerful support to the authors during the preparation of manuscript, and especially in the typing of the bid to the Ministry of Education, in April, 1982. A more dedicated and professional secretary I cannot imagine!

Finally, my wife and children are to be thanked and commended for their understanding, tolerance, and support through the interminable hours of meetings, research, and writing that this project has spanned during more than four years.

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CHAPTER ONE

THE REVISED SOCIAL STUDIES CURRICULUM

A new curriculum for schools might be expected to encourage the development of innovative learning materials. The British Columbia Ministry of Education published a draft of a new Social Studies Curriculum for grades kindergarten through eleven in 1979. The first draft of the new curriculum contained clear departures from the Guide which had been in place since 1968. A great many educators expressed deep concerns about most of the suggestions which had been written into the Revised Curriculum. For example, many perceived that geography and history had disappeared as distinct disciplines, others saw treasured blocks of content vanishing from their particular grade's purview, and still others noticed that there was a dearth of materials available for the effective implementation of this new curriculum. This writer believed that the most effective way to implement the Revised Curriculum would be through the provision of innovative learning materials across the grades. The designing, creating, and informal field testing of the first three sections of such a text for grade seven pupils is the subject of this thesis.

The Social Studies Revision Committee made numerous changes to the first draft of its Revised Curriculum. The fourth draft (April, 1980), and the final draft (1983) are attached as Appendix 1, pages 65 to 73. The details of the 1980 draft made it clear that the Revision Committee intended that:

- Social Studies should consist of a broadly based social sciences view of man's place in his world. Fields of study such as anthropology, archaeology, architecture, political science, and technological

innovation were noted to be worthy concomitants to the core fields of geography and history.

- the teaching of Social Studies should be based upon the illustration of generalizations and the analysis of issues within the four-fold content framework which had been prescribed. i.e. Canada Past, Canada Present, World Past, and World Present.
- new learning materials in the form of both print and non-print resources would be required for the effective implementation of the Revised Curriculum.

The publication of the Revised Curriculum caused many teachers of the social sciences and humanities to become more clearly aware of the turbulent nature of our times and disciplines. But, because the social sciences and those who teach them to the uninitiated play a significant role in the making and re-making of society, it is important that the tools and methods which those teachers use should be designed to be compatible with the complex matrix of our dynamic world and society. The materials which are the subject of this study were designed and created within the context of this presumption. The authors' principal objective was to facilitate the work of those teachers and pupils who would explore their surroundings and attempt to understand the relationships between people and places.

At any level of education, curriculum and its resources must be based upon two prerequisites:

- it must be credible to both teachers and pupils.
- it must be consistent with the objectives of its society and the elements of its unique education system.

In order to satisfy these prerequisites, the designing of curriculum and its resources should begin with three definitions:

- (i) education should be defined as a set of desirable societal goals which reflect a concern both for the individual and for the group. This definition of education should be compatible with the goals of academic disciplines which are, in part, the carriers of society's information, knowledge and wisdom.
- (ii) there should be as precise, as possible definitions of cognitive processes, and cognitive development. These form the foundation of any curriculum and its resources by balancing the delicate interplay of the need to stimulate intellectual growth and the need to recognize the nature and extent of such growth in order to determine appropriate further stimuli.
- (iii) there should be contemporary, consensual definitions of those disciplines which provide the content and methods of the curriculum and its resources. These definitions should be designed to ensure that of the educational hierarchy does not become remote from the lived-in world of the teacher and pupil. The definitions should also ensure the development of that lively interest which causes disciplines to flourish constantly in new and more useful forms.

By their very nature the tasks of arriving at these definitions are never-ceasing since they seek conclusions which, in our society, are in a

state of continual evaluation and modification. It is within this environment of restlessness, relatedness, and responsibility that these resource materials have been designed and prepared.

There is much dispute about the definition of education but as a lively and enduring question, it continues to be the point of origin for all curriculum design. During many years of classroom service, the authors of the Grade 7 test have been influenced by many conceptions of the principles, the purposes, and the practice of education. In the long run they have chosen to represent their viewpoint through the definition of P. H. Phenix¹ that education is a process whereby people acquire understandings and meanings.

Education thus becomes the process of creating and developing cognition, a task which embraces a wide spectrum of human responses to encounters with the self, societies, and the various settings of man. In practical terms, education is the nurture of the ability of the individual pupil to:

- (a) obtain knowledge in a variety of forms by means of a variety of methods;
- (b) comprehend the various meanings of this knowledge, and to elaborate and extend it by various means;
- (c) apply knowledge in both abstract and concrete forms in solving problems;
- (d) analyse knowledge to discover its constituents, internal and external relationships, and organizing principles;

¹ Phenix, P. H. Realms of Meaning: A Philosophy of the Curriculum for General Education. New York. McGraw Hill 1964

- (e) synthesize new forms of knowledge, alternative means of discovering and validating understanding, and new generalizations about knowledge;
- (f) evaluate understanding by means of various criteria ranging from objective to subjective in origin and form.

Education clearly consists of teaching and learning, with the emphasis upon learning. For the teacher, it becomes the task of modulating the growth of invention, experiment, and discovery. It attempts no less than to demonstrate and recapitulate how man has thought and survived through time and space by creating meaning for himself, for the groups in which he lives, and for the settings which surround him. Education seeks to provoke more effective ways of thinking and surviving, by examining man as he is and has been, and proposing how he might be.

For the pupil, education is the daily accretion of the skills and tools which provide increasing personal control over the gathering of information, the transformation of information to knowledge, and the practical application of knowledge as wisdom. Learning becomes a route to intellectual maturity mapped by the experience of society. It is a route hedged against excess, but broad enough to dispel conformity. It seeks to develop the individual as a functional member of a group by generating participation skills to:

- (a) use language, including mathematics, as symbols to impart and decipher general and specific meanings;
- (b) apply empirical techniques and scientific method to discover, analyse, classify, and verify knowledge;
- (c) employ meanings and materials in the arts and music

- to show the relationship between the aesthetic and physical aspects of human existence;
- (d) validly use intuitive, personal, experiential observation to create understanding;
 - (e) formulate and apply values which guide understanding, which question appearances and meanings, and which delineate the spiritual qualities which man can possess.

The Grade 7 text has been created around these concepts of education, and, therefore, manifests the following characteristics:

1. It is concerned primarily with the behaviour of the pupil, seeking to establish, through the vehicle of social studies, specific cognitive and psychomotor functions including:
 - (a) literacy: reading and comprehension based on ability to define, imagine, create, infer, conceptualize, classify, relate, and symbolize;
 - (b) numeracy: observation and mensuration related to the real world and representations of that world, survey and experimental skills, and quantitative cognition from applying mathematical and statistical concepts;
 - (c) oracy - auracy: discussion and explanation based on the development of logic, reasoning, analogy, metaphor, description, and analysis;
 - (d) graphicacy: formulating, drawing, and interpreting maps, graphs, diagrams, and pictures.

2. The text is designed to strike a balance between the need to accommodate all the specific material content required by the Revised Curriculum and the requirements for the cognitive growth of pupils of this age. The text also deliberately fosters understanding of the contemporary social sciences per se. The purpose is to promote the continued growth of these disciplines, and to demonstrate the meaningful part they play in creating human satisfaction, happiness, and dignity.
3. The text seeks with care, to develop values in ways which provoke in pupils desire for and senses of: empathy, identification, comparison, self-analysis and the analysis of the values of others.

The cognitive growth of pupils has been viewed by J. H. Flavell "as a specific form of biological adaptation of a complex organism to a complex environment....Piagetian man actively selects and interprets environmental information in the construction of his own knowledge rather than passively copying the information just as it is presented to his senses....(he) always reconstructs and reinterprets that environment to make it fit in with his own existing mental framework....the mind builds its knowledge structures by taking external data and interpreting them, transforming them, and reorganizing them."²

Since it may be readily found elsewhere (Piaget & Inhelder, 1969; Beard, 1969; Flavell, 1977), there is no need to recapitulate the detail of Piaget's conception of cognition and development. Suffice it to indicate that curricula for Grade 7 pupils would be constructed to meet the needs

² Flavell, J. H. Cognitive Development. 1977 p. 6

suggested by Piaget's second and third stages of development: the concrete and formal-operational periods. Piaget has placed the average chronological ages of attainment of these two stages at about eleven years for the concrete and fourteen for the formal. However, findings by subsequent workers (e.g. Beard, 1969) have suggested that these ages, particularly that of the attainment of the formal-operational stage, may be much later, perhaps by as much as four years later. In addition, it is now accepted that not all individuals complete the Piagetian scheme of development, hence a number of pupils may never become formal-operational.

Piaget believed that a pupil's learning is constrained by his stage of development. Therefore, a teacher should be able to design a social studies curriculum with its conceptual structures sequentially graded according to the defined stages in the pupil's mental development. There is merit in attempting such discovery, but, for several reasons, the design of curriculum should be approached cautiously. Firstly, the diversity of the social sciences precludes the sequencing of a multitude of ideas into a single stream. Secondly, strict adherence to a particular scheme might lead to a form of tyranny in the classrooms where activity might become predicated by the goal of average performance. Thirdly, the streaming of pupils according to general stages of mental development might unnecessarily restrict the optimum rate of growth for each individual.

The authors of the text are cautiously convinced of the efficacy of Piaget's findings in guiding the learning process. However, they have relied on two further views in developing both the sequence and the scope of materials. First, they have adopted J. Bruner's method of repetition of concepts, with sequential adjustments to meet the changing competence of

the pupil.³ Their purposes have been to recapitulate concepts and generalizations without losing the stimulation value of new experiences. In this way, the text caters to variety in pupil competence, but does not lose sight of Piaget's conceptual framework. In addition, the authors have turned to R. Gagne's theory that proper sequencing of encounter and learning material produces development rather than passively accommodating to it.⁴

Therefore, the text reflects the view that information and knowledge about given phenomena possess an internal logical coherence which should guide the learning process.

While there are risks inherent in pragmatic eclecticism, there are even greater risks in embracing only one conception of how children learn. The text has been created, therefore, within a framework which is believed to be at once securely founded in the findings of contemporary educational psychology, and moderate enough to appeal to a wide range of professional preferences for modes of instruction. The criteria by which the authors have been guided are the need:

1. to match conceptual and illustrative content with generally accepted ideas about children's mental development.
2. to stimulate the growth of those intellectual characteristics assigned by Piaget to each of his stages.

³ Bruner, Jerome S. Beyond the Information Given: Studies in the Psychology of Knowing. 1973

⁴ Gagne, Robert, and White, Richard. Memory Structures and Learning Outcomes. Review of Educational Research. 48, (2), 1978. pp. 187 - 222.

3. The need to present material content in logical sequences according to the internal structure of the material.
4. The need to present fundamental concepts and generalizations repeatedly, but in ways which permit recapitulation without destructive over-familiarity.
5. The need to encourage the free rein of imagination on the part of both teacher and pupil.
6. The need to see the social studies as one of the major efforts in education to initiate understanding and techniques of successful human behaviour.
7. The need to include all of the social sciences in social studies activities in ways that are relevant to the present stages of development of the pupil.

The authors' attempts at meeting these seven criteria involved an approach which was characterised by:

- (a) discovery-inquiry teaching based on carefully chosen curricular experiences.
- (b) progression from concrete to abstract through active involvement of the pupil in problem-solving.
- (c) sequencing of activities and encounters according to findings about pupils' stages of cognitive development.
- (d) syllabus modifications to meet individual needs for cognitive development.

- (e) evaluation which assesses both the pupils' performance of cognitive operations and mastery of subject matter.

It was clearly the intent of the authors of the Revised Curriculum that the new social studies curriculum should establish the social sciences as a powerful complement to the existing curricula in the physical and life sciences. Any resource materials interpreting the revised social studies curriculum should therefore protect this intent, and include as many of the component social sciences as is practicable and educationally desirable. The authors define the social sciences as those disciplines which describe, analyse, and explain man's social experience and behaviour in time and space. This text for Grade 7 therefore fulfills the requirement to present man's interaction with his physical environments by introducing and employing where and when appropriate:

- (a) cultural anthropology
- (b) archaeology
- (c) economics
- (d) geography
- (e) history
- (f) political science and law
- (g) psychology
- (h) sociology
- (i) comparative religion

To provide optimum orderly acquaintance with the social sciences, the authors have chosen to create a text with a history and geography matrix within which are set those elements of human social, economic, and political behaviour which are appropriate to the concepts, generalizations,

and issues contained in the Revised Curriculum, Grade 7. It is suggested that through this mode of organization, history and geography will cease to be the only social sciences to which our children are exposed, but, without denigration or erosion, assume a more logical framework role in the task of teaching pupils about the functional possibilities of man on his planet. History and geography have been used throughout the text to maintain temporal continuity and spatial familiarity, becoming more or less obtrusive as occasion warrants.

In addition to the social science disciplines listed above, the authors have included in the text literary and fine arts materials whenever they are appropriate. Their reasons are two-fold. First, they wish to respond fully to the definition of 'culture' which is clearly expressed in the Revised Curriculum. Grade 7 is the beginning of a cumulative sequence of encounters with a definition of culture. A simple but comprehensive foundation is essential. Second, they see literature and the fine arts as a complement to the social sciences, since they provide a view of the human condition at given times and places in man's experience. In particular the authors have stressed poetry since it offers a remarkably refined distillation of both thought and word, and is to be found as a form of expression throughout society.

The authors' approach to teaching the social sciences through social studies is man-centred, and focussed on man-made spatial patterns on the earth, and on human temporal behaviour. It rejects determinism in favour of presenting a humanistic conception of human possibility and capability modulated by deep concern for justice and decency. Ultimately its concern is with the story of man's growth as an individual within a societal group, and the need for thoughtful relationships with all elements of both the

living and non-living environment. The text is interdisciplinary in scope and character. The aim is to erase the false boundaries of knowledge in an effort to reveal that stewardship of our resources grows more easily where understanding is wide.

Before commencing the writing of the materials, the authors spent four months analysing and interpreting the curriculum documents. The search was for a pattern of generalizations, content and issues that would fulfill three requirements: the authors' philosophical and educational stances; and the subtle sequencing of pupil skill development and maintenance, and the practical everyday demands of classroom management.

The second stage of the design process is the heart of the text's concept. In keeping with contemporary instructional style, it was decided to work progressively from investigation of a concept or generalization to illustration and testing of concepts or generalizations to analysis of relevant issues. First, the generalizations in the Revised Curriculum were rigorously analysed and interpreted, and then restated in language and detail appropriate to Grade 7 instruction. The authors selected the grade goal as the overall generalization, and seven detailed generalizations which expanded the grade goal. These were, later, to form the chapters of the book. Next, the four content categories were integrated with the generalizations. This was achieved by simply constituting a 7 x 5 matrix, as illustrated on page 14. The horizontal dimension consisted of the seven generalizations while the vertical dimension was formed by an introduction and the four content categories: World Past; Canada Past; Canada Present; and World Present (see chart, overleaf). The material content and the issues prescribed were then augmented and assigned places within the matrix. As each station in the matrix was filled, attention was given to

methods of presenting information, stimulating the pupils to react, encouraging the teacher to build interesting lessons around the concept in the station, and of creating and maintaining prescribed pupil skills. This organization readily proved to have several distinctive advantages. First, while the entire text may be used in the sequence in which it is written, it is also susceptible to a variety of modified sequences. For instance, the organizations from past to present, and from near to far may be altered to meet the preferences of the teacher and pupil without physically reorganizing the book. Second, the sequence of generalizations has been organized according to a logic perceived by the authors; however, this does not preclude other sequences for other purposes. It is clear that only Chapters 1 and 9 are fixed in position by the organization and nature of the book. Third, the use of a modular system permits the selective use of the book to provide longer or shorter programs of study. Care has been exercised to recapitulate skills, so that no loss of skill development is sustained by reducing the number of modules studies during the year. Finally, the materials which fill the matrix include generalizations, content, and issues in a way intended to generate lessons. Clear opportunities are offered for the individual teacher to create unique learning situations while relying on the materials. Recommendations for altering and augmenting the pupil activities are contained in a teacher's guide to each modular study in the book.

CHAPTER TWO

DESIGNING AND WRITING OF LEARNING MATERIALS

A plan to write an innovative style of textbook for each of five grades, from seven through eleven, passed through three stages. It began with a review of the authors' educational and pedagogical beliefs and an analysis of the Revised Curriculum.⁵ The grade seven text was the first to be attempted because of the implementation time-line which had been suggested by the Ministry of Education.

The second stage consisted of the development of a conceptual framework for the grade seven text. This was achieved by blending the curriculum's seven generalizations⁶ and the four time-space criteria - World Past, World Present, Canada Past, Canada Present - for the selection of content which might be taught. The plan for the writing of the textbook followed these seven steps:

1. The curriculum's generalizations would each be rewritten in a form which might be expected to be accessible to children of about twelve years of age. Each generalization would be entitled a Rule of Thumb.
2. Five stories were to be designed and written to illustrate each Rule of Thumb. These stories were, respectively, to illustrate the generalization in an introductory way, and to provide content which was both fitting to that generalization and to the World Past, World Present, Canada Past, and Canada Present

⁵ See Appendix 1, pages 64 to 73.

⁶ The generalizations of the 1980 draft of the Revised Curriculum were entitled Grade Goals and Understandings in the final (1983) printing.

areas of study.

3. Each story was to be imaginatively written to engage the interests of pupils who are at the "Romantic" stage of their educational development.⁷
4. The Issues which were identified in the Revised Curriculum as being worthy of discussion by grade seven pupils were found, in most cases, to be non-debatable. That is, in many cases 'Issue statements' were written as statements or as questions calling for 'Yes' or 'No' answers. Therefore, all issues were rewritten or composed in a simple form which could be best expected to excite debate. For ease of identification and comprehension by pupils, each 'Issue' was titled 'A Matter of Opinion'.
5. Questions for discussion were to be included at the conclusion of the first, or introductory, story of each chapter. These sets of questions were to be entitled 'TALKABOUT'.
6. Questions and activities for pupils were to be designed for each of the four content stories of each chapter. These questions and activities were to be designed so that pupils would be provided with ample opportunities for the development of the full range of skills as outlined in the Revised Curriculum.

⁷ Egan, Kieran. Educational Development. Oxford University Press, 1979. Chapter 2 The Romantic Stage. pages 28 - 49.

7. A Teacher's Resource Guide was to be designed and written for each text so that:

- the meaning of each "Rule of Thumb" would be clarified.
- the gradations of types of questions according to Bloom's taxonomy would be explained.
- appropriate teaching techniques for the handling of the stories, the "Rules of Thumb", the "Matters of Opinion", "Sage Sayings", TALKABOUT, and activities would be suggested.
- easy-to-copy outline maps, quizzes, and activity pages would be provided for teachers, so that their preparation time might be significantly reduced.
- alternative approaches for enrichment and modification would be emphasised.
- lists of print and non-print materials which could illustrate and/or extend the data and concepts for each generalization might be provided.
- definitions of terms might be given in the form of a glossary.
- teachers might be invited to locate and use other stories and activities to extend the concepts and generalizations.

The broad framework for the textbook was established before any attempt was made to identify appropriate stories for each section.

The final stage of the design process was writing the stories and activities to amalgamate instructional techniques, learning modes, concepts or generalizations, and informational content. These were required to be

repetitive in style, so that they had elements of supportive expectability and familiarity. They also needed to possess interesting novelty not encountered in other books. There was a need to make the materials increasingly challenging as skill developers both within each chapter and within the book as a whole. And above all the materials needed to stimulate pupils and teachers to go far beyond the materials. The matrix at this stage, was simply filled with stories and accompanying exercises. Each chapter consists of an introduction and four stories. The introduction explores a generalization. Then the stories illustrate the operation of the generalization in different places at different times in human history.

It was within the recently published work of Kieran Egan⁸ that the authors discovered a theory which lent some authority to their own views that the development of man and his cultures could be most effectively presented to grade seven pupils through the illustration of each of many generalizations by several well-written stories. Egan claimed "... that at each stage we make sense of the world and experience in significantly different ways and that these differences require that knowledge be organized differently to be accessible and educationally effective at each stage."⁹ And human educational development passes through Mythic, Romantic, Philosophic, and Ironic stages. That grade seven pupils might normally be found in the Romantic Stage (8/9 to 14/15 years of age) of their educational development led the authors to structure their stories in romantic style. "An important characteristic of knowledge that engages students at the romantic stage is that it tells them something about what

⁸ Egan, Kieran. Educational Development. New York. Oxford University Press. 1979.

⁹ *ibid.* p. 7

is real and possible...Just as romantic exploration of the real world begins with a probing of its limits, so it is the fantastic and spectacular that the romantic perception highlights... This romantic search for limits enables students to explore the vastness of the worlds of nature, culture, and history, to get a sense of their size and scope, and to get a sense of what is real within them."¹⁰

The reading of Egan's Educational Development reinforced our own belief that the best way to share significant experiences and activities with pupils who are at both the concrete-operational stage of growth in their capabilities, and who are at the romantic stage of their educational development is through the telling of appropriate stories.

"The interest generated by connecting students with something far from their experience needs to be sustained and developed...The technical tool that will help us do so much is the story form."¹¹

Into each story are injected relevant aspects of the social sciences which are then developed later in the activities. The stories seek to offer moral education as well as objective scientific understanding, and the two are united through discussion of an issue. The schedule of skills prescribed for reiteration, initiation, and recapitulation in the Revised Curriculum has been analysed and used as a sequence guide in the design of the activities which follow each story. Every attempt has been made to include all skills and to maintain a sequence of development in keeping with contemporary findings about pupil development in the cognitive, psychomotor, and affective domains. The authors' goals for the use of text were developed in the form of a list which preceded the final act of

¹⁰ *ibid.* p. 32.

¹¹ *ibid.* p. 40.

writing the text itself:

1. To teach by means of concepts and generalizations which are illustrated from, tested against, and applied to the real, experienced world.
2. To provide opportunities for both ad hoc, random experiences, and experiences which are deliberately contrived and sequenced.
3. To introduce the entire spectrum of the Social Sciences in forms and at levels of comprehension appropriate to Grade 7 pupils.
4. To foster links between the Social Studies curriculum for Grade 7 and subsequent Social Studies curricula, and other Grade 7 curricula.
5. To meet, as far as possible in one set of materials, all of the objectives of the Revised Curriculum, Grade 7.
6. To use visual materials only as deliberate teaching instruments, in forms and colours most likely to enhance the development of cognition at the Grade 7 level.
7. By constant insistence on pupil participation, to emphasize the activity and creativity by the individual pupil at rates which may be guided by the individual teacher.
8. To emphasize and facilitate the teacher's role as initiator, demonstrator, evaluator, and guide. And to avoid imposing upon the teacher the constant role of "teller".

9. To provide a foundation for the fundamental concepts which are expressed throughout the Revised Curriculum Grades 7 - 11.
10. To provide experiences which are discovery-based and problem solving, and which carry the pupil constantly to consideration of his own role in the world.
11. To interpret the Revised Curriculum as a scheme to foster the development of pupil cognition.
12. To emphasize that the Social Sciences are concerned with various ecological relationships of man; man with man; man with society; man with environments both artificial and natural.
13. To encourage a variety of approaches to comprehension of man's ecological relationships, e.g. concentric - spatial, chronological, 'triggers and connections', 'incidents and patches', cause and effect, etc.
14. To provide relevant and substantial encounters with the fundamentals of description, analysis and explanation, at appropriate intellectual levels of:
 - . terrain studies
 - . hydrology
 - . meteorology-climatology
 - . biogeography
 - . demography
 - . agriculture
 - . industry
 - . commerce
 - . settlement
 - . resources

15. To provide opportunity for the individual teacher to create values and attitudes by methods which are both open and positive.
16. To introduce pupils to appropriate aspects of the changes in methods currently occurring in the Social Sciences, e.g. quantitative methods, etc.
17. To emphasize information and knowledge about Canada at various scales of inquiry ranging from the neighbourhood to the nation.

With these goals clearly in mind, the authors designed the format and layout of the text as it appears in Appendix 4, pages 134 to 159.

CHAPTER THREE

A PLACE FOR POETRY

To provide optimum and orderly introduction to and acquaintance with the social sciences, the stories of the grade seven text were chosen and written so that history and geography served as the main vehicles by which appropriate elements of human social, economic, and political behaviours were placed in perspective. Within such a form of organization, it was thought, geography and history might cease to be as simplistically and mutually exclusively defined by teachers of Social Studies as they have often been in British Columbian schools .

In fact, geography and history have been given, within the DISCOVERIES text, the type of exposure that is more consistent with their modern definition and usage than with their traditional and often confining definitions in classrooms. Geography and history have, in other words, been used as the foundation for the explanation of the functional possibilities of man on his planet. And it is hoped that this approach will preserve, for pupils, some spatial and temporal familiarity.

Within the DISCOVERIES learning resources a more obvious departure from the usual may be noted in the frequent use of carefully selected fine arts materials. Visual art in the form of line drawings, and quotations from literature are to be found throughout the text. The decision to include examples of visual art, calligraphy, and excerpts from good literature was made with the intent that teachers and pupils might experience a more comprehensive definition of culture, and a fuller understanding of the complexities of man's perceptions of and his interactions with his physical environments. This represents part of the authors' multi-disciplinary and inter-disciplinary approach to the teaching of social studies. The inclusion of poetry has, in particular, taken many teachers and pupils by

surprise. But poetry has been included in all chapters of the text because of what the poets have to say, and because of the manner in which they say it.

The authors' justification for the use of poetry in a text which purports to present a man-centred view of human relationships with environments through time and space is based upon the antiquity and universality of poetry as an art form. Poetry has been recognized from the earliest, pre-Homeric times as an essential part of a people's culture. The poet's basic social function has been

"...connected with something very ancient and primitive in society and in society's use of words...the poet was the repository of all wisdom and knowledge, the teacher...'the unacknowledged legislator' (Shelley) of his society."¹²

That poetry is not only the encapsulation of the best that has been thought and written, but is captivating to young people of all ages is a claim of Andrew Stibbs in his Teaching Poetry:

"As well as being a particularly refined manifestation of high culture in books which sell in small numbers, poetry is an ancient, universal, and popular art form, and it is public phenomenon, found on grave-stones and lavatory walls, in advertisements and pop songs, 'In Memoriam' columns, the jokes of dirty young men (and young women, for all I know), and in children's games."¹³

In our attempts to teach children the knowledge and concepts which are the stuff of the social sciences we can find poetry to be good and useful for it is one of the finest verbal refinements of the thoughts of man, and

¹² Frye, Northrop. The Great Code. page 22

¹³ Stibbs, Andrew. Teaching Poetry. p. 39

is often couched in memorable rhythm and rhyme. It is an integral part of our culture which was succinctly defined by Matthew Arnold as the best that has been thought and said. Professor Bradley claimed that poetry is worth-while for its own sake.¹⁴ But Susanne Langer referred specifically to poetry's invaluable capacity to stimulate the imagination when she wrote that poetry, like all art

"...is abstract and meaningful; it is organic and rhythmic, like music, and imaginal, like painting. It springs from the power of language to formulate the appearance of reality,...Poetry exhibits, like nothing else in the world, the formulative use of language; it is the paradigm of creative speech."¹⁵

Many poets have provided us with invaluable historical records, for they are prone to treat the mundane daily duties and drudgeries of life as being worthy of comment simply because they are so much a part of our experience. From the earliest writings of man, poetry provides us with some insights into the daily lives, the hopes and fears of the common people. Those events which take place on a grander scale are the subjects of poems, too.

In spite of the fact that poetry can entertain us, thrill us with the discovery of new and original knowledge about things that are mighty or mundane, carry within its words, form, metre, and rhythm a record of our past and hopes for the future, provide moral comment and a ready vehicle for remembering, it has formed a very small part of our schooling and education during the past few decades.

¹⁴ Bradley, A. C. Oxford Lectures on Poetry. Chapter 1: Poetry for its Own Sake. p 3 - 34. 1901

¹⁵ Langer, Susanne. Problems of Art. p. 51 In this case, Langer was quoting from Ernst Cassirer's Philosophy of Symbolic Forms. New York. Charles Scribner's Sons, 1957.

"Poetry attracts so little attention today that it may be hard to believe that it has real importance. But anyone who studies the history of civilization will find it difficult to escape the conclusion that poetry has always held a central position in human culture."¹⁶

Poetry has been sadly neglected in our schools;¹⁷ this is to be seen as a particularly sad state of affairs if we agree with Egan's point that "...a mind stocked with fine poetry and prose enriches both the rhythms of one's language and the range of one's thought and sentiment and provides an infinitely rich treasure that can be drawn on at will through the rest of one's life."¹⁸

The firm belief that a schooling in the social sciences should be both multi-disciplinary and inter-disciplinary, and that an excellent technique for bridging many of the arbitrary gaps between the disciplines is to expose children to a rich store of poetry led to the use of carefully selected poems throughout the grade seven text, DISCOVERIES. The book opens with two poems which highlight some aspects of man's perceptions of his natural and industrial environments. Wordsworth's Daffodils was chosen because of its excellent message regarding the perception and remembrance of beauty in nature, because of its perfect poetic form, and because of Wordsworth's stature as "...indisputably the most sublime of our poets since Milton."¹⁹

¹⁶ Korg, Jacob. An Introduction to Poetry. p. 1.

¹⁷ Benton, Michael. Poetry for Children: A Neglected Art. Children's Literature in Education 9, (3), 1978, and Langer, Susanne. op cit p. 147 provide strong comment on this neglect.

¹⁸ Egan, Kieran. Educational Development. p. 48.

¹⁹ Bradley, A. C. op cit. p. 126.

Anne Marriott's Woodyards in the Rain was selected to provide an interesting counter-point to Daffodils in that it deals with an industrial landscape, and because it illustrates the forcefulness of nostalgic recollection of a familiar local scene, a Fraser River sawmill.

Chief Dan George says much in few words in My Heart Soars. He captures both the native's nostalgic recollections of all that was best in the past and the perceived injustices of being dispossessed of his birthright. The forcefulness of this local poem illustrates an emotional aspect of poetry which was spoken of by Coventry Patmore:

"The greatest of all the functions of the poet is to aid in his readers the fulfillment of the cry, which is that of nature as well as religion: 'Let not my heart forget the things mine eyes have seen'."²⁰

A story from west coast Indian mythology - The Weeping Chief of Tanu - was selected to follow My Heart Soars, in order that original material might be used to carry forward the messages from the poem.

Louis Armstrong's memorable lyric, What a Wonderful World, is the fourth poem of the grade seven text. It is included because it is the condensation of a cheerful thought. But far more than that, this poem was, in the form of the "hit" song of 1963, the catalyst for an African story which opens the second chapter. Without the song's lyrics on an African evening the author's point of view regarding the local people's ways of living might never have received the radical re-orientation which gave rise to the story which so clearly addresses the generalization for the second chapter:

The many ways in which people use their surroundings depend upon their beliefs, their technologies, and the values that

²⁰ Day-Lewis, C. The Clark Lectures - The Poetic Image. 1947. p. 139

they place upon the land and its resources.

Other poems - all chosen as gems of poetic expression - have been carefully selected, and sprinkled throughout the text of DISCOVERIES. They include:

When the Frost is on the Punkin. James Whitcomb Riley.

Horatius at the Bridge. John Masefield

Travel. Robert Louis Stevenson

If I Were a Rich Man. (from Fiddler on the Roof) Abeldon Harnich.

Between Two Furious Oceans.

The Wind Our Enemy. Anne Marriott.

The Song My Paddle Sings. E. Pauline Johnson.

The Sailor's Consolation. Charles Dibdin.

The case for poetry was most succinctly put by Leonard Clark when he claimed that poetry should not be omitted from a child's education "...for no other reason than that it is there, on hand, in all its vastness, to be explored and enjoyed. No culture has ever possessed such a supreme corpus of poetry, either in bulk or in quality, as the English...To ignore the importance of poetry for children, to neglect it, to present it in an emasculated form, is to deny them a 700-year-old tradition."²¹

Therefore, poetry has been selected to form an integral part of the grade seven text because it bridges the disciplines, excites the imagination, and neatly encapsulates human values and ideals. Professor Bradley's view is our own:

²¹ Clark, Leonard. Poetry and Children. Children's Literature in Education. 9, 3, 1978. p. 130.

"About the best of poetry, and not only the best, there floats an atmosphere of infinite suggestion. The poet speaks to us of one thing, but in this one thing there seems to lurk the secret of all. He said what he meant, but his meaning seems to beckon away, beyond itself,...It is a spirit. It comes we know not whence. It will not speak at our bidding, nor answer in our language. It is not our servant, it is our master."²²

During the past two years many people - critics, editors, teachers, pupils - have read and commented upon parts of DISCOVERIES, and most have been quite surprised to find poetry in social studies learning resource materials. Yet all but a publishing consultant have eventually shown some enthusiasm for the idea that gems of poetry can enhance and facilitate our understanding of some of the complex relationships which develop between man and his environments. Perhaps it is fitting to conclude this argument for poetry in social studies with a poem:

Ladies and gentlemen

This is our final word

-Our first and final word-

The poets have come down from Olympus.

For the old folks

Poetry was a luxury item

But for us

It's an absolute necessity

We couldn't live without poetry.

²² Bradley, A. C. op cit. pp. 26 - 27.

Unlike our elders

- And I say this with all respect -

We maintain this

A poet is no alchemist

A poet is a man like all men

A bricklayer building his wall.

A maker of windows and doors

We talk

With everyday words.

We don't believe in cabalistic signs.

And one thing more:

The poet is there

To see to it the tree does not grow crooked.

from Manifesto Nicanor Parra.

Translated by Miller Williams.²³

CHAPTER FOUR

READABILITY

During all stages of the writing of the DISCOVERIES materials, determined efforts were made to ensure that readability would be appropriate to pupils who are approximately twelve years of age.

Both authors of the DISCOVERIES materials have had training and experience in the teaching of reading, and in the teaching of elementary school pupils. In fact, both have taught a variety of subjects to kindergarten through adult level students. The grade seven group was revisited through local teachers and classrooms, and through personal interviews with several pupils. The works of Piaget and Egan were studied to provide a re-orientation to the teaching of twelve-year olds. And some examples of learning resources which satisfied tests for readability at the grade six - seven level were surveyed.

A very high priority in the writing of stories for grade seven pupils was that the material be easy to read, and readily understandable at the grade six - seven level. The criterion which was selected to provide a quantitative test of readability was the Fry Readability Scale.

At first, the readability of a number of randomly selected 100-word passages was found to be averaging at the grade eight level. During the final stage of re-writing each story, every word, phrase, clause and sentence was scrutinized for meaning, concept-load, length, factual density, clarity, and vocabulary.

The Fry Readability tests proved to be reassuring. But it is well understood that this is a coarse-grained assessment of how well pupils can read and understand given materials. Thus, the authors depended upon their many years of experience in teaching children, to make a subjective evaluation of the appropriate levels of vocabulary, concept-load, and

density of facts within each passage. The objective was to make the text interesting, and thought-provoking, yet quite easy and enjoyable to read.

Further evidence that readability had been designed at appropriate levels was provided by several independent critics in Kelowna, Vancouver, and Toronto. The EPIE analysis process was used locally, and other refined techniques were used elsewhere by Ian Parker, and Charles Kahn, of Toronto. The details of the tests, and of the instruments used were not revealed to the authors. But assurances were given that readability, and data-density were very consistently pitched at the target-level of grade six - seven.

Subsequently, many interesting gauges of readability were made during some months of field-testing of the first three sections of DISCOVERIES. The responses of teachers and pupils who worked carefully through the first twenty-seven pages of text confirmed earlier measurements and assumptions. Some typical comments which were provided by pupils include:

"This is interesting!"

"I didn't understand that before."

"Too many long words."

"Is this socials or poetry?"

"This stuff is fun to work with by yourself, too."

"Interesting."

"Excellent."

The general tenor of comment from pupils was very positive. I discussed some of these perceptions and comments with several pupils who had been engaged in one of the field-tests, in a small grade seven class. My conclusions from both the reading of pupils' written responses and interpreting several oral assessments were that the text is:

- oversimplified for the more able pupils.

- too densely laden with concepts and facts for the least able.
- quite satisfactory for the majority of pupils.

Thus, it appears that the combined application of the Fry Readability Scale and personal judgements has provided a satisfactory level of readability relative to vocabulary, meaning, concept-load, and factual density.

Some summary readability test data are included as Appendix 3, page 91.

CHAPTER FIVE

FIELD-TESTING OF DISCOVERIES MATERIALS

An heuristic, informal field-test of the first three sections of the DISCOVERIES materials was carried out during the spring of 1983. A large scale, formal field testing program had been planned, but was cancelled because of the apparent impact upon teachers of a program of economic restraint, and because of widespread opposition of grade seven teachers to the Revised Curriculum.

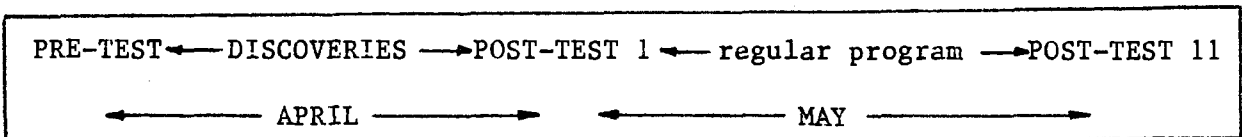
Some form of field testing was thought to be a worth-while venture in that data were required to support the authors' intuitions which had brought the text thus far. Informal and subjective responses by teachers and students were, eventually, the best types of data which were accessible. The collection of those responses is the subject of this chapter.

Access to grade seven students, for the purposes of field testing the DISCOVERIES materials in classrooms, was arranged through the office of the Superintendent of Schools. Copies of the teacher's resource guide for field testing DISCOVERIES were delivered, by hand, to several principals who were thought to be supportive of sound innovation, and who were perceived to have grade seven teachers who might be receptive to this proposal. From each of those several schools a grade seven teacher volunteered to participate in the testing program. A meeting of the Deputy Superintendent of Schools, the Director of Elementary Education, the grade seven teachers, and the author was held so that strategies for testing might be developed. At that meeting several points became clear:

1. All of the teachers found the twenty-seven pages of DISCOVERIES materials to be very interesting, and very "teachable" in that each unit contained an

- interesting, readable story, appropriate activities for students, and well-graded sets of questions for students to answer.
2. All of the grade seven teachers wanted to use the new materials in their classrooms almost immediately. This meant that there could be no pure-control group, since no-one was prepared to take three lessons to merely present a class with three versions of the same test without explanation or follow-up.
 3. Each teacher wanted to maintain a high level of autonomy in dealing with all aspects of field-testing.
 4. All teachers were quite prepared to follow the same basic format for field-testing. That is, they would give the Pre-Test, then teach the DISCOVERIES materials, administer Post-Test 1, carry on with teaching of the regular Social Studies curriculum for about a month, then administer Post-Test 11.

FIELD-TESTING PLAN



5. Each teacher would move at his or her own pace, depending upon the reactions and interest level of the pupils.

While this field testing plan was a faint shadow of the original, I was very pleased that a number of teachers and their principals had enthusiastically accepted the DISCOVERIES materials during a time of such severe restraint, and such uncertainty within the educational community.

There was no possibility of establishing any type of clear control group, so the field-testing procedures were put in place in the hope that between seventy and ninety pupils would complete the two-month program.

A complete package of field testing materials was assembled for, and distributed to, each of the grade seven teachers who had volunteered to participate in this project. Those teachers had received and read the Teacher's Guide for Field Testing, and had met with the author to discuss the testing program.

Each package of materials which was supplied to a teacher of a grade seven class contained sufficient copies of all tests, textbook sections, maps, quiz, and daily response sheets to enable each class to proceed with the field testing without any further preparation.

The following list of contents and summary instructions was included with each package of materials. The numbers shown are for South Rutland Elementary School.

DISCOVERIES

FIELD-TESTING

Many thanks for agreeing to participate in this field testing of the first twenty-seven pages of DISCOVERIES. I trust that all of the data that you will require are contained in this package:

CONTENTS

COPIES

1. Textbook summary - 1 folded chart, blue-printed.
2. Student and teacher diary sheets.-----46
3. Master sheet for summarizing student responses.----- 2
4. Pre-test of forty items (pink sheets) -----46

COPIES

5. Post-test 1 of forty items (blue sheets) -----46
6. Post-test 11 of forty items (white sheets) -----46
7. DISCOVERIES text - Chapter 1. Canary cover
white pages-----46
8. DISCOVERIES text - Chapter 2. Introduction,
green pages-----46
9. DISCOVERIES text - Chapter 2.1 Fitting In,
blue pages-----46
10. Activity sheets for Fitting In: World - outline map--60
Canada - outline map-60
Ten questions:-----46
11. Numbers 1 through 36, for student identification----- 1

In view of the severe constraints placed upon our time, resources, and energies this year, I would like to suggest that field testing proceed as you see fit, at your own pace and timing, but within these broad guidelines:

1. Give each student a secret choice of a number, 1 through 36.
2. Administer Pre-test, having students identify their papers only by their numbers. (Send papers to me for marking!)
3. Teach the three sections, 27 pages, of DISCOVERIES, in your own timing, style, and degree of enrichment.
4. Administer Post-test 1 (blue) as soon as possible after completing all three sections of DISCOVERIES. (Again, send to me for marking).

5. Wait for four weeks, then administer Post-Test 11 (white). Again, have students identify themselves by their "anonymous" numbers. Return tests, and diaries and summary of responses to me at Kelowna Secondary School. I'll provide you with results.

PARTICIPANTS:

Mr. Harry Weston	Bellevue Creek Elementary	39 students
Mr. George Ewonus	West Rutland Elementary	30 students
Mr. Dick Mowry	Ellison Elementary	30 students
Mr. Gordon Ledinski	Hudson Road Elementary	6 students
Mrs. Pearl Slater	South Rutland Elementary	45 students
Mr. Drew Craig	Westbank Elementary	40 students

I hope to do regression analyses of each student's responses to the four sections on each of the three tests, so it is very important that each student clearly identifies him or herself by number on each test.

Many thanks for agreeing to be part of this experiment. In a period of such restraint, your generous help is especially considerate.

Examples of all of the materials which were provided to each teacher are presented here as Appendix 4, pages 92 to 159 and Appendix 5, pages 160 to 167.

An element of pupil-anonymity was provided by having each student select, at random and in secret, a number with which to identify himself, or herself. This number was to be the only form of identification to be used on the three tests, and on the daily responses to each lesson. An appearance of anonymity was attempted in the hope that the pupil's

enjoyment of and experiences with DISCOVERIES would be freed from any threat of failure, and that the daily responses in the forms of qualitative and quantitative evaluations of each lesson would be open and honest. Teachers were asked to make a daily summary of the numerical responses of each pupil, and to read the brief qualitative statements about each lesson. Several examples of pupil responses, and all summaries of their quantitative responses are attached as Appendix 7, pages 177 to 179.

The plan to give pupils an element of anonymity in their responses appears to have worked very well. In only one case did a pupil adopt a flippant attitude to the answering of some questions. And on the daily response sheets the candour of many of the responses indicates that pupils must have felt quite free of any threat of criticism for making bold commentary. The apparent sincerity of the pupils in offering their opinions and assessments of each lesson gives the author some reassurance that their numerical evaluation of each lesson, on a five-point scale, might be as valid as can be expected of such a coarse scale.

An example of one pupil's responses is attached as page 42, so that the above comments might be put in context. Further examples of such pupils' diaries are to be found in Appendix 7, pages 180 to 189.

Each teacher was asked to maintain a tally sheet of the quantitative responses of all pupils in each class. The quantitative responses were made on a five-point scale, 1 through 5, with "1" signifying "very poor", and "5" representing "excellent". It was intended that this very coarse grained classification would give pupils a chance to provide both a day-to-day and an over-all impression of their perceptions of the DISCOVERIES materials. The following table - page 43 - is an example of how the twenty-six pupils in one class responded to eleven lessons over a six-week period. The average response of 3.8 on a 5 point scale - 76% -

was a result with which both the teacher and the author were well pleased.

All tests and pupil response data were graded and analysed by the author so that teachers who had so generously offered and given their time and services would not be burdened by an extra load of marking. Consistency in the grading of the questions was also an objective in opting for a centralised marking process. For the purposes of this project, each pupil's achievements on each of the three tests had to be measured in four different areas, and recombined in five different ways to provide the basic data upon which the final assessment of this project and the DISCOVERIES materials would be built. The full extent of the grading and analysis tasks which were required with the three tests proved to be so time-consuming as to be properly the concern of no-one but the author!

The Three Tests

Each of the eighty-two pupils who worked with the innovative DISCOVERIES materials was asked to write three tests. The first - the Pre-test - was taken before the pupils had had any exposure to the new materials. The second test - Post-test I - was written immediately after students had completed their work with the twenty-seven pages of new materials. And the third and final test - Post-test II - was written by those same pupils approximately four weeks after they had finished working through the experimental materials and written the second test. The three tests are to be found in their original and subsequent random ordering of questions within the Teacher's Guide for Field Testing which appears here as Appendix 4, pages 93 to 160. The tests are set out on pages 109 through 133.

Each of the three tests consisted of four sets of ten questions:

1. Ten questions calling for the recall of knowledge
which should have been presented to pupils in the

TABLE 1.

DISCOVERIES field test at Bellevue Creek Elementary School. Summary of Pupil Responses. Class No. 1.

DATE	TOPIC OF LESSON	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	30	32	33	36	AVERAGE	
83-3-29	Introduction - natural & man-made world.	-	3	5	5	5	4	4	5	5	4	5	4	5	4	4	5	4	3	5	4	5	4	5	4	2	4	4	4	4.3
83-3-30	Looking and seeing: Two poems.	-	4	4	4	5	2	5	4	3	4	3	4	5	4	4	4	4	3	4	4	2	4	4	1	2	3	3	3.6	
83-4-13	Questions, discussion on two poems.	-	3	3	4	4	4	4	4	4	4	5	-	5	3	-	4	4	4	4	4	3	4	4	3	1	4	5	3.7	
83-4-15	Tolstoy's story.	4	4	5	5	5	5	5	5	5	3	-	4	3	-	4	3	5	4	4	4	5	3	3	2	5	5	4	4.1	
83-4-18	Landscapes.	2	2	4	3	5	2	4	3	2	3	-	3	-	-	-	4	2	4	3	5	3	3	4	1	-	4	4	3.2	
83-4-22	Using the Landscapes	4	4	4	4	4	5	3	4	5	4	-	4	-	-	-	5	5	4	5	4	4	5	4	3	-	5	4	4.2	
83-4-28	<u>My Heart Soars</u>	3	4	4	4	5	4	5	5	4	4	4	-	4	4	-	5	4	4	4	4	-	4	4	3	5	5	3	4.1	
83-5-5	<u>Fitting In:</u> Introduction	5	3	4	4	5	4	4	5	4	4	3	-	4	4	-	4	4	4	1	4	3	3	5	4	3	5	4	4	3.8
83-5-6	Talkabout	-	4	3	-	4	4	3	-	2	-	-	3	4	-	3	4	-	4	5	3	3	-	4	4	3	-	4	4	3.6
83-5-18	The First Revolution.	3	4	3	4	4	3	5	5	3	5	-	3	4	-	3	4	-	4	2	-	5	4	2	4	4	-	1	-	3.6
83-5-13	Map Study.	-	3	2	3	5	4	1	-	4	-	-	3	2	-	3	2	-	4	1	-	3	4	-	4	3	1	-	2.9	
AVERAGES:		3.5	3.5	3.7	4.0	4.6	3.7	4.1	4.2	3.5	3.5	4.0	4.0	5.0	3.8	3.6	4.5	4.6	3.4	3.6	4.0	3.8	5.5	4.1	7.6	2.2	4.3	3.4	5.3	3.8

- regular grade six and seven Social Studies program of studies.
2. Ten questions calling for the comprehension and/or analysis of concepts and ideas from the regular grade six and grade seven programs.
 3. Ten questions calling for the recall of knowledge from the experimental DISCOVERIES materials.
 4. Ten questions calling for the comprehension and/or analysis of concepts and ideas from the DISCOVERIES materials.

The twenty questions which were chosen to relate to the regular grade six - grade seven program of studies were selected from a battery of over 200 questions. The battery of test items was provided by a local grade seven teacher who is a Social Studies specialist, and who has had several years of successful teaching experience at both the grade six and grade seven levels. Twenty questions which referred to the content of the first twenty-seven pages of the DISCOVERIES materials were developed by the author. Each of these questions was based directly upon the text, or the exercises and activities which were contained within the text. All forty questions, in their original form were given to a small group of grade seven pupils in order to check that there were no ambiguities, that all were quite clear, and that the grade six - seven data which were being tested were, in fact, accessible to pupils at that level of their schooling.

Several of the questions were re-written in view of some criticisms which were offered by those pupils. In order to make the tests a little more "user friendly", thirty-three of the forty test items were restructured to provide three apparently different questions each of which

asked for the recall of similar data. Thirty-three of the forty test items were re-worded in such manner. Four of those re-structured questions - one from each of the four types of questions - are listed below to demonstrate this aspect of test composition. All test items are listed in accessible form in Appendix 4, pages 108 to 132.

QUESTION	NUMBERS	QUESTION
From original format	From randomly ordered sequences	
3.	22 Pre-test:	The Nile flows down north across the continent of _____.
3.	29 Post-test I:	The longest river which flows northward across the continent of Africa is the _____.
3.	25 Post-test II:	The Nile, longest river in _____, flows northward across that great continent.
11.	15 Pre-test:	Why does the sun rise in the east?
11.	20 Post-test I:	Why does the sun set in the west?
11.	3 Post-test II:	Why does the sun rise in the east and set in the west?
21.	40 Pre-test:	Who wrote the verse: "I wandered lonely as a cloud That floats on high o'er vales and hills, When all at once I saw a crowd, A host, of golden daffodils;"

21. 14 Post-test I: Who wrote the poem Daffodils?
 "I wandered lonely as a cloud
 That floats on high o'er vales and hills,"
21. 27 Post-test II: Who wrote this poem?
 "For oft when on my couch I lie
 In vacant or in pensive mood,
 They flash upon that inward eye
 Which is the bliss of solitude;
 And then my heart with pleasure fills,
 And dances with the daffodils."
31. 27 Pre-test: What is meant by "A Rule of Thumb"?
31. 13 Post-test I: What do you understand "A Rule of Thumb"
 to be?
31. 28 Post-test II: What is "A Rule of Thumb"?

In order to further modify the tests so that they might not appear to be the same, the forty test items were assembled in random order in each of the three tests. Several sets of randomly ordered numbers from 1 to 40 inclusive were generated through an Apple II computer, and the three sets are shown in Appendix 4, page 109.

As each teacher completed the full field testing program, all test papers and pupils' daily response sheets were returned to the author for grading and analysis. The year's restraint program appears to have taken its toll, for results were received from only three teachers, whose five classes totalled eighty-two pupils. And it was not until well into September, 1983 that the last of those results were received.

The results which were achieved by all eight-two pupils on all three tests are tabulated in Appendix 6, pages 169 to 175.

CHAPTER SIX

ANALYSIS OF RESULTS OF FIELD-TESTING OF DISCOVERIES

The primary objective in field testing the first three sections of the DISCOVERIES text with teachers and pupils at the grade seven level was to generate a broad range of criticism from which the final modification of the text could be carried out. The fine-tuning of the manuscript immediately before taking it to publication was the goal. The testing which was carried out was more restricted in terms of numbers of teachers and pupils participating, and in terms of the lack of control groups, than had been intended. But the thoroughness with which the experimental materials were used in the classrooms, and the qualitative and quantitative results which were achieved, have combined to indicate that the text is effective in its present form, and that very few modifications are required to make DISCOVERIES an excellent textbook for grade seven pupils' study of man's relationships with his environments.

There are several results to be noted from the field testing of the first twenty-seven pages of DISCOVERIES. Some results have been specific, and objective, in the form of measured responses to tests and quantitative evaluation of each lesson by each pupil. And some results have been in the form of subjective responses which have been provided both orally and in writing by both teachers and pupils. All of the results have been difficult to assess because of the nature of the sample of pupils which was tested, because of the questionable validity of the testing instruments, because of the negative attitudes which pervaded the schools during a period of restraint, because of inconsistencies in field testing procedures from classroom to classroom, and because of the fact that pupils' responses on their daily response sheets were quite inconsistent both internally,

from pupil to pupil, and from class to class. The following is a description, and an assessment of the most significant results which were derived from the field testing experiments.

OBJECTIVE RESULTS.

The most significant objective results of the field testing consist of the test marks which were achieved by eighty-two pupils. Each pupil wrote the forty-item Pre-test, and eighty pupils wrote both Post-Test I and Post-Test II. The results from the five grade seven classes are tabled in Appendix 6, pages 169 to 175. In the grading of pupils' answers, marks were awarded where it was obvious that the pupil had access to the appropriate information, and in spite of the fact that spelling and/or phrasing might not have been as precise as one might have hoped for. In many cases, especially where questions called for comprehension or interpretation of ideas, half marks were awarded for answers which gave the appearance of understanding even though the answers lacked precision. For each pupil and class the results of each of the three tests were tabulated, summed, and averaged in nine different formats:

1. Recall of data from the regular grade six - seven Social Studies curriculum.
2. Comprehension of concepts and ideas from the regular grade six - seven Social Studies curriculum.
3. Recall of data from the experimental DISCOVERIES materials.
4. Comprehension of concepts and ideas from the experimental DISCOVERIES materials.
5. The twenty questions dealing with both recall and comprehension of data and ideas from the regular grade six - seven curriculum.

6. The twenty questions dealing with both recall of data and comprehension of ideas from the experimental DISCOVERIES materials.
7. All forty questions.
8. Recall of data from both the regular grade six - seven Social Studies curriculum, and from the experimental DISCOVERIES materials.
9. Comprehension of concepts and ideas from both the regular grade six - seven Social Studies curriculum, and from the experimental DISCOVERIES materials.

One of the most obvious initial observations to be made concerning these test results is that there has been some streaming of pupils in those schools where two grade seven classes were involved in this work. Higher and lower ability groups appear to have been established at both Bellevue Creek Elementary School, and at South Rutland Elementary. This heterogeneous grouping of pupils appeared most clearly with the Bellevue Creek classes where the pupils of the larger class achieved appreciably higher marks in almost all sections of all three tests, and especially in those sections where the questions called for the comprehension of concepts and ideas. The higher achieving pupils also indicated that they had had more exposure to novel ideas such as some of those which are contained within the DISCOVERIES materials; most of the new or novel ideas from the experimental materials seemed to lie outside the experiences of the eleven who comprised the smaller and lower-achieving class at Bellevue Creek Elementary School. The results are similar, although not quite so distinctly demonstrated, for the two classes at South Rutland Elementary School. These summary observations proved to be entirely consistent with

comments made by both of the teachers of the two classes in each school. In each case, the pupils in the smaller class were those who had been identified as having the most significant learning difficulties.

The following graph illustrates the discrepancies in test achievement between the higher and lower achieving classes of pupils at Bellevue Creek Elementary School. An unexpected result which is to be noted is that the "slow learners" appear to have made gains in their knowledge between the writing of Post-test I and Post-test II, yet that was a period of time during which there was no teaching of the experimental materials. Yet it was in the recall of information from DISCOVERIES that the least able pupils made their greatest gains, while the more able pupils made losses in that area. The differences observed between Post-test I and Post-test II results might have much to do with the pupils' familiarity with the test items. However, neither the results of the tests, nor the answers to

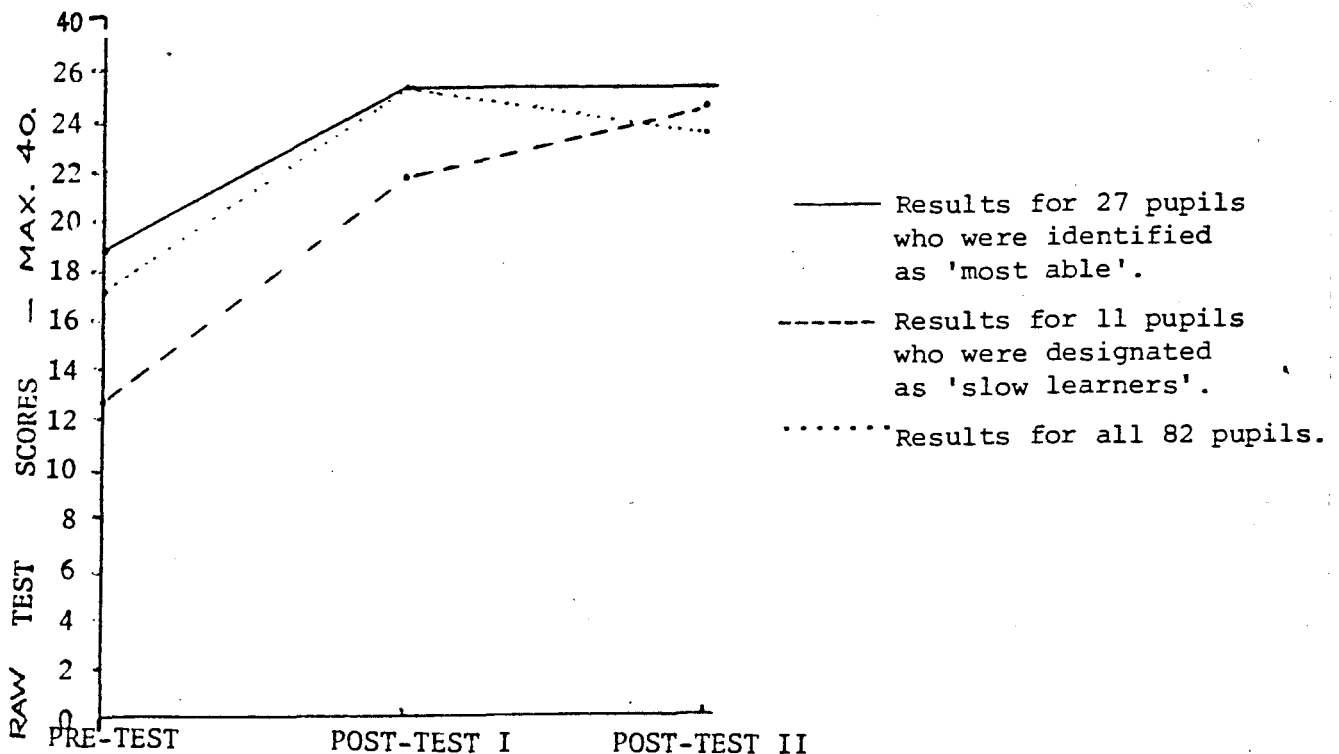


Figure 3. TEST RESULTS FOR TWO CLASSES AT BELLEVUE CREEK

ELEMENTARY SCHOOL AND ALL EIGHTY-TWO PUPILS WHO WERE TESTED.

individual test items, nor the tests themselves were returned to the pupils at any time.

A comparison of test results for "most able" and "slow learner" classes appears to indicate a closing of the gap between their test scores during the field testing of DISCOVERIES materials.

A quantitative measurement of pupil performance on and reactions to the experimental DISCOVERIES materials was provided by each pupil in each of three of the five field-testing classes. The pupils were asked to maintain a very brief diary in which they would enter the date and title of each lesson, a quantitative assessment of each lesson on a fivepoint scale, and a brief verbal comment about that lesson. While the numerical results of the pupils' evaluation of each lesson might give the appearance of being objective - see page 43 for a summary from one class - this quantitative measure is entirely subjective. Each pupil's numerical assessment of each class simply represents his or her summary reaction to the materials, the teacher, and/or any one, or more, of a number of other variables. Any one response is to be regarded as having little value. But when the responses of whole classes of pupils are taken in concert with each other, some interesting trends appear. And when the responses of each pupil are read in conjunction with the brief verbal response which was provided for the same lesson, the reader can gain some insight into the pupil's feelings. The teachers who had their pupils complete and submit a diary after every lesson found that they were able to analyse their own lessons through the attitudes and responses of the children. Similarly, an analysis of the responses for each of the three classes provided this writer with some clear insights into what pupils perceived to be the best and worst of the new materials. For example, almost all pupils enjoyed Leo Tolstoy's story

about the greedy peasant, and most found the section on The First Revolution to be especially interesting. However, the lack of adequate maps of food resources in either their atlases or the text materials was a major problem for several students; their inability to properly complete a simple assignment was frustrating. This is a short-coming of the text that needs to be addressed by the authors before the DISCOVERIES materials are published.

Forty-one pupils provided a summary numerical response to each lesson. The average response for all pupils who worked through the entire package was 3.81/5. This was a reassuring vote of confidence in the DISCOVERIES materials, for it was derived from a total of 395 individual responses. Twenty nine pupils - 71% of the participants - gave a maximum assessment of 5 for at least one lesson. Comparisons from school to school cannot be easily made since each class moved at the pace which was determined by its teacher, and more or less time was spent on particular sections. However, the most popular lessons at two of the schools were as follows:

Bellevue Creek Elementary 1. Introduction:

The natural and man-made worlds. (4.3/5)

2. Using Landscapes (4.2/5)

3. Tolstoy's Greedy Peasant (4.0/5)

Hudson Road Elementary 1. The First Revolution (4.5/5)

2. Rules of Thumb (4.2/5)

3. People Make Places (4.2/5)

There were no conclusive indications of which sections of the new materials pupils found most difficult, or least enjoyable. But several pupils indicated, through their comments, that "some work is needed in the map area"!

Summaries of pupil responses on the five-point scale are included in Appendix 7, pages 178, 179, and 180.

QUALITATIVE MEASURES:

A wide variety of qualitative responses to the content, and style, and format of the DISCOVERIES materials has been heard during the twenty months since the first three sections were typeset. In most cases, those who read the first three sections of DISCOVERIES were found to become quite enthusiastic about the possibilities for a fullyfledged textbook which would be written in the same format and style.

The field-testing proposal, complete with the first three sections of the text, were presented to the Superintendent of Schools for School District #23 (Central Okanagan) in January, 1983. Subsequently, these materials were studied by the six most senior professional members of staff of that District. A meeting was convened so that the author might address the School Board's staff on the materials and the field-testing proposal. Both the text and the plan to test it in the classrooms of the Central Okanagan received the unanimous support of those officers.

Field-test booklets in the format of a Teacher's Guide were distributed to several principals of Elementary Schools in the Central Okanagan. In each case the principals shared the materials with their teachers of grade seven classes. And in every case both the principals and the teachers enthusiastically endorsed the content and format of the teaching materials. And each of the grade seven teachers indicated a ready willingness to incorporate the DISCOVERIES materials into his or her classroom.

Most of those teachers were prepared to make special plans to put aside the regular curriculum for a period of time in order to test the new materials with their pupils.

The most positive and reassuring comments from teachers came from those who field tested the new materials most thoroughly. During and immediately after field testing DISCOVERIES several teachers gave brief but enthusiastic comments about how teachable the units appeared to be, and about how enthusiastic their pupils were in working with the new materials. Only two brief written comments were received at the conclusion of the field testing, and they are included here as pages 188 and 189 of Appendix 7.

Some of the most significant comments about DISCOVERIES were made by the pupils themselves. The following are twelve of the most frequent remarks which were gleaned from the pupils' field test diaries:

- This is very interesting.
- Poems are a surprise, but a good idea.
- Tolstoy's story was neat.
- This is a new way of studying.
- I learned a lot.
- I didn't really know what needs and wants were before.
- Lots to think about.
- This text will be more interesting than others.
- We need a better map of where the foods are to be found.
- Needs some work in the map area.
- This was fun.
- Easy to read.

The many comments from all of those who worked closely with the DISCOVERIES materials confirmed the authors' impressions that the

readability, content, concept-load, and factual-density, and the landscape format in standard size were quite appropriate for most grade seven pupils. That pupils found the poetry to be both enjoyable and meaningful, and that many of them noted that the surmounting border of line-drawings had far more significance than mere decoration, was additionally encouraging.

CHAPTER SEVEN

CONCLUSIONS

The construction of innovative, valuable new learning resources is a long, difficult, and onerous task. It carries with it responsibilities to the many teachers and pupils - most of whom will remain unknown to the authors. A decision to write a textbook cannot be conscientiously carried through to fruition without the authors being aware that many teachers may use that text for the entire course and program of studies, or just as a source of incidental materials for remediation or enrichment. Throughout a vast jurisdiction such as the Province of British Columbia, any text may be used by teachers who are leaders in their disciplines, and those who have but passing familiarity with the subject; by teachers who have devoted long careers to their pupils, and those who are eager neophytes. In writing DISCOVERIES the many burdens of responsibility of the authors to so many members of their Provincial community were given careful consideration. The stories, the activities, the "Rules of Thumb", and the Teacher's Resource Guide were designed and constructed so as to be most "teachable", yet not so entirely teacher-proof as to be uninteresting.

The designing, writing, type-setting, and illustrating of new learning resources which precisely fit a new and innovative curriculum has been a challenging, interesting, and rewarding experience for the authors. It has been a long-term commitment which has convinced this writer that the primary requirement for the implementation of a new curriculum is the ready availability of classroom materials which will engage the interests of pupils for a major part of the time which is specified for the course of studies.

The DISCOVERIES materials have appeared to fill the needs of teachers and pupils in their working with a new curriculum. But they were in no way effective in convincing more than a small handful of professional staff and teachers in the Central Okanagan that the Revised Curriculum was in any way superior to the regular curriculum, nor that the new course of studies could be smoothly and effectively implemented at the grade seven level. The DISCOVERIES materials have, in particular, caused both teachers and pupils to engage in a range of stimulating and purposeful activities. Innovative aspects such as the use of stories and poetry to engage the interests and minds of pupils who are passing through the romantic stage of their educational development were supplemented with "Rules of Thumb" for generalizations, "Sage Sayings" for quotations, "Matters of Opinion" for issues for debate and discussion, line drawings to both summarize and illustrate the text, and student activities and questions designed according to Bloom's taxonomy. And all of this work was centred around the primary objective of having young people become more alert to, sensitive of, and observant of man's relationship's with his physical surroundings.

The first twenty-seven pages of one text were field tested by eighty-two pupils and three teachers, in five different classes. There was strong concensus that these materials marked a fresh departure from the texts which have been approved for use in the classrooms hitherto. Teachers indicated that DISCOVERIES materials were a new and useful tool for putting grade seven pupils in touch with the wide range of materials which are relevant to the social sciences, and that the three sections of text which were tested represent the foundations of a textbook which would have facilitated the implementation of the Revised Social Studies Curriculum. The latter point has quite recently become academic, for the Revised Curriculum has, for the foreseeable future, been put to rest.

A new curriculum which does not resemble the Revised Curriculum of 1981 was given official sanction by the Minister of Education late in 1983.

Informal field testing was carried out by three teachers in five classrooms. Each teacher was supplied with a Teacher's Guide for Field Testing, and all relevant materials in sufficient numbers for all their pupils. And each teacher followed the Resource Guide quite closely, but at the pacing and timing which he or she found to be most fitting with each class. The variations in teaching techniques and teachers' emphases, let alone the variations in average abilities of the students of various classes, renders the results comparable within, rather than between, the classes.

The testing instruments which had originally been intended to play a major role in the formal field testing experiments were so modified in format and detail, and in techniques of application as to be invalid and unreliable. Therefore, they have been used to provide some general support for the authors' intuitions regarding the details of content and format of the DISCOVERIES text.

Care was taken in the construction of each question, in the variations of thirty-three of those forty questions, and in the random ordering of the questions which were put together to form the three tests. But half of the forty questions which comprised each test were derived from the regular grade six-seven Social Studies Curriculum. And there was no check made with the teachers of the five classes which were tested, of whether or when those twenty facts and concepts had been taught. Nor did the tests take into account the widely varied home and extra-curricular experiences of the pupils. Therefore, only three conclusions have been drawn with any confidence:

1. The teachers and pupils who field tested the DISCOVERIES materials were almost unanimous in expressing their enjoyment of the experiences.
2. The pupils, on average, demonstrated marked improvements in their knowledge of facts and understanding of ideas and concepts from the experimental materials over the duration of the field testing. This graph helps to illustrate that, across the writing of all three tests, the pupils' recall of data from the regular grade six-seven curriculum showed little improvement and subsequent decline, while their knowledge and understandings of the DISCOVERIES materials showed a dramatic improvement during exposure to those materials, and a subsequent decline of about 10% during the following four weeks.
3. Pupils gave the impression that they were significantly better at recalling information than in understanding ideas. The greatest improvements in the performances on tests, and the best retention of knowledge, was noted for the twenty questions which were designed to ask pupils to remember and recount simple bits of factual information.

The author in the design and field-testing process does not pretend to be an unbiased reporter upon the nature and qualities of the DISCOVERIES materials, or the field testing which involved them. However, all observers agreed that it was obvious that the pupils who shared the field testing experiences enjoyed the materials and their learning of new facts and ideas which were presented, sometimes, in novel ways. And it was

apparent that the professional educators at both the School Board and the classroom levels judged the content and format of these materials to be most appropriate to the educational needs of children of about twelve years of age.

SOME IMPLICATIONS

The designing and production of innovative learning materials is both a means to an end, and an end in itself. It is a means to professional growth of educators who design, write, illustrate, and field-test learning materials. And innovative learning materials which are soundly based upon educational theory and pedagogy facilitate the implementation of new curriculum, and facilitate the growth of students. The DISCOVERIES project has been such a means, and might eventually give rise to some such ends. At this stage of the development of these materials several noteworthy implications might be drawn:

1. The first requisite in the designing of learning materials is to have the author elaborate his philosophy of education, and to outline a set of objectives for students.
2. Learning materials should be planned to match a curriculum, but there are significant risks in tying the materials too literally to a particular curriculum. Any attempt to support a draft of a curriculum with learning materials is an especially risky venture.
3. Dedicated teachers who, in teams, work to design and write learning materials should expect to find their experiences remarkably intriguing, time-consuming, stimulating, frustrating, and professionally rewarding.

4. Practicing teachers who maintain an idealistic and eclectic pragmatism are able to produce and use innovative learning materials to the considerable benefit of their students.
5. Landscape format in standard size (21.6 cms x 28 cms) facilitates the lay-out of attractive double-page spreads of print, illustrations, captions, borders, and/or boxes of special data.
6. Line drawings can be an effective yet inexpensive means of illustrating learning materials. Ingenious yet simple drawings are very effective in engaging the interests of students, and in exciting their imaginations.
7. Bloom's taxonomy should be used in the designing of questions and activities for students.
8. Each unit of a body of learning materials should be accompanied by a brief set of questions and activities which would enable all students to move from simple recall to synthesis and evaluation.
9. Enrichment through questions, activities, and additional stories should be provided in a Teachers' Resource Book which is designed to complement the learning materials.
10. "Busy work" of students should be minimized. Outlines of maps, graphs, and diagrams which are required for student activities should be provided in a non-copyright, easy-to-reproduce form in a Teachers' Resource Book.
11. A most valuable form of field-testing involves the teacher and students in as near to normal curricular and extra-curricular activity.

12. Qualitative responses of teachers and students - feelings, opinions, impressions - can represent invaluable forms of data for use in the assessment and improvement of the learning materials.
13. One of the most revealing forms of student response to new learning materials is an anonymous diary.

In conclusion, it is the opinion of the author that one of the most effective ways of improving the learning environments of our children is to put the development of learning materials into the hands of dedicated, enthusiastic, experienced teachers; and to put the assessment of those materials into the minds and hands of students and their classroom teachers.

APPENDIX 1.

BRITISH COLUMBIA MINISTRY OF EDUCATION PROPOSED CURRICULUM
GUIDE FOR SOCIAL STUDIES GRADES KINDERGARTEN TO ELEVEN,
APRIL, 1980

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TABLE OF CONTENTS -----	page 66
GRADE SEVEN CURRICULUM:-	
OUTLINE -----	page 67
SOCIAL STUDIES CURRICULUM	
GUIDE 1983 -----	page 69

PROPOSED CURRICULUM GUIDE

SOCIAL STUDIES, K-11

DRAFT ONLY

April 1980



Province of British Columbia
Ministry of Education
Division of Public Instruction
Curriculum Development Branch
1980

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DRAFT ONLY

GRADE VII: PEOPLE AND PLACES

From grades one to six, students have been introduced to the various social units which comprised a culture in relation to themselves. In grade seven, the emphasis of the curriculum shifts. Students are capable of examining people in the past and present in Canada and the world from a more mature perspective which encompasses the full complexity of the societies. The students do, however, require some organizers around which to structure their studies. These organizers are intended to be cumulative, moving from the concrete to the abstract.

Grade seven, therefore, focuses initially on the interaction of people and the places they live, their physical environment. People and their physical environment mutually affect one another. The kind and degree of these mutual interactions are dependent, to a considerable degree, upon the nature of the particular society at the time and its culture, economy, government and international ties. Students should learn to identify the various significant components of the physical environment, their variations in time and place and their effect upon the society as well as the interactions among these and culture, economies, government and international ties. In grade eight, the students will examine peoples and cultures.

Where sufficient learning resources are available dealing with the students' local area, the teacher might wish to begin with the interactions between people and their physical environment in the immediate area.

The prescribed content for grade seven is Units I, II, III and IV.

The major concepts to be stressed in this grade are interaction, needs, change, environment, resources, power. Other concepts which may be incidentally introduced or reinforced are identity, causality, diversity,

interdependence, values, culture.

The introduction of significant and appropriate current events is an integral part of this curriculum at every grade.

A focus has been identified for each grade. It is intended to provide an organizer and starting point for the students and teachers as well as to facilitate the learning and teaching of the content, generalizations, issues and skills indicated at each grade. The focuses are also cumulative leading students to deal with succeeding units with greater complexity and sophistication, applying content, generalizations, issues and skills previously acquired. The focuses are not intended to be exclusive.

The division of each grade into four columns, "Content," "Generalizations," "Issues," and "Skills", is intended to reinforce the philosophy and goals of this Social Studies curriculum.

The division is, to some degree, arbitrary but makes clear the intent that content and skills should lead to the generation of concepts and generalizations that can be applied through issues.

It is important that students at each grade deal with content, generalizations, issues and skills. They may do so at differing levels of competence. The order in which the components are dealt will vary. The items listed in any one column, however, should not be dealt with in isolation.

The prescribed content for the grade is designed to require 75 - 80% of the class time available for Social Studies for the vast majority of students. The remaining time may be used to explore the prescribed components in greater depth or to study district, school or teacher developed units. The latter must be consistent with the intents of the proposed Social Studies curriculum as a whole.

Social Studies Curriculum Guide

grade one – grade seven

1983



MINISTRY OF EDUCATION
CURRICULUM DEVELOPMENT BRANCH
Victoria, 1983

Grade Seven

From grades one to six, students have been introduced to various social units from the family to the nation.

The grade seven program focuses on the interaction of people and their physical environment. Students should learn to identify the various significant components of the physical environment, their variations in time and place and their effect upon society. In grade eight, the students will examine people and cultures.

Where sufficient learning resources dealing with the local area are available, students may begin by studying the interactions between people and the immediate physical environment.

The scope and sequence chart for each grade is divided into four columns: content, understandings, inquiries and skills. It is important that students deal with these components as part of an integrated process. The order in which the components are dealt with will vary; however, they should not be studied in isolation.

The concepts upon which the understandings are based include interaction, needs, change, environment, resources, power, identity, causality, diversity, interdependence, values and culture.

The introduction of significant and appropriate current events is an integral part of the curriculum at this and every grade level.

The prescribed content for the grade will require a minimum of 75-80% of the class time available for the majority of students. The remaining time may be used to explore the prescribed curriculum in greater depth or to study district, school, teacher or student developed units. The latter must be consistent with the intents of the curriculum.

The curriculum for this grade is interim and has been included in order to produce a complete guide for the elementary grades.

At the time of the publication of this document, the curriculum for the secondary grades was subject to refinement, and in order to ensure articulation between the elementary and secondary social studies guide, adjustments to the grade seven curriculum may become necessary.

People and Places

PROCESS:

In order to comprehend the grade goals, students are expected to examine the content, develop the understandings and skills and have practice in applying these through the inquiries.

GRADE GOALS:

To have students recognize that:

- o People interact with their physical environment to satisfy common needs.
- o As people attempt to satisfy their needs, they must establish a workable relationship with their physical environment.
- o As people interact with their environment, the environment may change or the people's way of life may change.
- o The ways in which people interact with their physical environment are influenced by their culture, resources, government, laws, historical period and contacts with other societies.
- o The interaction of people and their physical environment may change over time.

CONTENT	UNDERSTANDINGS	INQUIRIES	SKILLS
Students should examine the interaction of people and their physical environment	Students should, through the examination of the content, come to these understandings	Students should integrate content, understandings and skills through the study and discussion of inquiries, e.g.	Skills should be introduced, developed and reinforced in a suitable context. Numbers to left of items refer to pages in Appendix A.
<ul style="list-style-type: none"> o CANADA PRESENT <ul style="list-style-type: none"> A survey of the regions of Canada and selected studies of at least two regions, one of which must be British Columbia and the other chosen from <ul style="list-style-type: none"> Atlantic Southern Quebec/ Ontario Prairies Sub-Arctic/Arctic 	<ul style="list-style-type: none"> o The physical environment in each region of Canada influences the people's way of life o In selecting resources to meet common needs, people in each region have modified their physical environment o In some cases the use of resources has been regulated by the law and government restrictions o Conservation of resources and a workable relationship with the physical environment is of concern to Canadians 	<ul style="list-style-type: none"> o To what degree are people in specific regions of Canada adversely or positively influenced by the physical environment? o Should Canadians continue to modify their physical environment to meet their immediate needs? o How, in your experience, have people changed the environment? Was it beneficial or detrimental? o Should the government regulate the use of resources if it interferes with the livelihood of some Canadians? o What level of government, if any, should regulate the use of physical resources? 	<ul style="list-style-type: none"> 45 A. PROBLEM SOLVING 45 B. DECISION-MAKING C. INTERPRETING MAPS & GLOBES: <ul style="list-style-type: none"> 45 Symbols 45 Direction 47 Location 47 Scale and Distance D. UNDERSTANDING TIME & CHRONOLOGY: <ul style="list-style-type: none"> 49 Time and the Calendar 49 Chronological Series E. LOCATING INFORMATION: <ul style="list-style-type: none"> 49 Books/Reference Works 49 Newspapers, Magazines, Pamphlets 51 Field Studies, Interviews 51 Pictures, Photos, Charts, Graphs 51 F. ORGANIZING INFORMATION 53 G. ACQUIRING INFORMATION THROUGH READING 53 H. ACQUIRING INFORMATION THROUGH LISTENING AND OBSERVING I. EVALUATING INFORMATION: <ul style="list-style-type: none"> 53 Oral, Visual, Print J. COMMUNICATING ORALLY AND IN WRITING: <ul style="list-style-type: none"> 55 Speaking 55 Writing K. CITIZENSHIP SKILLS: <ul style="list-style-type: none"> 57 Self-worth 57 Interpersonal Relations 59 Group and Discussion Skills 59 Leadership
<ul style="list-style-type: none"> o CANADA PAST <ul style="list-style-type: none"> Two selected studies of <ul style="list-style-type: none"> - pre-contact aboriginal settlement - first European settlements 1000-1642 	<ul style="list-style-type: none"> o Pre-contact native people adapted to their physical environment, relying upon available resources to satisfy their basic needs o A mutual interaction existed between the physical environment and the cultural beliefs and values of pre-contact peoples o Contact and trade with European settlers resulted in significant changes to the interaction of native peoples with their physical environment 	<ul style="list-style-type: none"> o How would you as a pre-contact native in a specific place meet your basic needs? o To what extent did the physical environment influence the cultures of pre-contact native people? o How did contact between the native peoples and Europeans change the way of life of both groups? 	

CONTENT

Students should examine the interaction of people and their physical environment

- o **WORLD PAST**

One selected study of an ancient people in

- the Tigris-Euphrates Valley
- the Nile Valley
- the Andes

UNDERSTANDINGS

Students should, through the examination of the content, come to understand that

- o The first European settlers had to change their way of life in response to the different physical environment
- o The interaction of the early European settlers with their physical environment changed over time as settlement expanded.

- o Certain physical environments were more suitable for the development of ancient societies because of physical features and available resources

- o How ancient peoples interacted with their physical environment was influenced by their values, beliefs, skills, level of technology and contacts with other societies

- o Ancient peoples' interactions with their physical environment, resources, government, laws and contacts with other societies contributed to the development of distinct cultures

- o Technological advances, such as the invention of the plough and irrigation systems, enabled ancient people to modify their physical environment and thus satisfy their needs more efficiently.

- o How ancient peoples interacted with their physical environment changed over time

INQUIRIES

Students should integrate content understandings and skills through the study and discussion of inquiries e.g.

- o "European settlers made a better adjustment to the North American environment than did the pre-contact peoples." Do you agree or disagree? Why?

- o You are a leader of a wandering group of early people looking for a place to settle. Where would you settle? Why would you choose this location?

- o Why might the ancient people have developed different cultural patterns if they were located in some other physical environment?

- o "The way the people interacted with their physical environment in the past is very similar to the way people interact with their environment now." Do you agree or disagree? Why?

- o What connections are there between our current culture and the ancient cultures?

SKILLS

Skills should be introduced, developed and reinforced in a suitable context. Refer to page numbers in Appendix A for details.

CONTENT

Students should examine the interaction of people and their physical environment.

- o **WORLD PRESENT.**

A survey of people chosen from either:

- a desert environment
- an Arctic environment other than Canadian

UNDERSTANDINGS

Students should, through the examination of the content, come to these understandings:

- o The physical environment in a particular place influences the inhabitants' way of life and how they satisfy their needs.
- o The use a people make of their physical resources depends upon their culture, technology and contacts with other societies.
- o As people utilize physical resources, changes in the physical environment result. These changes may or may not be planned and may or may not be beneficial.
- o The ways in which a people interact with their environment will change over time.
- o Conservation of resources and workable relations with the physical environment are a growing concern for all people.

INQUIRIES

Students should integrate content understandings and skills through the study and discussion of inquiries, e.g.

- o To what extent do you think physical environment shapes a people's way of life?
- o Should people continue to modify their physical environment in significant ways?
- o How should people manage the use of physical resources?
- o Should a people, in order to satisfy their needs, be allowed to alter the physical environment of people in other parts of the world?

SKILLS

Skills should be introduced, developed and reinforced in a suitable context. Refer to page numbers in Appendix A for details.

- o Extension: approximately 20-25% for student, teacher or district developed studies

APPENDIX 2.

AN EXPANDED OUTLINE OF PLANS FOR THE
WRITING OF DISCOVERIES, A SOCIAL STUDIES
TEXTBOOK FOR GRADE SEVEN PUPILS

CHAPTER ONE

INTRODUCTION

This Book is About People, Places, and Rules of Thumb.

People use their land as best they can. They travel across distances, and they occupy places. And some people see their surroundings more vividly than do most of us. Two poems illustrate perception of landscape.

People test how well they can and do use their places by constantly checking on some simple Rules of Thumb. There are seven such rules in this book. They help us to understand how the lives of different people are closely linked with their natural and man-made surroundings. These Rules of Thumb are:

1. Man satisfies his basic needs by fitting in with and using his physical surroundings.
2. The many ways in which people use their physical surroundings depend upon their beliefs, their technologies and the values which they attach to the land and its resources.
3. Knowledge and technology enable groups of people to identify opportunities and hazards in their surroundings.
4. People have attempted to organize their societies in order to make the best use of their surroundings.
5. Groups of people may interact and become inter-dependent because of the uneven distribution of resources.
6. In choosing and using resources, groups of people may change their surroundings in many different ways.
7. When physical surroundings change, the ways groups of people behave may also change.

EXPANDED OUTLINEINTRODUCTION

People need land. But how much land does a man need? Leo Tolstoy's story of the greedy peasant offers us one answer. The authors offer several others.

CHAPTER TWOFITTING IN

Man satisfies his basic needs by fitting in with and using his natural surroundings.

In this introductory section to the four case studies of this chapter we learn that man has called himself wise - Homo sapiens. Men are usually clever creatures, too.

Here we learn how men have learned to be both wise and clever in the ways in which they use their surroundings.

2.1 WORLD PAST: THE FIRST REVOLUTION

The first farmers fitted in with their surroundings in very new and special ways. They gathered seeds, then planted them. They grew crops, made towns, invented laws, and changed the world forever more.

"When man learned to grow grains and to tame animals he also tamed himself."

2.2 CANADA PAST: AN INUIT MISADVENTURE

The Inuit were hunters and gatherers who satisfied their basic needs by fitting in with their Arctic surroundings. The annual trip from Igloolik to Pond Inlet was never easy. This story tells of a time when it became impossible. The slow killer was one night of warm weather which changed everything while the travellers slept in their snow house.

EXPANDED OUTLINECHAPTER TWO2.3 CANADA PRESENT: HOME BASE - OUR OWN TERRITORY

Canadians who live in cities or on farms or in fishing villages satisfy their basic needs by fitting in with and using their physical surroundings.

From the arrival of the first native Indians to come to this area through to the present day we look, in his chapter, at where we live. We think of our foods and water supply, our clothing and shelter, our recreation, entertainment and festivals.

To show how a local area has become a good home territory for many people we look at the Central Okanagan Valley. This story provides a simple pattern for a study of your own territory.

2.4 WORLD PRESENT: NOMADS OF DRY AFRICATHE MASAI OF NGORONGORO

The Masai are semi-nomadic cattle-herders who satisfy their basic needs by fitting in with and using their physical surroundings as best they can.

The high, dry grasslands of East Africa make a colourful homeland for lions, giraffes, zebras and many thousands of wild animals. They are also the homelands of a proud people who rely upon grass for the satisfaction of almost all their needs.

BUSHMEN OF THE KALAHARI

The Bushmen are nomadic hunters and gatherers who satisfy their needs in the Kalahari Desert.

Scarce rainfall, scarce fruit, and scarce animals help to make the life of each Bushman difficult.

So he wanders in search of the rains, game animals, and the precious supplies of water.

In this story an Afrikaans farmer who goes looking for the Bushmen meets a clan of very thirsty and hungry natives in the shimmering heat of the central Kalahari. It is doubtful whether they would have survived that savage summer without some assistance!

CHAPTER THREEUSING OUR LAND

The many ways in which people use their physical surroundings depend upon their beliefs, their technologies and the values which they place on the land and its resources.

As Louis Armstrong tells us, "It's a Wonderful World!"

The world is wonderful whether we live in Canada or in West Africa. The trick is to see places through the eyes of the people who live there.

This first story about using our land tells of some of the advantages and some of the problems experienced by people in West Africa, and in Canada, too.

3.1 WORLD PAST: EGYPT WAS THE GIFT OF THE NILE

"Hail to thee, O Nile, that issues from the earth and comes to keep Egypt alive! . . .

When the Nile floods, offering is made to thee, oxen are sacrificed to thee, great oblations are made to thee, birds are fattened for thee, lions are hunted for thee in the desert, fire is provided for thee . . .

So it is, O Nile, verdant art thou, who makest man and cattle to live!"

The rise and fall of this wonderful river helped a people to make for themselves a glorious and colourful life-style long, long ago.

3.2 CANADA PAST: THIS LAND'S FIRST PEOPLE

The many ways in which Canada's native peoples used their landscapes depended upon their beliefs, their technologies and the values which they attached to the land and its resources.

Great sorrow comes to Chief Always Laughs when his grandsons forget the rule that no-one is to molest or hurt any creature. And Chief Dan George laments for his lost people and his lost life-style.

And Crowfoot sees changes which destroy his people and break his heart.

CHAPTER THREE3.3 CANADA PRESENT: THE SHAPE OF HOME

We look back at ancient Rome to discover why Romulus and Remus built a town by the Tiber River. We learn of how Horatius defended a bridge and saved a city. Then we look at our own hometown to see more clearly why it is what it is, and why it is where it is.

And we take a bird's-eye view of Richmond, British Columbia, to see how people find many uses for flat land. An aerial photograph and a topographic map (1:50 000) illustrate part of the Richmond story.

3.4 WORLD PRESENT: REINDEER LAPPS KNOW EIGHT SEASONS

The many ways in which reindeer Lapps use their vast territories depend upon their animals, their beliefs, their technology, and the values which they attach to the land and its resources. From sunlit summers in the high mountains to the cold, dark winters on the coastal plains, and back again, the Reindeer Lapps follow their animals. Or do the animals, after thousands of years of the same migrations, now follow their Lappish masters? Each year these hardy Lapps make the same four journeys and the same four camps that their parents and ancestors have from time immemorial. Each stage is the same adventure as it was the year before.

CHAPTER FOURI SHOULD LIKE TO RISE AND GO . . .

Knowledge and technology enable groups of people to identify opportunities and hazards in their surroundings.

Travel can be exciting. Travel can also be dangerous!

In this chapter Robert Louis Stevenson presents a poet's imaginary journey to wonderful far-away places. And Ovid tells the story of Phaeton, son of Apollo, who took a wildly thrilling but deadly flight across the sky.

Today's flights are neither flights of fancy, nor of mythology. Great care is taken as men take to the air in such fiery departures and returns as we see with the Space Shuttle. In brief, this is a story of mankind's learning to fly.

EXPANDED OUTLINECHAPTER FOUR4.1 WORLD PAST: THE INCAS AND THE ANDES

With exceptional knowledge and technology the Incas built an Empire in the Andes Mountains. In deep, narrow valleys they cultivated many local crops including potatoes, tomatoes, peanuts and beans. They tamed the llama and alpaca, and used them for many purposes. The Incas and their people built cities and roads, and the closely fitted stoneworks withstood the destructive works of earthquakes and storms.

This is a story of the Incas' successes in building a colourful civilization in a rugged land.

4.2 CANADA PAST: THE NEW WORLD OF THE NORTH

Curiosity, knowledge and technology combined to help explorers to find the eastern shores of Canada. Each explorer who made a land-fall in eastern Canada identified some opportunities and some dangers in those natural surroundings.

Lief Ericson carried the Viking way of life to Canada. He found a sheltered harbour, and flourishing vines and forests. But he also found bleak, blizzard-filled winters.

Then John Cabot sailed for Henry VII of England. He toured the east coast, meeting Portuguese fishermen, but he landed only once, and briefly.

Jacques Cartier explored the St Lawrence to Quebec, and found a land " . . . composed of stones and horrible, rugged rocks, . . ."

And fishermen were the only visitors who were seen in eastern Canada for three more generations.

4.3 CANADA PRESENT: LIFE IS MOVEMENT, MOVEMENT IS LIFE

What we enjoy and find thrilling depends upon what we know and understand. Travel is a good example of how enjoyment and danger can be dependent upon the knowledge that we possess.

For example, sailors on the deck of a storm-tossed ship, Daedalus who flew from Crete, and the Wright Brothers at Kitty Hawk were happy because they had made excellent preparations for their dangerous journeys.

This story explores the pathways that we follow today, and the precautions that we take.

CHAPTER FOUR4.4 WORLD PRESENT: PERU'S PROBLEMS AND PROSPERITY

The people of Peru live in a hazardous land. And they live well! Earthquakes and landslides, droughts and flooding rains, and warm ocean currents make life very difficult from time to time. But Peruvians have made the best of their rugged land and their cold ocean since before the Incas built their empire.

In modern Peru irrigated farms produce many crops, mines and oil-fields supply rich resources for industries, fish flourish in the cold ocean currents..

Peruvians have built their nation and their ways of life by overcoming many of the hazards, and by making the most of many of their opportunities.

CHAPTER FIVEIF I WERE A RICH MAN . . .

People have attempted to organize their societies in order to make the best use of their physical surroundings.

"Rex" meant king in Roman times. "Reich" became the name for kingdom in Germany. By the time "rex" reached England it was changed to "rich", for the head of the kingdom usually had the greatest wealth.

In this story we learn that "richness" is a relative term, but that it is very important to man's relationships with his surroundings.

Being "rich" rather than "poor" comes from making the wisest uses of resources. And here we look at some clever ways of using resources very well.

5.1 WORLD PAST: THE LAND WITHIN THE PASSES

A long journey up the muddy, yellow waters of the Huang-ho brings us to the magic traces of the first Chinese farmers. So rich was the land where they lived that the earliest farmers never herded animals. But they grew grain crops, made pottery on a wheel, designed and built canals, dikes and ditches, and developed their language and literature. Throughout their land those people said that the secret of prosperity was living in harmony with the world about them.

EXPANDED OUTLINECHAPTER FOUR

5.1

For over forty centuries the land between the passes has given life to China's civilization.

5.2 CANADA PAST: SEIGNEURIAL CANADA

King Francis I sent Cartier westward in search of wealth. He sailed home to France with tales of future empire.

Champlain, the Royal Geographer, made explorations, maps, reports and experiments in settlement in the future empire, the New World. But progress was very slow for, in France, life was better than it had been for many years. With great determination and strength, Champlain's first settlers struggled along for thirty years.

Louis XIV pacified the Iroquois, revived the trade in furs, and sent Jean Talon as "Business Manager" of New France. Talon was full of new ideas, and one of those was the "seignior" - an old, old way of organizing farming and settlement.

5.3 CANADA PRESENT: THE NEW RIVER VALLEY DWELLERS

British Columbia is Canada's tallest province. Canada's highest mountains and deepest canyons are found here. It is a sea of mountains.

And men have penetrated the rugged landscape, and chosen river valley bottoms as their favourite routes of travel and places to settle.

Slowly at first, then more and more quickly the river bottoms filled with roads and farms, houses and stores, railways and factories, schools and shopping centres. Farmland began to disappear. Then came a law which was to preserve the land which produced the food of the people!

5.4 WORLD PRESENT: GHANA GROWS UP

Today Ghana is a modern nation of farms and industries.

Cacao is their main export product. But Ghana is many things besides chocolate!

It is the mighty Volta Dam at Okosombo; it is Lake Volta; it is fishing and irrigation farming; it is boat building and modern transportation.

CHAPTER FIVE5.4 GHANA GROWS UP

Ghana has been changed in many ways in recent times. And many of the changes have been because of new ideas from distant places. Now we see that the ideas and the works of the Ghanaian people have brought about many improvements for the people. This is, quite simply, a story of making better uses of resources.

CHAPTER SIXCARGOES

Groups of people may interact and become inter-dependent because of the uneven distribution of resources.

"Stately Spanish galleons coming from the Isthmus,
Dipping through the Tropics by the palm-green shores,
With a cargo of diamonds,
Emeralds, amethysts,
Topazes, and cinnamon, and gold moidores."

This is a story of resources, of learning how to use them well, and especially of adding to their values by moving them from place to place. It is a story of trade, and wealth, and wisdom, too.

6.1 WORLD PAST: SOLOMON'S TEMPLE

"David was a shepherd boy.
He slew Goliath and shouted for joy!"

And David became the poet-king of the Israelites. He brought peace and prosperity to his people during his long reign. But it was David's son, Solomon, who made Israel a wealthy and famous trading centre. He developed trade routes along which goods flowed. But he was clever enough to make sure that the goods flowed through Israel.

So much wealth moved through Israel that Solomon and his nation grew more and more wealthy. Eventually, Solomon had a magnificent temple built in the dry, hot, rocky land. It was a testimonial to his management of resources!

The magnificence did not last long, but Solomon showed the world that skill in moving goods from place to place could make one wealthy!

EXPANDED OUTLINECHAPTER SIX6.2 CANADA PAST: ISLAND OF DISASTER

Champlain chose the name for the new land - New France.

King Henry IV chose the man to lay claim to the new piece of empire - de Monts.

de Monts recruited crews, provisioned his ships, and sailed from France to cross the Atlantic and build a colony for his king. But the new colony did not prosper. On the island of Sainte Croix small mistakes began to add up to make a disaster:

- soils were poor and sandy;
- the trees which provided only little protection from the winter blizzards were cut down;
- springs froze, and fresh water became scarce;
- ice floes piled up and jostled each other on the great Fundy tides, and travel to the mainland became impossible;
- firewood ran out;
- good food grew scarce, and men became ill;
- scurvy affected 68 of the 79 men. For 35 the affliction was fatal.

All but three of the survivors returned to France. But Champlain and two of his men stayed in New France to build again, and to learn from their mistakes. Disaster was turned into victory at last, and New France had come to stay.

6.3 CANADA PRESENT: A SEA OF GRASS

Canada's prairies have been building for a long, long time. Through eons of time the land rose and fell. Seas and glaciers came, then disappeared. Salt, potash, oil, coal and natural gas began to accumulate in the rocks and soils. Then, quite recently, grass spread across the land.

It was to this vast sea of grass and its rich hunting that the first North American people came.

From primitive hunters to modern wheat farmers; from fur traders to oil-well drillers; from rail-roaders to modern business executives; from tepees and cabins to modern towns and cities, the sea of grass has seen men come and go.

CHAPTER SIX6.3 A SEA OF GRASS

Whenever one thinks of the sea of grass, the picture is always of the giant checker-board in greens and browns and golds. This is the farmers' gift to Canada - a land of hope, and food, and love for the land.

6.4 WORLD PRESENT: NIGERIA - GIANT OF AFRICA.

With a population three times greater than that of Canada, Nigeria is Africa's most populous nation. This is an African giant with great prospects for the future. It is a land of coal, oil, tin and iron; of rich soils and varied climates; of forests and grasslands; of roads and railways, ports and cities.

It is also a land of old problems such as the tsetse fly which brings sleeping sickness and the simulium fly which spreads blindness. But new solutions to old problems are to be seen throughout Nigeria as resources are used more wisely.

CHAPTER SEVENA MAN -MADE PLANET

In choosing and using resources, groups of people may change their physical surroundings in many different ways.

Man has changed remarkably since he first appeared on earth. He looks different from his ancestors. But that is not as important as the changes he has made in the ways he goes about living his daily life.

Man was found, at first, at only a few of the most suitable places on earth. Today, there is no part of this planet which has not been explored. And there are only a few places where man does not choose to live permanently.

Our daily lives depend upon the resources that we take from the land. But it is also important to remember that we share this planet with all living things.

7.1 WORLD PAST: MUD, MUD, GLORIOUS MUD!

For thousands of years two rivers poured their waters into the sea that we now call the Persian Gulf. They brought mud from high places and dropped it in the low lands where the waters ran quietly. Men came to the rich lowlands between the rivers, and

CHAPTER SEVEN

:7.1 called their new home area Mesopotamia. They learned to farm, to build and to irrigate, and all the time they worked with the mud of the lowlands. They tamed animals, and tamed themselves. Towns became cities. Ditches became canals. Rules became laws. And a new civilization grew out of the land which was mud.

.7.2 CANADA PAST: NEW WORLD - NEW LIFE: QUEBEC

Black cliffs towered over a tiny shelf of shoreline. Cartier had longed to clamber up those crags and build a fort. But he had to content himself with a small fort, a stockade, down-river. Now, over seventy-five years have passed by. It is 1608. The Indian village of Stadacona has vanished. And it is Samuel de Champlain who looks up at Cartier's dark, deserted cliffs. Champlain did what Cartier had hoped to do. He led his men to the craggy summit, and set about the building of the first and only walled city in North America.

The New World of Quebec meant new life for those who came from France. It meant a new-form of life for the natives, too!

Land soon ceased to be simply hunting land. It became farms.

The Indians who had, at first, helped the new-comers to become wealthy were expected to vanish into the shrinking forests.

Champlain's dream became the Indians' nightmare.

7.3 CANADA PRESENT: THE PRODUCTIVE PRAIRIES.

The long, long story of the Canadian prairies can be read in its rocks, and fossil fuels, and bones of dinosaurs.

Now the prairies supply us with valuable resources. Coal, oil and natural gas are taken from deep beneath the surface; potash, silver and gold are found closer to the surface; rich dark soils nourish wheat, barley, rye, trees and many other crops. How fortunate that the same land can produce so many things at once!!

CHAPTER SEVEN7.4 WORLD PRESENT: ZIMBABWE - OLD NAME, NEW NATION.

From the summit of a high granite hill, the crumbling walls of an ancient citadel - the Elliptical Temple - look out upon the silent grey ruins of a mysterious city. This was "The Great Zimbabwe", capital of King Monomatapa.

It was built when the Norsemen were making their tentative intrusions into eastern Canada.

The land between the Zambezi and Limpopo Rivers has seen many changes across the millenium, but especially during the past century. It is now a new and land-locked nation of farmers.

It is home to many subsistence farmers and to a few quite wealthy cash-crop businessmen. It is a land of changing rules, too, as native peoples play a stronger role in their own resource uses.

CHAPTER EIGHTHOME-MADE HAZARDS

When physical surroundings change, the ways groups of people behave may also change.

Man has always faced danger either from his surroundings, from his neighbours, or even from himself. Throughout the thousands of years for which he has lived on earth, man has learned three special ways to identify hazards and to deal with them effectively.

This story tells how man deals with the hazards of his existence.

8.1 WORLD PAST: ANGKOR - ANCIENT GHOST TOWN

As he hunted for beautiful tropical butterflies in the dank jungles of Cambodia Henri Mouhot stumbled upon the ruins of the great city of the ancient Khmers.

The Khmers were farmers, traders, warriors, artists, priests and builders. They tamed the elephant, and added his energies to their own.

The successes of the Khmers were staggering. But their success was also their downfall, for it attracted the attention of their war-like neighbours. Eventually, they deserted their beautiful city because it became too difficult to defend.

CHAPTER EIGHT8.2 CANADA PAST: HOCHELAGA WAS HOME

Montreal's site evolved over long eons. It has been flooded, carved by rivers, ground down by glaciers, and it has rebounded slowly since the last great ice-sheet melted away. Forests grew, animals reappeared, and man followed the animals. Iroquois and Huron made the river, lands and forests their home.

Much later some visitors arrived from France. They named the rapids "La Chine" for they thought they were close to the orient; and they named a commanding hill "Mont Real" - Mount Royal. They built a fort, a town, a city.

8.3 CANADA PRESENT: THE SEAWAY - IT'S ONLY AS FAR AS YOU THINK

How do you measure distance?

There are four ways, of course:

- there are distances which are the lengths of roads and other routes;
- there are the times it takes to cover those distances;
- there are the costs of travelling those distances at those speeds;
- and - there are the various measure of the ease or difficulty of travelling.

Distance is not just the length of the route. This story of the mighty seaway of the St Lawrence makes that quite clear!

8.4 WORLD PRESENT: THE HUNGRY SAHEL.

The villagers wait in vain for the rains. Again this year, and for four long years before, even the southern summer winds from the Atlantic have blown gentle and dry. But now the fierce winds from the Sahara blow steadily, day after day. The ground dries and cracks. Dust is everywhere, sifting softly through doorways and piling up in drifts. It grits in the teeth and blurs the eyes with tears.

We know now that drought is a common danger in the Sahel. And this is a story of one of those times - the great Sahelian drought of 1972 - 1973.

CHAPTER NINE

DO RULES OF THUMB STAND THE TEST OF TIME?

Summary stories as examples of man's perceptions and uses of his surroundings.

Some recent trends.

Some tentative predictions.

APPENDIX 3

READABILITY

From each story, four randomly selected 100-word passages were analysed using the Fry Scale. The great care which was taken in the re-writing process is reflected in the following measures of twenty randomly selected 100-word passages from the first two chapters of DISCOVERIES:

<u>SENTENCES</u>	<u>SYLLABLES</u>	<u>FRY READABILITY</u>
		<u>GRADE LEVEL</u>
10.8	147	5
5.8	132	7
5.8	140	7
8.6	140	6
5.5	147	8
7.5	136	6
6.9	148	7
8.5	139	6
8.7	138	6
7.3	146	7
6.5	140	7
4.5	133	8
8.5	139	6
4.0	134	8
5.5	139	7
8.2	135	6
9.5	131	4 - 5
6.7	145	7
9.0	133	5
5.8	138	7
AVERAGES: 7.3	139	6 - 7

APPENDIX 4

TEACHER'S RESOURCE GUIDE FOR THE FIELD TESTING OF
DISCOVERIES

DISCOVERIES

**A TEACHER'S RESOURCE GUIDE
FOR
FIELD TESTING**

DAVID S. WORRALL

1983-01-27

DISCOVERIES

A TEACHER'S RESOURCE GUIDE FOR FIELD TESTING

C O N T E N T S

1. Educational Philosophy and Curriculum Development Techniques.	1.
2. Meeting the Curriculum Guidelines	1.
3. The Textbook <u>Discoveries</u>	2.
4. Text Design - graphic display of scope and format:	3.
5. Grade Goals and Understandings - graphic display:	4.
6. Text Layout	5.
7. Poetry - Its place in the Social Studies:	5.
8. Field Testing Procedures:	8.
9. Diaries for Pupils and Teachers as part of Field Testing:	8.
10. Three Tests - One Pre-test and Two Post-tests explained:	9.
11. Teaching Materials for Chapter Two - Two maps, One Question sheet:	11.
12. Diary Form for Pupils and Teachers:	14.
13. Form for Summarising Pupils' Daily Quantitative Responses:	15.
14. Appendix 1. 40 test items in logical sequence:	16.
15. Appendix 2. 40 test items in random order as PRE-TEST:	26.
16. Appendix 3. 40 test items in random order as POST-TEST 1:	31.
17. Appendix 4. 40 test items in random order as POST-TEST 2:	36.
18. Appendix 5: <u>DISCOVERIES</u> - Text sample - the first 27 pages:	41.

DISCOVERIES

1. EDUCATIONAL PHILOSOPHY AND CURRICULUM DEVELOPMENT TECHNIQUES

The text: Discoveries has been planned, researched, written and, in part, type-set and illustrated during the past two years with the specific intent of providing up-to-date, highly appropriate data in the Social Sciences for grade seven students. The entire text may be seen to follow the draft of the Revised Curriculum Guide very closely. More importantly, it reflects what we judge to be the best of modern educational theory and philosophy, and curriculum development techniques as elaborated by such distinguished scholars and writers as Matthew Arnold, T.S.Eliot, Jean Piaget, P.H.Phenix, Benjamin Bloom, Jerome Bruner, Kieran Egan, Robin Barrow, Elliot Eisner, Paul Hirst, Dianne Common, and Ralph Tyler.

In brief, the text has been designed and written in the belief that children learn most effectively from engaging stories which include some of the best that has been thought and written; in the belief that the uninitiated filter a myriad stimuli and pieces of knowledge through a fine but not consistent mesh of previous experiences; that meaningful knowledge is best carried to the uninitiated through the disciplines and fields of knowledge; and that children who are in the concrete-operational stage of growth and development frequently have a romantic approach to life and learning. And the activities were structured because of the authors' belief that learning by doing various things provides some of the best reinforcement to learning at arms length, from books.

2. MEETING THE CURRICULUM GUIDELINES:

Discoveries follows the Revised Social Studies Curriculum Guide as though it had been written by the curriculum developers themselves.

On page 3 of this guide a schematic of the text's structure emphasises the generalizations which have been used to highlight each chapter, and designates the four stories from the prescribed time-place sequences. Both the generalizations and the sequences of times and places are taken directly from the Revised Curriculum. Each generalization is illustrated by four stories, one for each of the time-place designations. Thus this plan puts into practice the detailed recommendations which are carried in the Revised Curriculum, grade 7, 1981.

The extent to which the stories in each chapter of this textbook deal with the grade goals and understandings which are specified in the Revised Curriculum is graphically illustrated on page 4. (153 - 156)

3. THE TEXTBOOK DISCOVERIES:

3.1 CONTENT:

The content of this text and, more particularly, the content of the thirty-seven stories, derives from a multi-disciplinary approach to geography, history, and the social sciences. The text is, in fact, fundamentally geographical in the modern definition of that most synthetic of sciences in that the authors have attempted to explain to children WHY man does WHAT he does, WHERE and WHEN he does it! The central theme is "People and Places." The authors' intent is to illustrate that the inter-relationships between people and their environments provide both those people and those environments with many distinctive characteristics. The effects which are seen in the life-styles and the technologies of people are very rarely, if ever, DETERMINED by an one factor. The out-dated and simple-minded environmental determinism of the first half of this century has no place in this book. One simple example which may surface is that prairie people who wish to indulge in alpine skiing may do so by creating their own hill - Saskatoon's Blackstrap Mountain, for example! But many of the mutual man - land inter-actions are quite predictable, and are, therefore, the subject of fruitful investigation. We begin those investigations by posing generalizations, and call them Rules of Thumb for the sake of our twelve-year-old audience. Call them what you will, they are hypotheses which often challenge uninformed assumptions, and excite the uninitiated to investigate and debate. The stories - each is a mini-case study - are specific. They are intended to provide a little fuel to

DISCOVERIES - SUMMARY FORMAT FOR A GRADE SEVEN TEXT

CATEGORIES OF CONTENT PRESCRIBED IN CURRICULUM	THE GRADE SEVEN GOAL AS A RULE OF THUMB.	THE SEVEN RULES OF THUMB HIGHLIGHT THESE SEVEN CHAPTERS							GRADE SUMMARY RESTATEMENT OF THE BASIC GRADE GOAL
		1.	2.	3.	4.	5.	6.	7.	
WORLD PAST	"The lives of people are closely linked with their natural and artificial surroundings."	INTRO.	INTRO.	INTRO.	INTRO.	INTRO.	INTRO.	INTRO.	The stories in this section recapitulate the important lessons of the entire text, examining man's relationships with his surroundings, and hinting at some of the prospects for the future.
		2.1	3.1	4.1	5.1	6.1	7.1	8.1	
		2.2	3.2	4.2	5.2	6.2	7.2	8.2	
		2.3	3.3	4.3	5.3	6.3	7.3	8.3	
WORLD PRESENT		2.4	3.4	4.4	5.4	6.4	7.4	8.4	
		2.	3.	4.	5.	6.	7.	8.	
CHAPTERS:	1.								9.
GLOSSARIES:	*	*	*	*	*	*	*	*	*

ACTIVITY AND SKILL DIFFICULTY AND CONCEPT DENSITY GRADUALLY INCREASE

A SUMMARY OF CURRICULUM MATCH FOR DISCOVERIES.

The following three pages present, in sectional form, a 48% reduction of the large curriculum match chart which was prepared to support the submission of the DISCOVERIES text to the Ministry of Education. The original chart was prepared on mylar, and copied by the blue-print process. For ease of analysis, only three chapters are presented on each chartlet, but the full list of grade goals and generalizations is presented on the left.

This form of conflict matrix was sketched out in the early stages of the planning of the text, and was studied as a major guide for the writing and the re-writing of each story. In this way, the authors made curriculum fit a very high priority. No generalization, nor any grade goal was neglected. Such a specific matching of the many sections of the text with the main statements of the curriculum is an ambitious claim, and one which has invited and withstood close scrutiny.

Note: The following three pages, 154 - 156, represent a reduction of the original page -4- of this document. The text on page 151 continues on page 157.

FIGURE 6. DISCOVERIES CURRICULUM MATCH - A TABULAR SUMMARY

GRADE GOALS FOR GRADE SEVEN	CHAPTERS 1, 2, AND 3.																																																																		
<ol style="list-style-type: none"> 1. People live in particular places, a particular environment. 2. People interact with their physical environments. 3. People establish workable relationships with environments. 4. People and their environments are mutually changeable. 5. Culture, resources, governments, and laws affect environments. 6. People - environment interactions change through time. 	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td></tr> <tr><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td></tr> <tr><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td></tr> <tr><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td></tr> <tr><td>●</td><td></td><td>●</td><td></td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td></tr> <tr><td>●</td><td></td><td>●</td><td></td><td>●</td><td></td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td></tr> </table>	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●	●	●	●	●	●		●		●		●	●	●	●	●
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**FIGURE 7. DISCOVERIES
CURRICULUM MATCH - A TABULAR SUMMARY**

GRADE GOALS FOR GRADE SEVEN		CHAPTERS 4, 5, AND 6.														
1. People live in particular places, a particular environment.		●	●	●	●	●	●	●	●	●	●	●	●	●	●	
2. People interact with their physical environments.		●	●	●	●	●	●	●	●	●	●	●	●	●	●	
3. People establish workable relationships with environments.		●	●	●	●	●	●	●	●	●	●	●	●	●	●	
4. People and their environments are mutually changeable.		●	●	●	●	●	●	●	●	●	●	●	●	●	●	
5. Culture, resources, governments, and laws affect environments.		●	●	●	●	●	●	●	●	●	●	●	●	●	●	
6. People - environment interactions change through time.		●	●	●	●	●	●	●	●	●	●	●	●	●	●	
GRADE SEVEN UNDERSTANDINGS:																
WORLD PAST																
1. Ancient societies strongly favoured certain environments.		●														
2. Man-land relationships develop relative to beliefs & technology.		●														
3. Special man-land relationships promote cultural diffusion.		●														
4. Technology enabled useful environmental modification.		●														
5. Man-land interactions changed through time for many reasons.		●														
CANADA PAST																
1. Native peoples adapted closely to their physical environments.			●													
2. There is mutual interaction of cultures and physical environments.																
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3. The use of natural resources causes changes in environments.																
4. People-environment interactions change over time.																
5. Conservation of a viable environment is an increasing concern.																
CHAPTER SECTIONS		4 INT	4.1	4.2	4.3	4.4	5 INT	5.1	5.2	5.3	5.4	6 INT	6.1	6.2	6.3	6.4
CHAPTER TITLES		I SHOULD LIKE TO RISE AND GO	THE INCAS AND THE ANDES	THE NEW WORLD OF THE NORTH	LIFE IS MOVEMENT. MOVEMENT IS LIFE	PERU'S PROBLEMS AND PROSPERITY	IF I WERE A RICH MAN	THE LAND WITHIN THE PASSES	SEIGNEURIAL CANADA	THE NEW RIVER VALLEY DWELLERS	GHANA GROWS UP	CARGOES	SOLOMON'S TEMPLE	ISLAND OF DISASTER	A SEA OF GRASS	NIGERIA - GIANT OF AFRICA

**FIGURE 8. DISCOVERIES
CURRICULUM MATCH - A TABULAR SUMMARY**

GRADE GOALS FOR GRADE SEVEN		CHAPTERS 7, 8, AND 9.										
1. People live in particular places, a particular environment.		●	●	●	●	●	●	●	●	●	●	●
2. People interact with their physical environments.		●	●	●	●	●	●	●	●	●	●	●
3. People establish workable relationships with environments.		●	●	●	●	●	●	●	●	●	●	●
4. People and their environments are mutually changeable.		●	●	●	●	●	●	●	●	●	●	●
5. Culture, resources, governments, and laws affect environments.		●	●	●	●	●	●	●	●	●	●	●
6. People - environment interactions change through time.		●	●	●	●	●	●	●	●	●	●	●
GRADE SEVEN UNDERSTANDINGS-												
WORLD PAST												
1. Ancient societies strongly favoured certain environments.			●						●			●
2. Man-land relationships develop relative to beliefs & technology.			●						●			●
3. Special man-land relationships promote cultural diffusion.			●						●			●
4. Technology enabled useful environmental modification.			●						●			●
5. Man-land interactions changed through time for many reasons.			●						●			●
CANADA PAST												
1. Native peoples adapted closely to their physical environments.												●
2. There is mutual interaction of cultures and physical environments.												●
3. Initial European contact led to significant man-land changes.				●					●			●
4. European settlers changed life-styles to match their surroundings.				●					●			●
5. Settler-land relationships changed over time.				●					●			●
CANADA PRESENT												
1. Physical surroundings affect a people's way of life.					●					●		●
2. Resource selection leads to environmental modification.					●					●		●
3. Laws and governments affect resource use.					●					●		●
4. Conservation of a viable environment is an increasing concern.					●					●		●
WORLD PRESENT												
1. Physical environments influence ways of life.						●					●	●
2. Culture, technology, and social interaction affect resource use.						●					●	●
3. The use of natural resources causes changes in environments.											●	●
4. People-environment interactions change over time.						●					●	●
5. Conservation of a viable environment is an increasing concern.											●	●
CHAPTER SECTIONS		7 INT	7.1	7.2	7.3	7.4	8 INT	8.1	8.2	8.3	8.4	CONCLUSION
CHAPTER TITLES		A MAN-MADE PLANET	MUD, MUD, GLORIOUS MUD	NEW WORLD - NEW LIFE: QUEBEC	THE PRODUCTIVE PRAIRIES	ZIMBABWE - OLD NAME, NEW NATION	HOME-MADE HAZARDS	ANGHOR - ANCIENT GHOST TOWN	HOCHELAGA WAS HOME	THE SEAWAY - IT'S ONLY AS FAR AS YOU THINK	THE HUMMERY SANEL	PEOPLE PLACES RULES OF THUMB . . .

the debate of the hypotheses. It is hoped that vigorous pupil - teacher interactions will lead to a testing of the Rules of Thumb, to a search for causes and effects, and to some fitting elaboration on the case studies by drawing upon the resources of the teachers and pupils, of the homes, and of the libraries.

3.2 TEXT LAYOUT:

Landscape format has been chosen to enable linear illustration to flow across the pages. The size - standard letter size - is convenient for most pupils to carry, and to store.

Line drawings have been employed, for the most part. Drawn by Sandra and Lester Jones, professional Cartographers, these clear, simple illustrations are designed to encapsulate and/or to extend the essential points which are being made in the adjacent text. The surmounting border of line drawings is the best example of this attempt at providing for the pupil a graphic summary of what is being read. The first four pages provide a clear example: the text places man and his wide range of technologies and gifts in a natural environment, and highlights the changes from nature to factories, to well-planned urban areas which blend the best of nature with the best of technology:

3.3 POETRY:

Poetry provides us with especially astute observations in particularly efficient verbal form. At its best, poetry is one of the best forms of expressing the best that has been thought and said. Thus, according to the definition of culture which was made famous by Matthew Arnold, poetry is a particularly efficient means of verbally encapsulating our culture. In the words of Professor A.C. Bradley

"About the best of poetry, and not only the best, there floats an atmosphere of infinite suggestion. The poet speaks to us of one thing, but in this one thing there seems to lurk the secret of all. He said what he meant, but his meaning seems to beckon away, beyond itself, . . . It is a spirit. It comes we know not whence. It will not speak at our bidding, nor answer in our language. It is not our servant; it is our master."¹

So we have searched for the best that has been thought and said in the poetic form to illustrate some key points. Most fittingly we open the

1. A.C. Bradley Oxford Lectures on Poetry London: Macmillan, 1965. p.34.

text with William Wordsworth's Daffodils because of the magnificent way in which the poet captured his perceptions of his surroundings, and the persistence of those perceptions for years to come. C. Day Lewis has made the claim that the modern revolution in ecology and environmental awareness began with Wordsworth. But man is not usually in pristine, natural surroundings, so Anne Marriott's Woodyards in the Rain was chosen as an interesting counterpoint.

Chief Dan George says more, in fewer words, than any aboriginal advocates. He captures the native's nostalgic recollection of an idyllic past, his perceived injustices at being dispossessed of a birthright, and the bitter awareness that the future lies in joining, not fighting, those who have invaded. The brief poem by Chief Dan George reminds one of Patmore's observation that

is to aid in his readers the fulfillment of the
cry, which is that of nature as well as religion:

'Let not my heart forget the things mine eyes
have seen.'" ².

Louis Armstrong's "What a Wonderful World" is not merely a condensation of a concept or generalization as far as the second chapter of the text is concerned - it forms an integral part of an African story. Without the song, the story could not have happened.

It is not intended that the Social Studies curriculum be taken over by that of Language Arts! Poetry is simply a particularly refined distillation of observations about man and his surroundings. Nicanor Parra says it as well as can be said:

Ladies and gentlemen
This is our final word
-Our first and final word -
The poets have come down from Olympus.

For the old folks
Poetry was a luxury item
But for us
It's an absolute necessity.
We couldn't live without poetry.

2. Coventry Patmore, as quoted by C. Day Lewis The Poetic Image
Chapter IV: The Eternal Spirit's Eternal Pastime. p.139

Unlike our elders

- And I say this with all respect -

We maintain this

A poet is no alchemist

A poet is a man like all men

A bricklayer building his wall.

A maker of windows and doors.

We talk

With everyday words.

We don't believe in cabalistic signs.

And one thing more:

The poet is there

To see to it the tree does not grow crooked.³

3.4 READABILITY:

Several tests have been exhaustively applied to ensure that the readability, vocabulary, concept load and factual density of the text are appropriate for most eleven-year-olds, in Canadian schools. Many stories were read by my own children, with most positive responses! More precise measurements were gained by subjecting 112 excerpts of 100 words each to a readability test using the Fry Readability Scale. The average reading is grade six - seven, with only rare excerpts falling below grade five, or registering above grade eight. More sophisticated measures were applied, in Toronto, by consulting editor, Charles Kahn, who was most highly impressed by the appropriateness of all text for grade seven pupils.

3.5 QUESTIONS AND ACTIVITIES:

A broad range of questions, issues, and activities is offered with each story. Yet it is the intent that these specific assignments should be treated as suggestions - as guidelines to which may be added, or from which may be deleted at the teacher's discretion. Where a set of questions is offered, it is set out according to Bloom's taxonomy; that is, questions which require simple recall are followed by those which require comprehension, application, and/or analysis.

3. Nicanor Parra, Manifiesto. from Moore & Thurman To See the World Afresh Atheneum, 1974. p.39

Where activities suggest that a certain base-map or data sheet be used, those sheets are supplied in the Teacher's Resource Guide in a form which facilitates copying. For field testing, class sets of such pages are supplied. For example, in the Chapter Two story, Fitting In, the following are required (text p. 27; this guide, pages 11-13)

- 3.5.1 An outline map of the world.
- 3.5.2 An outline map of Canada.
- 3.5.3 A question sheet with spaces for answers.

4. FIELD TESTING:

It is intended that these materials be given as "realistic and ordinary" a trial as possible. They have been prepared for classrooms across this Province, from Victoria to Atlin, from Ucluelet to Field. And it is intended that it will be the professional skill of the teacher that will bring them to life. Therefore, only four requests are made.

- 4.1 That you proceed at your own pace, teaching in your own style.
- 4.2 That you feel free to add or subtract as you and your pupils travel through this material.
- 4.3 That you and your pupils maintain a diary of your experiences with Discoveries and that you collate the students' assessments each day. See pages 14, 15.
- 4.4 That you provide your pupils with a pre-test and two post-tests. See Appendices 1, 2, 3, and 4.

5. DIARIES:

5.1 DIARIES FOR PUPILS:

A sample of a student diary form is appended, page 14. A class set will be provided for those who run a field trial. It is very important that the pupils feel that they are free to complete and submit their diaries in anonymity, following each Discoveries lesson. Anonymity is facilitated by having students identify their diaries by secret numbers. It is suggested that each pupil select a number for his or her own use by going to the back of the classroom and making a selection from a box or bag which contains the numbers

from 1 through 36.

The quantitative entries should range from 1 through 5, on this type of rating:

1	2	3	4	5
A very poor lesson. This was dull/boring/uninteresting.		OK!		An excellent lesson. I really enjoyed this lesson.

The qualitative ratings are entirely up to the pupils, but they should be very strongly discouraged from using the cloak of secrecy to be rude, crude, or unattractive! The qualitative comments are for the teacher's personal guidance, and, in the long run, for my assessment of some of the less tangible dynamics of this learning experience.

5.2 DIARIES FOR TEACHERS:

Teachers are asked to keep a lesson-by-lesson diary of their experiences with Discoveries, using the same forms as the pupils, but elaborating as seen fit. Any significant variations - additions and/or deletions - should be noted. Your comments and suggestions regarding Discoveries, and the dynamics of your classroom where and when these materials are in use, would be greatly appreciated. The teachers' diaries will be read in conjunction with the individual and aggregate pupils' diaries.

5.3 FOR ANALYSIS:

A summary of the pupils' quantitative responses (scale 1 - 5) would be appreciated. A form, page 15, is enclosed for this purpose. Averages, vertically and horizontally, are meaningful, but their calculation is in no way an obligation! I will be pleased to carry out that task eventually.

6. THE THREE TESTS:

Three tests of forty (40) identical or nearly identical questions have been prepared, and are enclosed as Appendices 1, 2, 3, and 4, pages 16 - 40 . The questions are of short-answer or objective (multiple choice) type, and cover the following topics:

- Recall of data from existing grade 6/7 Social Studies program: 10 questions.
- Comprehension of concepts from existing grade 6/7 Social Studies program: 10 questions.
- Recall of data from Discoveries, 10 questions.
- Comprehension of concepts from Discoveries, 10 questions.

The questions have been, initially prepared in the order listed above, see pages 16 - 25, Appendix 1. They have then been randomly ordered in three different ways, to form a Pre-test, and two Post-tests. These are presented here for your information as Appendices 2, 3, and 4.

6.1 THE PRE-TEST:

To be administered to all pupils in participatory and control classes before any contact with Discoveries materials.

6.2 POST-TEST 1:

To be administered about three weeks after the writing of the Pre-test, and after the first group of pupils has finished working with the first 27 pages of Discoveries.

6.3 POST-TEST 2:

To be administered about three weeks after the writing of Post-test 1, and after the second group of pupils has finished working with the first 27 pages of Discoveries.

Names are not required on these simple tests; but pupils may identify their papers if they wish. In such cases, their papers will be returned to them at the conclusion of the full field testing exercise. It is most important that NO tests be left in or returned to the hands of any pupil until after the full field testing exercise has been completed.

7. QUERIES:

Any questions or concerns should be directed to:

David Worrall,
1531 Griffith Place,
KELOWNA, B.C. V1Z 2T7
769-5844

OR Vice Principal,
Kelowna Secondary School.
762-2805, local #15.

APPENDIX 1.

DISCOVERIES - TEST

ITEMS

LOGICAL SEQUENCE

Questions 1 - 10: Recall of data from standard grade 6/7 Social Studies program.

Questions 11 - 20: Understanding of concepts from standard program.

Questions 21 - 30: Recall of data from Discoveries, Revised Curriculum.

Questions 31 - 40: Understanding of concepts from Discoveries.

QUESTIONS FOR ONE PRE-TEST, AND TWO POST-TESTS.

Questions 1 - 10: Recall of data from standard grade 6 and 7 program in Social Studies.

Questions 11- 20: Understanding of concepts from standard program.

Questions 21- 30: Recall of data from revised grade 7 curriculum.

Questions 31- 40: Understanding of concepts from revised grade 7 curriculum.

RANDOM ORDERING OF TEST ITEMS: *

NUMBERS AS PER FOLLOWING 4 pp.	PRE-TEST	POST-TEST #1	POST-TEST #2
1	2	34	17
2	16	39	29
3	22	29	25
4	20	6	10
5	11	19	37
6	3	11	5
7	33	5	36
8	28	4	21
9	14	30	14
10	4	16	1
11	15	20	3
12	38	24	22
13	36	1	2
14	35	35	38
15	34	7	32
16	37	8	34
17	19	3	31
18	6	32	23
19	1	25	18
20	5	26	39
21	40	14	27
22	8	40	26
23	26	22	6
24	30	37	11
25	39	2	40
26	18	31	13
27	24	12	7
28	29	38	4
29	12	15	24
30	17	17	15
31	27	13	28
32	10	9	19
33	25	36	33
34	21	10	9
35	13	27	20
36	9	23	30
37	7	33	12
38	23	28	35
39	32	18	8
40	31	21	16

In many cases the questions are re-worded so that they ask for the same answer in different wording so that students will not become either bored with or wise to the precise wording of questions. It is hoped that this technique, plus the random ordering of the questions will lend some freshness to each test from the students' point of view.

* The three random order sets printed here were generated through an Apple II computer.

Ten questions involving recall of data common to the Grade 6 and 7 curriculum:

1. The imaginary line which we know as 0° latitude is usually referred to as the _____
 - 1.1 The longest parallel of latitude, 0° , is usually called the _____.
 - 1.2 The imaginary line which we know as 0° latitude is usually referred to as the _____.
2. The sea which lies between Africa and Europe is the _____ Sea.
 - 2.1 The sea which washes the coastlines of Spain, Italy, Greece, Crete, and Egypt is the _____ Sea.
 - 2.2 The sea which lies between Europe and Africa is the _____ Sea.
3. The Nile flows down north across the continent of _____.
 - 3.1 The longest river which flows northwards across the continent of Africa is the _____.
 - 3.2 The Nile, longest river in _____, flows northwards across that great continent.
4. The Olympic Games originated in _____.
 - 4.1 The Olympic Games were first developed by the _____.
 - 4.2 The Olympic Games were first held in _____.
5. The ruins of a magnificent temple stand on top of the Acropolis. That temple is known as the _____.
 - 5.1 The temple which decorates the top of the Acropolis is called the _____.
 - 5.2 The Acropolis carries the ruins of a magnificent temple on its summit. That temple is known as the _____.
6. Which of the following was NOT one of the seven wonders of the ancient world?

(A) The Colossus of Rhodes.	(B) The Hanging Gardens of Babylon.
(C) The Pharos of Alexandria.	(D) Macchu Pichu. (Ankor Wat) (The Taj Mahal)
(E) The Pyramids.	(F) The Parthenon.
7. Pyramids were used as the tombs of kings in ancient

(A) China.	(E) India.	(C) Peru.
(D) Greece.	(E) Egypt.	(F) Mesopotamia.

(7.1 and 7.2 use different order of answers.)
8. The imaginary lines which run east-west, and which can be used to measure distance from the equator are called

(A) parallels of latitude.	(B) meridians of longitude.
(C) great circles.	(D) linear scales.

(8.1 and 8.2 use different order of answers.)
9. The southern limit reached by the sun's rays in their apparent north-south migrations each year is the

(A) Tropic of Cancer.	(B) Arctic Circle.
(C) Tropic of Capricorn.	(D) Equator.

- 9.1 The sun's rays seem to migrate from north to south and back again each year. The most southern latitude at which they shine directly overhead is
- (A) The Antarctic Circle. (B) The Arctic Circle.
(C) The Tropic of Capricorn. (D) The Tropic of Cancer.
- 9.2 The northern limit reached by the sun's rays in their apparent north-south migration is the
- (A) Tropic of Capricorn (B) Tropic of Cancer.
(C) Arctic Circle. (D) Antarctic Circle.
10. When it is 1:00 a.m. (0100 hours) at Greenwich, England, at the International Date Line the time is
- (A) midnight (2400 hours.) (B) mid-day (1200 hours.)
(C) 2:00 a.m. (0200 hours.) (D) 1:00 p.m. (1300 hours.)
- (10.1 and 10.2 use different order of answers.)

Ten questions which require understanding of concepts from the standard grade 6/7 program:

11. Why does the sun rise in the east?
 - 11.1 Why does the sun set in the west?
 - 11.2 Why does the sun rise in the east and set in the west?

12. How do we accurately define our location if we are on an open ocean, or a featureless plain?
 - 12.1 How do we pinpoint our location on the ocean so that others can find us?
 - 12.2 When there are no landmarks nearby, such as when we sail across an ocean, how do we accurately and clearly define our location?

13. How did the ancient Egyptians discover that there were 365 days in one year?
 - 13.1 What happened in Egypt each year to enable the Ancient Egyptians to calculate that there were 365 days in a year?
 - 13.2 How did the ancient Egyptians discover that there were 365 days in one year?

14. Why was the Nile River one of the earliest centres of a flourishing civilization?
 - 14.1 Why were the people who settled in the Nile Valley over 5 000 years ago able to develop a vigorous civilization?
 - 14.2 One of the earliest civilizations flourished in the valley of the Nile. Why was that possible?

15. What special and new form of government was developed by the people of Athens about 500 b.c.?
 - 15.1 In about 500 B.C. the people of Athens developed a special form of government. What was that type of government called?
 - 15.2 The people of Athens, in about 500 B.C., developed a new and special form of government. What was that system called?

16. Name at least one important difference between the life-styles of the Athenians and the Spartans.
 - 16.1 Name at least one major difference between the life-styles of the people of ancient Sparta and Athens.
 - 16.2 How were the Athenian and Spartan life-styles different?

17. What was one of the main causes of the decline of the ancient Greek civilization?
 - 17.1 Greek civilization declined suddenly, about 300 B.C.. Why was that?
 - 17.2 Why did the civilization of ancient Greece collapse? Give at least one good reason.

18. What did the Romans borrow from the Greeks?
 - 18.1 Name at least one major idea or thing that the Romans borrowed from the Greeks.
 - 18.2 What did Roman civilization borrow from the Greeks? Name at least one major thing or idea.

19. Why did the Romans persecute the Christians?
 - 19.1 Why did the Romans put many Christians to death?
 - 19.2 Why did the Romans persecute the Christians?

20. What led to the collapse of the Roman empire and civilization?
 - 20.1 What was one of the main causes of the collapse of the Roman Empire?
 - 20.2 What caused the collapse of the Roman Empire? Give at least one major cause.

Ten questions requiring simple recall of data from the text Discoveries, written for the 1981 revision of the grade seven social studies curriculum:

21. Who wrote this verse? "I wandered lonely as a cloud
That floats on high o'er vale and hill,
When all at once I saw a crowd,
A host of golden daffodils."
- 21.1 Who wrote the poem Daffodils?
"I wandered lonely as a cloud
That floats on high o'er vale and hill,"
- 21.2 Who wrote this poem? "For oft, when on my couch I lie
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude;
And then my heart with pleasure fills,
And dances with the daffodils."
22. Name two basic things that all people look for in their surroundings.
- 22.1 What are two very important things that all people search for in their surroundings?
- 22.2 All people look for at least two basic things in their surroundings. What are they?
23. What does technology help us to do with our surroundings?
- 23.1 How does technology help us to use our surroundings?
- 23.2 What does technology help us to do with our surroundings?
24. Who was Leo Tolstoy?
- 24.1 Where and when did Leo Tolstoy live?
- 24.2 What types of stories did Leo Tolstoy write?
25. Who wrote these words? "My heart soars.
I have known you
When your forests were mine;
when they gave me my meat
and clothing."
- 25.1 Who wrote these words? "For thousands of years
I have spoken the language of the land
and listened to its many voices.
I took what I needed
and found there was plenty for everyone."
- 25.2 Who wrote these words? "I walked tall and proud
knowing the resourcefulness of my people,
feeling the blessings of the Supreme Spirit.
I lived in the brotherhood of all beings."
26. What does the name "Homo sapiens" mean?
- 26.1 What proud and special name has man given to himself?
- 26.2 What is the scientific name for a human being?

27. When are people able to live well?

27.1 What do people have to do in order to live well?

27.2 When are people - especially native people - able to live well?

28. Complete this sentence:

"Man has been a town dweller for _____."

28.1 Complete this sentence:

"For hundreds of thousands of years our forefathers were _____."

28.2 Complete this quotation:

". . . the largest single step in the ascent of man is the change from nomad to _____."

29. The agricultural revolution occurred in several places. Name any two of them.

29.1 Where did the agricultural revolution take place? Name at least two places.

29.2 Name at least two parts of the world where men invented farming.

30. What do the following names have in common?

Marquis, Thatcher, Canthatch, and Pelisser.

30.1 What do the following names have in common?

Marquis, Selkirk, Canthatch, Hercules, and Pelisser.

30.2 What do the following names have in common?

Thatcher, Selkirk, Canthatch, Ramsey, and Hercules.

Ten questions which require comprehension of concepts or principles from Discoveries, a text for the Revised (1981) Social Studies Curriculum, grade seven.

31. What is meant by "A Rule of Thumb"?
 - 31.1 What do you understand a "Rule of Thumb" to be?
 - 31.2 What is "A Rule of Thumb"?

32. Why should we get to know our surroundings well?
 - 32.1 What does a good knowledge of our surroundings help us to do?
 - 32.2 Why should we develop a good knowledge of our surroundings?

33. Groups of people who use their surroundings very effectively have invented at least three things to help them live well. What are two of those things?
 - 33.1 In order to make the best possible use of the land groups of people do at least three special things. What are two things we do in order to use our land as best we can?
 - 33.2 What are two of the special things that people do when they set out to make the best possible use of the land?

34. Why is it very difficult for us to see other peoples' landscapes as they, themselves, see their own surroundings?
 - 34.1 as above.
 - 34.2 as above.

35. What are two natural and two man-made hazards which threaten our lives?
 - 35.1 Our survival depends upon avoiding or overcoming hazards in our environments. What are two natural, and two man-made hazards that some people have to overcome or avoid?
 - 35.2 as above.

36. In using our surroundings wisely we should know the difference between things that we NEED and things that we WANT. What is the difference between NEEDS and WANTS?
 - 36.1 as above.
 - 36.2 as above.

37. What does it mean to be civilized?
 - 37.1 What do all civilized people have in common?
 - 37.2 What is a civilized person?

38. How did the taming of animals improve the daily lives of early farmers? .
 - 38.1 In what ways did people tame themselves when they tamed animals?
 - 38.2 as above.

39. Why, in your opinion, do we know much more about the people of ancient Mesopotamia than we know of the people of ancient Mexico or Peru?
- 39.1 Why, in your own opinion, do we know much less about the people of ancient Mexico or Thailand than we know of those peoples of ancient Mesopotamia?
- 39.2 Why, in your own words, do we know a great deal more about the people of ancient Mesopotamia than we do about the peoples of ancient Thailand or Peru?
40. Why do people have to fit in to their surroundings in order to satisfy their basic needs?
- 40.1 as above.
- 40.2 as above.

APPENDIX 2.

DISCOVERIES - PRE-TEST

40

RANDOMLY ORDERED QUESTIONS

PRETEST

I. Recall of data from standard grade 6/7 Social Studies program:

- 1.
- 6.
- 10.
- 18.
- 19.
- 20.
- 22.
- 36.
- 37.
- 32.

II. Understanding of concepts, standard grade 7 program:

- 2.
- 4.
- 5.
- 9.
- 11.
- 17.
- 26.
- 29.
- 30.
- 35.

III. Recall of data from Discoveries, written for revised Grade 7 Social Studies curriculum (1981):

- 3.
- 8.
- 23.
- 24.
- 27.
- 28.
- 31.
- 33.
- 34.
- 38.

IV. Understanding of concepts from Discoveries, written for revised Grade 7 Social Studies curriculum (1981):

- 7.
- 12.
- 13.
- 14.
- 15.
- 16.
- 21.
- 25.
- 39.
- 40.

This is a short set of questions to help us discover some of the many things that you know already, and to measure how many things you learn during the next month, or two.

1. The sea which lies between Africa and Europe is the _____ Sea.
2. Name at least one important difference between the life-styles of the Athenians and the Spartans: _____

3. Name two basic things that all people look for in their surroundings:
_____ and _____.
4. What led to the collapse of the Roman Empire and its civilization?

5. Why does the sun rise in the east?

6. The Nile River flows down north across the continent of _____.
7. Groups of people who use their surroundings very effectively have invented at least three things which help them to live well. What are two of those things?
_____ and _____.
8. Complete this sentence:
"Man has been a town dweller for _____."
9. Why was the Nile River valley the home of one of the first civilizations?

10. The Olympic Games originated in _____.
11. What special and new form of government was developed by the people of Athens in about 500 B.C.? _____
12. How did the taming of animals improve the daily lives of early farmers?

13. In using our surroundings wisely we should know the difference between things that we NEED and things that we WANT. What is an important difference between a NEED and a WANT? _____

14. What are two natural, and two man-made hazards which threaten our lives?
Natural: _____ and _____.
Man-made: _____ and _____.

15. Why is it very difficult for us to see other peoples' landscapes as they, themselves, see their own surroundings? -----

16. What does it mean to be civilized? -----

17. Which group of people did the Romans persecute most cruelly?

18. Which of the following was NOT one of the seven wonders of the ancient world?
(A) The Colossus of Rhodes. (B) The Hanging Gardens of Babylon.
(C) The Pharos of Alexandria. (D) Macchu Pichu. ()
(E) The Pyramids. (F) The Parthenon.
19. The imaginary line which we know as 0° latitude is usually referred to as the -----
20. The ruins of a magnificent temple stand on top of the Acropolis. That temple is known as the -----
21. Why do people have to fit into their surroundings in order to satisfy their basic needs? -----

22. The imaginary lines which run east and west on a map, and which can be used to measure distance from the equator are called
(A) parallels of latitude. (B) meridians of longitude.
(C) great circles. (D) linear scales. ()
23. What does the name "Homo sapiens" mean?

24. What do the following names have in common?
Marquis, Thatcher, Canthatch, Pelisser. -----
25. Why, in your opinion, do we know much more about the people of ancient Mesopotamia than we know of the people of ancient Mexico or Peru? -----

26. What important thing, or idea, did the Romans borrow from the Greeks?

27. Who was Leo Tolstoy? -----
28. The "agricultural revolution" occurred in several places. Name any two of them:
----- and -----
29. How do we accurately define our location if we are on an open ocean, or on a wide, featureless plain? -----

30. What was one of the main causes of the sudden decline of the ancient Greek civilization? -----

31. When are people able to live well?

32. When it is 1:00 a.m. (0100 hours) at Greenwich, England, the time at the International Date Line is

- (A) midnight (2400 hours) (B) mid-day (1200 hours)
(C) 2:00 a.m. (0200 hours) (D) 1:00 p.m. (1300 hours) ()

33. Who wrote these words? "My heart soars.
I have known you
when your forests were mine;
when they gave me my meat
and clothing."

34. Who wrote this verse? "I wandered lonely as a cloud
That floats on high o'er vale and hill,
When all at once I saw a crowd,
A host of golden daffodils."

35. How did the ancient Egyptians discover that there were 365 days in one year?

36. The southern limit reached by the sun's rays in their apparent north-south migrations each year is the (A) Tropic of Cancer. (B) Arctic Circle.
(C) Tropic of Capricorn. (D) Equator. ()

37. Pyramids were used as the tombs of kings in ancient
(A) China. (B) India. (C) Peru.
(D) Greece. (E) Egypt. (F) Mesopotamia. ()

38. What does technology help us to do with our surroundings?

39. Why should we get to know our surroundings very well?

40. What is meant by a "Rule of Thumb"?

APPENDIX 3.

DISCOVERIES - POST-TEST 1.

40

RANDOMLY ORDERED QUESTIONS

I. Recall of data from standard grade 6/7 Social Studies program:

- 4.
- 7.
- 8.
- 13.
- 15.
- 16.
- 17.
- 25.
- 32.
- 34.

II. Understanding of concepts, standard grade 7 program:

- 5.
- 6.
- 10.
- 11.
- 21.
- 27.
- 29.
- 30.
- 31.
- 39.

III. Recall of data from Discoveries, written for revised grade 7 Social Studies curriculum (1981):

- 3.
- 9.
- 12.
- 19.
- 20.
- 23.
- 35.
- 36.
- 38.
- 40.

IV. Understanding of concepts from Discoveries, written for revised Grade 7 Social Studies curriculum (1981):

- 1.
- 2.
- 14.
- 18.
- 22.
- 24.
- 26.
- 28.
- 33.
- 37.

How have we been doing this past month? This is a short quiz to compare what we knew a month ago with what we now know.

1. Why is it very difficult for us to see other peoples' landscapes as they, themselves, see their own surroundings?
2. Why, in your opinion, do we know much less about the people of ancient Mexico or Thailand than we know of the people of ancient Mesopotamia?
3. Where did the "agricultural revolution" take place? Name at least two places:
4. Which of the following was NOT one of the seven wonders of the ancient world?

(A) The pyramids of Egypt.	(B) Ankor Wat.	
(C) The Pharos of Alexandria.	(D) The Hanging Gardens of Babylon.	
(E) The Colossus of Rhodes.	(F) The Parthenon.	()
5. Why did the Romans put many Christians to death?
6. Why does the sun set in the west?
7. The ancient temple which decorates the top of the Acropolis is The
8. The Olympic Games were first developed by the
9. What do the following names have in common?
Marquis, Selkirk, Canthatch, Hercules, Pelisser.
10. Name one major difference between the life-styles of the people of ancient Sparta and Athens.
11. What was one of the main causes of the collapse of the Roman Empire?
12. Where, and when, did Leo Tolstoy live?
13. The longest parallel of latitude, 0° , is usually called the
14. Our survival depends upon avoiding or overcoming hazards in our environments. What are two natural, and two man-made hazards that some people have to avoid or overcome?

15. Pyramids were used as the tombs of kings in ancient
 (A) Greece. (B) Mesopotamia. (C) Egypt.
 (D) Peru. (E) China. (F) India. ()
16. On a map of the world, the imaginary lines which are drawn running from west to east, and which may be used to measure distances from the equator, are called
 (A) parallels of latitude. (B) great circles.
 (C) linear scales. (D) meridians of longitude. ()
17. The longest river which flows northwards across the continent of Africa is the _____.
18. What does a good knowledge of our surroundings enable us to do?

19. Who wrote these words? "For thousands of years
 I have spoken the language of the land
 and listened to its many voices.
 I took what I needed
 and found there was plenty for everyone."

20. What proud and special scientific name has man given to himself?

21. Why were the people who settled in the Nile Valley over 5 000 years ago able to develop a vigorous civilization? _____

22. Why is it that people have to fit into their surroundings in order to satisfy their basic needs? _____
23. What are two very important things that all people search for in their surroundings?
 _____ and _____
24. What do all civilized people have in common?

25. The sea which washes the coastlines of Spain, Italy, Greece, Crete, and Egypt is the _____ Sea.
26. What do you understand a "Rule of Thumb" to be? _____

27. How do we pinpoint our location on an ocean so that others may know where to find us?

28. In what way did people tame themselves when they first tamed animals?

29. In about 500 B.C. the people of Athens developed a special form of government. What was that type of government called?
30. Greek civilization declined suddenly in about 300 B.C. Why was that?
.....
31. What used to happen in Egypt each year that enabled the Egyptians of old to calculate that there were 365 days in one year?
32. The southern limit reached by the sun's rays in their apparent north - south migrations each year is the (A) Equator. (B) Arctic Circle.
(C) Tropic of Cancer. (D) Tropic of Capricorn. ()
33. In using our surroundings wisely we should know the difference between things that we NEED and things that we WANT. What is an important difference between NEEDS and WANTS?
34. When it is 1: p.m. (1300 hours) at Greenwich, England, the time on the International Date Line is (A) mid-day (1200 hours) (B) 2:00 a.m. (0200 hours)
(C) 1:00 a.m. (0100 hours) (D) midnight (2400 hours) ()
35. What do people have to do in order to live well?
.....
.....
36. How does technology help us to use our surroundings?
.....
.....
37. In order to make the best possible use of their lands, groups of people do at least three special things. What are two of these things that we do in order to use our surroundings as well as we can?
38. Complete this sentence:
"For hundreds of thousands of years our forefathers were"
39. Name at least one major idea or thing that the Romans borrowed from the Greeks.
.....
40. Who wrote the poem "Daffodils"? "I wandered lonely as a cloud
That floats on high o'er vale and hill,..."
.....

APPENDIX 4.

DISCOVERIES - POST-TEST 2.

40

RANDOMLY ORDERED QUESTIONS

I. Recall of data from standard grade 6/7 Social Studies program:

- 4.
- 6.
- 10.
- 11.
- 13.
- 23.
- 27.
- 28.
- 34.
- 39.

II. Understanding of concepts, standard Grade 7 program:

- 1.
- 9.
- 19.
- 24.
- 26.
- 30.
- 32.
- 35.
- 37.
- 40.

III. Recall of data from Discoveries, written for revised Grade 7 Social Studies curriculum (1981):

- 2.
- 3.
- 8.
- 12.
- 18.
- 21.
- 22.
- 29.
- 31.
- 36.

IV. Understanding of concepts from Discoveries, written for revised Social Studies curriculum (1981):

- 5.
- 7.
- 14.
- 15.
- 16.
- 17.
- 20.
- 25.
- 33.
- 38.

During the past two months we have learned a great deal about different people, and different places. These forty questions call for your best answers so that we might know how much we have learned during this time.

1. Why did the vigorous civilization of ancient Greece collapse? Give at least one good reason: _____
2. Name at least two parts of the world where people invented farming.
_____ and _____
3. Who wrote these words? "I walked tall and proud
knowing the resourcefulness of my people,
feeling the blessings of the Supreme Spirit.
I lived in the brotherhood of all beings."

4. When it is 10:00 a.m. (1000 hours) at Greenwich, England, the time at the International Date Line is (A) 10:00 a.m. (1000 hours) (B) midnight (2400 hours)
(C) 10:00 p.m. (2200 hours) (D) mid-day (1200 hours) ()
5. What is a civilized person? _____

6. The Acropolis carries the ruins of a magnificent temple on its summit. That temple is known as The _____
7. In using our surroundings wisely we should know the difference between things that we NEED and things that we WANT. What is an important difference between NEEDS and WANTS?

8. Who wrote the poem: "For oft, when on my couch I lie
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude;
And then my heart with pleasure fills,
And dances with the daffodils."

9. One of the earliest civilizations flourished in the valley of the Nile. Why was it possible for a civilization to flourish in that place? _____

10. The imaginary line which appears on many maps and which we know as 0° latitude is usually called the _____
11. The Nile, longest river in _____, flows northwards across that continent for about 6 000 kilometres.
12. All people look for at least two basic things in their surroundings. These two things are _____ and _____
13. The sea which lies between Europe and Africa is the _____ Sea.

14. In what way did people tame themselves when they tamed animals?

15. Why should we always try to develop a good knowledge of our surroundings?

16. Why is it very difficult for us to see other peoples' landscapes as they, themselves, see their own surroundings?

17. What is a "Rule of Thumb"?

18. What does technology help us to do with our surroundings?

19. What did Roman civilization borrow from the Greeks? Name at least one major thing, or idea.

20. Why, in your own words, do we know a great deal more about the people of ancient Mesopotamia than we do about the peoples of ancient Thailand or Peru?

21. When are people, especially native people, able to live well?

22. What is the scientific name for a human being?

23. Which of the following is NOT one of the seven wonders of the ancient world?

- (A) The Hanging Gardnes of Babylon. (B) The Pharos of Alexandria.
- (C) The Taj Mahal. (D) The Parthenon.
- (E) The pyramids of Egypt. (F) The Colossus of Rhodes. ()

24. Why does the sun rise in the east and set in the west?

25. Why do people have to fit into their surroundings in order to satisfy their basic needs?

26. How did the Egyptians of old discover that there were 365 days in one year?

27. Pyramids were used as the tombs of kings in ancient
 (A) Greece. (B) China. (C) India.
 (D) Egypt. (E) Mesopotamia. (F) Peru. ()
28. The Olympic Games were first held in _____.
29. What types of things did Leo Tolstoy write about? _____

30. The people of Athens, in about 500 B.C., developed a new and special form of government. What was that system of government called? _____
31. Complete this quotation as best you can:
 ". . . the largest single step in the ascent of man is the change from nomad to _____."
32. What famous group of people were cruelly persecuted by the Romans?

33. What are two of the special things that people do when they set out to make the best possible use of their surroundings? _____

34. The northern limit reached by the sun's vertical rays in their apparent north - south migrations each year is the (A) Tropic of Capricorn. (B) Equator.
 (C) Tropic of Cancer. (D) Arctic Circle. ()
35. What caused the collapse of the Roman Empire. Give one major cause:

36. What do the following names have in common?
 Thatcher, Selkirk, Canthatch, Ramsey, Hercules. _____
37. When there are no landmarks nearby, such as when we sail across an ocean, how can we accurately define our location? _____
38. Our survival depends upon avoiding or overcoming hazards in our surroundings. What are two natural, and two man-made hazards that some people have to avoid or overcome?
 Natural: _____ and _____
 Man-made: _____ and _____
39. The imaginary lines which are drawn to run east and west on maps, and which can be used to measure distances from the equator are called
 (A) Linear scales. (B) Great Circles.
 (C) Parallels of latitude. (D) Meridians of longitude. ()
40. How were Athenian and Spartan life-styles different? _____

Appendix 5.

DISCOVERIES

Text sample of
the first twenty-seven
pages.

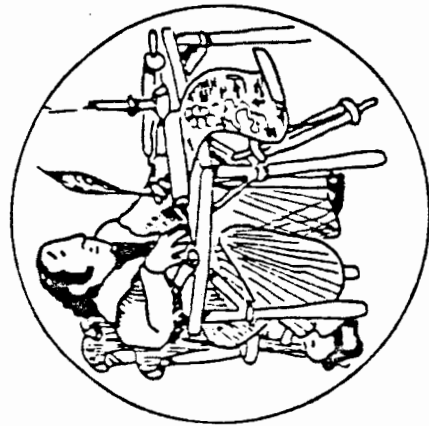
DISCOVERIES

A. I. JONES, B.Ed., Dip. Geog.
Department of Geography
Okanagan College

L. M. JONES, Dip. Geog.
Cartographer

S. C. JONES, Dip. Geog.
Cartographer

D. S. Worrall, B.A., Lit.B.
Kelowna Secondary School



Chapter 1: People Places, and Rules of Thumb
GLOSSARY

Chapter 2: Introduction: Fitting In

- 2.1 WORLD PAST: The First Revolution
 2.2 CANADA PAST: An Inuit Misadventure
 2.3 CANADA PRESENT: Home Base — Our Own Territory
 2.4 WORLD PRESENT: Nomads of Dry Africa:
 Masai of Tanzania
 Bushmen of the Kalahari

GLOSSARY

Chapter 3: Introduction: Using Our Land

- 3.1 WORLD PAST: Egypt Was the Gift of the Nile
 3.2 CANADA PAST: This Land's First People
 3.3 CANADA PRESENT: The Shape of Home
 3.4 WORLD PRESENT: Reindeer Lapps Know Eight Seasons
 GLOSSARY

Chapter 4: Introduction: "I should like to rise and go..."

- 4.1 WORLD PAST: The Incas and the Andes
 4.2 CANADA PAST: New World of the North
 4.3 CANADA PRESENT: Life Is Movement, Movement Is Life
 4.4 WORLD PRESENT: Peru's Problems and Prosperity
 GLOSSARY

Chapter 5: Introduction: "If I were a rich man..."

- 5.1 WORLD PAST: The Land Within the Passes
 5.2 CANADA PRESENT: The New River Valley Dwellers
 5.4 WORLD PRESENT: Ghana Grows Up.
 GLOSSARY

Chapter 6: Introduction: Cargoes

- 6.1 WORLD PAST: Solomon's Temple
 6.2 CANADA PAST: Island of Disaster
 6.3 CANADA PRESENT: A Sea of Grass
 6.4 WORLD PRESENT: Nigeria — Giant of Africa
 GLOSSARY

Chapter 7: Introduction: A Man-made Planet

- 7.1 WORLD PAST: A Man-made Planet
 7.2 CANADA PAST: New World — New Life: Quebec
 7.3 CANADA PRESENT: Productive Prairies
 7.4 WORLD PRESENT: Zimbabwe: Old Name, New Nation
 GLOSSARY

Chapter 8: Introduction: Home-made Hazards

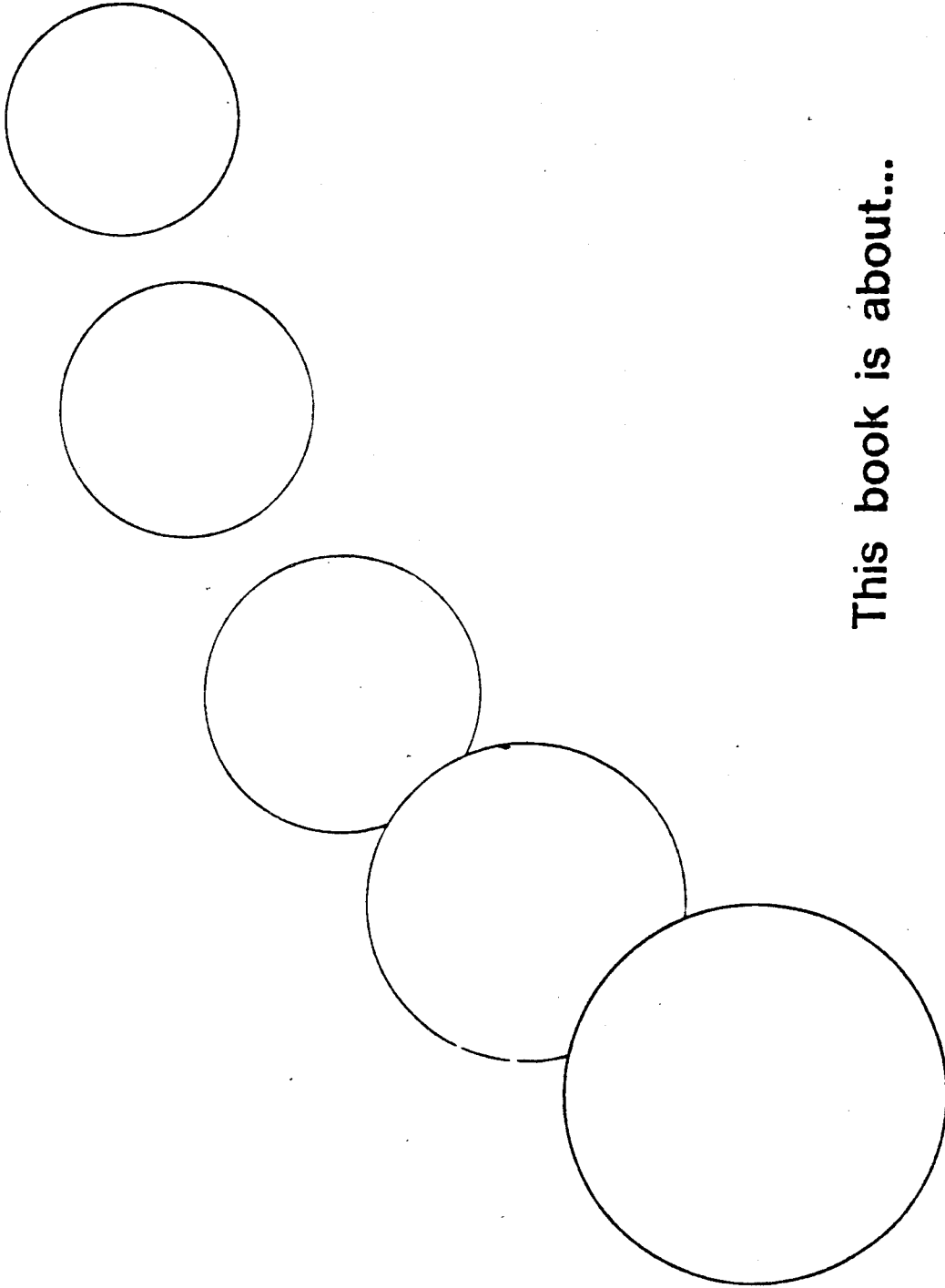
- 8.1 WORLD PAST: Angkor, Ancient Ghost Town
 8.2 CANADA PAST: Bochetaga Was Home
 8.3 CANADA PRESENT: A Sea-Way to the Heart of our Homeland
 8.4 WORLD PRESENT: The Hungry Lands of the Sahel
 GLOSSARY

Chapter 9: Conclusion: People Places, and Rules of Thumb

INDEX

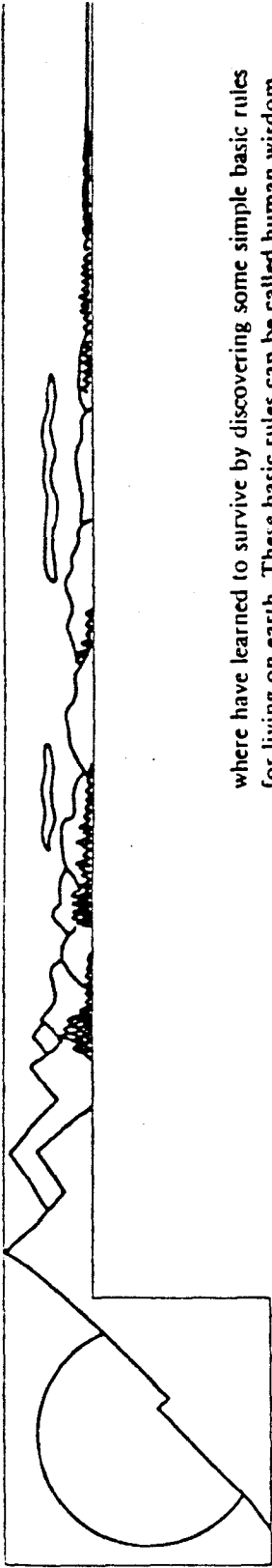
5.3 Canada Past Seigniorial Canada

Contents



This book is about...





where have learned to survive by discovering some simple basic rules for living on earth. These basic rules can be called human wisdom. We meet many of the rules which help to make us better users of our surroundings as we read this book. But here the rules are called "Rules of Thumb". They are some of the secrets which men have shared for thousands of years.

One of the earliest tricks that we all learn is to look at our surroundings. The more we look, the more detail we notice. Observation is how we decide what we like or dislike. When we know our surroundings well we can choose to avoid some things, or to change them.

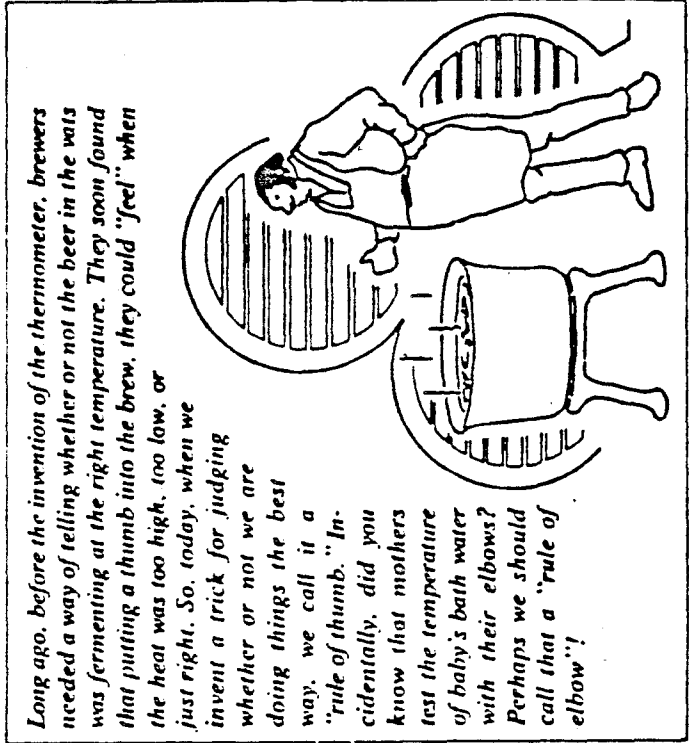
People, Places and Rules of Thumb

We live in a world which is both natural and man-made. Nature has provided the land, the waters, the weather, and the vegetation. These are our natural surroundings. They grow and they die and decay. They renew themselves. They change all the time.

Much of our every-day world is also man-made. Our imagination and our technology help us to change our natural surroundings and to invent new and different places. We change the world about us to make it more useful, more comfortable, and more attractive.

Sometimes the changes we make are mistakes. We spoil our surroundings, causing destruction and danger for ourselves and for natural things. We have learned many lessons from our mistakes. Thus we are now more careful and thoughtful about the ways in which we change our surroundings. Man has always been clever. Now, in many ways, he is becoming wiser.

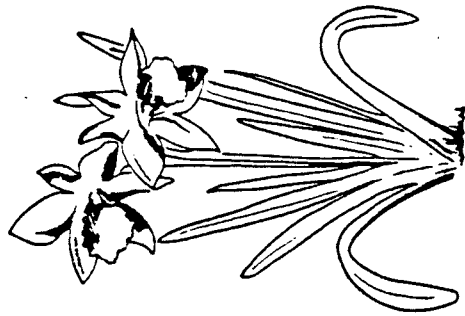
This book tells us many things about people using and changing their surroundings. It helps to show how different people have different ideas about changing the world. It tells how people every-



Long ago, before the invention of the thermometer, brewers needed a way of telling whether or not the beer in the vats was fermenting at the right temperature. They soon found that putting a thumb into the brew, they could "feel" when the heat was too high, too low, or just right. So, today, when we invent a trick for judging whether or not we are doing things the best way, we call it a "rule of thumb." Incidentally, did you know that mothers test the temperature of baby's bath water with their elbows? Perhaps we should call that a "rule of elbow"!

Some people look more carefully than others. As a result, they often see things the rest of us miss. Poets are such people. Sometimes they give us pictures in words which share with us new thoughts and feelings about the world. Here are two quite different poems which show us how poets can help us to observe our surroundings more clearly.

The first poem is by William Wordsworth. He lived most of his life in lonely country places in England. A restless man, Wordsworth travelled to foreign places whenever he could, observing carefully the tiny details of the things he saw. His poem tells of the beauty of a vast field of golden flowers in the early spring-time. As we read the poem we should remember that these flowers have appeared after a long, cold, grey winter. We may then understand why the poet was thrilled by the loveliness of nature.



DAFFODILS

William Wordsworth

*I wandered lonely as a cloud
That floats on high o'er vales and hills,
When all at once I saw a crowd,
A host, of golden daffodils;
Beside the lake, beneath the trees,
Fluttering and dancing in the breeze.*

*Continuous as the stars that shine
And twinkle on the Milky Way,
They stretched in never-ending line
Along the margin of a bay:
Ten thousand saw I at a glance,
Tossing their heads in sprightly dance.*

*The waves beside them dance, but they
Out-did the sparkling waves in glee:
A poet could not but be gay,
In such a jocund company:
I gazed — and gazed — but little thought
What wealth the show to me had brought:*

*For oft, when on my couch I lie
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude;
And then my heart with pleasure fills,
And dances with the daffodils.*

The second poem describes the sights and smells of a wet lumber yard in Vancouver. It was written by Anne Marriott, a city-dweller from Victoria, British Columbia. It is full of man's industry and the man-made world, far away from nature.

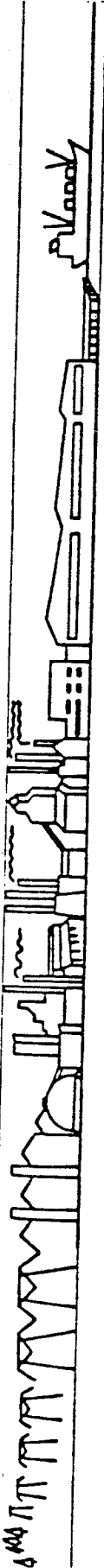
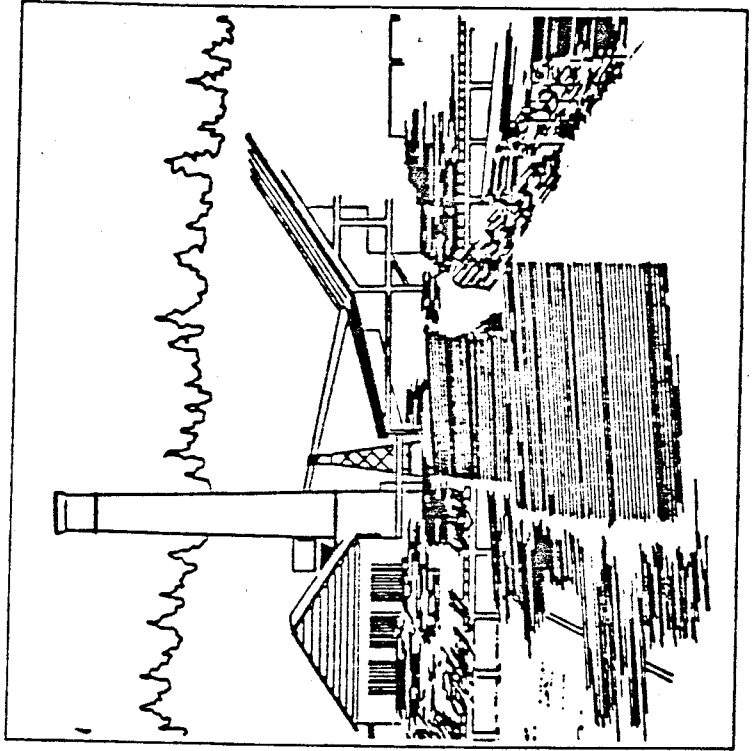
WOODYARDS IN THE RAIN

*The smell of woodyards in the rain is strong
like six-foot lumberjacks with hairy chests
and thick axe-leathered hands*

*The scent is raw, it slices through
pale drizzle and thin mist
biting the sense.*

*I like to watch piled wetness dripping off
the yellow-brown stacked shingles, while behind
the smoke churns up in black revolving towers
from lean mill chimneys.*

*Now the broad-hipped tugs
sniff through the squall and swing oblong booms
by tar-stained wharves
as with a last fierce gesture rain
small pocks the oil-green water with a hurled
ten million wire nails*



The two poems tell us many things about our world and ourselves. Did you notice that **LOOKING** and **SEEING** are two quite different things? And did you realize that seeing is not always done just with the eyes? The world around us is a mixture of the natural and the man-made. And both can be beautiful. Beauty, of course, can mean different things to different people.

Read the poems again, then answer the questions which follow.

Questions

1. How many daffodils did Wordsworth discover? How accurate is that number?
2. How do you know that the wet woodyards in Van-couver had a very strong odour?
3. Why was Wordsworth happily surprised by his discovery?
4. Marriott found the woodyards attractive. In what ways did they arouse her interest?
5. List three words or phrases from each poem to show that the poets enjoyed viewing the landscape which they discovered.
6. What other people, besides poets, look at their surroundings very closely? How do we know that these people are very observant?

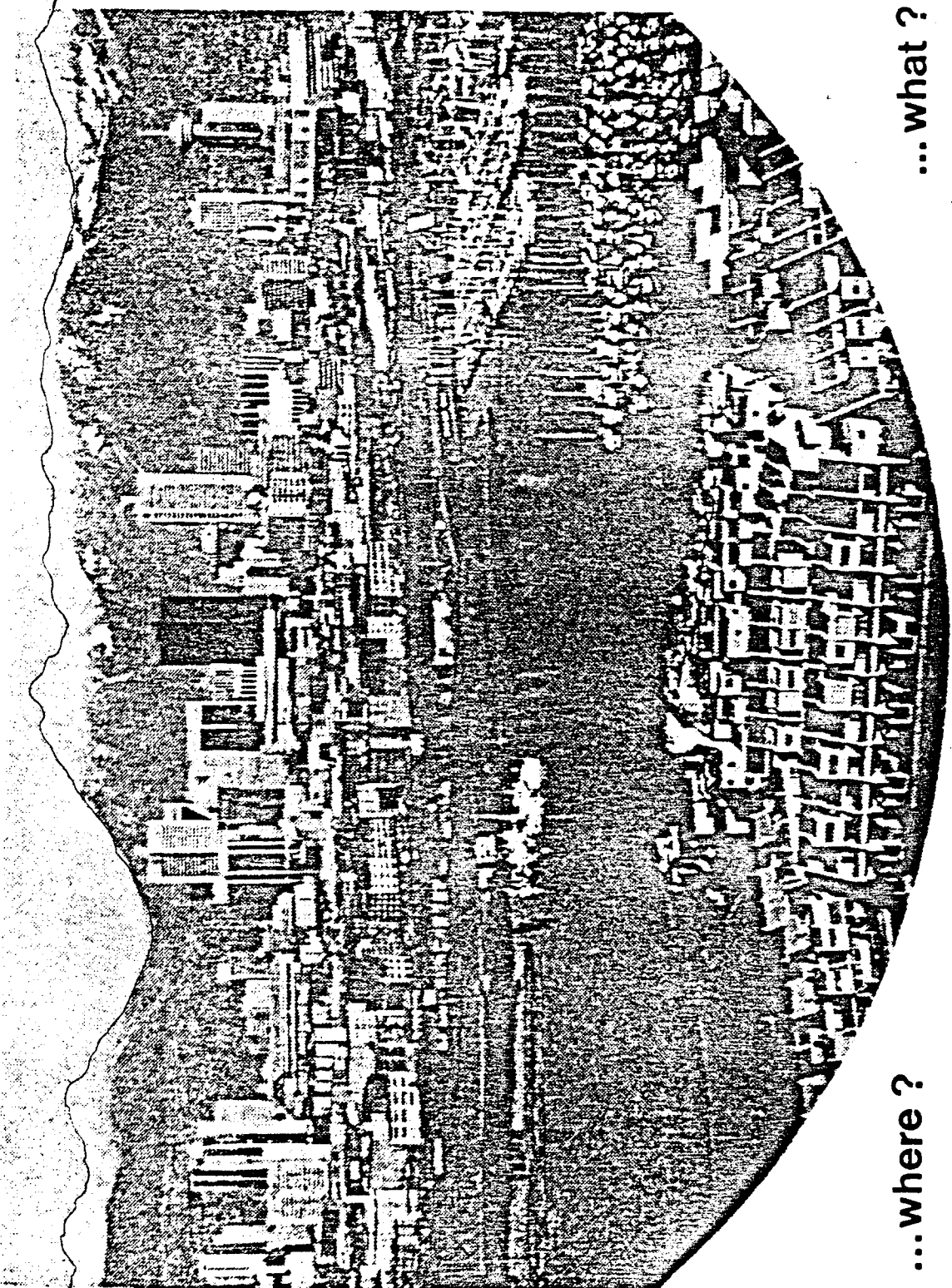
"Daffodils" and "Woodyards" are two very different poems. They come from different times, and places and poets. But they tell us much about how some people see, use and think about their surroundings. Perhaps there are many things in your surroundings which you notice more than others notice them. Those things may have

special meaning for you as you go about your daily activities, or travel farther a field.

There are many interesting things to see and do, of course. In hundreds of nations and states there are millions of people who live, work and play in their own special surroundings. They all find that there are things to enjoy and things to be improved so that their lives will be more interesting, comfortable, and enjoyable.

The world is easier to look at, to see and to understand if we have some simple rules to go by. When we test such rules and find that they work for us, they become part of our wisdom and our way of life. The most simple of the rules which seem to work for us from day to day may be called "rules of thumb". They are not laws. They are not always exact. But just as the brewer of old dipped his thumb into the fermenting fluid in the vat to check its temperature, rules of thumb give us a good idea of how things work most of the time.





... where ?

... what ?

... when ?

... why ?

... how ?

The Rules of Thumb

There are seven rules of thumb used in this book to help us to understand how the lives of different groups of people are closely linked with their natural and man-made surroundings. These rules of thumb are:

1. Man satisfies his basic needs by fitting in with and using physical surroundings.
2. The many ways in which people use their physical surroundings depend upon their beliefs, their technologies and the values which they attach to the land and its resources.
3. Knowledge and technology enable groups of people to identify opportunities and hazards in their surroundings.
4. People have attempted to organize their societies in order to make the best use of their surroundings.
5. Groups of people may interact and become interdependent because of the uneven distribution of resources.
6. In choosing and using resources, groups of people change their surroundings in many different ways.
7. When physical surroundings change the ways groups of people behave may also change.

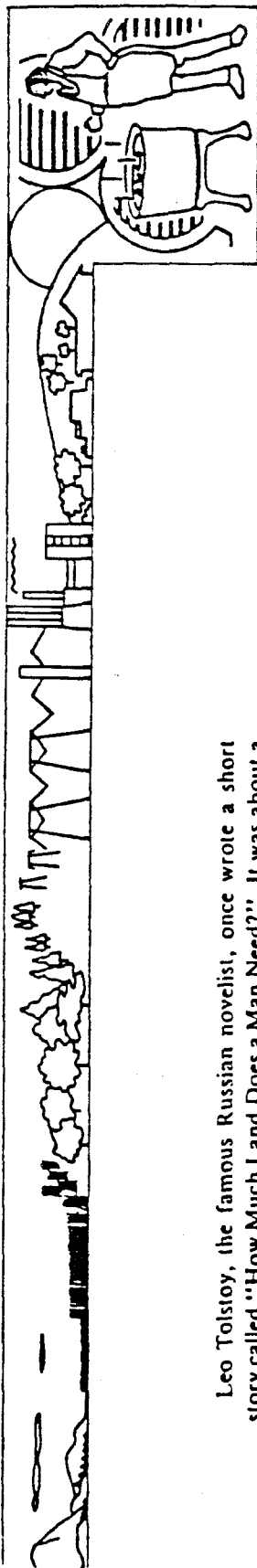
So this book has seven chapters filled with short stories about people seeing and using their surroundings to solve the every day problems of making a living. The stories tell about many different places at many different times in history. Each story shows how different one group is from another. But, at the same time, it also shows how similar we all are. Perhaps the easiest way to understand this idea about rules of thumb is to tell a little story.

Count Tolstoy was born to a wealthy Russian landowning family on September 9, 1828. His parents died while he was very young. His aunts arranged for European tutors to educate Tolstoy, and he was influenced by their love of literature and history. After attending Kazan University from 1844 - 1847, he joined the Russian Army and

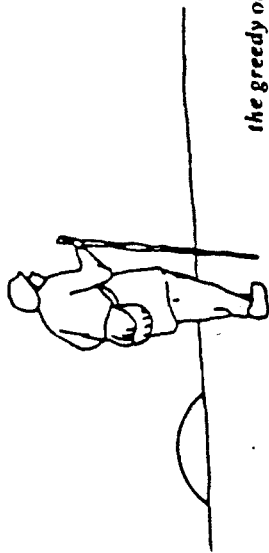


Leo Tolstoy (1828-1910)

fought at Sevastopol during the Crimean War in 1855. War gave him the experiences later found in his great novels. After the war, Tolstoy travelled throughout Europe, eventually returning to his old family estates to farm. He was now 33 years old and filled with ideas about how to make the world a happier place for everyone to live in. He married, and raised a large family. He opened a school for the children of his peasants, and used very modern teaching methods. Tolstoy had been a writer of short stories since he was 24. Now he began his two famous novels about Napoleon's invasion of Russia in 1812, *War and Peace* and *Anna Karenina*. Gradually he grew unhappy with his wealth, when so many were poor. So he began to teach people to be kind and to share their wealth. Finally, when he was over 60, he gave his wealth and estates to his wife and ten children, and lived the simple life of a Russian peasant. But he never found the happiness he sought, and he died, sick and discouraged, in 1910.

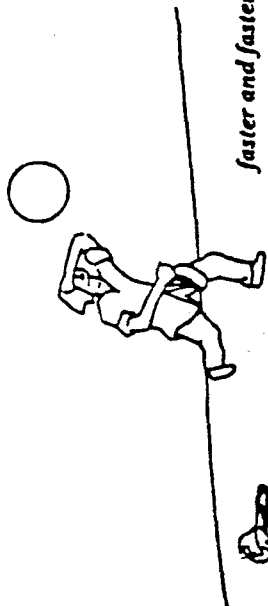


Leo Tolstoy, the famous Russian novelist, once wrote a short story called "How Much Land Does a Man Need?". It was about a greedy peasant who promised his soul to the Evil One in exchange for some land. The Evil One promised the peasant all the land he could walk around between sunrise and sunset in one day. So, as the sun rose the following morning, the greedy one set out. While



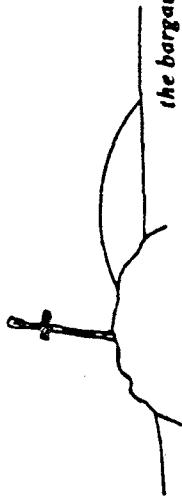
the greedy one set out

anxiously watching the sun's journey through the sky, he planned his course and hurried around a huge square of rich, beautiful land. By midday he could look back and barely see the marker where he had begun. It was time to return. But greed drove him a little further. Soon he knew that he must turn back or lose the bargain. As the sun began to sink, the peasant found himself some distance from the point where he had begun in the morning. It was now a race. He began to run. His legs grew heavy, but faster and faster he ran. His head swam. He could hardly see for fatigue. His heart



faster and faster he ran

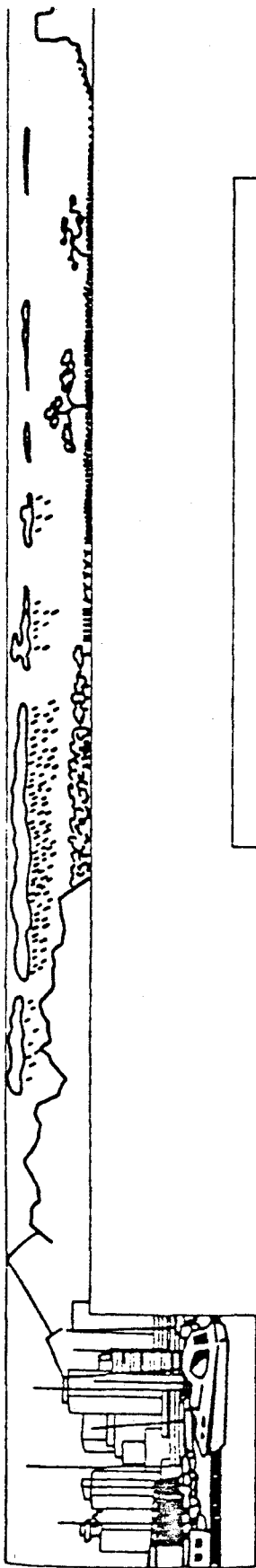
pounded as though it would burst. Just as the last glint of the sun sank below the western rim of the great Russian prairie, the greedy peasant reached the marker. But, exhausted by his enormous effort, he looked once at the great sweep of land which was now his. Then, in the gathering darkness, he sank to the ground and died. The Evil One chuckled and buried him. So the peasant received all the land he needed. It was just enough for his grave. The Evil One took his payment and the bargain was complete.



the bargain was complete

The great Russian story-teller was a rich landowner himself. But as he grew older and wiser, he thought much about the fertile lands of his beloved Russia. He tried to teach his people some lessons. In this story he was warning people against being greedy. The foolish peasant in this story thought more about his own importance than about the land or other people. He was willing to do anything to own as much land as he could, even if it was more than his share. Tolstoy did not think that such a man would love the soil and treat it as a precious gift. Such a greedy landowner would not think of the future. He would only try to use his land to make himself rich quickly. He would care little for those who would come after him.

Tolstoy lived over a hundred years ago, but his lessons are just as important today as they were then. We can still hear him saying that land is a treasure which we must protect and use wisely. In one way or another, our wealth, our health, our food, our happiness all come from the land around us.



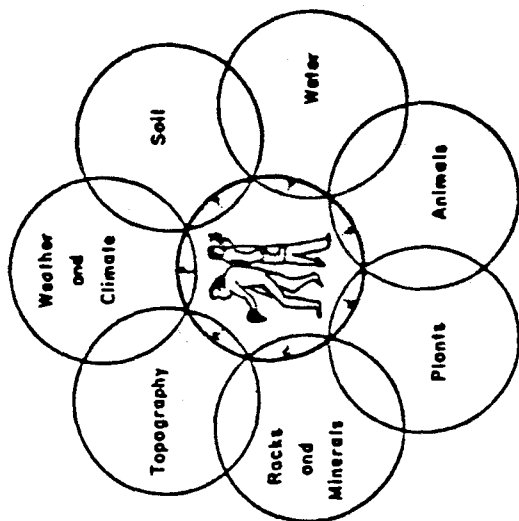
People Make Places

As we look around we see the landscape. Some of us see the natural world of the countryside or the wilderness. Others notice the buildings, streets and surroundings found in the city. Both places are landscapes, whether they are formed by nature or made by people. The different landscapes we see tell about the ways in which people use the land upon which they live. And it is not just the surface of the land which is used. The rainfall, the water in streams and lakes, the air, the soil, the plants and trees, and the rocks are all part of the landscape. When we say "land", we include these, too.

As the human race grows larger, it uses more and more of the earth's surface to support daily life. There are very few places now where people have not been. Explorers have discovered nearly all the landscapes where people can live.

As we use them, the landscapes of the world are gradually changing. The natural form which they all once had is taking on the human touch. Forests and grasslands are disappearing to make way for farms and houses, roads and factories. Old lakes are being drained or filled in, and new lakes are growing behind man-made dams. Rock, sand and rubbish are being dumped in shallow waters along sea-shores to make new land for industries. Land is being

Man's Natural Environment



Question:

Give an example of man using each of the seven parts of his natural surroundings to provide:

- a) daily food
- b) shelter
- c) safety
- d) wealth

Tell about one problem that man has caused or experienced while using each of the seven parts of his natural surroundings.



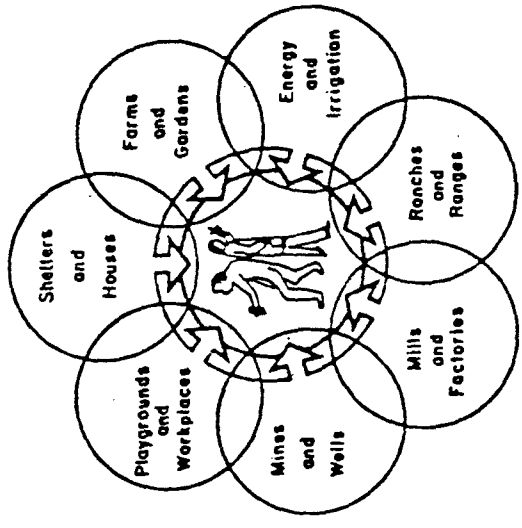
levelled to make building and farming easier. Trees are planted; sometimes for lumber, sometimes for fruit, sometimes for shade from the sun or shelter against the winds. Everywhere we look man is using the land where he lives, and changing it.

If we look carefully, we see people in different places using their land in different ways. And yet, everyone is doing the same everyday things. They are farming, hunting and fishing, gathering and making. From small and primitive tribe to huge industrial nation, everyone is trying to survive. Each group goes about this task in its own way. Each thinks that it has found the best way of using the landscape. Each makes its own landscape.

People everywhere use their own landscape in ways that seem best to them. They think first of their need for water, food and safety. They look for reliable supplies of fresh, clean water. They find enough land to provide crops or other food. For their settlement they choose a site which is safe from natural dangers and from human enemies. Of course, human beings do all of these things in places which are quite different from each other. Some are desert places, while others are densely forested. A place may be hot, cold, wet, dry or changeable. Not all have four seasons. Some are flat. Others are mountainous. Places may be safe or dangerous. The possibilities are almost endless. But all human beings use the landscape which they find for themselves. They use, as best they can, the gifts it offers them. And they do their best to solve the problems which they find in their landscapes. The ways we use the landscapes are often ingenious, and as varied as the landscapes themselves.

Solving the problems of living in a landscape means producing food easily, quickly and in sufficient quantities. It also means enjoying more safety, more wealth, and more time to spend doing other things than producing food and staying safe! This is called leisure time. So each group of human beings sets to work to discover three things.

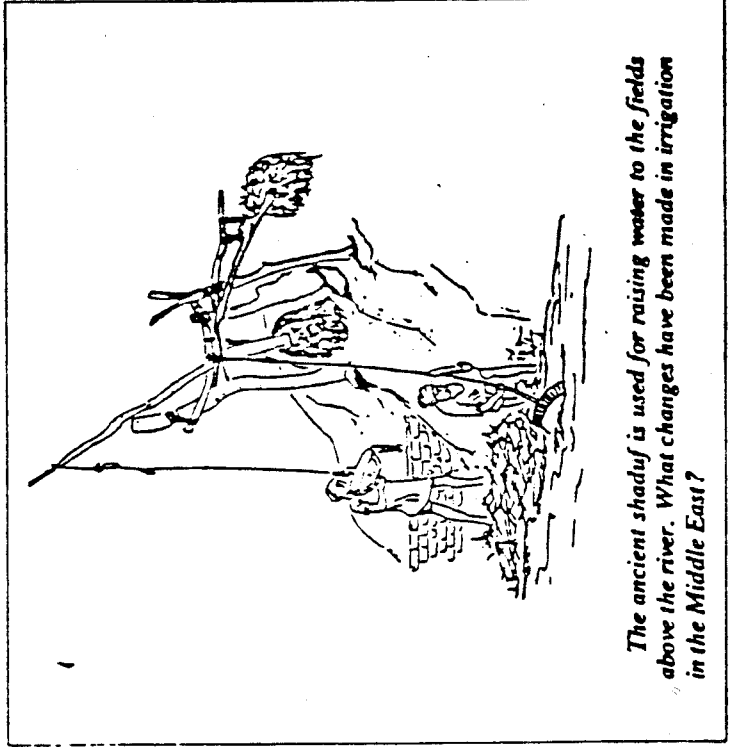
Man's Artificial Environment



Question:
 The coloured arrows in the diagram represent communication and transportation. What is the difference between communication and transportation? Pick any three circles and name the kinds of communication and transportation used to link them together for man's benefit.
 Tell about one problem that man has caused or experienced while making each of the seven parts of his artificial surroundings.

done, and keeps everyone well-fed and safe. This trick of organizing work is called 'government'.

Each group also has its own selection of tools and weapons, and ways to use them. They are the results of improvements which have come from invention and experience. They are called the group's 'technology'. Technology allows human beings to use and change their landscapes. The more powerful and complicated our technology, the more we can change the landscape. And we can also change it more quickly. Transportation is a form of technology. It allows one group of people to trade with others. So they can now use each other's landscapes to make their lives easier and



The ancient shaduf is used for raising water to the fields above the river. What changes have been made in irrigation in the Middle East?

First, they look at their landscape to find out what is there. They often make lists or maps of the gifts and the problems which they discover.

Then they begin to decide what they need to stay alive, and what they want to give them more comfort. These are quite difficult tasks, because the people must first decide what is best and most important for the whole group. It often leads to long and bitter arguments.

Lastly, the group has to discover and invent ways of getting what they need and want from their landscape.

All of these activities do not take place in this neat order, nor at meetings. They go on from day to day during thousands of years. Ideas and tools are tried. Some work. Some fail. Gradually each group learns by experience the best ways to get the most out of its landscape.

Each group of human beings invents its own ways of using its landscape. All groups seem to have three basic inventions. First, there is the way that manpower is organized to get the work done. Second, there is the development of tools to make work more efficient. And third, there is a system of education.

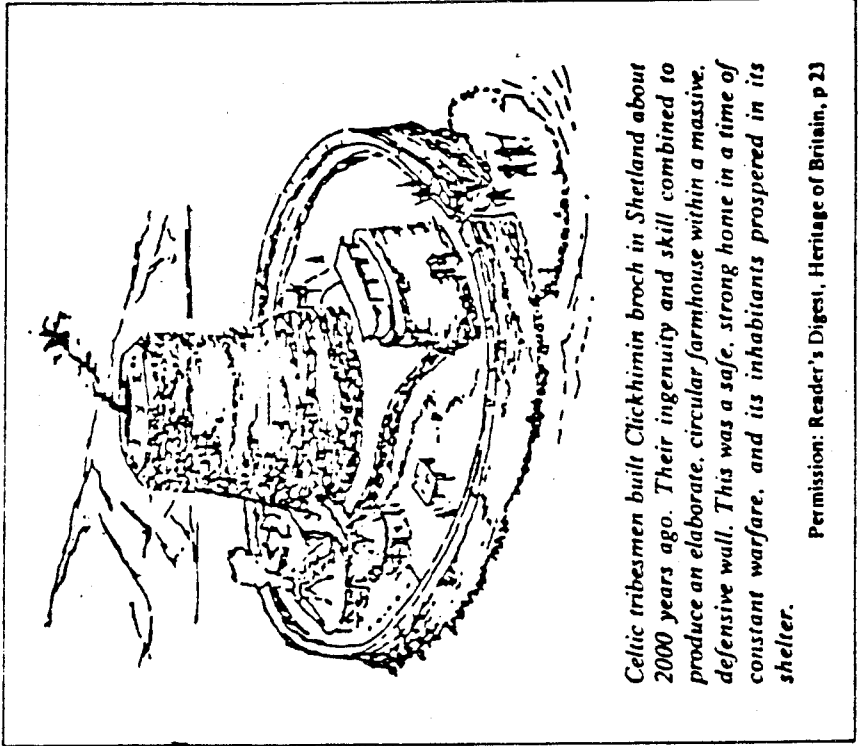
There are several ways of organizing a group's man-power. For instance, everyone could do everything he could. Alternatively, jobs could be given out according to strength, skill or age. There might be jobs for men and jobs for women. Some members of a group might be trained to work, while others would fight wars if necessary. Each group tries to find a system which gets the work

richer. Transportation, however, can allow one group to take over the landscapes of others. Often, this has unhappy results.

All human groups have ways of teaching their members how to use the landscape. Not all have schools, colleges, and universities. But all have a system of education. Sometimes this is as simple as the family where the older members teach the younger ones. The children are taught what is best for the group. They also discover the best ways of using their landscape. Education prepares people to make decisions about what is important for the whole group.

So, depending on the way they work together, their technology, and the things they want, people change their landscapes to suit themselves. This is why landscapes are different from each other. It is also the reason that we associate certain landscapes with certain groups of people. The stories which follow take you to many distinctive landscapes which are carefully used and changed by the people who live in them. Look for interesting differences from your own landscape.

Everywhere we look, whether it is just around our neighbourhood or across the world, we see land being used. If we watch carefully, we may discover three interesting things. First, we may see the many ways in which landscapes are different from each other. Second, we may discover many things about the people who live in those other landscapes. Indeed, by looking very carefully at our own landscape, we may discover some very surprising things about ourselves! Thirdly, we may find ourselves trying to see other people's landscapes the way they do. This is very difficult, for we think that our way of thinking and our way of doing things is best. For us, it usually is. But for others it might not be. When we manage to see the world through the eyes of others we usually grow kinder and more understanding. Then we like to share more and criticize less. We think more of helping each other. We are more careful about each other and about our precious landscapes.



Celtic tribesmen built Clickhimin broch in Shetland about 2000 years ago. Their ingenuity and skill combined to produce an elaborate, circular farmhouse within a massive, defensive wall. This was a safe, strong home in a time of constant warfare, and its inhabitants prospered in its shelter.

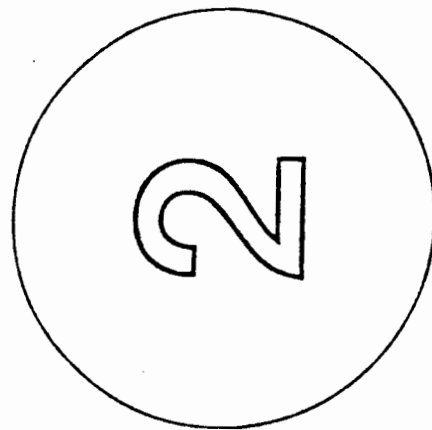
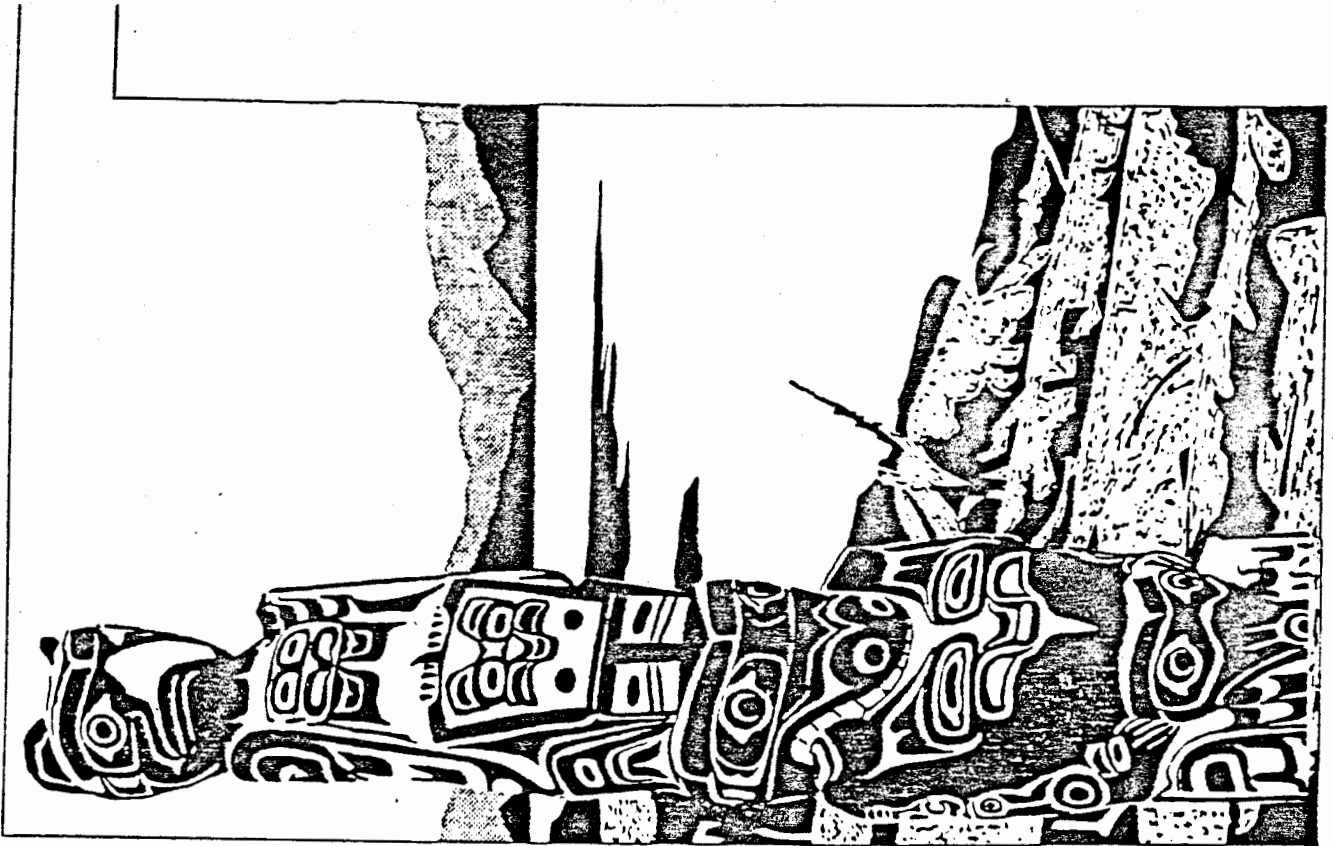
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REMEMBER HOW WE HAD THEM?



TALK ABOUT

1. Give three words which you would use to describe a greedy person.
2. Close your eyes and think about the landscape around you. Without going more than five blocks, or two kilometres from where you are, find five natural and five man-made features.
3. A hundred years ago the newspapers were full of stories of great explorers. Today, we read very little about the exploration of our earth. Why is this so?
4. Tell about five changes which have happened in your landscape during your life-time. Which of these changes do you think has been the most important to you? Why was it especially important?
5. Find ten simple words to describe your own landscape. Remember that the landscape is much more than just the surface or the shape of the earth.
6. What are the three basic things that all human groups try to obtain first from their landscapes?
7. Who do you think can change their landscape more, a primitive tribe of hunters or a community of industrial people? Explain your answer.



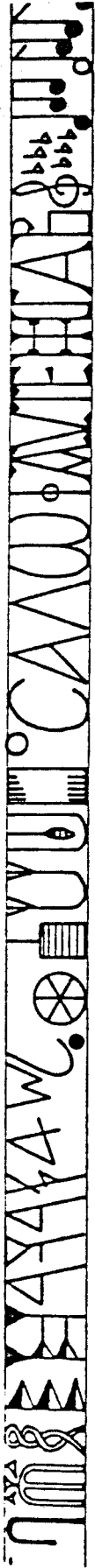
MY HEART SOARS

Chief Dan George

My heart soars
 I have known you
 When your forests were mine;
 when they gave me my meat
 and clothing.
 I have known you
 in your streams
 and rivers
 where your fish flashed
 and danced in the sun,
 where the waters said come,
 come and eat of my abundance.
 I have known you
 in the freedom of your winds.
 And my spirit,
 like the winds,
 once roared your good lands.
 For thousands of years
 I have spoken the language of the land
 and listened to its many voices.
 I took what I needed
 and found there was plenty for everyone.

The rivers were clear and thick with life,
 the air was pure and gave way
 to the thrashing of countless wings.
 On land, a profusion of creatures abounded.
 I walked tall and proud
 knowing the resourcefulness of my people,
 feeling the blessings of the Supreme Spirit.
 I lived in the brotherhood of all beings.
 I measured the day
 by the sun's journey across the sky.
 The passing of the year was told
 by the return of the salmon
 or the birds pairing off to nest.
 Between the first campfire and the last
 of each day I searched for food,
 made shelter, clothing and weapons,
 and always found time for prayer.
 The wisdom and eloquence of my father
 I passed on to my children,
 so they too acquired faith,
 courage, generosity, understanding,
 and knowledge in the proper way of living.





clever inventions well.

Man is not only wise and clever. He is, firstly, a creature. Like all other creatures he often feels hungry. Even more often he feels thirsty. He needs the comfort of rest and shelter. He clothes himself to provide comfort and protection from the elements and, sometimes, to avoid the embarrassment of being undressed or wrongly clothed. Everyone, every day, feels these basic needs.

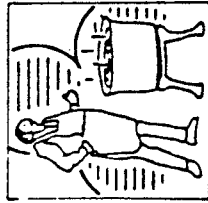
Whether he lives in a busy city such as Vancouver or on the banks of a tropical stream such as the Amazon, man works to feed and shelter himself. When he is very successful, he lives well. At other times he is not so successful and he barely exists. He must rely upon relatives, friends or neighbours for help, or he may die, perhaps quite slowly.

Those who find it easy to feed and to shelter themselves may quickly turn their minds and energies to other interests. They begin to want as well as need things. They may want to improve the quality of their shelters, their clothing, their utensils or their weapons. Religion, music, dance and art are likely to attract their interests too. Survival is the name of the game. But that is just the beginning. When we decide which of our wants to satisfy first we each make a decision which is personal. Our personalities become apparent in the ways we try to satisfy our wants, then move on to try to satisfy more special desires. For most of us our life's great challenge is not just to survive. It is how to enjoy the most interesting and rewarding life.

It is quite probable that you are one of the fortunate Canadians who finds himself well fed and well sheltered from the elements. You probably know very well where to find your next meal. You probably have a wardrobe of clothing from which to choose. Perhaps you have special shoes for special purposes. You probably have a bed of your own. Your immediate needs have been taken care of for you, so it is natural that you should turn your mind to other, more interesting matters. Your special interests may extend to entertainment, to recreation, or to sports, luxury foods, hobbies,

Fitting In

INTRODUCTION



Rule of Thumb

Man satisfies his basic needs by fitting in with and using his physical surrounding. These surroundings vary from place to place.

People are very special creatures. We have even given ourselves a proud and special name — I Man, the wise! ^{learned, experienced.} For much of the time we are wise. We are also clever, quite often. We can understand our surroundings and fit well with them. Some of us can speak, read and write in several complex codes which we call languages. We often find that it is exciting to put our ideas and messages into codes, and to transmit them to others and have those people share our ideas, feelings and knowledge. We have also been clever enough to invent technologies of great complexity. As time passes we discover whether we are wise enough to use our

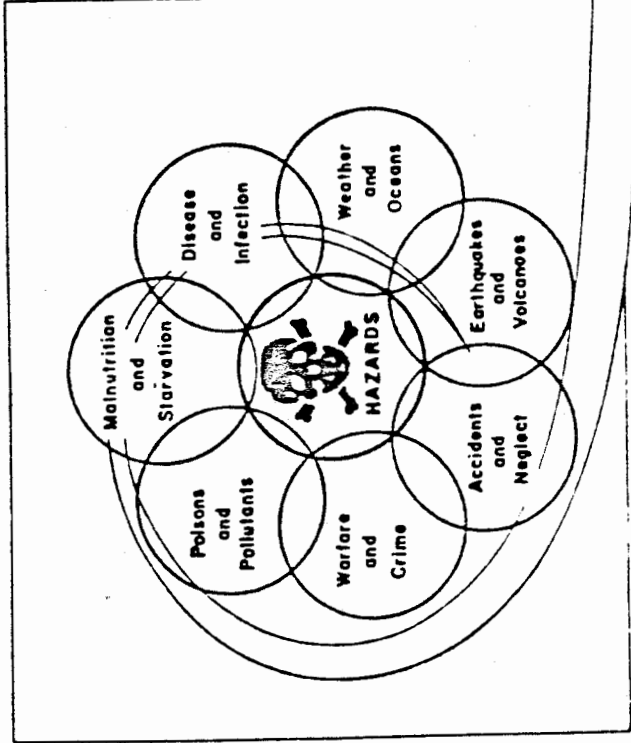


your own education, or to a part-time job.

Our wants may soon become, in our own minds, our needs. Many of us now believe that we need a telephone, a radio, a colour television set, an automobile, an electronic calculator and a water bed. If the loss of any of these special items would seriously affect your life-style, we may be right to call that thing a need. Isn't it curious? Wants gradually become needs!

Let us compare our needs and the ways in which we satisfy them with those of a child from the Amazon. We all feel thirsty, and we all drink. Water is the most simple of drinks, and is usually the most readily available. But milk may be a drink which we prefer. The child from the Amazon jungle does not have that choice. Many of us also enjoy a milk-shake or a Coca-Cola. Do we really need these drinks? As we think about our needs and how we satisfy them, it is interesting to trace some of our resources:

A BASIC NEED	A RESOURCE	ORIGINS OF THE RESOURCE
Thirst	Fresh Water	From a kitchen tap via copper, and steel pipes from a filtration and chlorination plant and fluoridation plant from a reservoir from a lake or a stream.
Hunger	A peanut butter and jam sandwich	Bread from a supermarket from a bakery from a flour mill from a wheat farm in Saskatchewan. Butter from the same supermarket from a factory from a dairy farm's cows in the Fraser Valley. Peanut butter from the supermarket from a factory from a peanut plantation in Nigeria. Jam from supermarket from a factory from fruit from an Okanagan orchard and sugar from Cuba.



This little after-school snack satisfies you for a few hours. But if you stop to think about what you drink and eat your curiosity may not be satisfied as easily as were your hunger and thirst. If you think of what you used, you might wonder at how some things as simple as bread, butter, jam and peanut butter are waiting for you when you come home each day. How far from your home are the wheat fields of Saskatchewan, the dairies of the Fraser Valley, the peanut plantations of Nigeria, the orchards of the Okanagan and the sugar cane fields of Cuba? Pipelines and vehicles deliver things to your home. Have all those pipes and vehicles and the people who make them work become parts of your needs? Certainly, your life would change if all those trucks, ships and pipes were suddenly, as



if by magic, to disappear!

The native child of the Amazon feels thirsty and hungry, too. And he satisfies those feelings with his own resources.

A BASIC NEED	A RESOURCE	ORIGINS OF THE RESOURCES
Thirst	Fresh Water	Scooped by hand directly from the river which flows past the village.
Hunger	Manioc and fish	Manioc is dug from the village garden. The fish is speared in the river.

Some people have a local and immediate link with their surroundings when it comes to satisfying their needs. Others find that the things they need come from both near and far. Many more people are involved in satisfying your needs than in taking care of the young native of the Amazon. We may wonder whether you deserve more of the world's goods because you have more needs

Survival of Mankind depends on:

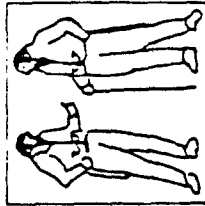
1. Knowledge of the natural world.
2. Understanding of the human body.
3. Willingness to share resources.
4. Understanding the results of our industrial revolution.
5. Abolition of warfare.
6. Good social behaviour.
7. Careful behaviour at home, at work and at play.

Questions:

1. Which of these hazards are natural?
2. Which hazards are caused by man's ignorance?
3. Which hazards can be prevented?

than does someone else.

Each day we grow thirsty and we drink. We grow hungry and we eat. We grow tired and we rest. To do these things well we return to the resources of the land.



Sage Saying

"People who do not eat well do not feel well, and good health, like food, is unevenly distributed over the world."

de Blij, Harm J., Human Geography, p8

Matter of Opinion

Should Canadians help to make certain that every child on earth is well fed every day?
If some people have more needs than others do they deserve more resources?

Activities

1. Take a few minutes to look around our classroom. List as many things as you can which come from different countries.
2. Select one of the following items. Decide whether, for you, it is a need or a want. Draw a diagram to show where it begins and how it reaches you.

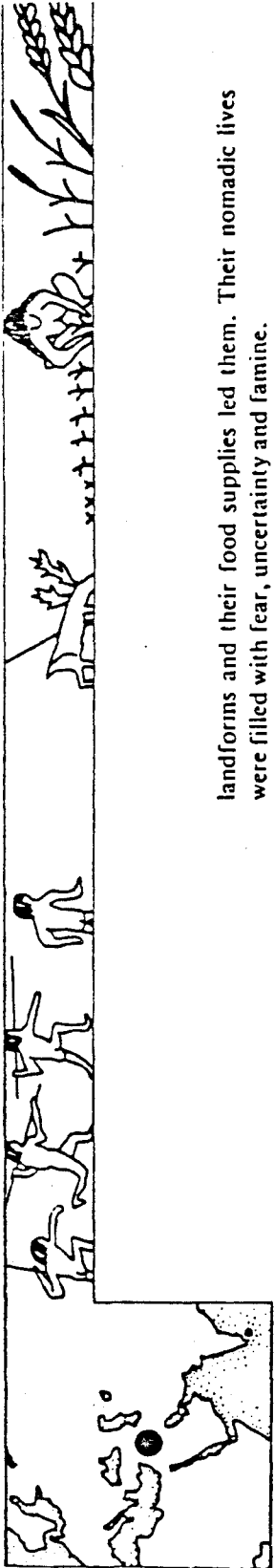
2.1 a woollen sweater	2.2 a glass of milk
2.3 a litre of gasoline	2.4 a comic book

WHERE ARE WE AT?



TALK ABOUT

1. What are some inventions that men have been clever enough to make and wise enough to use well?
2. What are three things that you do every day in order to survive?
3. List three things which you want but do not need.
4. Where can you obtain those three wants, and at whose expense?
5. How would your life change if all the stores in British Columbia were to close their doors permanently?
6. Why are your surroundings more complex than those of the young native of the Amazon?
7. Do we become greedy when we no longer note the difference between our needs and our wants?



landforms and their food supplies led them. Their nomadic lives were filled with fear, uncertainty and famine.

Then the world changed. Some people learned to make more food for themselves by co-operating with nature than by attacking and raiding it. Those people were, almost certainly, women who worked at the quiet, daily chores of gathering seeds and berries and grinding them for cooking. By accident and with patience they learned to cultivate what they collected. The change which they made in their way of life was so great that we call it a revolution. It was neither as sudden nor as noisy as the American, French or Russian Revolutions. But it was much more important than all those three put together!

This first great revolution took place in at least four different places, and at four different times in history. In the hills of Thailand, tribesmen learned to grow rice about 10,000 years ago. In the Middle East, somewhere between Israel and Iran, a special bread wheat was grown by village people about 7,000 years ago. In Central America, maize was the crop which was first cultivated by the Aztecs, the Mayas and the ancestors of the Incas about 4,000 years ago.

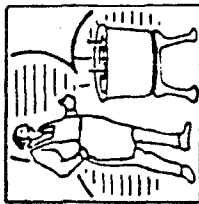
Fitting In

STUDY 1

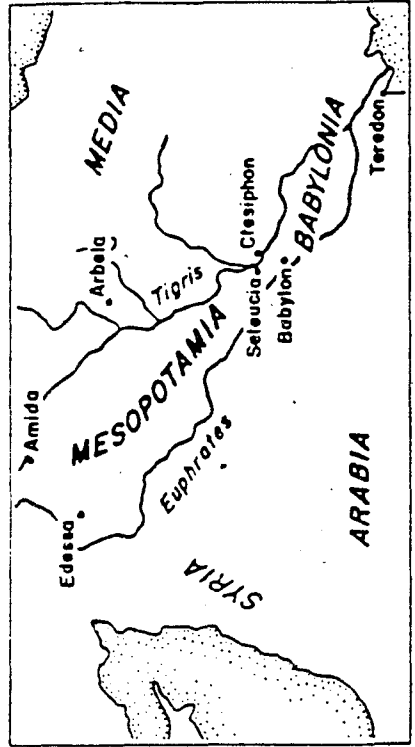
THE FIRST REVOLUTION

Rule of Thumb

Thousands of years ago the people of Mesopotamia satisfied their basic needs by fitting in with and using their physical surroundings.



Man is a hunter of animals. He is also a gatherer of seeds, berries and fruits. For most of his long history the human being has found his food in the local lands and waters, and he has taken it for his own use. Some say that the human male has not forgotten the long history of his ancestors; perhaps that is why boys who walk beside lakes or streams, or along mountain trails often test their strength and accuracy by throwing stones. For many thousands of years men have been hunters. Man has been a town dweller for only a very short time. For hundreds of thousands of years our forefathers were nomads. They wandered where weather, seasons,



We know very little of the pre-history of the peoples of South-East Asia and the Americas. It is from Mesopotamia — the land of Iraq — that we have learned so much. Archaeologists have explored there for over one hundred years. We now know that many grasses grew very well there thousands of years ago, although few remain to this day. We know, too, that hunters wandered across those wide and well-grassed plains in pursuit of herbivorous animals. Those people also gathered some of the ripe grasses and ate their tiny seeds. It was fortunate for them that the soils were fertile and the climate warm and sunny.

It was much more fortunate for those people, and for us, that a small accident happened amongst the growing grasses. Some wild wheat grasses interbred in a special and unusual way. They produced fat little seeds which have come to be known as emmer wheat. The plump grains of emmer wheat scattered on the wind. They planted themselves well for they were like small darts. Below the seed was a sharp point with a small barb; above it a long spine

helped it to catch the air and fly straight, to land point-first.

Emmer wheat was attractive to those nomads who wandered across grassy hills and plains. It grew tall and carried long heads of large seeds. It was much easier to collect than were the other grasses. Probably some observant and patient women noticed that where seeds had been dropped on the ground new grass sprang up after a shower of rain. They may have taken some of their seeds and covered them with a little soil to see whether they could make the same thing happen again. It may seem a very simple thing to plant some seeds and to harvest a crop. To those ancient stone-age people of Mesopotamia it was a miracle! Suddenly their lives changed. The world has never been the same!

About 7,000 years ago another happy accident occurred in Mesopotamia. It probably happened in a small village garden where emmer wheat grew and flowered. Restless breezes carried faint clouds of pollen across the grasslands. Some tiny flowers of the wheat were, again, pollinated by wild grass. The seeds which

A Puzzle

For Ten Points:

What do Marquis, Thatcher, Selkirk, Canthatch, Ramsay, Hercules and Poltser have in common?

For Six Points: (first clue)

They are all well-bred!

For Four Points: (second clue)

They grow as grasses, and die to feed us.

For Two Points: (third and last clue)

They make spaghetti, macaroni, cookies, starch, porridge, bread and buns.

Answer: *They are seven of Canada's famous wheats.*

The life history of these wheats is at least as long as the story of our own civilization.

Wild wheats first appeared in the hills of northern Mesopotamia about 10,000 years ago. At first their breeding and growth was accidental. Then, in an amazing natural accident wild grasses and wild wheats bred to make bread wheat. And the people spread the wonderful little seeds.

Thousands of years passed, and more and more wheat was grown

in Europe and Central Asia. By the time James Cook set sail from England, the "staff of life" for Englishmen was wheaten bread. Those who followed Cook across the oceans carried seeds of wheat to distant lands. Settlers grew the tiny grains to provide food which was easily stored, carried, cooked, or multiplied.

Wheat-growing frustrated some of our great-great-grandparents. The prairie sod was as hard as sun-dried brick. Snow-filled winters prevented growth for much of the year. Summers were warm, but often too short. But help was at hand:

- steel ploughs and strong horses broke the sod;
- barbed wire fences protected crops;
- new wheats grew more quickly.

There are, now, thousands of wheats available to farmers, and new varieties are made available each year. Plant scientists struggle to grow new wheats to meet the demands of hungry Man, and to the challenges of Nature.

And that brings us back to Marquis, Thatcher, Hercules and the rest. They are some of the famous spring wheats which have helped farmers to provide good food for Canada and the world. They have been grown from the wild wheats of long ago, and far away. These great Canadians are, indeed, well bred!



Oh, Be Civilized!

Does behaving in a civilized fashion mean that you should:

- a) do as you are told and stop annoying your elders?
- b) lower your voice and stop arguing?
- c) remember your table manners?

Well, yes and no! Being civilized can mean good behaviour. It also means breaking old rules and using new ideas. And it all started a long time ago.

The Romans divided all people into two kinds. There were the 'cives' who lived in the city, and the 'pagani': peasants who dwell in hunting camps and farming villages. The words 'civilization' and 'civilized' grew from the word for a city-dweller. It means knowing how to live in cities.

Mankind has lived in cities for less than 10,000 years. For perhaps a million years before that cities did not exist, because city living needs some very special discoveries, inventions and skills. Cities are a new way for people to live together.

When man learned how to tame plants and animals, he no longer needed to roam in search of food. This fixed farming address was the first stage in the change from peasant to citizen. Then came the

grew from that lucky breeding were bigger, more numerous, and more tightly packed than were those of emmer wheat. Another obvious difference was that they lacked the barbed point and the long spine of the emmer wheat seeds. The husks of the new wheat were light, soft and easily removed. Bread wheat had grown by chance. By chance, too, it had grown in the field of a farmer. It could not spread itself naturally on the wind. It could spread and multiply only with the help of man! How strange that the new wheat which man needed for his food needed man to help it to grow!

Bread wheat gave man a certain supply of food. It was easy to grow, to harvest, to thresh and to grind. It was also easy to store for long periods of time. Those who grew wheat had to build store houses for grain. They had to establish permanent villages. There they made mud houses and store-rooms; they tilled their fields and they tamed some animals. Within a few centuries, dogs, sheep, goats and cattle became part of village life. The tending of animals became a full time task for some villagers. Those who became villagers gave up the wandering life of the nomad. They lived in a

plough, the wheel, and irrigation. Soon there was more food than each farm family needed, and more than enough farmers. Some farmers gave up food-growing and became full-time craftsmen. They bought their food and other needs by selling the things they made. These ex-farmers moved from their farms to clusters of buildings where they were handy for those who wished to use their services. Industry had been invented, and with it came the first cities.

The new cities became market places. Money and book-keeping were needed. Writing and arithmetic made business possible. Rules for living in the city were invented, along with a way of making rules. It was called government.

The cities grew. So did travel and trade. Sometimes cities quarrelled. So soldiers and armies were invented to defend each city. Rich citizens filled their homes with beautiful things. They hired other citizens to make them, to write books and to teach their children. Art, education, the library and science had arrived.

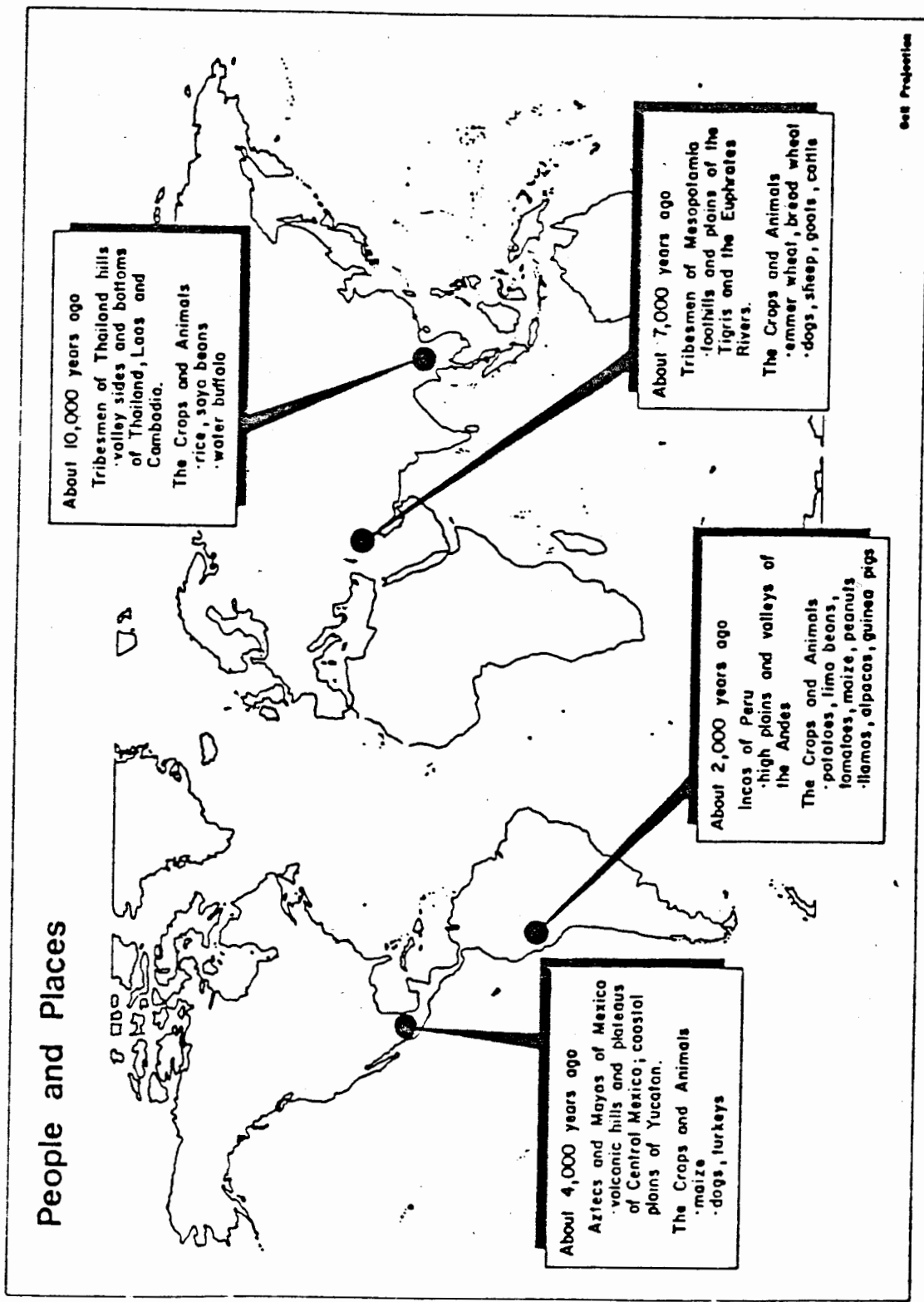
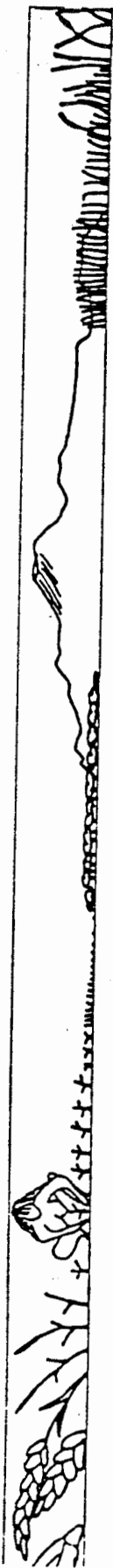
So now that you know, you can behave in a civilized fashion! All you need to do is to invent, read, write, do mathematics, make things — and watch your table manners!

village which had a sure supply of food, safety for the people and added privacy in mud houses. They accepted the endless daily chores of the farmer.

Most villagers who grew wheat needed to spend less time in the daily search for food. Some of them had time to make tools and weapons. Others specialised in medicine and religion. Some people spent time in making rules for behaviour and for work. Others helped to put ideas and knowledge into writing. The new food supply made many changes. It allowed man time to begin the great changes which continue today, and to which we give the name 'civilization'.

When man learned to grow grains and to tame animals he also tamed himself. He began the slow but exciting journey to civilization. These great events were truly revolutionary.

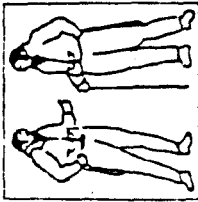
Other people learned to be farmers, too. In Thailand, Mexico and Peru, man learned to grow crops and to settle in groups which we call villages. In those places, too, man learned to tame animals, to make pottery and to build a civilization.



WHERE HEN-HOW HAT WAY?



4. Canadians eat peanuts and bananas, but these crops do not grow in this country. Where do we find our share of these crops? How do they reach us?



Sage Saying

*"A happy conjunction of natural and human events created agriculture. . .
 "...the largest single step in the ascent of man is the change from nomad to village agriculture."*

Jacob Bronowski, *The Ascent of Man*, p 68

Matter of Opinion

Should hunters be allowed to hunt where farmers grow crops?

Activities

1. On an outline map of the world show where these crops were first grown by man:

1.1 wheat	1.2 maize	1.3 potatoes
1.4 soya beans	1.5 rice	1.6 peas
1.7 sunflowers	1.8 peanuts	1.9 bananas
1.10 sugar cane		
2. Use simple symbols or colour to show on your world map where these crops are grown in large quantities today.
3. On an outline map of Canada show where any four of the ten crops listed above are grown in large amounts.

Questions

1. What is a revolution?
2. What was revolutionary about farming in Iraq 7,000 years ago?
3. How is it that bread wheat might be called a "happy accident"?
4. What did the first farmers give up so that they could be farmers?
5. It seems likely that the first farmers were women. Why is that?
6. In what ways were people better off by being farmers?
7. How did the taming of animals improve the daily life of the early farmers?
8. Why, in your opinion, do we know more of ancient Mesopotamia than of pre-historic Thailand, Mexico or Peru?
9. What was the largest single step in the ascent of man?
10. Why do archaeologists believe that this great step took place in different times and places?

APPENDIX 5

FIELD TESTING

PACKAGE FOR DISCOVERIES

Only those sections of the field testing package of materials which are not to be found in other sections of this thesis are included within this section. The items which are to be found in Appendix 8 are:

1. The table of contents and summary instructions page 161
2. Student and Teacher diary sheets page 163
3. Activity sheets for Fitting In. World map page 165
Canada map page 166
Ten questions page 167

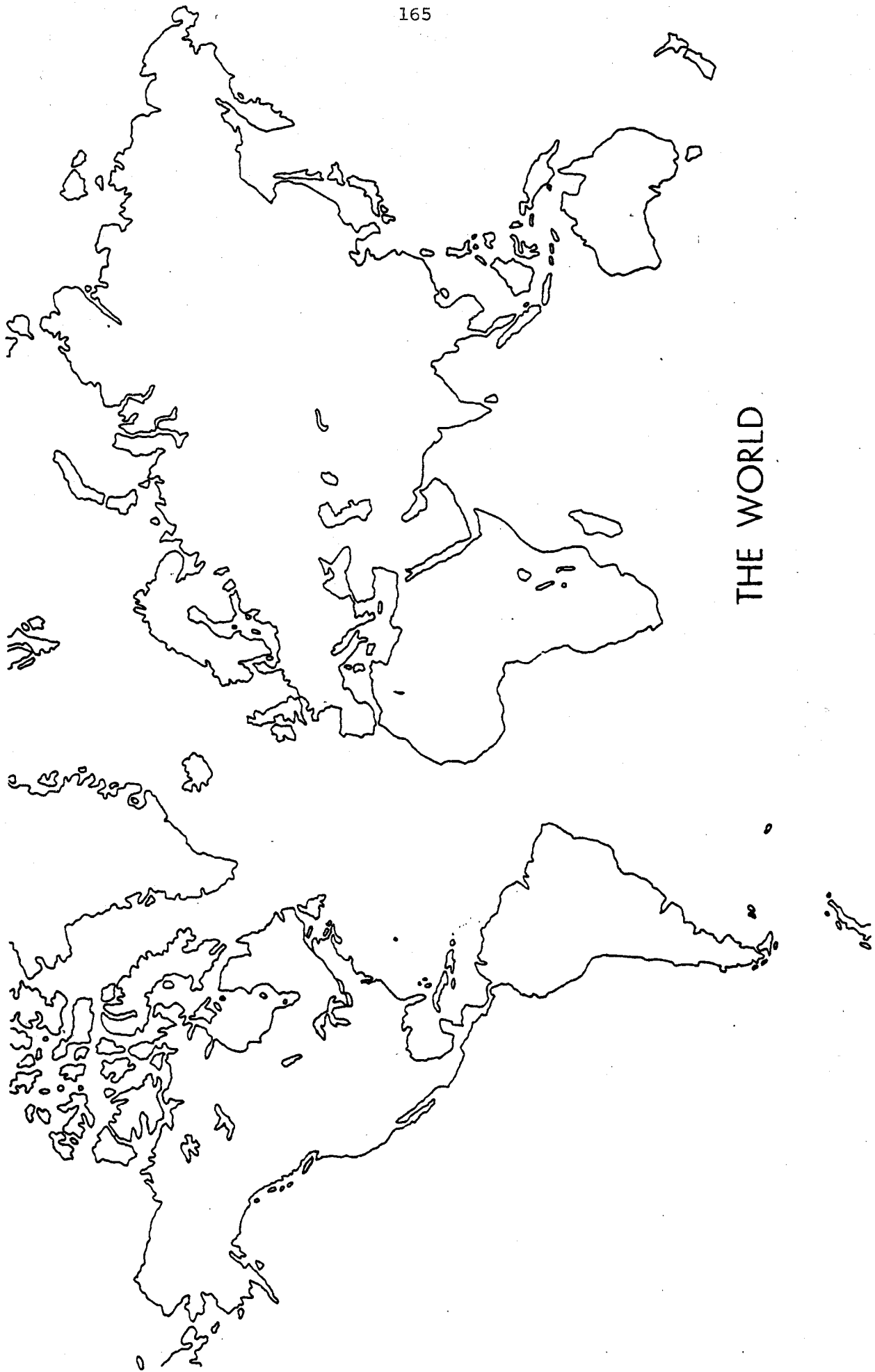
FIELD TESTING:Participants:

Mr Harry Weston	Bellevue Creek.	39 students.
Mr George Ewonus	West Rutland	30 students.
Mr Dick Mowry	Ellison	30 students.
Mr Gordon Ledinski	Hudson Road	36 students.
Mr Len Barry		
Mrs Pearl Slater	South Rutland	45 students.
Mr Drew Craig	Westbank	40 students.

I hope to do a regression analysis of each student's responses to the four sections of each test, so it is very important that each student clearly identifies him or herself by number on each test.

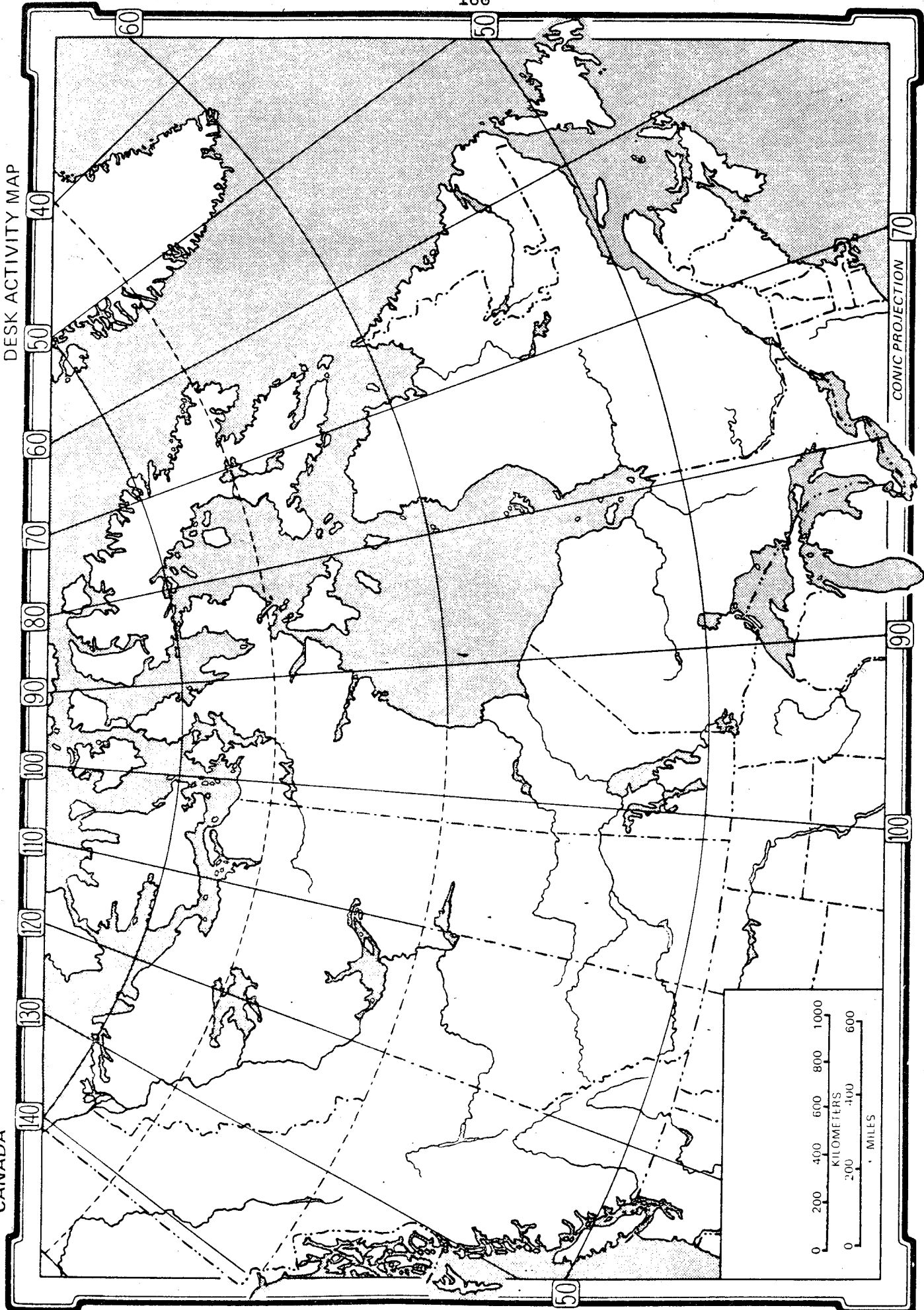
Eventually I hope to collate and analyze all data, and publish them in a thesis for Simon Fraser University. If that does come to pass I would like to present each of the participants in the field-testing, above, with a copy of the final document.

Many thanks for agreeing to be part of this experiment. In a period of such restraint your generous help is especially considerate!



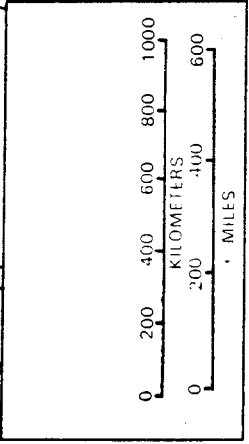
THE WORLD

DESK ACTIVITY MAP



CANADA

CONIC PROJECTION



THE FIRST REVOLUTION.

1. What is a revolution? _____

2. What was revolutionary about farming in Iraq 7 000 years ago? _____

3. How is it that bread wheat might be called a "happy accident"? _____

4. What did the first farmers give up so that they might become farmers? _____

5. It seems likely that the first farmers were women. Why was that? _____

6. In what ways were people better off by being farmers? _____

7. How did the taming of animals improve the daily life of the first farmers? _____

8. Why, in your opinion, do we know more of ancient Mesopotamia than of pre-historic Thailand, Mexico, or Peru? _____

9. What was the largest single step in the ascent of man? _____

10. Why do archaeologists believe that this great step took place in different times, and in different places? _____

APPENDIX 6

FIELD TEST RESULTS FROM THREE TESTS FOR FIVE CLASSES

Class No. 1, at Bellevue Creek Elementary School.	page 169
Class No. 2, at Bellevue Creek Elementary School.	page 171
Class No. 3, at Hudson Road Elementary School.	page 172
Class No. 4, at South Rutland Elementary School.	page 173
Class No. 5, at South Rutland Elementary School.	page 175

TABLE 3.

"DISCOVERIES" FIELD TESTING. SCORES ON THE FORTY QUESTION PRE-TEST, AND BOTH POST-TESTS. SPRING, 1983.

CLASS No. 1 - GRADE SEVEN AT BELLEVUE CREEK ELEMENTARY SCHOOL, KELOWNA, B.C.

STUDENTS' NUMBERS	RECALL OF GRADE 6/7 DATA		COMPREHENS'N GRADE 6/7 CONCEPTS		RECALL OF DISCOVERIES DATA		COMPREHENS'N DISCOVERIES CONCEPTS		RESULTS FOR 20 GRADE 6/7 QUESTIONS		RESULTS FOR 20 DISCOVERIES QUESTIONS		TOTAL SCORES ON ALL FORTY QUESTIONS		TOTAL SCORES ON 20 RECALL QUESTIONS		TOTAL SCORES ON 20 COMP'N QUESTIONS												
	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.									
1.01	7	4	5	7½	7	3	1½	2½	5	6½	3½	4½	14½	11	8	8	6	9½	22½	17	17½	8½	6½	10	14	10½	7½	13½	
1.02	7½	8	8	5½	6½	5	2½	9½	7	7	7½	9	13	14½	13	9½	17	16	22½	31½	28½	10	17½	15	12½	14	13½		
1.04	6½	8	7	1	1½	1	1½	3	6½	4	3	3½	7½	9½	8	5½	6	10	13	15½	18	8	11	13½	5	4½	4½		
1.05	6	7	9	2½	5	7	3½	8	6	3	6	5½	8½	12	16	6½	14	11½	15	26	27½	9½	15	15	5½	11	12½		
1.06	4½	7	7	7	6	5½	2½	7	7½	5½	5	8	11½	13	12½	8	12	15½	19½	25	28	7	14	14½	12½	11	13½		
1.07	5½	6	7	6	6	6	1	3½	5½	4½	4½	5	11½	12	13	5½	8	8½	17	20	21½	6½	9½	10½	10½	10½	11		
1.08	7	7	8	6	7½	8	4	10	8½	6½	9	7½	13	14½	16	10½	19	16	23½	33½	32	11	17	16½	12½	16½	15½		
1.09	7½	5	7	3	2	5	4	8	7	5	4½	2½	10½	7	12	7	12½	9½	17½	19½	21½	11½	13	14	6	6½	7½		
1.11	7	9	8	4	4½	5	3½	9	10	4	9	8	11	13½	13	7½	18	18	18½	31½	31	10½	18	18	8	13½	13		
1.12	7	7	5	3½	3	1	2½	3	6½	1½	4	3	10½	10	6	4	7	9½	14½	17	15½	9½	10	11½	5	7	4		
1.13	6	8	6½	5	6	6½	5	6½	2½	7	9	5½	8½	7	11	14	13	8	15½	16	19	29½	29	8½	15	15½	10½	14½	13½
1.14	7	8	6	6½	5	6½	2	4½	7½	4	6	8	13½	13	12½	6	10½	15½	19½	23½	28	9	12½	13½	10½	11	14½		
1.15	4½	6	A*	1	2	A	2	9½	A	6	8	A	5½	8	A	8	17½	A	13½	25½	A	6½	15½	A	7	10	A		
1.16	7	7	7	8	7	7½	4	9	10	5	7½	8	15	14	14½	9	16½	18	24	30½	32½	11	16	17	13	14½	15½		
1.17	5	8	7	5	5½	6	3	7	10	6	8	8	10	13½	13	9	15	18	19	28½	31	8	15	17	11	13½	14		
1.18	9	8	7	8	9	8	8	9	10	9	7½	7½	17	17	15	17	16½	17½	34	35½	32½	17	17	17	17	17	16½	15½	
1.19	7	8	8	7	4½	7	2½	8	7½	5½	7½	8	14	12½	15	8	15½	15½	22	28	30½	9½	16	15½	12½	12	15		
1.20	9	9	9	6½	6½	9	1½	8	10	6½	9	5	15½	15½	18	8	17	15	23½	32½	33	10½	17	19	13	15½	14		
1.21	7	9	A	6½	9	A	3½	9	A	6	8	A	13½	18	A	9½	17	A	25	35	A	10½	18	A	12½	17	A		
1.22	9	10	7	5	5	7	2	6	6½	6½	6	7	14	15	14	8½	12	13½	22½	27	27½	11	16	13½	11½	11	14		
1.23	8	7	7	2½	3	5	1½	3½	3	3½	5½	7½	10½	10	12	5	9	10½	15½	19	22½	9½	10½	10	6	8½	12½		
1.24	7	7	6	4	5½	6	4	7½	6	4	5½	6	11	12½	12	7½	15½	12	18½	28	24	11	14½	12	7½	13½	12		

TABLE 3. (continued)
 "DISCOVERIES" FIELD TESTING. SCORES ON THE FORTY QUESTION PRE-TEST, AND BOTH POST-TESTS. SPRING, 1983.
 Class No. 1 continued.

STUDENTS' NUMBERS.	RECALL OF GRADE 6/7 DATA			COMPREHENSIN GRADE 6/7 CONCEPTS			RECALL OF DISCOVERIES DATA			COMPREHENSIN DISCOVERIES CONCEPTS			RESULTS FOR 20 GRADE 6/7 QUESTIONS			RESULTS FOR 20 DISCOVERIES QUESTIONS			TOTAL SCORES ON ALL FORTY QUESTIONS			TOTAL SCORES ON 20 RECALL QUESTIONS			TOTAL SCORES ON 20 COMPIN QUESTIONS		
	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.
1.25	7	6	5	7½	8	8	3	9	10	6	9	9	14½	14	13	9	18	19	23½	32	32	10	15	15	13½	17	17
1.30	6	7	7	3½	4	6	1	5	5	1½	2½	1	9½	11	13	2½	7½	4	12	18½	17	7	12	10	5	6½	7
1.32	5	9	10	4	4½	4	2	5	4	1½	3	3½	9	13½	14	3½	8	7½	12½	21½	21½	7	14	14	5½	7½	7½
1.33	4½	7	7	1	2	0	2½	5	5½	0	2	0	5½	9	7	2½	7	3½	8	16	10½	7	12	10½	1	4	0
1.36	5	8	6	3	3½	4½	2	5	6	3½	5	4½	8	11½	10½	5½	10	10½	13½	21½	21	7	13	12	6½	8½	9
TOTALS	178	200	176	130	159	137½	73	180	173	125	167	146	309	339	314	198½	347½	319½	507½	686½	633½	250	402	350	255	306	283½
AV'GES	6.7	7.4	7.1	4.8	5.2	5.5	2.7	6.7	6.9	4.6	6.2	5.8	11.4	12.6	12.6	7.4	12.9	12.8	18.8	25.4	25.3	9.3	14.9	14.0	9.4	11.3	11.3

TABLE 4.

"DISCOVERIES" FIELD TESTING. SCORES ON THE FORTY QUESTION PRE-TEST, AND BOTH POST-TESTS. SPRING, 1983.

CLASS No. 2 - GRADE SEVEN AT BELLEVUE CREEK ELEMENTARY SCHOOL, KELLOWNA, B.C.

STUDENTS' NUMBERS.	RECALL OF GRADE 6/7 DATA		COMPREHENSIN' CONCEPTS		RECALL OF DISCOVERIES DATA		COMPREHENSIN' DISCOVERIES CONCEPTS		RESULTS FOR 20 GRADE 6/7 QUESTIONS		RESULTS FOR 20 DISCOVERIES QUESTIONS		TOTAL SCORES ON ALL FORTY QUESTIONS		TOTAL SCORES ON 20 RECALL QUESTIONS		TOTAL SCORES ON 20 COMP'N QUESTIONS										
	PRE-TEST.	POST I.	PRE-TEST.	POST I.	PRE-TEST.	POST I.	PRE-TEST.	POST I.	PRE-TEST.	POST I.	PRE-TEST.	POST I.	PRE-TEST.	POST I.	PRE-TEST.	POST I.	PRE-TEST.	POST I.									
2.01	2	6	5	1½	1	4	1½	2½	5½	0	2	4	3½	7	9	1½	4½	9½	5	11½	18½	3½	8½	10½	1½	3	8
2.06	5	5	4	4	3	5	3½	3½	7½	5½	6	7	9	8	9	9	9½	14½	18	17½	23½	8½	8½	11½	9½	9	12
2.08	5	8	8	5½	5	5	5	7½	8½	6	6	6	10½	13	13	11	13½	14½	21½	26½	27½	10	15	16½	11½	11	11
2.15	6½	7	7	6½	7½	7½	1½	7	8½	2½	8	8½	13	14½	14½	4	15	17	17	29½	31½	8	14	15½	9	15½	16
2.18	6½	7	8	2½	6	4	2½	7½	5	4	6	5	9	13	12	6½	13½	10	15½	26½	22	9	14½	13	6½	12	9
2.22	7	7	9	4	5	5	1	6½	5½	2	6½	4½	11	12	14	3	13	10	14	25	24	8	13½	14½	6	11½	9½
2.23	2	4	9	1	2	4	0	5	5½	1½	4½	4½	3	6	13	1½	9½	10	4½	15½	23	2	9	14½	2½	6½	8½
2.24	4	7	7	1	4	4	0	6	5½	1½	3	5½	5	11	11	1½	9	11	6½	20	22	4	13	12½	2½	7	9½
2.30	4½	8	8	2½	2	3½	3	5	5½	4	7	4½	7	10	11½	7	12	10	14	22	21½	7½	13	13½	6½	9	8
2.32	5	7	8	1	3	3	2	7	7	3	5½	8½	6	10	11	5	12½	15½	11	22½	26½	1	14	15	4	8½	11½
2.34	8	10	10	3	4	7	1	5	7	2	5	4½	11	14	17	3	10	11½	14	24	28½	9	15	17	5	9	11½
TOTALS	55½	76	83	32½	42½	52	21	62½	71	32	59½	62½	88	118½	135	53	122	133½	141	240½	269½	76½	138½	154	64½	102	114½
AV'GES	5.1	6.9	7.6	3.0	3.9	4.7	1.9	5.7	7.1	2.9	5.4	5.7	8.0	10.8	12.3	4.8	11.1	12.1	12.8	21.9	24.4	7.0	12.6	14	5.9	9.3	10.1

TABLE 5.
 "DISCOVERIES" FIELD TESTING. SCORES ON THE FORTY QUESTION PRE-TEST, AND BOTH POST-TESTS. SPRING, 1983.
 CLASS No. 3 - GRADE SEVEN AT HUDSON ROAD ELEMENTARY SCHOOL, KELOWNA, B.C.

STUDENTS' NUMBERS.	RECALL OF GRADE 6/7 DATA		COMPREHENSIN' GRADE 6/7 CONCEPTS		RECALL OF DISCOVERIES DATA		COMPREHENSIN' DISCOVERIES CONCEPTS		RESULTS FOR 20 GRADE 6/7 QUESTIONS		RESULTS FOR 20 DISCOVERIES QUESTIONS		TOTAL SCORES ON ALL FORTY QUESTIONS		TOTAL SCORES - ON 20 RECALL QUESTIONS		TOTAL SCORES ON 20 COMP'N QUESTIONS									
	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.	PRE-TEST.	POST I.	POST II.								
3.01	5	7	2½	6½	1½	3½	6½	3½	3	6	2½	6½	12½	6	14	28	14½	8½	15½	10½	5½	12½	4			
3.02	7	4½	3	3½	2	3½	5	5½	3½	7½	8	7	12½	13½	17	20½	21½	10½	9½	11½	6½	11	10			
3.10	3	4	3	½	0	2	3	4½	2	4	3	4	7	7½	7½	11	12½	5	7	7½	2½	4	5			
3.24	7	8	3	4	3	2	6½	6	½	7	4	2½	13½	10	12½	25½	19	9	14½	12	3½	11	7			
3.27	0	7	5	0	3½	0	6	5	1½	7½	7	1½	13½	12	1½	24	21½	0	15	10	1½	11	11½			
3.29	6	6	8	1½	5½	3	9	9	6	10	9	7½	11½	13½	9	19	18	16½	30½	31½	9	15	17	7½	15½	14½
TOTALS	28	38½	35	10½	23	18½	14	36	33½	42	33½	38½	61½	53½	30½	78	67	69	139½	120½	42	74½	68½	65	52	
AV'GES	4.76.4	5.8	1.8	3.8	3.1	2.3	6.0	5.6	2.8	7.0	5.6	6.5	10.2	8.9	5.1	13.0	11.2	11.6	23.2	20.1	7.0	12.4	11.4	4.6	10.8	8.7

TABLE 6.

"DISCOVERIES" FIELD TESTING. SCORES ON THE FORTY QUESTION PRE-TEST, AND BOTH POST-TESTS. SPRING, 1983.
CLASS No. 4 - A GRADE SEVEN CLASS AT SOUTH RUTLAND ELEMENTARY SCHOOL, KELOWNA, B.C.

STUDENTS' NUMBERS	RECALL OF GRADE 6/7 DATA		COMPREHENS'N GRADE 6/7 CONCEPTS		RECALL OF DISCOVERIES DATA		COMPREHENS'N DISCOVERIES CONCEPTS		RESULTS FOR 20 GRADE 6/7 QUESTIONS		RESULTS FOR 20 DISCOVERIES QUESTIONS		TOTAL SCORES ON ALL FORTY QUESTIONS		TOTAL SCORES ON 20 RECALL QUESTIONS		TOTAL SCORES ON 20 COMP'N QUESTIONS										
	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.									
4.01	7	5	6	3	4	4	1	3	4	3	3	10	9	10	4 $\frac{1}{2}$	6	6	14 $\frac{1}{2}$	15	16	8	8	10	6 $\frac{1}{2}$	7	7	
4.02	9	9	8	6 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	3	8 $\frac{1}{2}$	9	6 $\frac{1}{2}$	8	15 $\frac{1}{2}$	16 $\frac{1}{2}$	13 $\frac{1}{2}$	9 $\frac{1}{2}$	16 $\frac{1}{2}$	17	25	33	30 $\frac{1}{2}$	12	17 $\frac{1}{2}$	17	13	15 $\frac{1}{2}$	13 $\frac{1}{2}$	
4.03	3	4	4	2	2	2	2	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	1	5	6	6	4 $\frac{1}{2}$	2 $\frac{1}{2}$	4	9 $\frac{1}{2}$	8 $\frac{1}{2}$	10	5	5 $\frac{1}{2}$	6	4 $\frac{1}{2}$	3	4	
4.04	7	6	8	4	4 $\frac{1}{2}$	5	3 $\frac{1}{2}$	6	6 $\frac{1}{2}$	4	5 $\frac{1}{2}$	11	10 $\frac{1}{2}$	13	7 $\frac{1}{2}$	11 $\frac{1}{2}$	18 $\frac{1}{2}$	22	24 $\frac{1}{2}$	10 $\frac{1}{2}$	7	16	16	4	10 $\frac{1}{2}$	10 $\frac{1}{2}$	
4.05	5 $\frac{1}{2}$	8	7	1 $\frac{1}{2}$	4 $\frac{1}{2}$	7	1 $\frac{1}{2}$	8	9	2 $\frac{1}{2}$	6	7	11	13 $\frac{1}{2}$	14 $\frac{1}{2}$	8	15 $\frac{1}{2}$	16	19	30 $\frac{1}{2}$	10 $\frac{1}{2}$	15 $\frac{1}{2}$	16	8 $\frac{1}{2}$	13 $\frac{1}{2}$	14 $\frac{1}{2}$	
4.06	7	7	7	4	6 $\frac{1}{2}$	7 $\frac{1}{2}$	3 $\frac{1}{2}$	8 $\frac{1}{2}$	9	4 $\frac{1}{2}$	7	8	10	11	10	6	12 $\frac{1}{2}$	9	14	22 $\frac{1}{2}$	20	9	13 $\frac{1}{2}$	13	5	9	7
4.07	6	6	7	2	4	4	3	7 $\frac{1}{2}$	6	3	5	3	8	10	10 $\frac{1}{2}$	10	8	9 $\frac{1}{2}$	18	20	17 $\frac{1}{2}$	10	10 $\frac{1}{2}$	9 $\frac{1}{2}$	8	9 $\frac{1}{2}$	8
4.08	7	7	6	3	3 $\frac{1}{2}$	4	3	3 $\frac{1}{2}$	3 $\frac{1}{2}$	5	6	4	10	10 $\frac{1}{2}$	10	8	9 $\frac{1}{2}$	18	20	17 $\frac{1}{2}$	9	6	6	5	3 $\frac{1}{2}$	7 $\frac{1}{2}$	4
4.09	6	4	4	0	2	2	0	2	1	3 $\frac{1}{2}$	5 $\frac{1}{2}$	2	6	6	6	3	7 $\frac{1}{2}$	3	9 $\frac{1}{2}$	13 $\frac{1}{2}$	9	6	6	6	5	3 $\frac{1}{2}$	7 $\frac{1}{2}$
4.10	6	9	5 $\frac{1}{2}$	5 $\frac{1}{2}$	8	9	4	10	10	7 $\frac{1}{2}$	8	11 $\frac{1}{2}$	17	14 $\frac{1}{2}$	17 $\frac{1}{2}$	11 $\frac{1}{2}$	18	17 $\frac{1}{2}$	23	35	32	10	19	15 $\frac{1}{2}$	15	16	16 $\frac{1}{2}$
4.11	8	9 $\frac{1}{2}$	8 $\frac{1}{2}$	5	8	7 $\frac{1}{2}$	4	10	10	8	10	9 $\frac{1}{2}$	13	17 $\frac{1}{2}$	16	12	20	19 $\frac{1}{2}$	25	37 $\frac{1}{2}$	35 $\frac{1}{2}$	12	19 $\frac{1}{2}$	18 $\frac{1}{2}$	13	18	17
4.12	7	8	6	3 $\frac{1}{2}$	5 $\frac{1}{2}$	6	3	8 $\frac{1}{2}$	4	4	5	4	10 $\frac{1}{2}$	13 $\frac{1}{2}$	12	7	13 $\frac{1}{2}$	8	17 $\frac{1}{2}$	27	20	10	16 $\frac{1}{2}$	10	7 $\frac{1}{2}$	10 $\frac{1}{2}$	10
4.13	7	8	8	7	7 $\frac{1}{2}$	7	4	8 $\frac{1}{2}$	10	8 $\frac{1}{2}$	8 $\frac{1}{2}$	9	14	15 $\frac{1}{2}$	15	12 $\frac{1}{2}$	17	19	26 $\frac{1}{2}$	32 $\frac{1}{2}$	34	11	16 $\frac{1}{2}$	18	15 $\frac{1}{2}$	16	16
4.14	9	9	8	5	5 $\frac{1}{2}$	4 $\frac{1}{2}$	2	9	9	4 $\frac{1}{2}$	9	7	14	14 $\frac{1}{2}$	12 $\frac{1}{2}$	6 $\frac{1}{2}$	18	16	20 $\frac{1}{2}$	32 $\frac{1}{2}$	28 $\frac{1}{2}$	11	18	17	9 $\frac{1}{2}$	14 $\frac{1}{2}$	11 $\frac{1}{2}$
4.15	7	7	8	3	6 $\frac{1}{2}$	7 $\frac{1}{2}$	3	6	8	4	6	6 $\frac{1}{2}$	10	13 $\frac{1}{2}$	15 $\frac{1}{2}$	7	12	14 $\frac{1}{2}$	17	25 $\frac{1}{2}$	30	10	13	16	7	12 $\frac{1}{2}$	14
4.16	7	9	8	7	5	6	2	8 $\frac{1}{2}$	6 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	7	14	14	14	7 $\frac{1}{2}$	16	13 $\frac{1}{2}$	21 $\frac{1}{2}$	30	27 $\frac{1}{2}$	9	17 $\frac{1}{2}$	14 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	13
4.17	3 $\frac{1}{2}$	6	7	0	3	1	2	2 $\frac{1}{2}$	2 $\frac{1}{2}$	3	3	0	3 $\frac{1}{2}$	9	8	5	5 $\frac{1}{2}$	2 $\frac{1}{2}$	8 $\frac{1}{2}$	14 $\frac{1}{2}$	10 $\frac{1}{2}$	5 $\frac{1}{2}$	8 $\frac{1}{2}$	9 $\frac{1}{2}$	3	6	1
4.18	4 $\frac{1}{2}$	7	5	3 $\frac{1}{2}$	5 $\frac{1}{2}$	6	3	6 $\frac{1}{2}$	6	4	7	6	8	12 $\frac{1}{2}$	11	7	13 $\frac{1}{2}$	12	15	26	23	7 $\frac{1}{2}$	13 $\frac{1}{2}$	11	7 $\frac{1}{2}$	12 $\frac{1}{2}$	12
4.20	5	5	5	1 $\frac{1}{2}$	1	1	2	4	6	2	6	5 $\frac{1}{2}$	6	6	4	4	10	11 $\frac{1}{2}$	9 $\frac{1}{2}$	16	17 $\frac{1}{2}$	7	9	11	2 $\frac{1}{2}$	7	6 $\frac{1}{2}$
4.21	9	8	7	4 $\frac{1}{2}$	5	6 $\frac{1}{2}$	4	8 $\frac{1}{2}$	8	4 $\frac{1}{2}$	6 $\frac{1}{2}$	4 $\frac{1}{2}$	13 $\frac{1}{2}$	13	13 $\frac{1}{2}$	8 $\frac{1}{2}$	15	12 $\frac{1}{2}$	22	28	26	13	16 $\frac{1}{2}$	15	9	11 $\frac{1}{2}$	11
4.22	5 $\frac{1}{2}$	6	6	3	2 $\frac{1}{2}$	2	3	4 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	7	7 $\frac{1}{2}$	8 $\frac{1}{2}$	10 $\frac{1}{2}$	8	8 $\frac{1}{2}$	11 $\frac{1}{2}$	11	17	22	19	8 $\frac{1}{2}$	10 $\frac{1}{2}$	9 $\frac{1}{2}$	8 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$
4.23	3	6	6	3	4	4 $\frac{1}{2}$	2 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{2}$	5	8 $\frac{1}{2}$	6	6	10	10 $\frac{1}{2}$	7 $\frac{1}{2}$	14	10 $\frac{1}{2}$	13 $\frac{1}{2}$	24	21	5 $\frac{1}{2}$	11 $\frac{1}{2}$	10 $\frac{1}{2}$	8	12 $\frac{1}{2}$	10 $\frac{1}{2}$

TABLE 6. (continued)

"DISCOVERIES" FIELD TESTING. SCORES ON THE FORTY QUESTION PRE-TEST, AND BOTH POST-TESTS. SPRING, 1983.
 CLASS No. 4 (continued) - A GRADE SEVEN CLASS AT SOUTH RUTLAND ELEMENTARY SCHOOL, KELOWNA, B.C.

STUDENTS' NUMBERS	RECALL OF GRADE 6/7 DATA		COMPREHENS'N GRADE 6/7 CONCEPTS		RECALL OF DISCOVERIES DATA		COMPREHENS'N DISCOVERIES CONCEPTS		RESULTS FOR 20 GRADE 6/7 QUESTIONS		RESULTS FOR 20 DISCOVERIES QUESTIONS		TOTAL SCORES ON ALL FORTY QUESTIONS		TOTAL SCORES ON 20 RECALL QUESTIONS		TOTAL SCORES ON 20 COMP'N QUESTIONS													
	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.												
4.24	7	8	8	3½	4	4	4	6	7½	7	10½	12	12	10	14½	13½	20½	26½	25½	11	15	14½	9½	11½	11	6	6	6		
4.25	6	8	8	2	1½	1½	2	2	4½	4½	8	9	9	12	11½	11	12	21	20½	8	15	14½	8	15	14½	4	6	6		
4.26	6	7	8	5½	5½	5	4	7	8	5½	11½	12½	13	10½	15	14½	22	27½	27½	10	14	17	12	13½	10½	8	8	10½		
4.27	7	8	9	3	3½	4	2	2	5	4	7½	7½	13	4½	13	11½	14½	24½	24½	9	16	16½	5½	8½	8	8	8	8		
4.28	7	8	7	2	4	4½	3	3	9	6½	9	12	11	6	18	15	15	30	24½	10	17	13½	5	13	11	5	13	11		
4.29	6½	5	8	4	2½	1½	1½	2	4	6	10½	7½	9	5	6	11	15½	13½	20½	8	7½	13	7½	6½	7½	6½	7½	7½		
4.30	8	9	7	3½	5½	8	3½	8	5½	9½	11½	14½	15	9	14	17½	20½	28½	28½	11½	17½	15	8½	11	17½	17½	11	17½	17½	
TOTALS	186	206½	200	100	132	138	79	188	187	140	182½	160½	286½	338½	338	219	370½	347½	505½	709	685½	265½	394½	387	240	314½	298	240	314½	298
AV'GES	6.4	7.1	6.9	3.5	4.6	4.8	2.7	6.5	6.5	4.8	6.3	5.5	9.9	11.7	11.7	7.6	12.8	12.0	17.4	24.5	23.6	9.2	13.6	13.3	8.3	10.8	10.3	8.3	10.8	10.3

TABLE 7.
 "DISCOVERIES" FIELD TESTING. SCORES ON THE FORTY QUESTION PRE-TEST, AND BOTH POST-TESTS. SPRING, 1983.
 CLASS NO. 5 - A GRADE SEVEN CLASS AT SOUTH RUTLAND ELEMENTARY SCHOOL, KELOWNA, B.C.

STUDENTS' NUMBERS	RECALL OF GRADE 6/7 DATA		COMPREHENSIN' GRADE 6/7 CONCEPTS		RECALL OF DISCOVERIES DATA		COMPREHENSIN' DISCOVERIES CONCEPTS		RESULTS FOR 20 GRADE 6/7 QUESTIONS		RESULTS FOR 20 DISCOVERIES QUESTIONS		TOTAL SCORES ON ALL FORTY QUESTIONS		TOTAL SCORES - ON 20 RECALL QUESTIONS		TOTAL SCORES - ON 20 COMP'N QUESTIONS										
	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.	PRE-TEST	POST I.	POST II.									
5.31	7½	6	6	3	3½	4½	4	5½	6	7	10½	9½	10½	8½	12	13	19	21½	23½	11½	11½	12	7½	10	11½		
5.32	7½	5	8	3½	5½	4	3½	6	5	4½	5½	2½	8	11½	7½	19	22	19½	19½	11	11	13	8	11	6½		
5.33	9	6	7	5	5	1½	3	7½	6	6	8½	3	9	16	9	23	27	17½	17½	12	13½	13	11	13½	4½		
5.34	6	6	7	3	4½	2½	4	7	8	2½	7	5	6½	14	13	15½	24½	22½	22½	10	13	15	5½	11½	7½		
5.35	9	9	9	5	5½	4	3	7½	5½	5½	6	5	14	14½	13	10½	10½	22½	28	23½	12	16½	14½	10½	11½	9	
5.36	6	6	8	2½	3	4	3	5	6½	7	8	7	8½	9	12	13	18½	22	25½	9	11	14½	9½	11	11		
5.37	4	6	6	5	5½	5	3	7½	5	5½	7½	5½	9	11½	11	15	17½	26½	21½	7	13½	11	10½	13	10½		
5.38	10	9	9	5½	4	8	3	8	9	5	8	7	15½	13	17	16	23½	29	33	13	17	18	10½	12	15		
5.39	5½	6	6	3	4	4½	3½	9½	9	7	8	7	8½	10	10½	10½	17½	16	19	27½	26½	9	15½	15	10	12	11½
TOTALS	64½	59	66	35½	40½	38	30	63½	60	47½	65	49	100	99½	104	128½	109	177½	228	213	94½	122½	126	85	105½	87	
AV'GES	7.2	6.6	7.3	3.9	4.5	4.2	3.3	7.1	6.7	5.3	7.2	5.4	11.1	11.1	11.5	8.6	14.3	19.7	25.4	23.6	10.5	13.7	14.0	9.2	11.7	9.6	
ALL 82 PUPILS	6.3	7.1	6.9	3.8	4.6	4.7	2.7	6.5	6.4	4.4	6.3	5.5	10.0	11.7	11.6	7.1	12.8	17.1	24.4	23.5	8.9	13.5	13.3	8.2	10.9	10.2	

APPENDIX 7

PUPIL AND TEACHER RESPONSES TO THE FIELD TESTING OF
DISCOVERIES

1. Summaries of pupils' numerical assessments page 177
2. Samples of Pupils' Diaries page 180
3. Letters from Teachers page 188

TABLE 8.

DISCOVERIES field test at Bellevue Creek Elementary School. Summary of Pupil Responses. Class No. 1.

DATE	TOPIC OF LESSON	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	30	32	33	36	AVERAGE	
83-3-29	Introduction - natural & man-made world.	-	3	5	5	4	5	4	5	5	4	5	4	4	4	5	4	3	3	5	4	4	5	4	2	4	4	4	4	4.3
83-3-30	Looking and seeing: Two poems.	-	4	4	4	5	2	5	4	3	4	5	4	4	4	4	4	3	3	4	4	4	2	4	4	1	2	3	3	3.6
83-4-13	Questions, discussion on two poems.	-	3	3	4	4	4	4	4	4	4	5	-	5	3	-	4	4	4	4	4	3	4	4	3	1	4	5	3	3.7
83-4-15	Tolstoy's story.	4	4	5	5	5	5	5	5	5	3	-	4	3	-	4	3	-	5	4	4	4	5	3	3	2	5	5	4	4.1
83-4-18	Landscapes.	2	2	4	3	5	2	4	3	2	3	-	3	-	3	-	4	2	4	3	5	3	3	4	1	-	4	4	3.2	
83-4-22	Using the Landscapes	4	4	4	4	4	5	3	4	5	4	-	4	-	4	-	5	5	4	5	4	4	5	4	3	-	5	4	4.2	
83-4-28	<u>My Heart Soars</u>	3	4	4	4	5	4	5	5	4	4	-	4	4	4	-	5	4	4	4	4	4	-	4	4	3	5	3	4.1	
83-5-5	<u>Fitting In:</u> Introduction	5	3	4	4	5	4	5	4	3	3	-	4	4	4	-	4	4	1	4	3	3	3	5	4	3	5	4	3.8	
83-5-6	Talkabout	-	4	3	-	4	4	3	-	2	-	-	3	4	4	-	4	4	5	3	3	3	-	4	4	3	-	4	3.6	
83-5-18	The First Revolution.	3	4	3	4	4	3	5	5	3	5	-	3	4	4	-	4	2	-	5	4	2	4	4	-	1	-	3	3.6	
83-5-13	Map Study.	-	3	2	3	5	4	1	-	4	-	-	3	2	-	4	1	-	4	1	3	4	-	4	3	3	1	-	2	2.9
AVERAGES:		3.5	3.5	3.7	4.0	4.6	3.7	4.1	4.2	3.5	4.0	5.0	4.0	3.8	3.6	4.5	4.6	3.4	3.6	4.0	3.8	3.5	4.1	3.7	2.2	2.4	2.7	2.4	3.8	

TABLE 9.
DISCOVERIES field test at Bellevue Creek Elementary School. Summary of Pupil Responses. Class No. 2.

DATE	TOPIC OF LESSON	1	6	15	22	23	24	30	32	34	AVERAGE
83-3-30	Introduction - The natural and man- made world.	3	5	4	4	5	5	4	5	-	4.4
83-4-11	Looking and Seeing: Two poems.	3	4	4	3	4	4	3	3	-	3.5
83-4-13	Questions and Disc- ussion on two poems.	3	4	4	4	4	3	5	4	-	3.9
83-4-18	Tolstoy's story.	3	3	4	4	3	3	4	4	4	3.6
83-4-25	Landscapes.	3	4	-	4	4	4	4	4	3	3.8
83-4-27	Using the Landscapes	3	4	-	4	4	4	4	5	4	4.0
83-5-4	<u>My Heart Soars</u>	4	5	3	4	5	3	4	3	2	3.7
83-5-4	Introduction to <u>Fitting In.</u>	3	4	3	3	4	4	5	5	3	3.8
83-5-11	The First Revolution.	3	4	4	4	4	4	3	4	4	3.8
83-5-13	Map Study.	3	5	4	4	5	5	5	5	4	4.4
	AVERAGES:	3.1	4.2	3.8	3.8	4.2	3.9	4.1	4.2	3.4	3.87

TABLE 10.

DISCOVERIES field test at Hudson Road Elementary School. Summary of Pupil Responses to each Lesson.

DATE	TOPIC OF LESSON	1	2	10	24	27	29	AVERAGES
83-4-21	Introduction: Observing.	4	2	3	4	3	3	3.2
83-5-4	Rules of Thumb.	4	4	4	5	4	4	4.2
83-5-5	Misuse is Abuse.	2	3	3	4	3	3	3.2
83-5-11	People Make Places.	4	4	5	4	4	4	4.2
83-5-12	Chart Project.	4	4	4	3	4	3	3.7
83-5-25	VANCOUVER: Who? What? When? Where?	3	3	5	3	4	4	3.7
83-5-26	Fitting In.	4	4	4	4	4	4	4.0
83-6-1	The First Revolution.	5	4	4	5	4	5	4.5
83-6-2	Activities.	3	-	5	4	4	3	3.8
83-6-8	The First Revolution: Being Civilized.	4	4	4	4	4	4	4.0
83-6-9	Activities.	4	3	5	4	4	4	4.0
AVERAGES		3.7	3.5	3.8	4.0	3.9	3.7	3.85

DISCOVERIES FIELD TEST AT South Rotland Elementary MY No. 11

DATE	TOPIC OF TODAY'S LESSON	NUMBER	MY OPINION OF THIS LESSON
4/13/83	pg 5-7	1st	nice, very artistic, meaningful
4/14/83	pg 5-8	2nd	good, gets your attention
4/15/83	pg 9-11	3rd	knowledgeable, I agree with the lesson
4/17/83	pg 11 summary	4th	pg 11 I did not know how to write land until I read that pg. Some parts of this lesson were hard to understand.
April 20, 25	Notes on Discoveries	5, 6, 7, 8th	a different way of writing, not as easy as explained how to do it
April 26	pg 12, 13, 14, 15	9th	tells the difference between man's natural and artificial world and how man uses the two worlds
May 9/0	pg 18-21	10, 11th	interesting, shows how well off we have it compared to 4-origins
May 11	pg 18-22	12th	Today I learned that what we want soon turns to what we need.
May 12	pg 18-22 Talk about	13th	I learned that people need people to survive.
May 16	pg 23-27	14, 15th	I learned how man became civilized and what sage means.
May 19	pg 27	16th	The questions were easy to answer
May 24, 25	Review	17th	I remembered something and reviewed things I had forgotten.
May 26	Test	18th	Some questions were hard because we didn't cover some things.
IN SUMMARY, my opinions are that:			This is a different type of studying.

DISCOVERIES FIELD TEST AT SOUTH BUTLAND MY No. 13

DATE	TOPIC OF TODAY'S LESSON	NUMBER	MY OPINION OF THIS LESSON
April 13, 1983	P. 5-8	1	I think it should be used in the beginning of the year because it is very 'simple'
I	was		absent
April 18 1983	10-11	3	is a good "lesson" but I would not recommend it as a social studies lesson.
April 19 1983	P. 11 summary	4	The lesson got us to think, but would be better for 2. wts.
April 20-25	Notes on Discoveries	5, 6 7, 8	ditto
April 26	P. 12, 13, 14, 15	9	The most impressive lesson yet, missed. discussion + explanation.
May 9, 10	P. 17-20	10, 11	Good lesson Very interesting
May 11	P. 22	12	We had a talk and were given an assignment. Very difficult.
May 12	P. 20	13	Very interesting + knowledgeable
May 16, 17, 18	P. 23-27	14, 15, 16	I learned a great deal from this lesson. and it made me think a lot
May 19	P. 27	17	I learned a lot from this booklet because I had no difficulty answering the questions
May 20	Preview	18	WENT OVER QUESTIONS was A BIG HELP ON TEST
May 25	Recall	19	DITTO
May 26	Test	20	found easy because of review

IN SUMMARY, my opinions are that:

It was very educational and knowledgeable. Got better as we went further.

Thursday, April 14, 1983

Dear David,

Hopefully the enclosed papers will provide you with some enlightening awareness of the lack of understanding and relevance with much of our Social Studies curriculum.

Glancing through several of the papers I personally felt discouraged (yet chuckled) at some of the ridiculous answers. However, I should note for both our benefit, that the calibre of pupil I have this year (in particular) is reflected in the responses. The majority of them are products of a transient society. Having been in as many schools as their grade level is not conducive to a progressive learning situation. Also, many of my 19 (only) home room class have had a very disruptive and undisciplined home life. Consequently, concentration and comprehension skills are lacking.

Nevertheless, I, for one, am particularly interested in seeing the net result of teaching specifics with your approach as outlined in DISCOVERIES. It can't help but be a positive experience for both pupil and teacher. Their noted reaction to my presentation of the first lesson was most encouraging!

Sincerely,

Pearl Slater.

Mr. Worrall,

"Discoveries". A very interesting approach to the grade 7 Social Studies. I'm waiting for the completed book.

The students seem to enjoy working with the chapters covered, and found it very easy to follow and understand. They indicated they would like to see it in the classroom.

The idea that 'poems' could be made to fit in with socials, was rather unique in their eyes and once they thought about it, found it quite interesting. Poets actually do have something to say!

The students enjoyed the map study, but found the Atlas we have in class use, was not too good, particularly for products. Countries to products, fine; but products to countries not always given. Encyclopedias were so so.

Each lesson named on the students sheets was sometimes over two or three days, depending on the assignment and the period interruptions (due to other happenings in the school).

I've had a number of students away and a new member so all marks for evaluation are not 100%. Hope this won't throw out your rebut, too much.

Again, I like this book and wish you luck on it!

Harry Weston

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