In this section you will find a comprehensive unit of work designed for the Science and Technology Stage 2 syllabus that uses all the computer interactives (learning objects). This unit takes students through a range of activities concerning urban planning and built environments, culminating in the design of a new neighbourhood. In addition, links to other learning areas activities and outcomes can be found at the end of this section.

If you are considering using the objects individually, a range of ideas have been provided in Section 2 of this guide.

**Purpose and focus**

Through participation in *My Neighbourhood*, students will learn about the design process as it is applied to the planning of urban areas of the built environment. Students will design a master plan for a new neighbourhood.

As part of the design process they will:

- analyse their local neighbourhood;
- examine what is a local community, who uses the neigbourhood and for what purpose;
- explore the features of their local neighbourhood;
- observe many types of buildings, the specific placement of buildings and facilities, modes of transport used and needed, and the use of public spaces;
- develop a sensory appreciation of the built environment and of planning and heritage issues;
- consider the sustainability of built environments.

Throughout this unit students will have to make decisions, solve problems, and evaluate and re-evaluate chosen solutions. Consideration will need to be given to:

- the long-term future of the new neighbourhood, addressing the needs and growth of the community;
- understanding how people create, construct, modify and adapt structures and spaces for a wide range of purposes and appreciating that the environments they build are an important part of our communities and heritage;
- the features of neighbourhoods – their positive and negative aspects, how they currently meet the needs of the community, and what should be changed;
- the functionality, aesthetics and sustainability of the suggestions.

The unit is presented as a simulation to provide students with opportunities to role play community members with special interests; discuss environmental, social, heritage and other community issues associated with planning and design; and resolve concerns and problems through negotiation to establish a viable neighbourhood (Resource 1. What are simulation games?).
My Neighbourhood and outcomes

Teachers should take some time to familiarise themselves with the suite of interactive learning tools (learning objects) used in this unit to help students develop an understanding of the elements of urban design. Specific ideas for using the learning tools to support Science and Technology outcomes are included in the teachers’ notes. Some teachers may choose to sequence the use of the learning objects differently or to use them as stand-alone objects (Resource 2. What are learning objects?). The integrated nature of this simulation allows students to further develop skills for working cooperatively in groups. Students will also need to use a range of organisational strategies. In some cases it may be necessary to explicitly teach some of these. Links and additional notes are provided to resources to support the teaching or reinforcement of these teaching strategies.

My Neighbourhood lends itself to integration with HSIE outcomes of environments and social structures that include topics dealing with interactions and significant places as well as democratic practices and purposeful reading, writing, talking and listening experiences in English. Links to other key learning areas are also included.

Opening page of My Neighbourhood; the learning objects take the student from ‘observer’ to ‘planner’, but can be accessed in any order.
Stage 2 Science and Technology: outcomes addressed in this unit

Designing and Making strand: the learning process, outcome and big ideas

**Stage 2**

**DMS2.8:** Develops, implements and evaluates ideas using drawings, models and prototypes at appropriate stages of the design process.

**Big ideas**
- identifies how designs change to better meet people’s needs
- works collaboratively to generate ideas for simple products, systems and environments
- reflects on design ideas for simple products, systems and environments, and suggests improvements
- communicates ideas through annotated sketches and models and uses scale in drawings and models
- suggests how design processes could be improved to produce better results.

Built Environments strand: content outcome and big ideas

**Stage 2**

**BES2.1:** Creates, models and evaluates built environments, reflecting consideration of functional and aesthetic factors.

**Big ideas**
- Over time, environments are built differently because technologies change, as do people’s needs.
- There are established techniques for drawing built environments, eg scale, front view, top view.
- Buildings and spaces can be evaluated in relation to functional and aesthetic qualities.
- Computing applications may be used to develop and present ideas for buildings and their interiors.

Note: Big ideas unpack the meaning of the outcome statements and incorporate content that is suitable for each stage. They are published on the *Supporting SciTech in the primary classroom* CD-ROM distributed to all NSW schools in 2003. The CD-ROM can also be accessed at [http://www.curriculumsupport.nsw.edu.au/primary/index.cfm?i=33&kla=Science](http://www.curriculumsupport.nsw.edu.au/primary/index.cfm?i=33&kla=Science).

Teaching and learning process – unit overview

**Introducing the unit**

The unit of work revolves around a scenario where students acting in the role of Town Planner will produce a design brief to develop the fictional neighbourhood of Littlegong. Littlegong could be an established neighbourhood undergoing change or a new development.

In introducing the unit you may need to explain what a town planner does and define what a design brief is.

**Definition of a design brief:**
- A design brief is a short statement about the task to be solved.
- It should clearly identify the problem for investigation.
- It is used to encourage thinking about all aspects of a problem before attempting a solution.
- It should contain an outline of the context of the problem as well as the key need or opportunity.
- It should also provide any specifications and limitations that apply to the task.

*Town planners* are also called *strategic planners, urban planners* or *regional planners*.
- They develop policies and plans to describe how land and resources should be used, and advise on the economic, environmental, social and cultural needs of particular localities or regions.
They work on large-scale projects such as new suburbs, towns, industrial areas, commercial and retail developments, urban renewal projects and transportation links.

Planners work closely with professionals in other fields (such as surveying, architecture, engineering, environment and conservation, property development, community services and transport planning). There is a high level of public contact, as they spend a lot of time in meetings and discussions. Time is also spent on conducting field visits, writing reports and performing research. Planners are also required to prepare documentation of their decisions.

While urban and regional planners may perform a diverse range of tasks, for the purposes of this unit of work they can be defined as doing the tasks in the left column of the following table. The right column suggests related activities that would suit students.

<table>
<thead>
<tr>
<th>TASK</th>
<th>POSSIBLE STUDENT ACTIONS AND ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop plans or strategies to cope with growth and change, in consultation with affected communities</td>
<td>Develop reports&lt;br&gt;Create poster presentations&lt;br&gt;Deliver oral presentations</td>
</tr>
<tr>
<td>Perform surveys and site inspections</td>
<td>Record details from excursions both local and remote&lt;br&gt;Interview stakeholder groups</td>
</tr>
<tr>
<td>Compile, describe and analyse information on physical, economic, social, legal, political, cultural and environmental factors that affect land use</td>
<td>Make and annotate photographs or illustrations of landscape&lt;br&gt;Identify stakeholder groups, eg residents, shopkeepers, cultural organisations etc&lt;br&gt;Conduct history research at the local library to identify sites&lt;br&gt;Discuss relevant news items in local and daily newspapers</td>
</tr>
<tr>
<td>Provide advice and reports on new developments or areas being redeveloped to councils and government regarding various land uses either urban or rural, including residential, public open space, placement of industry and types of industry, schools and shops</td>
<td>Visit local council chambers and observe a meeting&lt;br&gt;Role-play a presentation to council on the design brief</td>
</tr>
<tr>
<td>Draw up plans for development or redevelopment and evaluate proposals in terms of benefits and costs</td>
<td>Create drawings or posters of the development&lt;br&gt;Create and print out 2D plans using <em>The Observer</em> and/or 2D and 3D plans with <em>The Planner</em></td>
</tr>
<tr>
<td>Provide evidence for appeals in planning disputes</td>
<td>Role play the different opinions different groups may have about a plan. Students can refer to and role-play the examples found in <em>The Decision Maker</em></td>
</tr>
</tbody>
</table>

Personal requirements for a town planner:
- interest in social, economic, environmental and cultural issues
- good oral and written communication skills
- ability to produce detailed and accurate work
- good analytical and problem-solving skills.
Assessment
Inform students that at different stages in the unit and design process they will need to record their thoughts and actions, noting any changes or modifications made to original plans and the reasons for these changes. One method of documenting the process is to keep a learning log where personal reflections, challenges, achievements and setbacks are recorded. The learning log should include reflection on the steps in the design process and use of the learning objects, and new learning about urban design and the built environment (Resource 8. Student learning log for Neighbourhoods unit proforma).

Scenario and design brief

To design and model a master plan for a new neighbourhood:
Students have been contracted to prepare a master plan for a newly released area of land called Littlegong. The area available is five hectares and includes a culturally significant site, which has to be preserved. Five of the available blocks have been designated for commercial purposes. The number of residential blocks, their size and the amount and nature of open space are some of the issues students will have to consider as they prepare the master plan.

The following key questions can be either predetermined by the teacher or defined by the students to better link the activity with their familiar environment. Alternatively, students may find it rewarding to prepare a master plan for a development very different from their familiar environment.

Key questions:
- What is the density of the residential development – high, medium or low? The five neighbourhood types in The Explorer – Inner Urban, Suburban, Outer Suburban, Country and Coastal – may help students define the density.
- Is the focus of the development around a key feature – for example a railway station, bus interchange, historic building, key open space, shopping centre, industry or major employer?
• How many people should it be designed to house?
• What are the family units to be accommodated (single people or couples, families, elderly people)?
• How far away are the shops from where people live or from the key transport hub?
• How far do people have to travel to work?

These and other questions will help the students consider what attributes the development could or should have to be a successful neighbourhood.

**Structure of the learning groups**

Students work in groups to develop designs for their allocated blocks and coordinate and negotiate with the other groups to decide on the final design for the neighbourhood. Students should role-play different community members who have specific interests in the development, for example a builder, an environmentalist, an Indigenous person, a teenager, a young mother, a father, a shopkeeper. *(Talk of Toppsville is a model that could be used.)*

**Teaching and learning sequence of the design process**

**Building the field**

Students choose from a number of activities to identify their prior knowledge of the built environment.

**Step 1**  **Evaluating products and processes**  
A mini excursion to a local neighbourhood and case studies of other neighbourhood developments and built environments to find out about their features, facilities, buildings, spaces and how they meet needs.

**Step 2**  **Identifying needs and wants**  
Researching the needs and issues of their local community, focusing on the students’ perceived needs for a neighbourhood and developing a set of criteria for the features of a successful model development that will become Littlegong.

**Step 3**  **Generating and selecting ideas**  
Using the information gained in the previous activities to develop students’ ideas through drawings and modelling and the use of learning objects.

**Step 4**  **Using resources to create products, systems and environments**  
Creating a model of the neighbourhood using a variety of resources including learning objects.

**Step 5**  **Evaluating products and services**  
Analysing designs and the process used and suggesting modifications.
**Notes on the teaching and learning sequence**

*It is suggested that teachers should choose activities that meet the needs of their class, rather than trying to include every suggested activity.*

<table>
<thead>
<tr>
<th>TEACHING AND LEARNING SEQUENCE STEPS</th>
<th>NOTES TO SUPPORT TEACHING AND LEARNING SEQUENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review and discuss the design process that the students will follow.</td>
<td>Discussion should also identify students’ prior understanding of or experience with the design process, particularly if they have not engaged with the Built Environment strand.</td>
</tr>
</tbody>
</table>

**Building field knowledge**

**Choose from the following activities to identify students’ prior knowledge of the built environment**

- Use a discussion on built environment as an opportunity to assess students’ prior knowledge and understanding of the built environment and the design process. Discussion should focus on answers to the following questions:
  - What is an environment?
  - What is a built environment?
  - What is in our local built environment?
  - What is a community?
  - What is a neighbourhood?
  - What is in our local natural environment?
  - How can we find out what we don’t know?

- Have students complete a KWL (Know-Want-Learnt) chart. This could also be used as an ongoing assessment task by adding a further column for how the students found their information (KWLH).

- Begin to build up a word bank to develop language to be used.

- Use a graphic organiser, e.g. concept maps/charts to record information (Resource 3. Teacher resource: note-taking strategies).

- Resource 5. KWLH: Know-Want-Learnt-How proforma.

- This could be used as a personal glossary and used as a concentration game, matching vocabulary to meaning during guided reading group activities. This word bank should be added to throughout the unit of work to consistently reinforce the specific vocabulary associated with built environments and design.
# Teaching and Learning Sequence Steps

**Step 1 Evaluating products and processes**

- Inform students that they will be going on a mini excursion to explore and discover some of the elements and features in their local built environment.
- Take students on an observational walk or a mini excursion around a block near school and record what is seen in some form, say by taking digital photos or making sketches of each/some buildings/spaces; creating mind maps; noting information on worksheets.
- Use *Look and Listen* and discuss the placement of different facilities and their proximity to each other.

- Demonstrate the features of *The Observer* as another form of representation. In groups, students can plot the streetscape from the earlier walk using the learning tool and print out the icon and/or plan version of their creation. These can be combined with the students’ photographs and sketches to create a representation of the streetscape. Students can also take screen captures from the 3D Flythru from *The Observer*.
- Discuss the streetscape, for example:
  > Are there many original houses?
  > Are new houses like the old ones?
  > Why/how are they different?
  > How can we find out what styles of housing exist?

- Make it clear that the purpose is to be able to use what they discover to identify the needs and wants of the community users. This discussion could include questions to focus/guide students’ thinking; for example:
  > What areas do you use?
  > Why/how?
  > What about other areas – who would use them? etc.

- Encourage students to use their senses (sight, smell, touch, hearing), as they explore and observe the local environment. Guide students to identify the sights, sounds and smells of the neighbourhood and make judgements about noise pollution issues/considerations, future development, and the quality of urban and/or industrial areas.

- Discuss how the neighbourhood changes, particularly noting changes to the map of the local area. Identify features of the environment that remain constant throughout the passage of time, eg the big tree, the river etc.

- Discuss and suggest opinions why these features may remain yet others disappear. Identify the changes in housing and industry over the period of time and discuss why these may have changed; for instance people’s needs and wants may have changed. Discuss positives and negatives. Local councils or historical societies may have a photographic record of the main street in the local area and how it has changed over the years.
### TEACHING AND LEARNING SEQUENCE STEPS

- Read *My Place* by Nadia Wheatley to identify changes to a built environment over time, e.g., housing, industry, etc.
- Assessment: students record in the learning log their new learning and reflection on how the evaluation processes they have used have informed their design.

### NOTES TO SUPPORT TEACHING AND LEARNING SEQUENCE

*The Observer’s 3D Flythru*
## Step 2 Identifying needs and wants

- Identify and discuss the different aspects/features of built environments – their purpose, who uses them etc. Record information on a chart.
- Discuss what other features could be included in the neighbourhood. How do children use the environment?
- Include discussion about:
  - Who will live in the neighbourhood?
  - Who will work there?
  - Who are the users?
  - What will their needs be?
  - Where is it located?
  - How will blocks be developed?
  - How will funding be organised?
  - Who can buy blocks?
  - What community activities etc will be needed?
  - What infrastructure will be needed?
- Discuss issues about planning:
  - Who is involved?
  - What has to be considered (environmental impact statements, heritage issues, etc)?
  - Also introduce and explain the fact that planners and developers need to consider future needs of communities as well as present needs when designing a vision for the future.
  - What does it mean to consider the aesthetics of a design and development?
  - What is sustainability?
  - Why is sustainability a consideration when designing a new development or homes?
- From this sequence develop a set of criteria for the new development called Littlegong.
- Use The Decision Maker to discuss conflicting development issues. This activity develops students’ appreciation of the diverse range of stakeholders who need to be consulted when planning a development and the complexity of decision making.
- Assessment: students record in the learning log their new learning and reflect on how the identification of the needs process they have used will inform their design.

## Notes to Support Teaching and Learning Sequence

- If it is appropriate, develop possible survey questions to discover needs and wants of all the users of a community/-neighbourhood. Survey children, parents, P & C, adults, workers, businesses, etc and collate and analyse data.
- Revisit and reflect on all charts and data/information collected/recorded and discuss to identify a set of criteria for the neighbourhood’s development.
- Read a selection of Big Books/literature sources on community/designing/building etc to fine tune students’ thinking to identify the purpose of designing to meet someone’s needs. (MisBuildings by David Drew and On Site by J Pollock. Also, the works of Escher could be useful.)
- View a selection of the artworks of Jeffrey Smart, who uses the built environment and urban settings for his work (Resource 7. Jeffrey Smart).
- Pose ‘What if’ questions, for example: What if we built a factory (heavy industry area) next to a primary school? What if we built an emergency centre/hospital in the middle of the shopping centre? etc. Draw up a consequences chart and explore all positive and negative possibilities (Appropriate Technology). The Talk of Toppsville (a CD-ROM developed by ICAC) could also be used here to develop students’ understanding of ethics and corruption.
### Teaching and Learning Sequence Steps

#### Step 3: Generating and Selecting Ideas

- Using all information gleaned from previous activities, discussions or polarised debates now focus on what will be needed when designing for the Littlegong community.
- Demonstrate *The Explorer* for students to analyse and discuss a wider range of built environments and the types of buildings and facilities that could be used for Littlegong. They can ‘collect’ images to use later in the Backpack facility on the learning object.
- In groups (or as a whole class) brainstorm design opportunities for Littlegong, considering design criteria of the brief. Record all groups’ design ideas. See note for ideas.
- Look at a range of other formats for representing designs of neighbourhoods, e.g., architectural plans, artists’ impressions, aerial photographs, etc. Note how scale and direction are indicated. Discuss similarities and differences between representations.
- Demonstrate *The Planner*. Discuss the different ways the built environment is represented in this learning object. Students present the designs using *The Planner* or annotated sketches.
- Assessment: each group presents their design ideas to the class for constructive feedback. Suggestions are made by referring to the criteria in the design brief and identifying those that best meet the criteria. Following feedback and discussion, each group considers suggestions for combining and improving ideas.

### Notes to Support Teaching and Learning Sequence

Some of these activities could be useful:

- A ‘consider all factors’ ranking strategy or similar (such as a decision-making matrix, or pros/cons questions) could be used to identify those features that would best meet the needs of the users of this new neighbourhood.
- Depending on teaching style/class structure and prior experience at working in groups, choices could be made as to the way the next step in the design task could be undertaken.
  1. A whole class plan of Littlegong could be developed to meet the design criteria by telling each group to develop a range of designs for particular buildings or spaces. For example, given the type of the neighbourhood being developed, the class could be divided into four groups, with each group being responsible for designing one area. These areas would then be joined to create a larger, more complex neighbourhood.
  2. Alternatively, each group could be given the task of designing Littlegong. Each group’s plan could then be presented to the whole class and one design or a combination of features from each of the groups’ designs could be built into one new plan. Students should provide annotated sketches and the major steps needed to create the plan and even consider the development process.
- A variety of cooperative and cognitive strategies could be employed here so that each student’s opinion is valued. Strategies could include using a ‘continuum’ followed by a “So, what’s the problem?” In this way every student will have an opportunity to be heard: to give their opinion of what they feel would be required in the neighbourhood; to vote democratically (selecting the ideas of others that are appealing); and, finally, to make decisions about the features that will be included in the new neighbourhood. This is an opportunity to link to Democracy/The Democratic Process in HSIE.
### Step 4 Using resources to create products, systems and environments

- Using established techniques, eg labels, different views etc, students develop drawings/plans of Littlegong.
- Working from these drawings students transfer the above plans using *The Planner* to generate ideas for developments and develop the block. Revisit *The Explorer* and identify a range of possible facilities.
- Plot the sections of the new neighbourhood using *The Observer* to see the effects and relationships of the developments.
- Share with the class for feedback. Make modifications.
- Assessment: students record in the learning log their new learning and reflect on how the modelling process has influenced their design.

### NOTES TO SUPPORT TEACHING AND LEARNING SEQUENCE

- These could be developed using isometric paper and a scale (if students have developed an understanding of using scale, or at least a common/logical scale; for example, residential building blocks would be smaller than commercial sites and therefore a ‘scale’ would need to be established before drawing – such as 4 building blocks = 1 commercial site). Depending on the ability of students, the teacher could model designing a key for the different features of the new neighbourhood community; for example, a very simple key could colour code the features – say, green for houses, red for factories, blue for schools etc – and students would merely have to colour the squares on the isometric paper to match. Students could also consider the colours used by councils for zoning plans.
- Visual Arts activity – mediated drawings, different viewpoints, perspective etc.
- Refer to the earlier activity where students collected images from *The Explorer* gallery and placed them in their Backpacks. Students make decisions about the type of housing etc to meet the needs of the users of the neighbourhood community of Littlegong.
- Additionally, students may develop models using a variety of materials; find out costs of different materials; suggest the most appropriate and justify etc.
### TEACHING AND LEARNING SEQUENCE STEPS

**Step 5 Evaluating products and processes**

- Discuss the plans drawn (and model) for the new neighbourhood community of Littlegong.
- As a class, evaluate how it addresses the design brief, the needs of the community and criteria for success.
- Reflect on design process steps and suggest:
  > possible further development of design
  > how to improve the use of a design process.
- Assessment: neighbourhood plans are assessed by the teacher against the criteria and in conjunction with each student’s learning log.

### NOTES TO SUPPORT TEACHING AND LEARNING SEQUENCE

- A method of obtaining feedback from the interested parties and/or potential users of Littlegong could be to conduct polarised debates.
- Use questions to focus the evaluation, such as:
  > Are there any shortcomings?
  > Are all users’ needs satisfied?
  > Are the developers satisfied?
  > Is there need for further development?
- Invite parents and other students to evaluate the designs and models.

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The opening page from *The Explorer*
Additional sources of information

The following resources about neighbourhoods could be accessed for the class to use if their local area or resources are limited.

- Places such as Canberra, Castlecrag and Griffith offer opportunities for research, as a significant pool of resources exists. Many of these are available in municipal libraries and online. Other local developments where resources are available from developers and/or the council can be used. All of the above can be used to discuss the historical development of neighbourhoods. What were the houses like? How have they changed? What was there before?
- Other developments could include Wattle Grove, Newington, Homebush Bay and Landcom case studies or a development in the students’ local area. View maps/plans of the local built environment. These may be obtainable through the local town/shire council or historical society.
- Use The Explorer for students to collect images from the gallery and place them in the electronic Backpack. These images could be used in discussions about the similarities and differences between housing styles and purposes, shops, recreation areas and so on. Information texts could be written (English) and information kept to be used later in the task when making decisions about the type of housing etc required to meet the needs of the users of the neighbourhood community of Littlegong.
- Questions to focus and guide student thinking could include:
  > What areas do you use?
  > Why/how do you use them?
  > What about other areas?
  > Who would use them?
  > How can we find out what people need and/or want for a built environment/ neighbourhood/community?
  > What facilities does the town/shire council provide?
  > Why?
  > Are they effective?
  > Why/why not?

(Allow students to consider their own needs first.)
**Assessment items**

The following series of assessment tasks are suggestions for possible opportunities teachers may choose depending on the needs of their students and the focus of the learning. Two suggestions are for ongoing assessment throughout the unit, while several others are integrated tasks allowing assessment opportunities for a range of key learning area outcomes. Teachers may choose to use these tasks or develop other tasks to better meet the needs of their class.

<table>
<thead>
<tr>
<th>YOU WILL BE ASSESSED ON THE FOLLOWING ASPECTS OF THE TASK</th>
<th>THESE QUALITIES SHOULD BE IN YOUR WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developing and sharing design ideas</strong></td>
<td>• Drawings and sketches that are clear, well labelled and easily understood by the class</td>
</tr>
<tr>
<td>Your group will present to the class:</td>
<td>• Clear justification for why particular design ideas were chosen</td>
</tr>
<tr>
<td>• sketches and drawings of a range of design ideas</td>
<td>• Clear explanation of the criteria that are being met</td>
</tr>
<tr>
<td>• an explanation of how the following criteria are addressed in your design ideas:</td>
<td>• Thoughtful response to questions from class members</td>
</tr>
<tr>
<td>&gt; road safety issues</td>
<td>• Your feedback to others</td>
</tr>
<tr>
<td>&gt; height and scale of buildings and houses</td>
<td>• Constructive feedback on designs</td>
</tr>
<tr>
<td>&gt; community facilities including schools, childcare, library, playing areas</td>
<td>• Analysis of others’ design ideas with reference to criteria</td>
</tr>
<tr>
<td>&gt; shops</td>
<td>• Active listening to presentation and feedback</td>
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<tr>
<td>&gt; places of worship</td>
<td></td>
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<tr>
<td>&gt; open spaces</td>
<td></td>
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<tr>
<td>&gt; playing fields and green space</td>
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<tr>
<td>&gt; different types of transport</td>
<td></td>
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<tr>
<td>and respond to questions from class members.</td>
<td></td>
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<tr>
<td>You will listen to other groups’ ideas and provide constructive questions and feedback to assist the development of their design ideas.</td>
<td></td>
</tr>
</tbody>
</table>

| **Submitting your neighbourhood plan**                    | |
| Your group will hand in for teacher review:              | • Annotated drawings and sketches that are clearly labelled and easily understood |
| • completed sketches, plans and other representations of your neighbourhood | • Clear description of the neighbourhood plan |
| • information on the process and decisions you made      | • Clear explanation of how the design meets the criteria |
| • an explanation of how your design will meet the criteria the class established at the beginning of the unit. | • Justification for the planning decisions the group chose |
| | • Relation to the other parts of the neighbourhood plan being submitted by other groups |

| **Student learning log**                                  | • Thorough and accurate recording of all steps undertaken |
| The learning log should include:                          | • Justification of each step, in particular in regard to how it improves design for the built environment |
| • the steps used in the design process and justifications of decisions and actions | • The use of appropriate urban design/planning vocabulary |
| • reflection on what you have learnt.                    | • Identification of a range of new learnings, particularly in terms of how designing may be improved in the future |
Links to other learning areas

Activities

**English**
Talking and Listening: discussions, polarised debating, role-play
Reading: factual texts and visual information, tables, diagrams, flow charts, graphic organisers, maps and so on, using critical literacy skills
Writing: discussions, expositions, captions, letters, persuasive text (modality – choice of language, identifying different audiences and purpose)

**Mathematics**
Space and Geometry: three-dimensional space, sketching three-dimensional and two-dimensional objects from different views, top, front and side
Measurement: lengths and heights of buildings, spaces, areas of blocks, capacities of tanks and the like
Number: money transactions
Data: graphs and tables, scale – converting blocks (although scale is not expected to be taught to Stage 2 students, the concept could be introduced and discussed if this is deemed appropriate to the level of understanding of the students in the class)

**Human Society and Its Environment (HSIE)**
Environment: interactions, significant places, geographical terminology
Social systems and structures

**Creative and Practical Arts (CAPA)**
Visual Arts – urban artists, sculpture, use of three-dimensional malleable materials

**Personal Development, Health and Physical Education (PDHPE)**
Playing areas, recreation
Safety: road, pool, waters and so on
Cooperatively working in groups, problem solving and decision making

Outcomes

**English**

**TS2.1** Communicates in informal and formal classroom activities in school and social situations for an increasing range of purposes on a variety of topics across the curriculum.

**TS2.2** Interacts effectively in groups and pairs adopting a range of roles, uses a variety of media and uses various listening strategies for different situations.

**TS2.4** Identifies common organisational patterns and some characteristic language features of a few types of predictable spoken texts.

**RS2.5** Reads independently a wide range of texts on increasingly challenging topics and justifies own interpretation of ideas, information and events.

**RS2.6** Uses efficiently an integrated range of skills and strategies when reading and interpreting written texts.

**RS2.7** Discusses how writers relate to their readers in different ways, how they create a variety of worlds through language and how they use language to achieve a wide range of purposes.

**WS2.9** Drafts, revises, proofreads and publishes well-structured texts that are more demanding in terms of topic, audience and written language features.

**WS2.10** Produces texts clearly, effectively and accurately, using the sentence structure, grammatical features and punctuation conventions of the text type.
WS2.13 Discusses how own texts are adjusted to relate to different readers, how they develop the subject matter and how they serve a wide variety of purposes.

WS2.14 Discusses how own texts have been structured to achieve their purpose and the grammatical features characteristic of the various text types used.

Mathematics

SGS2.1 Makes, compares, describes and names three-dimensional objects including pyramids, and represents them in drawings.

SGS2.2a Manipulates, compares, sketches and names two-dimensional shapes and describes their features.

MS2.1 Estimates, measures, compares and records lengths, distances and perimeters in metres, centimetres and millimetres.

MS2.2 Estimates, measures, compares and records the areas of surfaces in square centimetres and square metres.

NS2.2 Uses mental and written strategies for addition and subtraction involving two-, three- and four-digit numbers.

NS2.3 Uses mental and informal written strategies for multiplication and division.

DS2.1 Gathers and organises data, displays data using tables and graphs, and interprets the results.

WMS2.2 Selects and uses appropriate mental or written strategies, or technology, to solve problems.

WMS2.3 Uses appropriate terminology to describe, and symbols to represent, mathematical ideas.

HSIE

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.

ENS2.6 Describes people’s interactions with environments and identifies responsible ways of interacting with environments.

SSS2.7 Describes how and why people and technologies interact to meet needs and explains the effects of these interactions on people and the environment.

Finding a desirable location for a library in The Decision Maker.
CAPA

VAS2.1 Represents the qualities of experiences and things that are interesting or beautiful by choosing among aspects of subject matter.

VAS2.4 Identifies connections between subject matter in artworks and what they refer to, and appreciates the use of particular techniques.

PDHPE

DMS2.2 Makes decisions as an individual and as a group member.

PSS2.5 Uses a range of problem-solving strategies.

ALS2.6 Discusses the relationship between regular and varied physical activity and health.

SLS2.13 Discusses how safe practices promote personal wellbeing.

Resources

Print

Board of Studies NSW 1994, Design and Technology Years 7–10 Teaching Kit.

Ciddor, Anna 1990, Look Back at Homes, Harcourt Brace Jovanovich Group, Australia.

Department of School Education NSW (1997) Strategies for Factual Reading.


Drew, David 1992, Alone in the Desert, Rigby Heinemann, Australia.

Drew, David 1993, Clever Island, Rigby Heinemann, Australia.

Drew, David 1992, Misbuildings Untransport, Rigby Heinemann, Australia.

Misbuildings introduces the idea of functional design in the form of a game of ‘find and fix the mistakes’ in the pictures on each page. Students are encouraged to propose explanations and solutions to design problems. Untransport is a useful resource to encourage students to use higher-order thinking skills. A great resource when exploring and generating ideas.

From the Rigby Realization Series of Big Books.


Gerber, R 1986, This is My Place, Jacaranda Press, Queensland.

This book explores aerial views and perspective. The variety of illustrations of different places could be used when identifying needs and wants of particular audiences and defining the design task. It could be used as a stimulus for discussion or starting points for use when generating ideas or proposing solutions to design problems.


Five units of work that exemplify best practice and assessment of levelled outcomes in the technology learning area, in years 4–7. Includes annotated student work samples, specific support sections on a range of technology teaching and learning issues.


Pohl, Michael 2000, Learning to Think Thinking to Learn, Hawker Brownlow Education, Australia.

Provides a range of teaching strategies to encourage creative thinking.

Pollock, J 1987, On Site, Martin Educational, Australia.

This book explains how a building is erected, identifying a site, laying foundations, building it and installing necessary fittings etc to its completion. It contains a useful glossary of building terminology. Could be useful for exploring and discovering, selecting and using appropriate technology to create.


Provides ideas for collecting, analysing and using a wide range of data.
CD-ROMs

**ASPIRE 2000**, Olympic Games resource for Australian schools (distributed to all schools).

The interactive CD-ROM provides a resource to show students how aspects of the Olympic site were preserved, designed and developed.

**The Talk of Toppsville** 1997, Independent Commission Against Corruption, NSW (distributed to all schools).

This is an interactive CD-ROM that provides an opportunity for students to explore ethics and values through dilemmas and values positions in a small community that is experiencing the development pressures of a growing community. **The Talk of Toppsville** uses the story of a community that is planning decisions for the future. The story is designed to stimulate students’ thinking around values and ethics in relation to the issues confronting Toppsville residents. In their visit to Toppsville, students will find residents taking different value positions on the issue. The media and other information systems are prominently displayed in Toppsville, thus providing students with an opportunity to study the impact of information on their personal value systems.

**Supporting SciTech in the Primary Classroom** 2003, NSWQTP, Commonwealth of Australia (distributed to all schools).


Online

**Edward de Bono’s Six Thinking Hats**, Boise State University, College of Business, CIS/PM Department, [http://cispom.boisestate.edu/murli/cps/sixhats.html](http://cispom.boisestate.edu/murli/cps/sixhats.html)

Practical information on using Edward de Bono’s six thinking hats.

**Effective Teaching Strategies**, North Central Regional Educational Laboratory, [http://www.ncrel.org/sdrs/areas/issues/ envrmnt/drugfree/sa3effec.htm](http://www.ncrel.org/sdrs/areas/issues/envrmnt/drugfree/sa3effec.htm)

Information on role-playing and other teaching strategies.


Provides details of a wide range of teaching strategies.


Provides general information on the use of teaching strategies and provides links to other sites.


A very comprehensive list of teaching strategies, organised in alphabetical order.


Information on a range of graphic organisers.


The **Kids’ Design Challenge** is a pilot program providing a unique opportunity for Stage 2 students (years 3 and 4) to participate in a real-life design task of importance to the community. Students participating in the **Kids’ Design Challenge** research a topical problem or issue and generate innovative solutions. They show initiative, make decisions and manage time and resources. They are creative, flexible and innovative. Some resources included in this unit were identified through this site.


The Landcom site provides background information about urban design and several case studies.

**MyRead: Strategies for Teaching Reading in the Middle Years**, Commonwealth of Australia, [http://www.myread.org/organisation.htm#coop](http://www.myread.org/organisation.htm#coop)

Information on cooperative learning strategies.

**Picture Australia**, [http://www.pictureaustralia.org](http://www.pictureaustralia.org)

Internet-based service that allows you to search many significant online pictorial collections at the same time (National Archives).
Simulations, CUTSD Project, Northern Territory University,  
Information about simulations.

Teaching Strategies, ESOL Online: English for Speakers of Other Languages, Ministry of Education,  
Information on a wide range of teaching strategies and, in particular, graphic organiser.

Teaching Thinking, The CorT Programme (Cognitive Research Trust),  
http://www.teaching-thinking.com/schools/classroom2.htm  
Practical information for using Edward de Bono’s CorT thinking program.

Tools and teaching strategies and instructions.

Equipment/software
Access to a computer or network of computers to use the learning objects
Inspiration (Version 7.5): Inspiration Software Inc.

Other people/places
Local council or shire officers
Landcom
National Parks and Wildlife Service
Local developers, planners, architects
Department of Planning (http://www.planning.nsw.gov.au)
Department of Natural Resources (http://www.dnr.nsw.gov.au)
Department of Energy, Utilities and Sustainability (http://www.deus.nsw.gov.au)
and organisations to provide information and guest speakers.

Teacher reflections and unit evaluation
Space has been provided in Section 7 for you to add your reflections and evaluation after you have implemented this unit. Landcom would welcome your comments on the My Neighbourhood material.