School Yard Greening

MODULE ONE:
Overview
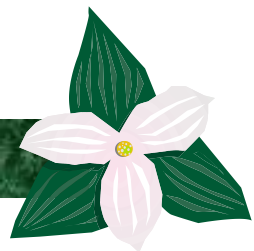
To be discussed

- Background
- Transforming people
- Definitions

Background

- School grounds transformation movement
- 150 years of school ground greening
- Outdoor classrooms
- Benefits
  - Reconnecting with nature

Transforming People

- School ground design
    - by grade 6 - 1,800 hours spent in schoolyard
    - parallels between schoolyards and jails
- School ground research
    - design of schoolyard affect on behaviour, happiness and health of children
- Conflict in the schoolyard
    - space for letting off steam
    - no space for quiet reflection or discussion

Transforming People

- Asking children
  - It is their area = getting their input
- Convention on the rights of the child
  - 1997: World Nations ratified "Convention on the Rights of the Child"

Transforming People

- ## The school place
  - benefits of transforming the workplace into warm inviting spaces increases productivity - same applies to schools
- ## Play structures
  - must be updated regularly to meet codes
  - children become bored with structure
- ## Learning indoors and outdoors
- ## Responsible citizens in the making
  - children are our future

Definitions

- Biodiversity
  - The diversity of all life on Earth

Definitions

- Transformation or greening
  - Holistic approach to improvement projects of a school ground
  - Includes cross-curricula activities and spaces to encourage imaginative play
  - Provides social opportunities and creates "a sense of" atmosphere
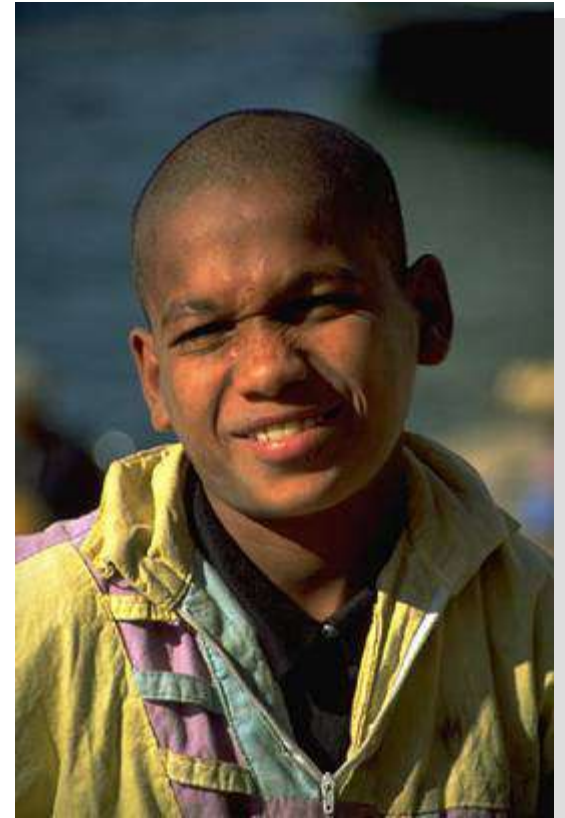
Definitions

- Naturalization
  - Creating or enhancing natural spaces
- Restoration
  - Process of reestablishing to the fullest extent the structure, function and integrity of indigenous ecosystems
- Beautification
  - Making something look better

Definitions

- The hidden curriculum
    - What is passively learned through participating in organized games, sports, playing and socializing in specially-created spaces.
   - It is received by the senses.

Definitions

- Native species
  - Plants which are found locally before the introduction of other non-native species.

Credits

- School Yard Greening has been funded by the Ontario Ministry of Natural Resources in partnership with the Eastern Ontario Stewardship Councils.

- Prepared by Ann Coffey, Canadian Biodiversity Institute.

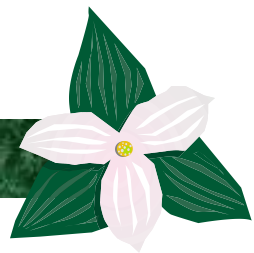- Layout & Design by Sue DeRochie, Forestry Designs.
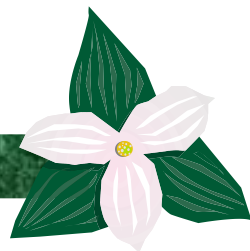
School Yard Greening

MODULE TWO:
Starting Up

To be discussed

- How to get started
- Building concensus
- Transforming your school yard
- Surveying people & yard
- Evaluating your site
- Drafting your plan
- Sharing the plan
- Implementing the projects
- Ongoing activities

How to get started

- Consultation
- Commitment and support
- Sharing ideas
- Proper planning takes time
- Forming a school yard planning team

Building Consensus

- Consultation, brainstorming and research
- Involving people
- Key to success
- Flexibility
- The "Hidden Curriculum"
- The question is:
    "What are they learning?"

Thinking about transforming your grounds

- Overall image of the school
    - Scale
    - Shelter
    - Space
    - Division of space
    - Places
- How are the grounds used?

Surveying people & the grounds

- Surveying people
- Skills identification
- Surveying the grounds
- Site use
- Biodiversity
- Shade
- Sample people and grounds surveys

Evaluating your site

- Evaluating the entire site
- Planning considerations
- A plan for all seasons
- Identifying resources
- Networking works!

Drafting your plan

- Your draft plan
- Composite of ideas
- Alternate plans
- Costing and timetabling
- Implementation schedule
- Maintenance plan
- Preliminary plan
- Keeping people informed

Sharing the plan

- Exhibit preliminary plans and survey results

- Present preliminary plans

- Respect concerns

- Adjust preliminary plans and implementation schedule

- Obtain final approval

Implementing projects

- Order purchased and donated supplies

- Launch the project

- Coordinating school and community volunteers

- Integrating grounds greening into the curriculum

Ongoing activities

- Publicizing
- Monitoring social effects
- Recording changes
- Monitoring and recording biodiversity on the school grounds
- Assessing community response
- Organizing special events
- Educating in the school grounds
- Networking

Planning check list

- Division of space
- Reducing congestion
- Equipment
- Scale
- Sense of place
- Boredom
- Conflict
- Noise
- Visual Appeal
- Comfort
- Fences

- Shade
- Wildlife
- Seating
- Paving
- Garbage
- Vandalism
- Meeting places
- Drainage
- All seasons
- Vegetation
- Gardens
- Soils
- Gradients

- Structures
- Traffic patterns
- Current uses
- Wind
- Views
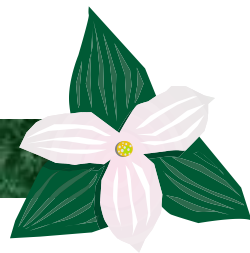- Visibility
- Future plans
- Snow removal

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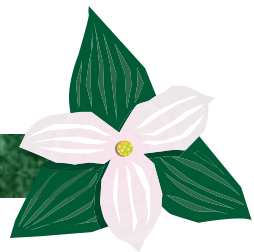
School Yard Greening

MODULE THREE:
Surveying

To be discussed

- Why survey people?
- Surveying
- Site mapping
- Site use
- Biodiversity
- Shade
- Skills utilization
- Using the results of the survey
- Sample surveys

Why survey people?

- To raise awareness and buy into the project
- People may be able to help if involved
- Survey not only children and people at the school but whole community
- It's a practical approach
  - Involves, facilitates, encourages, & helps

Surveying - Team

- Survey the surveyors
- Teamwork
- Ask questions …
- Think about how you are going to…
- Compile data and present results

Surveying - Students

- Involve children right from the beginning
- Do nots
- Instead …
- Curriculum connections
- Prioritize your projects
- Spreading the word

Surveying – Asking children

- Comments

- Categorizing their comments
  - Boredom
  - Noise
  - Play equipment
  - Broken or poorly-maintained areas
  - Colour, visual appeal, comfort
  - Fences
  - Shade
  - Wildlife
  - Seating
  - Paving
  - Garbage & vandalism
  - Caring for each other
  - Misc. comments

Surveying – Research Study

- Be part of a research project
- Submit information to Canadian Biodiversity Institute to be included

Surveying - Teachers

- Formal curriculum
- Play
- Supervision
- Behaviour
- Demand chart
- Spreading the word

Surveying - Parents

- Raising awareness
- Play
- Health & safety
- Aesthetics
- Skills
- Spreading the word

Surveying - Caretaking

- Raising awareness
- Knowledge of the grounds
- Health & safety
- Management of the grounds
- History of the grounds
- After hours
- Spreading the word

Surveying - Neighbours

- Raising awareness
- Addressing concerns
- After hours
- Ownership
- Project support

Surveying – Community

- Raising awareness
- Support
- Expertise
- Volunteers

Site Mapping

- Site plan
- Land ownership
- Land-use agreements
- Topographical maps
- Site plan evaluation
- Mapping and measuring site use

Site Mapping

- Observing daily site use
- Studying the physical environment
- Recording
- Communicating
- Project supporting activities

Biodiversity

- Definition
- Conducting an inventory
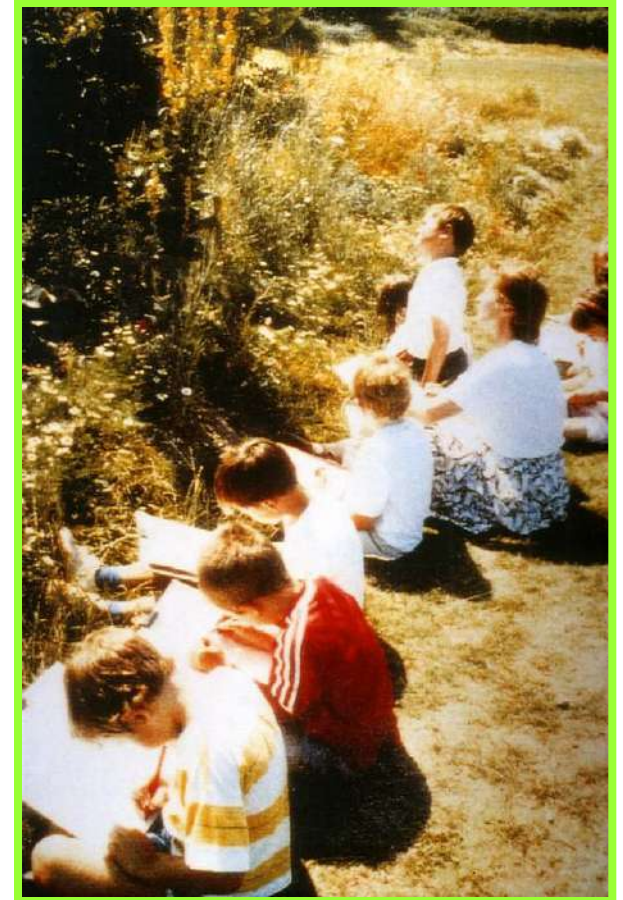- Monitoring
- Creating a databank
- Curriculum connections

Shade

- Raising awareness
- Choice and location of plants
- Sun protection policies
- Doing a shade audit

Skills Identification

- Identifying needs
- Designing the survey
- Creating a database
- Volunteers

Using the Survey Results

- People
- Site and site use
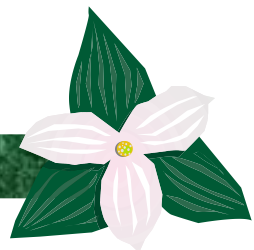- Biodiversity
- Shade
- Skills

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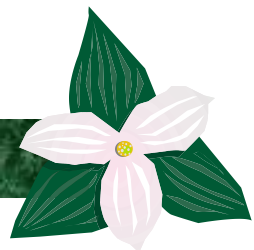
- Layout & Design by Sue DeRochie, Forestry Designs.

School Yard Greening

MODULE FOUR:
Types of Projects
- plants

To be discussed

- Planting trees, shrubs and vines
- Pavement and wall markings
- Seating
- Screening fencing
- Wildflower gardens
- Ponds
- Edible gardens
- Winter gardens
- Composting

Planting Trees, Shrubs & Vines

- Planting survival
    - Know your soil
    - Plant in groups
    - Mound or berm area
    - Create quiet, tree-shade spaces

Planting Trees, Shrubs & Vines

- Avoiding problems
    - Understand conditions of schoolyard
    - Understand needs of plant
    - Plant in right space
    - Plant suitable species
    - Learn proper planting techniques
    - Who will maintain the area?
    - Teach children the benefits

Planting Trees, Shrubs & Vines

- Protecting trees & plants
  - Make groves or mounded areas
  - Plant larger trees (45-65mm or more)
  - Conifers need help and considerations
  - Water … water … water
  - Snow … it's effects

Planting Trees, Shrubs & Vines

- Choosing plants
  - Trees
  - Hedges
  - Shrubs
  - Herbaceous, herbs
  - Rough grasslands
  - Crops

Planting Trees, Shrubs & Vines

- Matching species
  - Look at what's around school
    - See if they are healthy
    - Try to increase biodiversity by choosing different species
  - Ensure plants are right for area
    - Test soil
    - Prepare soil prior to planting
    - Is water available?

Planting Trees, Shrubs & Vines

- Other considerations
  - Planting near hard surfaces
  - Planting in dry conditions
  - Watch for overhead wires
  - If you have portables … consider their removal route for future

Considerations: Deciduous Trees

- Plant in mounded tree spaces
- Children prefer groves of trees with seating
- Plant large-caliper trees
- Do not plant flowering trees adjacent to play structures
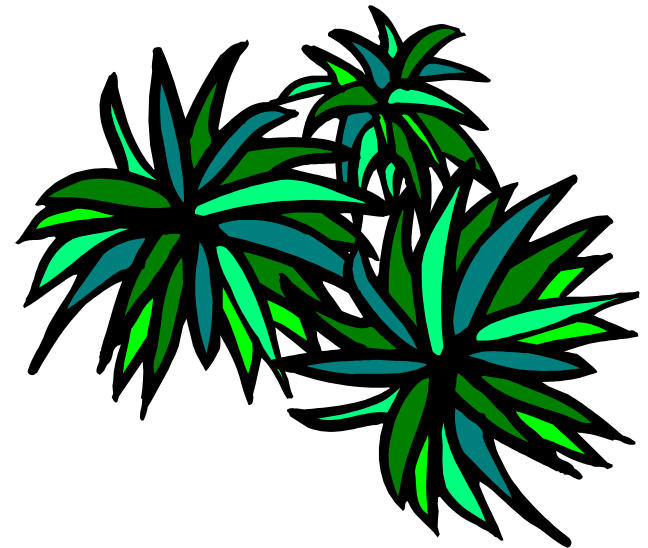
Considerations: Coniferous Trees

- Visibility
    - Do not obstruct "line of sight"
    - Do not plant too close to buildings
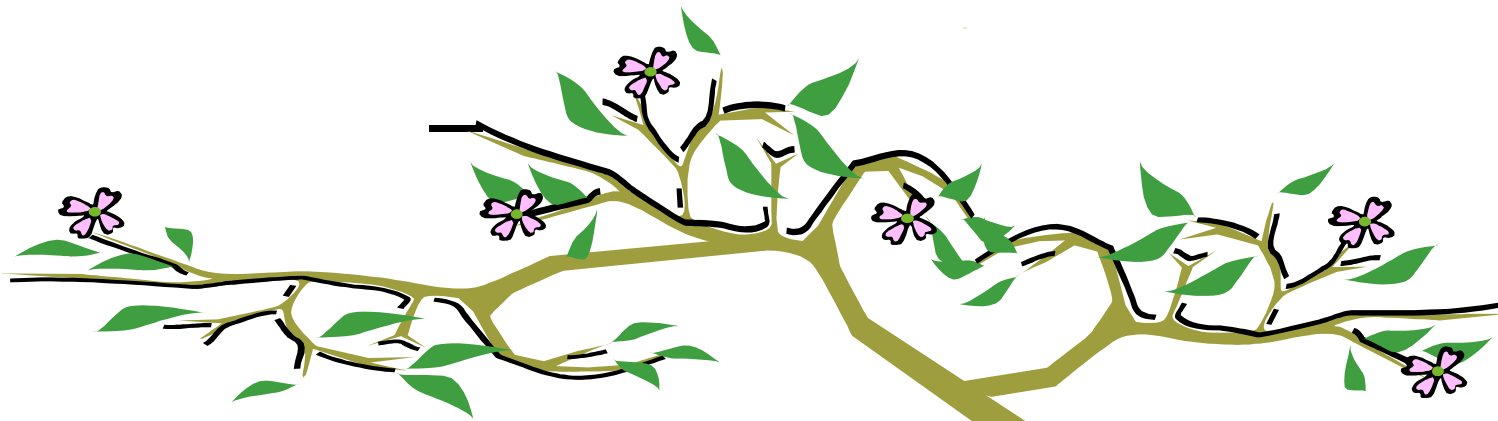- Salt sensitivity
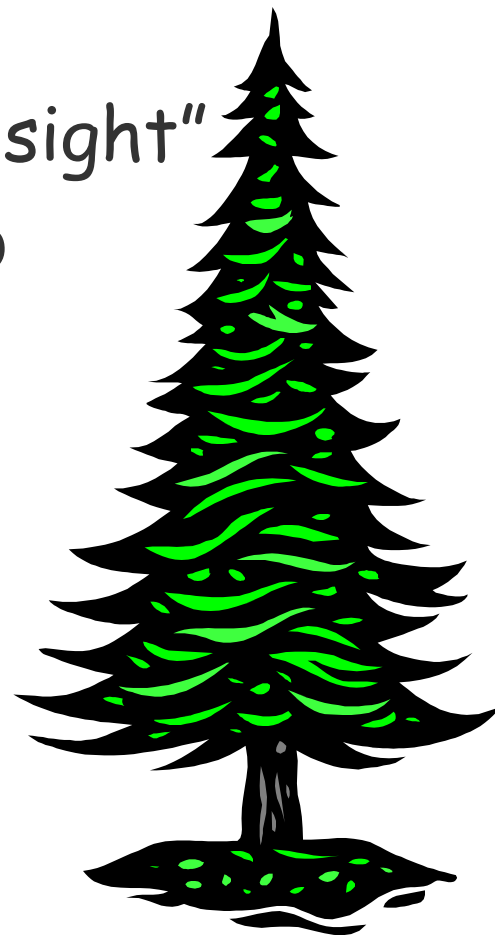
Considerations: Shrubs

- Look at design needs

- Don't forget mature size in plan

- Relationships between shrubs & trees

- Location

- Size, form, colour & textures

Considerations: Vines

- Great for screening unsightly views
- Usually need to be trellised and pruned
- Great for wildlife

Caring for your Plants

- Ownership:
    - Generate a sense of ownership even before planting
    - Educate community on benefits
    - Create excitement over program

Caring for your Plants

- Watering
  - Ensure watering plan is in place
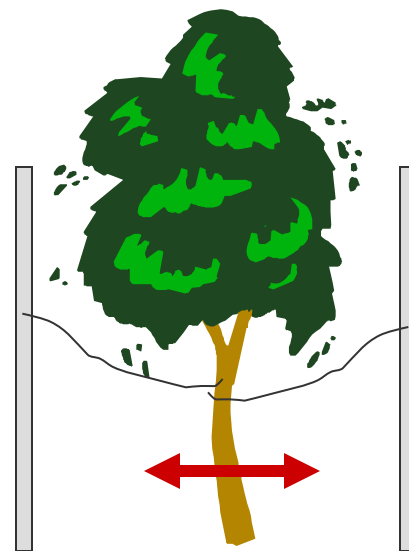 - Plants need lots of water to survive in early years

Caring for your Plants

- Staking
  - Larger trees need staking for support in first years
  - Ensure 2 are placed upwind and prevailing wind
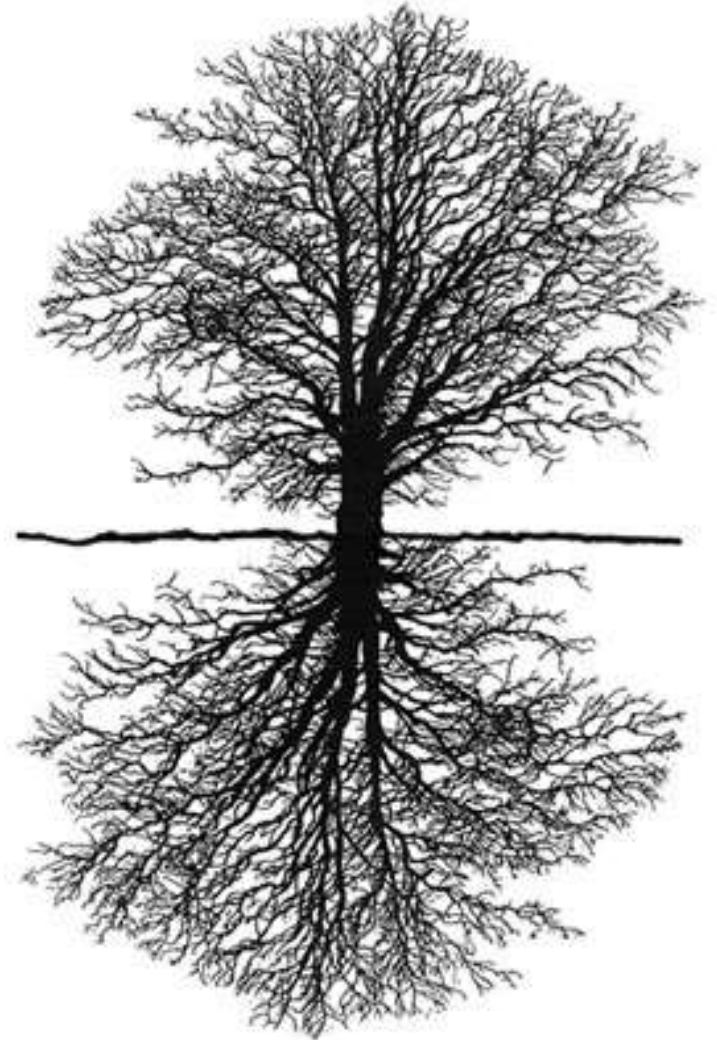
Caring for your Plants

- Mulching
    - Helps keep weeds down and retain moisture
- Weeding
    - Eliminates competition for nutrients
    - Do not use "Weed Wackers"
- Wrapping
- Fertilizing
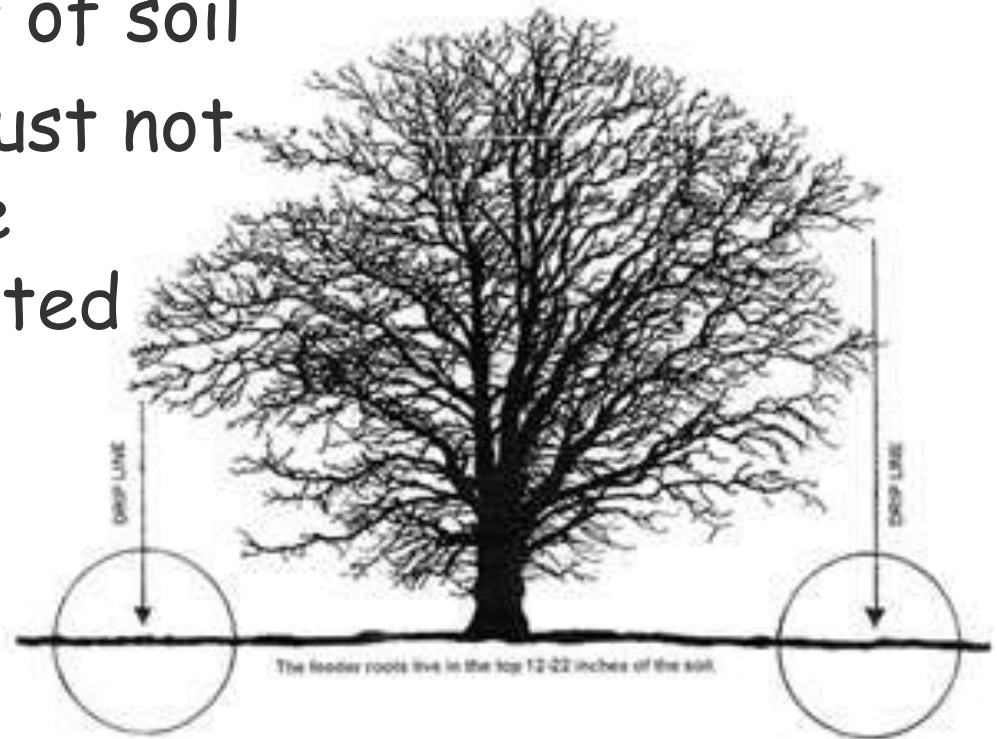- Mechanical damage
- Snow storage

Tree Planting

- Tree above & below
  - As much roots as there is branches & leaves

Tree Planting

- Root growth & feeding
  - Feeder roots live in the top 30-60 centimetres of soil
  - This area must not become compacted

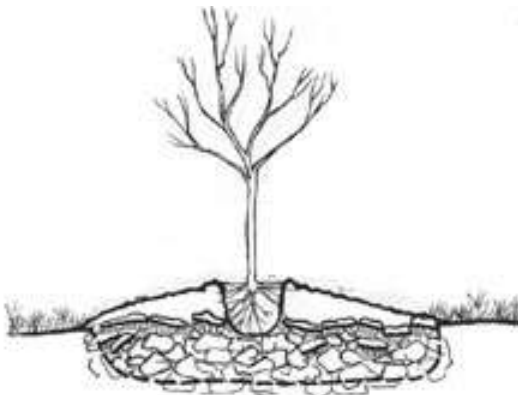The feeder roots live in the top 12-22 inches of the soil.

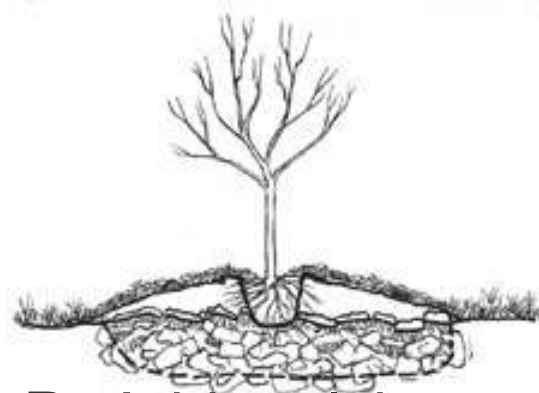# Tree Planting

- ## How to plant

A: break ground

B: add compost & mound 30cm. in centre

C: Dig hole & plant tree

D: Add mulch

Tree Planting

- Planting single trees at grade
  - Survival rate is very low (less than 10%)
  - Children lean bicycles, swing around trunk or hang objects from branches
  - If planted directly into grass, mowers mow to close and injure the trunk
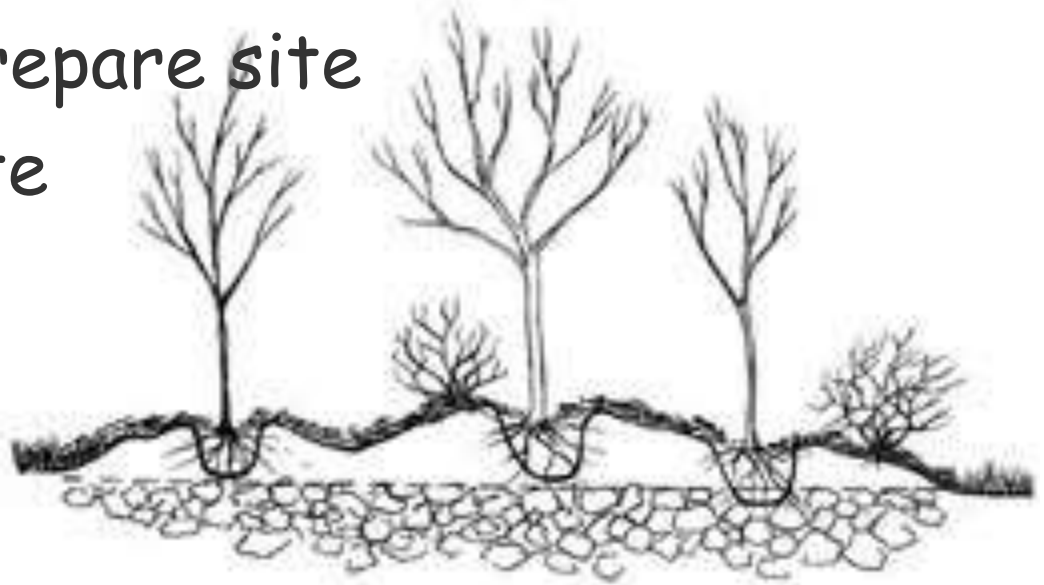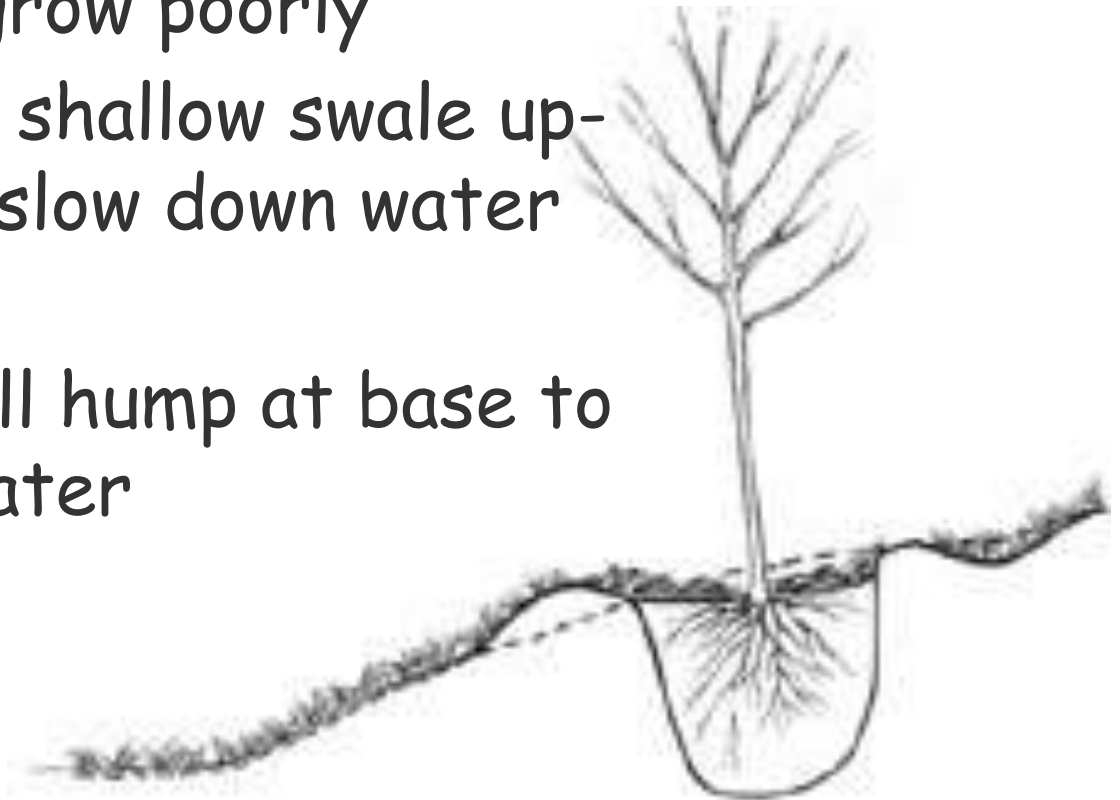
Tree Planting

- Planting groves of trees:
    - Creates a quiet space
    - Improves growing conditions
    - More visible
    - Easier to prepare site
    - Success rate higher

Tree Planting

- Planting on a slope
  - Usually grow poorly
  - Create a shallow swale up-slope to slow down water drainage
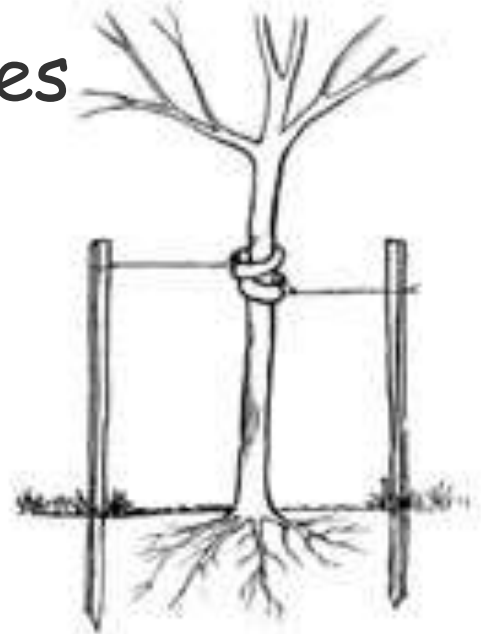 - Add small hump at base to retain water
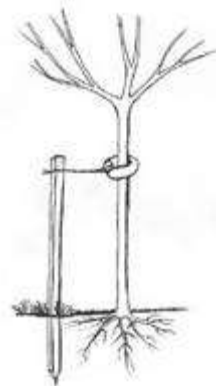
Tree Planting

- Staking
  - Helps support tree in first years (2 max.)
  - Should permit trunk movement
  - Large trees: use 2-3 stakes
  - Smaller trees: use 1

School Yard Greening

MODULE FOUR:

Other types of projects

Pavement and wall markings

- Child-friendly environment
  - Most buildings, schoolyard surfaces, fencing and gateways are dull and institutional in appearance
  - Inappropriate for children to develop play and social skills
  - Need to develop interesting outdoor spaces

Brightening the schoolyard

- Add murals on building walls or on painted plywood attached to fences
- Paint board games or mazes on pavement
- Create play houses, villages on pavement using paint
- Ask students for input!
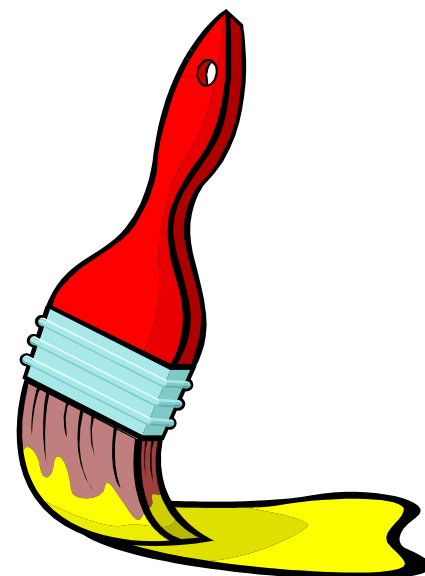
Coloring pavement & walls : Step 1

- **Murals:**
  - Colours fade – try to pick north or shade location

- **Paving:**
  - Find a smooth area
  - Not a high traffic area

- **Paint:**
  - Use good UV latex paint, do not seal it

Coloring pavement & walls : Step 2

- Prepare surface thoroughly
  - Sweep
  - Wash away dirt with sprayer washer if possible

Coloring pavement & walls : Step 3

- Outline your design
- Paint when temperature is 15-25C
- Give it 2 coats of paint to last longer
- Allow paint to dry completely (24 hours)
- Note: usually needs retouching every year – high maintenance and commitment
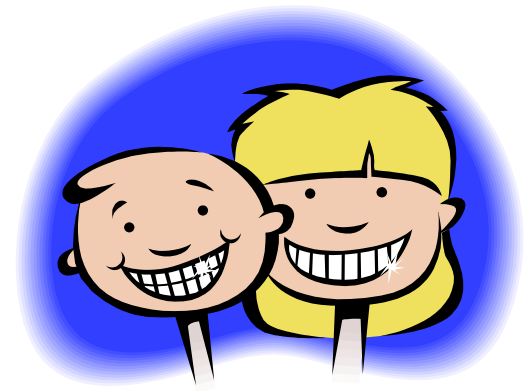
Ideas:

- ## Walls:
    - Murals designed by children
    - Measuring tape
    - Games, targets
    - Number and letter snakes
    - Map
    - Smiling faces

- ## Pavement:
    - Mazes
    - Board games
    - Ponds with lily pads for hopping games
    - Rail tracks
    - Sundials for children to cast shadows
    - Winding lines for following

Seating

- Children need comfortable, quiet, shady places to sit IN and not just to sit ON

Seating

- Arrangements
    - Survey children to see what they like to DO when sitting in quiet areas
    - This determines arrangements (semi circles, horseshoes, hexagons, etc.)
- Type & location
    - Use stumps, logs, boulders, rocks in quiet areas
    - Picnic tables very impractical as is metal seating which is too hot or cold depending on season
    - Provide sufficient seating between grades

Seating

- Outdoor classroom seating
  - If possible, provide seating area in shaded area for a whole class
  - Great setting for group discussion or for reading exercise

Screening Fences

- **Aesthetics**
  - Fences are truly "O-fence-ive" creating a prisoner/cage feeling
  - Covering them up with shrubs, climbing plants or murals compliments area
- **Acts as a windbreak**
- **Provides shade**
- **Increases habitat**
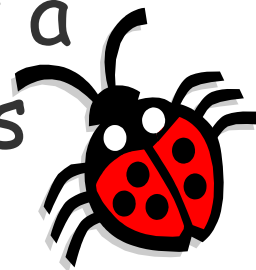
Wildflower Gardens

- Choosing wildflowers
    - Seeds vs. purchased plants
    - Soil types
- Wildflowers for wildlife
- Native Species

Butterflies, caterpillars & hummingbirds

- Children love to explore & see
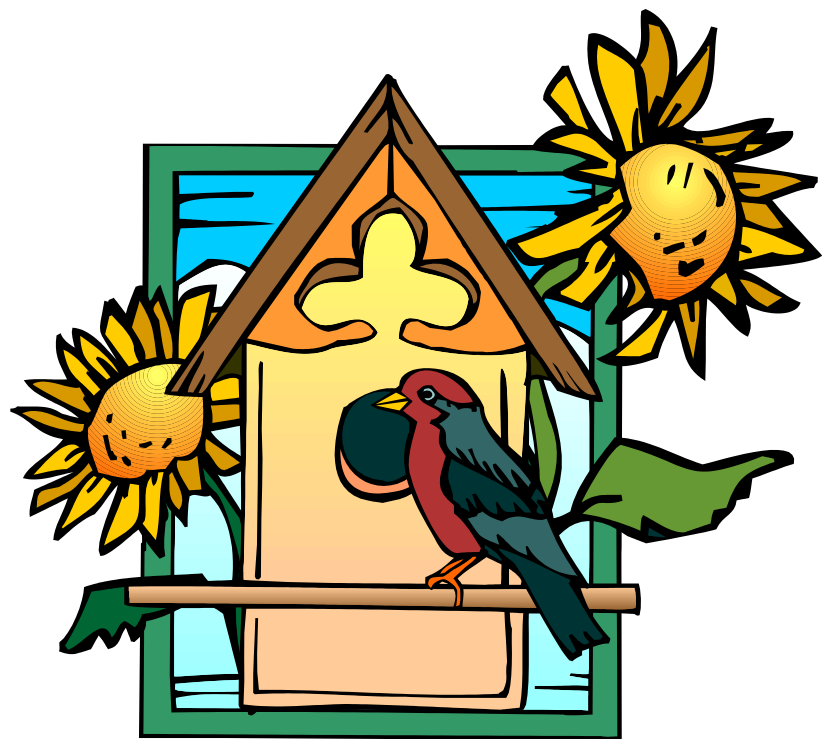- Choosing plants that will attract a wide variety of winged creatures

Wildlife Gardens & More...

- Letting the grass grow
- Toad garden
- Rock gardens
- Plants for crafts
- Mini-beast gardens
- Gardening with art
- Bird-feeding stations
- Bat roosting boxes
- Bird nesting boxes

Ponds

- Schoolyard ponds
  - Provides for aquatic studies
- Educational use
  - Great tool to discuss water resources
- Pond planning
  - Careful planning required : safety is key
- Wetland plants
  - Know your plants, choose wisely

Edible Gardens

- Children learn about plant growth
- Sustainability
- Nutrition and health
- Community gardens
- Food for funds
- Curriculum activities

Winter Gardens

- Half the year is in winter so plan project to be year round

- Ideas:
  - Add feeders for birds & squirrels
  - Grow plants that retain berries
  - Plant conifers in row to provide windbreaks
  - Add a weather station for monitoring
  - Place straw bales in late fall for mazes, play houses and benches
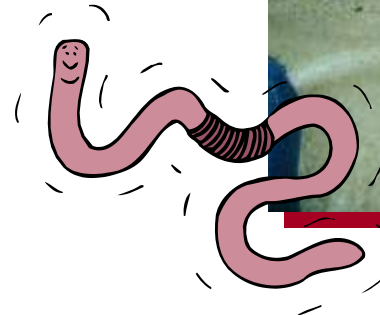 - Create berms for sitting in summer and sliding in winter

Composting

- Excellent way to reduce waste and teach students the concept of recycling

- Teach about soils and composting

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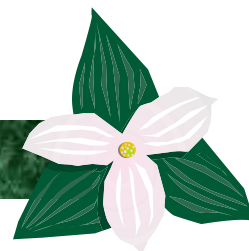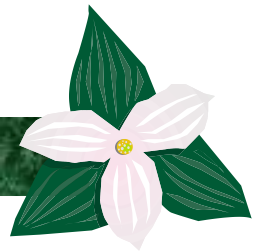
School Yard Greening

MODULE FIVE:
Site Design

To be discussed

- Designing the site
- Preparing the base plan
- Planning check list
- Building the model
- School grounds in a box check list
- Locating projects
- Sample site plans

Designing the site

- Looking at the whole site
- Big picture, little picture

Preparing the base plan

- The base plan

- Checking the base plan
  - Outline buildings, property boundary lines, internal edges, locate objects, North-South orientation

- Adding to the base plan
  - Add exits & entrances, windows, designated fire lanes

Preparing the base plan

- Checking the scale
    - Use a scale ruler
    - Ensure plan is accurate
- Reproducing the plan
    - Always have original, make copies for drafts or use acetates for overlays
- Transferring the data
    - Use survey results
    - Create draft plan on paper

Planning check list

- Check existing features, site conditions and site use

- Proposed features and new site uses

Building the model

- Why make a model
  - Avoid pitfalls
  - Great visual
- Planning the model
  - Pick a user friendly scale – 2X or 3X that of plan
- Gathering data
  - Use data gathered (surveys)
    - Site survey
    - Year-round biodiversity
    - Shade audit

Building the model

- Marking the grounds of the model

- Checking the scale
  - Make sure it calculates easily between the base plan and new model

- Assembling materials for making the model

  - Cardboard, fabric, paint, fencing, modelling clay, etc.

Building the model

- Marking the routes
  - Show vehicle traffic
  - Show children traffic patterns
  - Show emergency, delivery and waste collection routes
  - Use different coloured string to represent different routes

Building the model

- Pathways between projects
    - Try to respect existing routes
    - If placing a planting project unavoidable, make a marked pathway to guide people

Building the model

- Making greening projects
  - Place various greening projects as maquettes to model
  - Review:
    - Desired lines
    - Shade
    - Sight lines
    - Incompatible activities
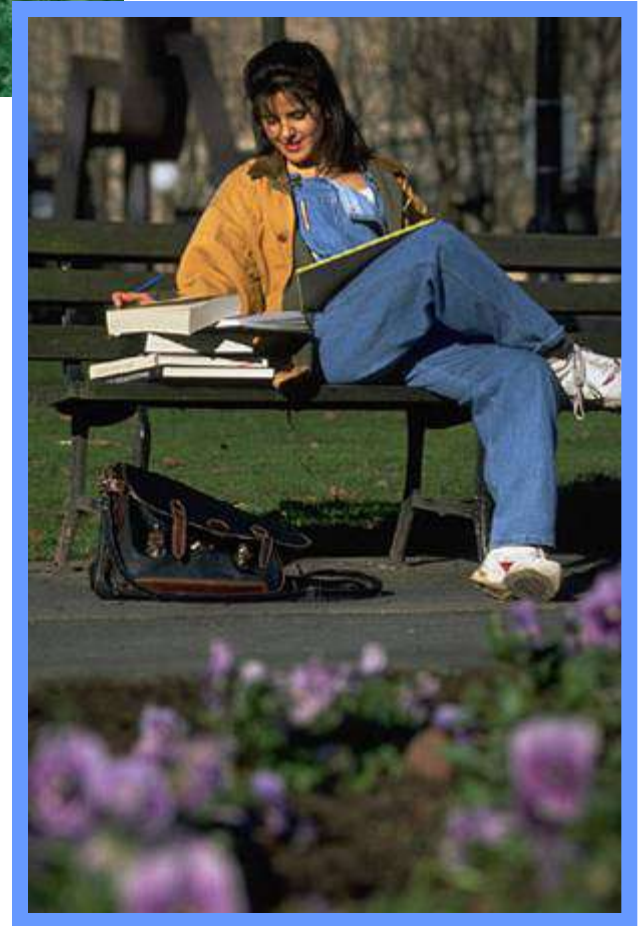
Building the model

- Vegetation
  - Place existing trees and shrubs at existing height to scale
  - Add new plantings with expected spread over time
  - Way to create it: use dead branches, add tissue for foliage, and set them in plasticine for a base

Building the model

- Seating
    - Place various styles for design element
    - Remember: children are much more interested in having pleasant places to sit IN than simply nice things to sit ON!
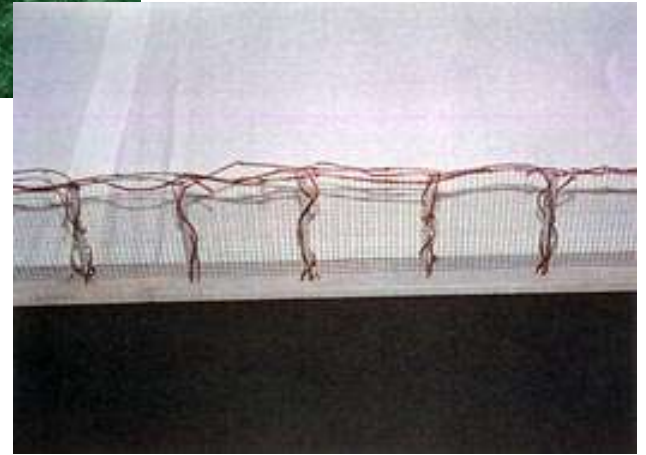
Building the model

- Sight lines
  - Verify that sight lines for supervision are not compromised
  - Safety is main issue!

Building the model

- Shade
  - Move spotlight to ensure shade will fall where you intend it too!

Building the model

- Displaying the model
    - Have show & tells
    - Increases interest & keeps momentum
- Storing the model
    - Try to keep it for the duration of project for reference
- Ownership & Model-makers
    - Having everyone participating in model making adds to ownership of project
    - Everyone loves to build!

Wrap Up

- Checking the scale
- Adding existing features
- Marking the routes
- Improving fencing
- Making windbreaks and screening unsightly views
- Placement of new objects
- Adding trees and seating
- Checking shade and sight lines

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