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# DIY Locality Packages for Geography and Cross-Curricula Practices

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## Introduction

"Place" and "locality" are core concepts in geography. In the social studies curriculum of primary schools in Singapore, which integrates geography and history, the concept of place and locality is the focus in the very first unit, entitled "Our School: Its Environment." In studying place and locality, students gain an understanding of the physical, social, economic, and historical milieus of the environments in which they live and the world of which they are members. Prior knowledge that they have is extended and enriched through inquiries about their environment; world-view that may have been limited is expanded through application of the knowledge gained through their inquiries.

Even as they engage in learning geography, students are using language within contexts that are meaningful and content rich. This context provides them with support for learning language as it is used in real-life situations. Even as they study geography, they are engaged in scientific inquiries about their environment and gaining access to the wealth of information on historical and economic perspectives that are integral to localities. Studying place and locality therefore lends itself naturally to cross-curriculum practices in the classroom, thereby contributing to active, participatory learning within real-life contexts.

Currently, materials and resources focusing on an inquiry approach to place and locality in Singapore are lacking. Those pertaining to other countries are more readily available. Consequently, teachers are frequently not in the position to conduct hands-on, participatory studies of local environments or they need to

rely on limited resources that do not do full justice to the potentials that a well-designed "do-it-yourself" (DIY) locality package can offer. This situation needs to be addressed because Singapore is rich in the physical resource of place, the potentials of which are largely untapped.

Within the highly commercialized environment of Singapore, it is beneficial, for example, for students to acquire a balanced view of place by making a first-hand study of a place like the Mandai Orchid Gardens, designated one of the high-tech farms of Singapore, of which very little that is pertinent to classrooms is currently available. Closer to home, students can study the new towns of Singapore to deepen their knowledge of the social, historical, economic, and political milieus that are integral to these towns. Other places that merit close study are Little India, Kampung Glam, China Town, Fort Canning Park, and other high tech farms in Singapore.

An effective approach to the study of place is a hands-on one where teachers guide students on a target locality, using a package that contains resources and materials, information about the locality, processes and procedures required, and tasks and activities that contribute to a comprehensive understanding of the inquiry. Ideally, these packages should contain materials that contribute to cross-curriculum studies because geography, by its very nature, is potentially a cross-curriculum discipline. Teachers can prepare these packages, as a do-it-yourself (DIY) initiative, working in teams to compile the materials and resources, tasks and activities, and a handbook that accompanies the package.

It is suggested that the team be made up primarily of a few geography teachers, together with one other teacher from each of the English, science, and social studies department. This composition will ensure that the geographical focus of place is effectively covered, and that the tasks and activities are integrated across the relevant subjects.

The following sections first offer suggestions for compiling a DIY package. It then provides an example of one such package by reference to the Mandai Orchid Gardens.

## Compiling a Locality Package

The first step in compiling a resource package is to decide on the locality that will be studied. Select the locality by considering its potential for meaningful and comprehensive study, its appeal to student and teacher interest, its accessibility, and the background information that is available. The team working on compiling the package will need to visit it initially to decide on the potentials that the locality offers for teaching geography and cross-curriculum subjects, the processes and procedures that are relevant to the study, and the materials and resources that need to be compiled. A DIY package for cross-curriculum study is especially useful for helping children view learning as a holistic process, not one that is confined within subject boundaries. The team will also need to gather information that has already been compiled about the locality and supplement it with their own. Once the compilation is completed, it is useful to pilot test the materials. From feedback obtained, the team can modify, augment, or reduce the materials and resources in the package.

Once a package has been compiled, it is important to review and update it after it has been in use for several years. Localities, by their very nature, are not static phenomena. They are susceptible to change, some localities more so than others. It is therefore necessary to update the package periodically by making visits to the localities to keep track of possible changes.

### What to Include in a Package

The package should include materials, resources, information about the locality, and suggestions for classroom-related activities. The following is a guide for the basic materials and resources that make up a locality package:

#### 1 *Photographs and slides*

Large, good quality colored photographs or slides showing different aspects of the locality are useful. A basic knowledge of photography is sufficient for taking suitable ground level photographs and slides, although possessing more skill in photography would be an

advantage. Take more photographs than the number required so that only the best ones are selected. If vertical aerial photographs can be obtained, it will be an added advantage in enhancing the visual property of the resources.

## 2 *Maps*

Three types of maps are useful: maps showing the locality at present (modern maps), maps showing the locality at various times in the past (historical maps), and maps showing the locality in relation to other places. In addition, it is useful to have a trail map to serve as a guide for field trips to the locality. The trail map should be simple and approximately scaled, with a series of "stopping points" on it. A worksheet that is used in conjunction with the trail map provides guidelines for gathering information and for learning tasks at each stopping point. The tasks should be varied and should provide for opportunities to use a range of skills and interests.

## 3 *Information about the Locality*

To stimulate students' thinking about place, to understand the multiple facets associated with it, and to maximize learning potentials, it is useful to include in the package as much background information about the locality as the team can gather. Information that is pertinent includes its physical configurations, its economic and social characteristics, its relationship to the community, its place in the environment, its historical significance, and objects, flora and fauna that are specific to the locality.

## 4 *Sections in the Package*

The next step is to determine how many sections the package will contain and how they will be organized into coherent units to facilitate the use of the package. The following are suggestions for organizing the sections of the package:

Section 1 consists of resources such as photographs, slides, maps, and samples of materials that are unique to the locality. These provide a wide range of learning opportunities. With photographs, for example, the team can compile a series of carefully graded activities

to suit students' interests and abilities, using single photographs or sets of photographs which have been appropriately captioned.

Section 2 provides information about the geography of the locality. Information that is pertinent includes the location, the place in the community, the economic and social pursuits, the historical perspectives, and the physical, commercial, and human resources.

Section 3 consists of tasks and activities for teaching geography and cross-curriculum subjects. The team needs to design these materials collaboratively. Tasks and activities can be organized in two subsets – an on-site set that students take with them to the location, and an in-class set for use prior to and after the field trip. For the on-site set, it is advisable to pose a few questions at each stopping point at the locality (a trail map indicates each point). These questions will require students to observe, think about, and draw conclusions about that stop in particular and its relationship to the locality in general. For the in-class set, ensure that there are both pre-visit and post-visit tasks and activities. The pre-visit ones will guide students on what to expect on the visit, and what is expected of them during the visit. The post-visit ones will allow students to consolidate ideas gained from the visit, to engage in thinking and clarification, to read materials that extend their knowledge, and to write about their experiences. Activities need to be varied and to appeal to the interests and proficiencies of the students.

## 5 *The Handbook*

A handbook provides information on the use of the package. It explains how the materials and resources may be used and how the tasks and activities may be conducted. The handbook needs to be clearly written, with an introductory section that gives an overview of the package and its objectives. Sections that follow will contain information on the materials and resources, how they are organized, and how they can be used. In writing the handbook, clarity and comprehensiveness need to be observed so that it will serve as a source of easy reference for users.

## **A Sample DIY Package**

The discussion that follows provides an example of a DIY locality package by reference to the Singapore Mandai Orchid Gardens. It is to be used as a social studies resource package in primary school. The geographical and historical perspectives that are integral to the social studies curriculum are extended to include science and English.

### **Mandai Orchid Gardens**

#### **Objectives**

(To be written in the handbook)

This resource package helps students acquire knowledge about a locality that has been identified as a "high tech farm" in Singapore, with physical and historical features that merit close study. It extends students' conception of place and locality by guiding them to understand Mandai Orchid Gardens as a "place" of commercial importance and as a potential tourist attraction. In addition, it encourages positive attitudes to nature and sensitizes students to the value of the environment.

#### **Materials and Resources**

This package contains the following materials and resources:

1. A set of maps: One map showing the location of Mandai Orchid Gardens in relation to other high-tech farms in Singapore (see Annex 1). One map showing details of Mandai Orchid Gardens, with a trail and 7 stopping points marked "A" to "G" (see Annex 2). Samples of flora and fauna obtained from the Gardens (not included in this article).
2. Information on Mandai Orchid Gardens

### *Location*

This locality is designated a high tech farm in Singapore. It is located along Mandai Road, about 1 kilometer from the Singapore Zoological Gardens. The Gardens stand on a gentle slope that is bordered by a secondary forest in one of the few verdant areas still remaining in Singapore. The environment favors the cultivation of orchids because water drains off easily, leaving soil always well-drained.

Below the landscaped orchid area is a low-lying narrow strip of land occupied by a water garden. This garden contains exotic Heliconias and ornamental Ginger plants.

The cultivation of orchids, together with research and development, is the main activity at the Gardens. Orchid is an epiphyte which grows on trees, other plants, and organic matter. It makes use of trees to get sunlight without harming the tree.

### *Commercial importance*

The Gardens are owned by Singapore Orchids Pte. Ltd. Cut flowers are exported to more than thirty countries in Europe, the United States, Australia, New Zealand, and the Middle East.

The Gardens are now recognized by the Singapore Tourist Promotion Board as a tourist attraction in Singapore. The entrance fee is \$2 for an adult and 50 cents for a child. It received more than 180,000 visitors in 1991.

There is a sale area where potted plants and souvenirs are sold at a reasonable price.

### *History of Mandai Orchid Gardens*

This enterprise was started by John Laycock and Lee Kim Hong in 1950, six years before Singapore started to export cut flowers. The Gardens started with an area of 2 hectares but now cover an area of 4 hectares. The first orchids cultivated were *Arachnis Maggei Oei*, *Aranda Deborah*, *Hilda Galistan*, and *Aranthera Mohamed Haniff*.



The focus of this enterprise is hybridization. Lee Kim Hong himself produced a large number of hybrids, many of which have joined the growing list of cut flowers for export. New flowering hybrids are continually introduced every year.

The Gardens started the first local sales of orchids in 1956 and then expanded to exporting orchids world-wide. 1957 marked the beginning of exports of cut flowers to London and Holland. This was followed by exports to Frankfurt, Milan, Athens, and Zurich in 1958. 1964 marked the turning point for the orchid industry in Singapore when the Gardens started bulk export of orchids to Europe.

In the 1970s, the export of cut orchid flowers from Singapore as a whole generated substantial revenue. The total value of all exports of cut orchid flowers from Singapore was S\$8 million in 1976. It doubled to S\$16 million in 1981. However, due to the world economic recession, it dropped to S\$10 million in 1986. In 1990, the production increased again to S\$21 million. Orchids are an important export commodity of Singapore presently.

The following are some varieties of orchids cultivated at the Mandai Orchid Gardens:

**Fig. 1 Vanda Miss Joaquim Josephine**



### *Vanda Miss Joaquim Josephine*

This hybrid was made the National Flower of Singapore on 15th April, 1981.

The flower has triangular fan-like purple petals (see Fig. 1) and is the oldest hybrid in Singapore and Malaysia. It was named after Agnes Joaquim, an American lady who was an avid gardener. The flower is attractive but fades quite quickly in the vase compared to newer hybrids.

**Fig. 2 Vanda Poepoe Diana**



### *Vanda Poepoe Diana*

This orchid was popular as cut flower in the 1950s and 1960s but is hardly seen today. The petals are white with a shade of yellow in the center.

### *Arachnis Maggei Oei Red Ribbon*

The flower has sepals and lateral petals with a background of greenish yellow which becomes white just toward the column. Irregular, transverse, and fairly regularly spaced dark brown bands are found throughout the perianth segments.

*Beatrice Ng yellow variety*

The flower has yellow, thin, and elongated petals. Although there are red and yellow varieties, the yellow ones dominate the export market.

*Vanda Ruby Prince*

This is a free flowering orchid with large purple flowers. It grows under a variety of temperatures and shade conditions.

### 3. Suggested Pupil Learning Activities

Multiple tasks and activities that are relevant to social studies, science, and English can be designed, arising from a study of the Gardens. Some suggested ones to help teachers get started are given below. Teachers are encouraged to design other tasks and activities according to the interest and proficiency of their classes. In designing these, ensure that there are adequate guidelines for pre-visit and post-visit tasks, and opportunities for monitoring and assessing student learning.

#### Social Studies

*Task 1*

Take students for a half day field trip to the Gardens. Ask them to draw a sketch map of the locality, and to provide a legend on their maps showing the location of the factory, the nursery, the secondary forest, the orchid beds, the commercial cultivation area, the rest place, and the water garden.

*Task 2*

Talk to students about other high tech farms in Singapore. On a map of Singapore, ask students to locate as many high tech farms as possible. For homework, ask them to find out as much information as possible about two other high tech farms and collect photographs and pictures of different aspects of each farm. Students will compile a scrapbook and write a short description of each item collected.

## Science

### *Task 1*

Take students for a half day field trip. Focus on orchid as a special plant and examine the characteristics of the plant and the flowers. Make sure that they visit all the different sections of the Gardens. Ask them to take notes as a guide takes them around and to collect samples of orchid stems, leaves, flowers, and/or a whole plant. Examine these specimens and discuss their distinguishing characteristics. Have them press flowers between books. Students can use the pressed flower to draw and label the different parts of the flower. Organize the pupils in groups to discuss the plant as an epiphyte: how it draws nutrients and water from its surrounding, how it survives in its natural environment, and how it propagates under natural conditions and at the Gardens.

### *Task 2*

Students to read about orchid and to discuss what they have discovered. Use a cooperative learning structure to help achieve maximum outcome.

## English

### *Task 1*

Students to collect brochures and other printed materials that are available during their visit to the Gardens. Read these materials and compile them into a scrapbook. Include photographs and maps; write captions for each photograph.

### *Task 2*

Students to write letters to other high tech farms to ask for brochures and information, and/or to request for permission to visit the farms.

Students write letters to the management of the Gardens, thanking them for the visit and telling them how much they have enjoyed themselves and what they have learned from it.

### *Task 3*

Students to read stories associated with flowers and plants and engage in related activities such as story retelling, talking about their own or their friends' and relatives' gardening experiences.

### *Task 4*

Students to bring orchids and other tropical flowers to class for "show and tell". Talk about these flowers. Discuss how plants can be cared for.

Discuss the Vanda Miss Joaquim Josephine as the national flower and what it symbolizes. Talk about national flowers and animals of other countries.

### *Task 5*

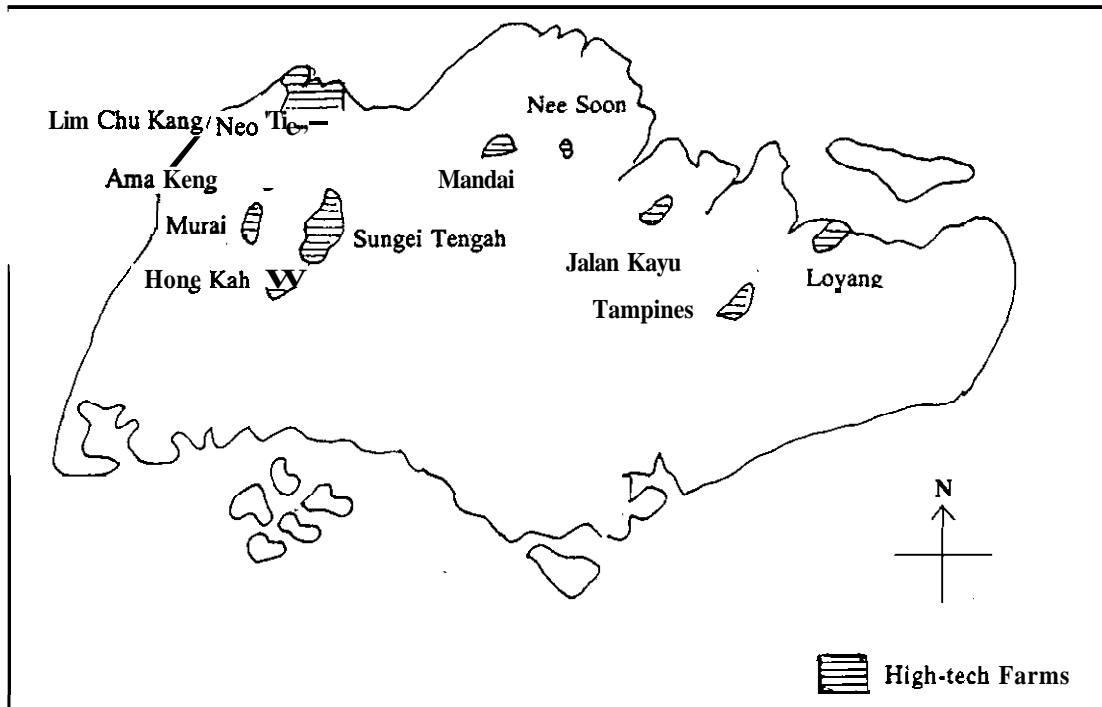
Focus on vocabulary associated with flora and fauna, and agriculture. Use activity-based approaches such as semantic webbing, games, and puzzles for vocabulary study.

## **Conclusion**

This article has shown the viability of compiling DIY location packages and their value in the school curriculum. DIY packages that are readily accessible to teachers facilitate the study not only of geography, but of related subjects across the curriculum. There is a need for locality packages that focus on localities in Singapore because of their present shortage. One suggestion is for schools to coordinate the effort by compiling packages of different localities, with each school responsible for a specific location. Through networking, the packages can be shared, thereby augmenting the number of packages available. These packages can, in addition, be further refined and updated so that they can eventually be published locally and internationally.

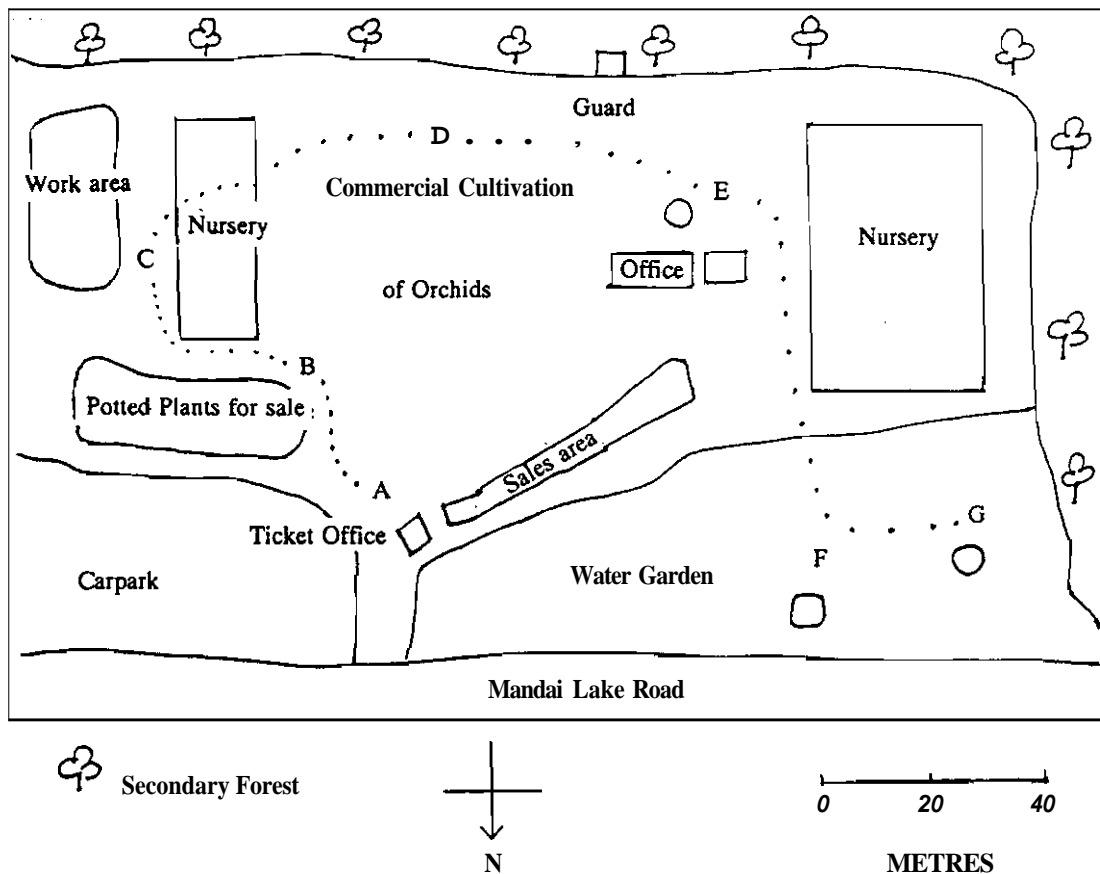
Annexe 1

Location of high-tech farms in Singapore



Annexe 2

Mandai Orchid Gardens



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