Site Design

Measuring and Mapping the Site

Site Design

- Looking at the whole site
- First things first
- Preparing the plan

Sample Site Plans

- Adding information to the plan
- Adding comments from the surveys
- Adding ideas to the plan
- A plan for a paved playground
- Location Map and Planting Plan
- The Grand Plan

Planning Check List

Measuring and Mapping the Site

Planning Check List

Planning for building a model

Building a Model Step by Step

Model Check List

Measuring and Mapping the Site

Measuring: Involving children

When you have completed the consultations with all of the children, and while some members of your team are working on the remaining people surveys, others can start involving classes in measuring the different components of the site. The greater the children's involvement during this initial planning stage, the greater will be their sense of ownership of the project as it evolves.

Have members of your team take a walk around the entire school property and make a list of everything that needs to be measured. Have a group of older students help you to make the list. Show them the plan of your grounds and explain the need for checking the measurements marked on the plan and for taking new ones. To get them thinking seriously about how the measurements will be used for planning, you can ask them to write down their reasons for each item they list.

Students learning about assessing and measuring their site

Ask the group to think about how the height of trees and the areas of shade that are available to them at different times of the day can be measured. Also get them to figure out some creative ways of measuring trees and shade appropriate for different age groups.

Once you have prepared the list, post it in the staff room and ask teachers to choose two to three measuring tasks each for their classes to complete.

If you need the measurements to be returned to you by a specific date, let the teachers know and write a note at the top of your list to remind them.

It is a good idea to take all of your measurements in both metres and feet because, although the metric system is taught in Canadian schools, it is not generally used for building materials and gardening supplies. For example, lumber is measured in board feet, and materials such as soil, mulch and gravel are measured in cubic yards. Weights are often given in pounds with a "soft" metric conversion. As well, plants and planter sizes can be found in both inches and centimetres.

Mapping: Involving children

The measurement tasks determine the dimensions and locations of things, the majority of which will be fixed objects, with a fairly high degree of accuracy. Mapping helps you identify elements that are subject to change, but are nonetheless very important to know about when you are planning.

Mapping is about the use of each space by different groups at different times of the day and throughout the year, the condition of each space, its geographical location relative to other spaces, and the environmental, physical and social factors that influence its condition and help determine how it is used.

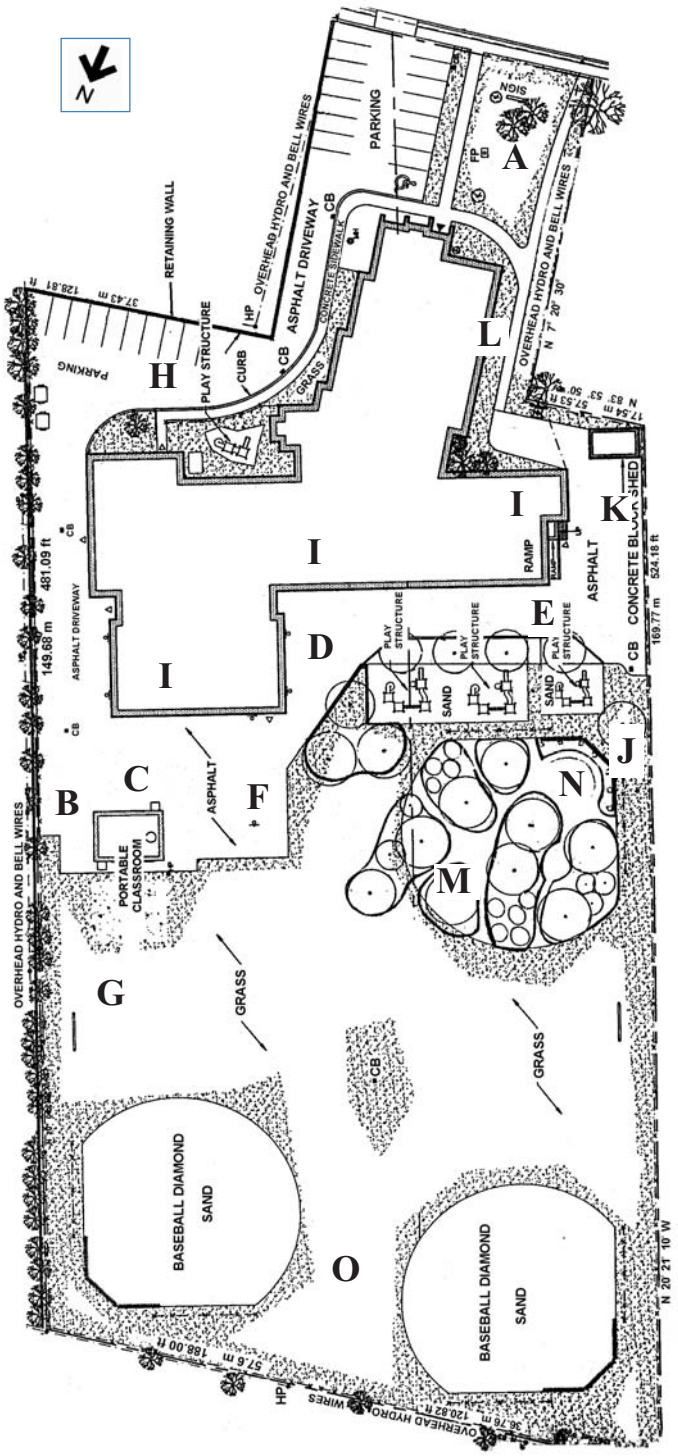
You will already know a lot about the yard from the people surveys, but read the children's comments again to refresh your memory. Then spend some time outside in the yard at recess times watching the children at play, talking with them and getting them to indicate places, features and activities that they like or dislike. Take blank site plans along with you and ask the children to help you add the site uses, behaviours and conditions. Small plans are easier to handle outside. If you prefer to use a large one, first attach it securely to a solid backing such as a white board.

The site measuring and mapping tasks on the following pages will give you an idea of the measurements you will need to take before you can start to plan.

Sample Measuring Tasks

The sample tasks based on the site plan shown will give you an idea of the measurements you will need to take before you can start to plan.

- Measure all of the edges of the school property along the boundary lines.
- Measure the length and height of all fences, and count the number of fence sections and support posts. It's useful to make drawings of the fences, number each fence section, and make notes on your drawings about the type and condition of the fencing.
- Measure the gates and entranceways to the yard. The measurements can be added to the drawings of the fences.
- Measure the edges of the school building and calculate the area and percentage of the land that the building occupies.
- Measure the edges of the paved spaces and work out the area of each and the total area of paved land. What percentage of the property is paved?
- Measure the edges of all the grassed spaces and work out the area of each as well as the total area of grass in the yard. What percentage of the property is grass?
- Measure the grassy area in front of the school near the parking lot (**A**).
- Measure the wood around the edges of the play structure and sand box. Work out the total area and percentage of the yard that is covered by sand.
- Find out the size of a standard soccer field and measure the area currently used for playing soccer in the yard. Is there enough room to make two small fields so that the junior and primary children can each have one?
- Measure the area of land occupied by the portable. Draw the area on the site plan and measure the distance between its east edge and the east fence (**B**), and its south edge and the school (**C**).
- Measure the distances between the east and south edges of the play structure and the closest walls of the school (**D**).



This plan is of a K-6 school. It had several areas that were barely used, including three baseball diamonds. We transformed one of them (**M**) into a quiet space planted with large shade trees and shrubbery. Its backstop (**N**) became a trellis for vines to grow on to create another shady space.

We also removed the asphalt along the southern edge of the play structure to plant four more shade trees.

- Draw a plan of the paving between the school and the play structure, measure the painted pavement games (hopscotch, four square, etc.) and mark their exact locations and the places where the paving has subsided or cracked on the drawing (**E**).
- Measure the paving between the northernmost wall of the school and the grass to determine whether there is enough room for a basketball court (**F**).
- Draw the high jump area on the plan (**G**), measure the length of the sand pit and the distance between its south end and the paving.
- Measure the height of the trees in the yard and the approximate diameter of their trunks about three feet up from the ground. Identify each tree and make a note of any specific problems such as dieback, exposed roots, soil erosion around the base, signs of disease and physical damage to the branches and bark.
- Measure the areas of shade cast by buildings and trees at different times of the day; for example, at the beginning and end of the school day, during morning and afternoon recesses, and at midday. Also, work out the total area of shade that the children have access to at these times.
- Measure the kindergarten yard at the front of the school (**H**).
- Identify the small tree in the kindergarten yard, measure its height and trunk diameter, and make notes about its condition. How could its growing conditions be improved?
- Is there any shade to measure in the kindergarten yard? Why not? Is the space large enough to build a sun shelter?
- Measure the height and length of the walls facing the yard where there are no windows (**I**). This will be useful for deciding upon the location of murals and ball games.
- Measure the distances between the west fence and the play structure and the backstop (**J**).
- Measure the width of the fire lane around the school that must be kept free of obstruction.
- Measure the distance between the west fence and the west wall of the school (**K**).
- Measure the width and length of the strip of grass along the west side of the school (**L**).
- Measure the area of the two baseball diamond at the north end of the yard (**O**). Calculate the percentage of the yard that they occupy.

Sample mapping activities

These simple site mapping exercises will give you an idea of the different physical and environmental aspects of the site that influence behaviour, how the different parts of the yard are used, and how children respond to them. Do the mapping at recess when you can watch the children and involve them.

- Observe the children at play in different weather conditions and at different times of the year. Show on your plan what each area of the yard is used for and the age groups that are attracted to specific features and activities.
- Note the quieter places in the yard and who is drawn to them. Roughly, what percentage of the children in the school gravitate towards quiet areas?
- Mark the places that are the most and the least favoured by the children.
- Mark any drainage problems. Show where water lies when the snow melts and when it rains. Involve the children in measuring the wet areas when conditions are right.
- If during the brainstorming sessions children said that bullying was a problem, observe the children at play to try to determine where it tends to happen and add any problem areas to the plan.
- Note behaviours that show physical and social discomfort because they will often highlight the simple things you can do to meet children's needs. For example, when you see children crammed into the only bit of shade in the yard, huddled together in a doorway in winter, or clinging to the edges and corners of the yard, you know that they are trying to stay out of harm's way. They need places where they can be themselves and feel safe and comfortable.
- With broad brush strokes, colour in on a blank site plan the areas that are used for hockey, basketball, soccer, tag, etc. Ask children to pinpoint the places where these games conflict with adjacent activities such as hopscotch. Note trouble spots on the plan.
- Get different groups of children to do a schoolyard walkabout with you to identify places that are noisy, quiet, ugly, attractive, unsafe, off-limits, littered, etc., and add them to your plan.
- Ask children to show you the places where problems occur on school property after hours.