San Diego County Water Authority

Shaping Spaces
Housekeeping:

- Breaks: mid-class, after lab
- Restrooms (please respect closed-off areas)
- Please silence your cell phones
- If you can’t attend, contact us!

WaterSmart Series Contacts:

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Shaping Spaces

Learning Objectives

Landscape Design Factors
- Curb appeal
- Functional design
- Stormwater design
- Shape your space
- Aesthetic concepts
- Place your plants

Plant Selection

Drawing Plants To Scale

Sustainable Landscape Elements
Homework Review

You should have read...
- A Homeowner’s Guide to a WaterSmart Landscape Steps 1-4

Hopefully you conducted...
- A soil drainage test
- An LID analysis based on your L-2 base plan
- A site analysis and complete the questionnaire

Of course you identified...
- Your star rating ★★★★★

Did you check out...
- SoCalWaterSmart.com for rebates and incentives?

Did you find your WaterSmart lifestyle when you watched...
- Videos On Demand episodes 1 through 8?
Please introduce yourself…

• Name
• Star rating
• New insights

Glad you’re back!
Class 2 Objectives

Homework Review

Star Rating

Introductions

Step 3 (continued)

Site Analysis

Step 4

Design Your WaterSmart Landscape

Background Concepts

Functional Design

Plant Selection

Putting It All Together
Landscape Design & Other Design Disciplines

**Similarities**
- ✓ Same basic elements & principles

**Differences**
- ✓ Three-dimensional
- ✓ Living
- ✓ Seasonal & ever changing
Landscape Design & Other Design Disciplines

Topics:
- Design Solutions
- How will you use your space?
- Low Impact Development (LID) stormwater capture
- Form follows function / bubble diagram
- Aesthetics
- Plant selection
- Drawing plants in scale
Concepts for Landscape Design
Design Solutions

Curb Appeal: Billboard Effect

- Groups or drifts of plants catch the moving eye
- High contrast
- Simple
Design Solutions

Curb Appeal: Wayfinding

- Direct line of sight or visual cues
- Generous path welcomes guests
- No overgrown areas
Design Solutions

Curb Appeal: Wayfinding

- Direct line of sight or visual cues
- Generous path welcomes guests
- No overgrown areas
Design Solutions

Landscape Functions

Climate Mitigation

- Deciduous / Evergreen
- View vs. Temperature
- Avoid large trees close to structures in fire hazard areas
Design Solutions

Landscape Functions

Security
Thorns as a deterrent
Design Solutions

Landscape Functions

Privacy
Screen ugly views or create privacy
Pick a cultivar that doesn’t need frequent pruning

Podocarpus macrophyllus maki
Shubby Yew

Pittosporum tenufolium
‘Silver Sheen’
Explore landscape design as two parts:

1. **Shaping Spaces** - how will you use the space?
   - Space arrangement, location of major elements
   - Design in 3D
   - Form follows Function
   - Aesthetics

2. **Planting Design** - how the space is filled with plants for effective design.
Functional Design: Shaping Spaces
How will you use your space?

Is your space an outdoor room, a passageway, or a garden?
Functional Design: Shaping Spaces

Outdoor Rooms

**Walls** do not need to be solid to create sense of enclosure

**Floors** can be flagstone, decomposed granite, mulch or groundcover

**Ceilings** can be canopies or arbors
Functional Design: Shaping Spaces

Passageways

- Way-finding or easy to follow
- Open path for curb appeal
- “Peek-a-view” for mystery
Functional Design: Shaping Spaces

Passageways

Way-finding or easy to follow
Functional Design: Shaping Spaces

**View Garden**

- Enjoy from a distance
- Treat as a canvas
- Include paths for maintenance & strolling
Functional Design: Shaping Spaces

View Garden

• Look for distant views to “borrow” and add to your landscape
Functional Design

Design in 3D

Create vertical dimension with

- Plant height contrast - trees or tall shrubs with low plantings
- Features - walls, fences, and arbors
**Shaping Spaces**

**Design in 3D**

Create vertical dimension with layered planting

- **Background**: 6’ +
- **Middleground**: 4’ +/-
- **Foreground**: 0-12”
Functional Design
Design in 3D

Create vertical dimension with layered planting for islands

- Background: 6’ +
- Middleground: 4’ +/–
- Foreground: 0-12”
Functional Design

Low Impact Development (LID) Stormwater Design
Low Impact Development (LID)
First Flush Capture – A source of FREE water for your yard!

Non-permeable surfaces
- roofs
- concrete
- asphalt
- grouted pavers

Semi-permeable surfaces
- decomposed granite
- cobble
- gravel
- compacted soil

Permeable surfaces
- landscape areas
- amended or mulched soils
Low Impact Development (LID)

How much runoff water do I plan for? What landscape features hold water to infiltrate into the soil?

- Refer to your notes on your LID Base Plan (L-2)
How can water capture work for you?

Question #1:

How much water do I plan for?

Determine your collection area
Question #1: How much water do I plan for?

- Define your storm water collection area - what makes sense for your project?
- Break the collection areas into geometric shapes
Question #1: How much water do I plan for?

- Calculate the area of each shape and total

496 SF

Area of Collection
Determine the volume of water to be collected

Gallons Collected

1” (Rainfall) x Area of Collection x 0.62 = Gallons

(0.62 is a constant to convert SF inches into gallons)

Convert Gallons to CF needed to retain water

Gallons ÷ 7.48 = Cubic Feet (CF)
First Flush Techniques: Pitfalls & Problems

Setbacks for infiltration areas at least:
- 5’ from foundations
- 10’ from other buildings
- 3’ from hardscape

Seek professional help:
- Expansive clay soil
- Poor percolation
Question #2: Where can I store that water?

Draw setback lines for infiltration areas:
- 5 feet from any building foundation and property lines
- 3 feet from an impermeable surface
- No more than 12” below finish grade

This is your “safe” area to hold the water until it sinks into the soil sponge
First Flush Capture Techniques

The goal is to *keep rainwater on site*

Slow-Store-Spread-Sink

- **Slow** down the speed of the flow
- **Store** in basins
- **Spread** over wider area
- **Sink** into healthy soil
Basin Cross Section

Basin 14’ long x 12’ wide x 4” deep holds 50 CF
Swale or Dry Stream Cross Section

Swale: 30’ long x 3.5’ wide x “V” cross section: 1’ deep in center holds 50 CF
Slopes & Hillsides Cross Section
First Flush Techniques

Dry Stream

Infiltration Trench
First Flush Techniques

Cisterns

Dry Well
First Flush Techniques: Rain Barrels

- Plan for overflow to protect foundation
- Check local agencies for current rain barrel & cistern incentives
- First Flush from 1,000 SF roof, 1.0” rain event is 83 CF
  ✓ Requires eleven 55 gallon rain barrels
**Question #2:** Where can I store that water?

- Determine the CF of your method(s)

**Length x Width x Depth = CF**

Note: All measurements are in feet, not inches
**Functional Design**

**Form Follows Function**

**How will the space be used?**

**What activities will occur there?**

- Active uses: cooking, eating, entertaining, sports, play, pool, pets, food
- Passive uses: resting, meditation, viewing

**Does the current layout “work” or does it need to change to be more functional?**

**Lose the bed lines!**

- Don’t think of your planting bed as a separate area…plan the entire space!
Functional Design

Form Follows Function

Functional Spaces & Hardscape

Create a Functional Bubble Plan

Think…

• How the space could be used, not how it IS used.
• Will it be an outdoor room, garden or pathway?
• Do you want add
  • Seating areas?
  • Pathways through planting “islands”?
  • Meander through your yard/slope with a circular route?
Functional Design
Form Follows Function

Functional Spaces & Hardscape
Create a Functional Bubble Plan

Think... How the space could be used, not how it IS used.
Functional Design
Form Follows Function

Functional Spaces & Hardscape
Create a Functional Bubble Plan

Think... How the space could be used, not how it IS used.
**Functional Design**

**Form Follows Function**

**Functional Spaces & Hardscape**

Is it an outdoor room?
Functional Design

Form Follows Function

Functional Spaces & Hardscape

Is it an outdoor room with a dry stream bed for LID?
STEP FOUR  DESIGN YOUR WATERSMART LANDSCAPE

Functional Design
Form Follows Function

Functional Spaces & Hardscape
Is it a passageway?
Functional Design
Form Follows Function

Functional Spaces & Hardscape
Is it a garden?
**Functional Design**

*Form Follows Function*

**Create a Planting Area Bubble Plan**

- Show basic planting areas
- Locate planting heights of
  - High
  - Medium
  - Low
Functional Design
Form Follows Function

Functional Spaces & Hardscape

 ✓ Complete your Functional Bubble Plan
   • Sketch circulation paths and gathering areas
   • Show planting areas and height

 ✓ Create your Hardscape Plan
   • Check hardscape in place and correct
   • Add desired elements

 ✓ Include
   • Hardscape: walkways, drive, walls, patios
   • Fences and walls
   • Elements: fountains, pots, arbors, rocks
   • Planting areas
STEP FOUR  DESIGN YOUR WATERSMART LANDSCAPE

Functional Design
Form Follows Function

- Overlay tissue paper on the L-3 plan
- Mark corners of the house for alignment
- Sketch ideas about your functional layout on the tissue
- Try several layouts until you find one that works for you
- Develop your hardscape and check in place at home
Lab & Break (30 min)

After Break:
✓ Landscape Form
✓ Aesthetics
✓ Plant selection
✓ Putting it all together

Homework:
- Functional Bubble Plan
- Hardscape Plan

Diagram showing a landscape design with labels for different plant zones and hardscape elements.
Form Composition

Form Follows Function

- Geometric or natural forms
- Forms provide visual order
- Forms provide edges between spaces
Form Composition

Rectangular Forms

- Formal, considered “man-made”
- Simple and relates to many materials and construction methods
Form Composition
Angular and Hexagonal Forms

- Less formal than rectangular forms
- Creates interest in the landscape
Form Composition

Circular Forms

- Simple feeling of unity and wholeness
- Circles as a whole or arcs can be form generators
Form Composition

Organic Meander

- Smooth back and forth transitions inspired by nature
- Many times used for walkways or dry stream beds
Design Concepts

Aesthetics

- Provides interest and impact
- Creates focal points and catches the eye
- Contrast plant textures, values, and colors
Design Concepts

Aesthetics of Proportion

- relative size of objects within the composition
- a large tree can make a house appear smaller
- most SoCal homes are out of scale to their lots
Design Concepts
Aesthetics of Proportion
Design Concepts

Aesthetics of Unity

- Provides cohesive calm
- Repeat plant selections throughout the plan including both sides of driveway
Design Concepts

Aesthetics of Color

Most powerful of art elements

Establish harmony

• Soothing: low contrast, monochromatic, cool
• Energizing: contrast, complimentary, warm

PRIMARY COLORS

TRIADIC COLORS

COMPLEMENTARY COLORS (OPPOSITE)
Design Concepts

Aesthetics of Color

Simple Color Harmony

Soothing

Energizing
Functional Design: Shaping Spaces

Aesthetics of Lines

- Curving lines provide a relaxed, informal feel
- Straight and geometric lines are classic and formal
Functional Design: Shaping Spaces

Aesthetics of Points

**Created Views** - use an accent feature to create a focal point
Design Concepts

Aesthetics of Texture and Contrast

- Provides interest and impact
- Creates focal points and catches the eye
- Contrast plant textures, values, and colors
Plant Selection
Creating Your Plant Palette
How to Choose?

- Climate appropriate?
- What do you like?
- Place appropriate?
- Does it fill a design function?

San Diego County Water Authority
Plant Selection

Climate Appropriate Plants

Where do they come from?

Look to other Mediterranean climates:

- California
- Mediterranean Basin
- Chile/South America
- Western Cape of South Africa
- Western & South Australia
Plant Selection
Climate Appropriate Plants

Leaf characteristics

- Leathery
- Small
- Silvery
- Solar tracking
Plant Selection

Climate Appropriate Plants

Edibles are the ultimate in local food but generally **NOT** climate appropriate

- Buried reservoirs or “ollas”
- Drip irrigation
- Sunken beds & planting pits
- Wicking beds
- Partial root-zone drying
- Encourage deep rooting
- Weed and mulch
Plant Selection
Climate Appropriate Plants

Climate appropriate edibles include

Figs
Pomegranates
Goji Berries
Plant Selection
Climate Appropriate Plants

Where to get plant suggestions?

WaterSmart plant palettes found in your Homeowner’s Guide and notebook

- Mediterranean
- Asian
- Tropical
- Contemporary
- Native
- Shade
- Groundcover options
Plant Selection

WaterSmart Plant Palettes

Mediterranean

Lavender

Rosemary

Olives
Plant Selection
WaterSmart Plant Palettes

Low Water Asian

Iris douglasiana  Dietes  African Iris  Nandina

Juniperus  Juniper
Plant Selection

WaterSmart Plant Palettes

**Low Water Tropical**

- Lantana
- Alstroemeria
- Euphorbia milii
  - Crown of Thorns
- Strelitzia
  - Bird of Paradise
- Bougainvillea
- Geraniums
- Bird of Paradise
- Bromeliads
- Plumeria
STEP FOUR
DESIGN YOUR WATERSMART LANDSCAPE

Plant Selection
WaterSmart Plant Palettes

Low Water Contemporary

Assorted Succulents
Anigozanthos Kangaroo Paw

Fire Sticks Kalanchoe thyrisifolia Agave Attenuata
Plant Selection

WaterSmart Plant Palettes

California Natives

Epilobium California Fushia

Saliva clevelandii
Cleveland Sage

Romneya coulteri
Matilija Poppy

Heteromeles arbutifolia Toyon
Plant Selection
WaterSmart Plant Palettes

*What you need to know about natives…*

California natives are

- Adapted for our climate, soils
- Provide habitat and attract wildlife
- Some plants are summer deciduous

Native plants need

- Little or no summer water
- Little or no fertilizer
- No pesticides
- Less maintenance

*Some native plants are summer deciduous*
Plant Selection

WaterSmart Plant Palettes

Shade Plants for Dry Areas

Bromeliads

Clivia Dianella variegata Schefflera arboricola variegata
Plant Selection
WaterSmart Plant Palettes

Walkable Ground Cover

Dymondia margaretae (Silver Carpet)

Lippia nodiflora (Kurapia)
STEP FOUR  DESIGN YOUR WATERSMART LANDSCAPE

Plant Selection
WaterSmart Plant Palettes

Flat Green Ground Cover

Achillea millefolium  
(Yarrow)

Fragaria chiloensis  
(Beach Strawberry)
Plant Selection

When you choose a plant, note the **mature** plant size

Agave americana marginata
STEP FOUR  DESIGN YOUR WATERSMART LANDSCAPE

Plant Selection

Pick the right size cultivar for the right place

Carissa macrocarpa “Natal Plum”

‘Grandiflora’
8’ x 8’

‘Boxwood Beauty’
2’ x 2’

‘Green Carpet’
1-1½’ x 4’

That is off the top of my head...
Plant Selection

If your garden is supporting undesirable wildlife, try the following strategies…

- Use native and other highly scented plants
- For severe burrowing animal issues, use wire mesh as an underlayment
- For deer and other non-burrowing animals, add fencing around damage prone plants

Examples Include:
- Rosemary
- Lavender
- Sage (many different species)
- Encelia or other low water types of daisies
- Society Garlic
Plant Placement

Consider growing conditions

- Exposure
  - ✓ Soil type
  - ✓ Drainage

Full Shade

Full Sun
STEP FOUR  DESIGN YOUR WATERSMART LANDSCAPE

Plant Placement

Pay close attention to your plants’ water requirements!

Refer to WUCOLS IV - Water Use Classification of Landscape Species

✓ South Coastal
  • San Diego
  • Chula Vista
  • Del Mar
  • La Jolla
  • Carlsbad
  • Oceanside
  • Vista
  • El Cajon

✓ South Inland
  • Escondido
  • Rancho Bernardo
  • San Marcos
  • Poway
  • Lakeside
  • Ramona

Plant Search: http://ucanr.edu/sites/WUCOLs/

WUCOLS IV
Water Use Classification of Landscape Species

Regions

Since substantially different climate zones exist in California, species were evaluated for regions that represent six different climatic conditions. These are not the only climate zones that exist in California, but they include much of the state where irrigated landscapes occur. For locations outside of the six regions, it is best to use species evaluations from a region that is most similar climatically to the location of interest.

<table>
<thead>
<tr>
<th>Number</th>
<th>WUCOLS Region</th>
<th>Sunset climate zones</th>
<th>CIMIS ETₐ zones</th>
<th>Representative Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>North-Central Coastal</td>
<td>14, 15, 16, 17, 18</td>
<td>1, 2, 3, 4, 5</td>
<td>Healdsburg, Napa, San Jose, Salinas, San Francisco, San Luis Obispo</td>
</tr>
<tr>
<td>2</td>
<td>Central Valley</td>
<td>6, 7, 8, 9, 14</td>
<td>12, 14, 15, 16</td>
<td>Auburn, Bakersfield, Chico, Fresno, Modesto, Sacramento</td>
</tr>
<tr>
<td>3</td>
<td>South Coastal</td>
<td>22, 23, 24</td>
<td>1, 2, 4, 6</td>
<td>San Diego, Chula Vista, Del Mar, La Jolla, Carlsbad, Oceanside, Vista, El Cajon</td>
</tr>
<tr>
<td>4</td>
<td>South Inland</td>
<td>18, 19, 20, 21, 22</td>
<td>9</td>
<td>Escondido, Rancho Bernardo, San Marcos, Poway, Lakeside, Ramona</td>
</tr>
<tr>
<td>5</td>
<td>High and Intermediate Desert</td>
<td>11</td>
<td>14, 17</td>
<td>Apple Valley, Barstow, Bishop, Lancaster, Lone Pine, Tehachapi</td>
</tr>
<tr>
<td>6</td>
<td>Low Desert</td>
<td>13</td>
<td>18</td>
<td>Borrego Springs, Blythe, Death Valley, El Centro, Needles, Palm Springs</td>
</tr>
</tbody>
</table>

**See CIMIS ETₐ Zone Map, http://www.cimis.water.ca.gov/cimis/cimisEtZones.jsp
Plant Placement

Plant Search: http://ucanr.edu/sites/WUCOLS/
STEP FOUR  DESIGN YOUR WATERSMART LANDSCAPE

Plant Placement

Hydrozoning

• Group plants with similar water needs together, according to irrigation zone
• Do not put high-water-use plants next to low-water-use plants
• Research
  • WUCOLS plant ratings
  • Plant palettes
  • Sunset Western Garden Book
Plant Research

How do I get to know this plant?

WaterSmart Plant Palettes

WaterSmart Garden Friendly California Natives:

<table>
<thead>
<tr>
<th>Type</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Mature Size</th>
<th>WUCOLS</th>
<th>Design Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree</td>
<td>Cercidium microphyllum</td>
<td>Little Leaf Palo Verde</td>
<td>12-20' x 12-25'</td>
<td>VL</td>
<td>AC</td>
</tr>
<tr>
<td></td>
<td>Cercis occidentalis</td>
<td>Western Redbud</td>
<td>12-20' x 10-15'</td>
<td>L</td>
<td>FL</td>
</tr>
<tr>
<td></td>
<td>Chilopsis linearis</td>
<td>Desert Willow</td>
<td>30' x 25'</td>
<td>VL</td>
<td>FL</td>
</tr>
<tr>
<td></td>
<td>Lithocarpus densiflorus</td>
<td>Tanbark Oak</td>
<td>30-80' x 30-80'</td>
<td>L</td>
<td>EV</td>
</tr>
<tr>
<td></td>
<td>Myrica californica</td>
<td>Pacific Wax Myrtle</td>
<td>20-30' x 10-20'</td>
<td>L</td>
<td>FL</td>
</tr>
</tbody>
</table>
Plant Research

How do I get to know this plant?

Sunset Western Garden Book

Specific plant info, including
✓ mature size
✓ cultivars
✓ growing conditions
Find Your Sunset Western Zone

**Zone 24**
- Mild maritime climate, mild winters, cool summers, rarely freezes

**Zone 23**
- Warmer than Zone 24, usually frost-free

**Zone 22**
- More winter chills than Zone 23, but influenced by ocean air

**Zone 21**
- A mix of maritime & continental influence, colder in winter
STEP FOUR
DESIGN YOUR WATERSMART LANDSCAPE

Plant Research

How do I get to know this plant?

Sunset Western Garden Book

Special Situations

PLANTS FOR WATERWISE GARDENS

In most parts of the West, where a short rainy season is followed by many months during which there is no rainfall at all, gardeners recognize that they must carefully manage their use of supplemental water for their gardens. Some manipulations (such as irrigation) can reduce water needs. Although their market value varies, depending on climate, soil type, and soil type, most Western gardens will need a new irrigation system. This book introduces the fundamentals of planning a new garden, using heatproof fabrics with high-impact resins to create a new look for your garden, and selecting landscaping options with undulating plants.

How do I get to know this plant?

Sunset Western Garden Book

Special Situations

PLANTS FOR WATERWISE GARDENS

Carnivorous plants

- Drosera capensis
- Nepenthes
- Sarracenia
- Utricularia

Special Situations

- S. purpurea
- S. rosea

PLANTS FOR WATERWISE GARDENS

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STEP FOUR  DESIGN YOUR WATERSMART LANDSCAPE

Plant Research

How do I get to know this plant?

Sunset Western Garden Book

Plant Profile
- Latin name
- Common Name
- Sun / Shade
- Zone
- Page for Info
**Plant Research**

Specific plant info, including:

- mature size
- cultivars
- growing conditions

---

**Carissa macrocarpa “Natal Plum”**

- ‘Grandiflora’
  - 8’ x 8’

**‘Boxwood Beauty’**

- 2’ x 2’

**‘Green Carpet’**

- 1-1½’ x 4’

---

**How do I get to know this plant?**

Sunset Western Garden Book

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**MEET THE CACTUS CLAN**

The cactus family contains a huge number of succulent plants (also known as “Meat-in-the-Sand Plants”). Bonsai-like leafless, spiny plants adapted to extreme climates, cacti require careful cultivation and maintenance. Leaves are usually large and spiky or needle-like, and many species have spines for protection against browsing animals. Flowers are usually large and brightly colored, which can attract birds and butterflies. All are native to the American Southwest and Central America. Some are native to the Americas, while others are native to Mexico and Central America.

**C政党s (Cactaceae)**

These desert-dwelling plants are native to the Americas and are known for their unique and beautiful flowers. They are divided into two main groups: columnar and globular. Some species are also known for their medicinal properties.

**Small Cacti**

Dwarf cacti are usually less than 1 foot tall and have small, rounded leaves. They are ideal for use in small spaces or as houseplants. Some species include the following:

- **C. plumosa**
  - A small cactus that grows to 6 inches tall and has spiny, green stems. It is native to Mexico and Central America.

**Tropical Cacti**

These cacti are typically found in the wild, but they thrive in the warm and dry conditions of the American Southwest. Some species include:

- **C. mohavensis**
  - A small cactus that grows to 1 foot tall and has spiny, green stems. It is native to the Mohave Desert of California.

---

**How to Grow**

- Water: Water regularly during the growing season, but avoid overwatering. Cacti do not need a lot of water, and overwatering can cause root rot.
- Light: Cacti require at least 6 hours of direct sunlight per day. They do not like direct sunlight, so protect them from the hot summer sun.
- Fertilizer: Feed your cactus every 2-3 weeks during the growing season with a balanced fertilizer.
- Propagation: Cacti can be propagated from seed or by cutting a branch off the plant and allowing it to dry before planting.

---

**Specific plant info, including**

- mature size
- cultivars
- growing conditions

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**Cabbage and Kale**

- **Carissa macrocarpa “Natal Plum”**
  - ‘Grandiflora’
  - 8’ x 8’

- **‘Boxwood Beauty’**
  - 2’ x 2’

- **‘Green Carpet’**
  - 1-1½’ x 4’

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**How to Use**

- Growing cactus: Cacti require well-draining soil and full sun. Water them only when the soil is dry, and allow them to dry out completely before watering again.
- Propagation: Cacti can be propagated from seed or by cutting a branch off the plant and allowing it to dry before planting. Cacti do not need a lot of water, and overwatering can cause root rot.
- Fertilizer: Feed your cactus every 2-3 weeks during the growing season with a balanced fertilizer.

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**Get Started Today**

- Visit your local nursery or garden center to find a variety of cacti and succulents.
- Consider growing a mix of cacti and succulents for a unique and interesting garden.
- Cacti and succulents are low-maintenance plants and require minimal care.

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**Waterwise Gardening**

- Water: Water regularly during the growing season, but avoid overwatering. Cacti do not need a lot of water, and overwatering can cause root rot.
- Light: Cacti require at least 6 hours of direct sunlight per day. They do not like direct sunlight, so protect them from the hot summer sun.
- Fertilizer: Feed your cactus every 2-3 weeks during the growing season with a balanced fertilizer.
- Propagation: Cacti can be propagated from seed or by cutting a branch off the plant and allowing it to dry before planting.

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**Conclusion**

- Cacti make great additions to any garden and can be grown indoors or outdoors.
- They require minimal care and are perfect for those who don’t have a lot of time to dedicate to gardening.
- Cacti and succulents are great for creating a unique and interesting garden.

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**Resource**

- Sunset Western Garden Book
- Cacti and Succulents: A Guide to Growing and Using Cacti and Succulents
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**Contact Us**

- For more information on growing cacti and succulents, contact your local nursery or garden center.
- Visit our website for more tips and resources on growing cacti and succulents.
- Follow us on social media for updates on new cacti and succulent varieties.
Explore landscape design as two parts:

1. **Physical site design** - how the space is arranged and the location of major elements
   - Design in 3D
   - Form follows Function

2. **Planting design and placement** - how the space is filled with plants for effective design.
Plant Design and Placement

Putting It Together:
Select plant locations based on your bubble diagram
Plant Design and Placement

**Putting It Together: Size Your Plants**

- Draw at mature size
- Avoid overplanting
- Allow room to grow
- Understand you may need to edit and thin later
Plant Design and Placement

Putting It Together: Tree Placement

plant trees a minimum of 10 feet from foundation
Plant Design and Placement

**Putting It Together: Simplicity**

- Limit your plant selections
- Avoid the temptation to get “one of everything”
- Make hard choices
Plant Design and Placement

Putting It Together: Final Tips

Keep it simple!
✓ Avoid the “beginner buffet” look
✓ Make hard choices
✓ Limit your plant palette

Group plants in drifts
✓ Use the rule of threes, or default to odd numbers
✓ Don’t blindly alternate plants

Now you’re ready to plan your plants!
Plant Design and Placement

Putting It Together: Remember Drawing in Scale?
This means using accurate proportion using a standard measurement to represent one foot.
Plant Design and Placement

Drawing Plants in Scale
- Determine the mature size of the plant
- Use the mature size
- Find appropriate circle on template

Example:
A bush is 3’ in circumference at maturity.

In a ¼” scale, use the ¾” diameter circle.
Plant Design and Placement

Drawing Plants in Scale
- Pencil in the plants for your space:
- At 1/4” scale = 1’- 0”
  - 3’ diameter shrub drawn as 3/4” diameter circle
  - 12’ canopy tree drawn as 3” diameter circle
Plant Design and Placement

Drawing Plants in Scale

How to Draw Simple Plants

1. Measure the plant diameter and draw a circle to scale
2. Mark the center
3. Add a rough outline
4. Same steps for a group of plants...
5. Or a drift of plants or groundcover
Plant Design and Placement

Drawing Plants in Scale

6. Add color if desired!
Complete your landscape design questionnaire

Clarify your requirements and tastes so you can communicate quickly with your design coach

Highlight the most important information (yes, with a highlighter!)

Homework: Complete Landscape Design Questionnaire

Landscape Design Questionnaire
Please highlight the most important information.

Name(s): 

The following questions are designed to give the Design Coach an overall idea of your likes and dislikes as well as what you might like to see in your new landscaping. Please only fill in the items that pertain to what the Design Coach will work on. Bring this to your Design Coach Appointment.

1. Please list family members and hobbies which might influence property use.

2. Are there any allergies or other medical conditions to be considered?

3. Do you have any pets that might require a special area or run?

4. Do you want or need a fence?
   Are there any specific community height restrictions or covenants?

5. Entryway:
   Would you like it open, or more enclosed and private?
   What type of pathway?
   Is it wide enough to be welcoming?

6. Driveway:
   Is it wide enough/ too wide for your needs?
   Do you need additional parking for guests?

7. Utility Area:
   Where will you place your garbage cans?
   Do you need room for a compost pile? Woodpile? Storage shed? Any future outbuildings?
Homework: Narrow Your Plant List

Narrow the list of plants that match your selected rating
**Homework:**
Complete Bubble and Hardscape Plans

**Complete** your bubble plan with different heights

**Draw** a hardscape plan that defines your space and your use areas

**List** your different materials and elements on the plan

**Bring** these to Class 4 for your Design Coach appointment

Get Ready!
For your Design Coaching Appointment at class 4
Add your plants after you’ve completed your hardscape. Pencil them in using scale circles. Indicate plants by name using a key or labels. Bring this to Class 4.

Push through any crisis in confidence!

You will have your plans by the end of Class 4!
Homework for Class 3

Complete
- Landscape design questionnaire
- Plant list
- Bubble diagram
- Hardscape plan

Start
- Planting plan

Read
- A Homeowner’s Guide to a WaterSmart Landscape steps 4-6
- The resource info in your notebook

Watch
- Videos On Demand episodes 9 through 17 at landscapemakeover.watersmartsd.org

Identify
- Sunset climate zone

Collect
- A turf sample – one for each type of lawn you have – and bring it to the next class

Photograph
- Your irrigation system

Homework sheets are located at the end of the Class 2 section in your notebook

For more technical information, refer to the Sustainable Landscape Guidelines online at landscapemakeover.watersmartsd.org/resources
Class 3 – Make It Happen!

Learning Objectives

Retrofit Your Irrigation
Landscape Implementation
• Turf Removal
• Sheet Mulching
• Contouring

Maintenance
Prep for Design Coaching
QUESTIONS?