Cub Scout Conservation Garden Park Activity Patch
Self-Guided Tour Instruction Sheet

INSTRUCTIONS TO TOUR LEADERS:
Patch Goal: To teach scouts the importance of conserving water in landscapes.

Preparation: For the best tour experience, familiarize yourself with this instruction sheet before you begin. All the information required to help scouts earn the patch is listed below.

Rules:
- Please keep your group together
- Stay on pathways
- Respect the garden and other visitors

SELF GUIDED TOUR BACKPACK:
A tour backpack can be checked out from the reception desk in the Conservation Garden Park Education Center. Tours must be scheduled in advance to reserve a tour kit for your troop. Once complete, make sure that you place all of the listed contents back into the backpack and return it to the reception desk.

Contents:
- Instruction sheet
- Tour map
- 5 Magnifying glasses
- 7 Binoculars
- 1 Water Cycle band
- Ziploc bag with example compost items
- 2 Drip irrigation parts
- 1 Pop-up irrigation head

GIVING THE TOUR:
Follow the provided map to the destination that corresponds with the activity number and then give your group the instructions for that activity. Proceed to the next destination when complete.

ACTIVITY REQUIREMENTS

Activity 1A: Look for clues that animals live in the Garden.

Location: Do this activity between points 1A and 1B on the map.
Tools to Use: Magnifying glasses, Binoculars
Steps:

1. Share the following description about animal habitat with the scouts:

   > Trees, shrubs, and flowers provide food and shelter for animals and insects. Including a variety of plants in yards encourages animals and insects to visit and even live there, which makes a healthier ecosystem than yards that are mostly lawn."

2. Walk from point 1A to point 1B. Have the scouts look for signs that animals live in the Garden. Encourage them to use the binoculars or magnifying glasses.

3. As scouts see signs, they can circle them on the list on their worksheets. The list is also included below.

Possible Signs

Birds:	Insects:	Spiders:
Nests	Wasp nests	Webs
Broken egg shells	Caterpillars	Eggs
Droppings	Droppings	Insects caught in webs
Feathers	Chrysalises	
Bird songs	Holes in leaves	
Snakes:	Snails:	Deer:
Shed skins	Slime trails	Droppings
		Damage to trees
Squirrels:	Gophers or Mice	Other:
Holes in between rocks	Mounds of soil	List any other signs not included here
	Holes in the ground	

Activity 1B: Look for plants that have adapted to live in warm, dry climates.

Location: Do this activity between points 1B and 2 on the map.
Tools to Use: Magnifying glasses, Binoculars
Steps:

1. Share the following description about plant adaptations with the scouts:

   > Many plants have adapted to live in areas with high summer temperatures and low amounts of precipitation. These adaptations help them to stay cooler and need less water than other plants. Four of these adaptations are easy to spot in this garden.
   >
   > **Blue-green or gray-green leaves** help plants keep cooler by absorbing less heat than plants with dark green leaves.

Small leaves on plants reduce the amount of heat absorbed and water lost over the area of the leaf.

Hair on leaves can help shield the plant from wind and sunlight.

Some plants **store water** in their stems or leaves. These plants are called succulents. In times of drought, they can use the stored water to help them survive.

2. Walk from point 1b to 2 and have the scouts look for plants with the four water saving adaptations along the way. Have them circle the adaptations on their worksheet as they find them.

Blue-green or gray-green leaves	Small leaves
Hairy leaves	Stores water in leaves or stems

Activity 2: Learn the water cycle story.

Location: Proceed to stop #2 on the tour map.
Tools to Use: Hydrologic cycle poster, Water cycle band
Steps:

1. Use the water cycle band to describe the water cycle to the scouts. The descriptions of each tag on the band are listed below:

    - **Yellow**/Solar Energy: Energy from the sun powers the never-ending water cycle through evaporation.
    - **Light Blue**/Evaporation: When water is heated by the sun, it becomes a gas and rises into the atmosphere.
    - **Green**/Transpiration: Plants use water to cool themselves, much like us sweating. The water cools the plant as it rises from the leaves as water vapor.
    - **White**/Condensation: Evaporated water in the atmosphere cools and condenses, forming clouds.
    - **Blue**/Precipitation: As air cools, water droplets are formed and released as precipitation—like rain and snow.
    - **Brown**/Percolation: When precipitation falls on the ground, it can be absorbed by the soil and move through the ground.
    - **Red**/Water Treatment: People can use reservoirs (like Jordanelle or Deer Creek) to collect water. Collected water can be cleaned in a water treatment plant so that it can be safely used by people.
    - **Purple**/Pipes: Water is transported from the treatment plant through pipelines to homes where it can be used.

2. Have the scouts fill in the blanks on the “Water Cycle” page with the correct water cycle labels.

Activity 3A: Save water drop by drop.

Location: Proceed to stop 3A on the map.
Tools to Use: Drip system parts
Steps:

1. Share the following description about drip systems:

   > Plants need water to thrive. We can reduce the amount of water lost to evaporation and wind by using a drip system. Drip systems deliver water directly to the soil and the roots of a plant with less chance for evaporation and being blown by wind.

2. Find an example of a drip system in the Garden. A good place to look is in the vegetable garden near this stop on the map. You may also show the scouts examples of drip system parts that can be found in the bags.

3. Have the scouts circle the correct answer to the questions on their worksheets. The answers are shown below.

   True/False Drip systems bring water right to plant roots.

   True/False Water sprayed into the air can easily evaporate.

Activity 3B: Spray the right way.

Location: Proceed to stop 3B on the map
Steps:

1. Share the following description about sprinklers:

   > Sprinklers spray water in the air over the plants that need water. Spraying water over plants works best for lawn. However, water can be lost to evaporation and wind. To avoid too much evaporation, sprinklers should be used during the night or early morning when it is cooler outside. Plants need the most water in the summer, less water in spring and fall, and don't need any sprinkling in the winter.

2. Find an example of a sprinkler in the Garden to show the scouts. There are many examples near stop 3b.

3. Have the scouts circle the best answer for both questions on their worksheet. The answers are shown below.

   The best time to turn on sprinklers is:
   - A) During the day
   - B) When it is raining
   - C) At night or early morning

   Plants need the most water in the:
   - A) Winter
   - B) Summer
   - C) Fall
   - D) Spring

Activity 4: Reduce garbage and recycle yard waste.
Location: Proceed to stop 4 on the map.
Tools to Use: Magnifying glasses, Bag with example compost items
Steps:

1. Share the following description about compost:

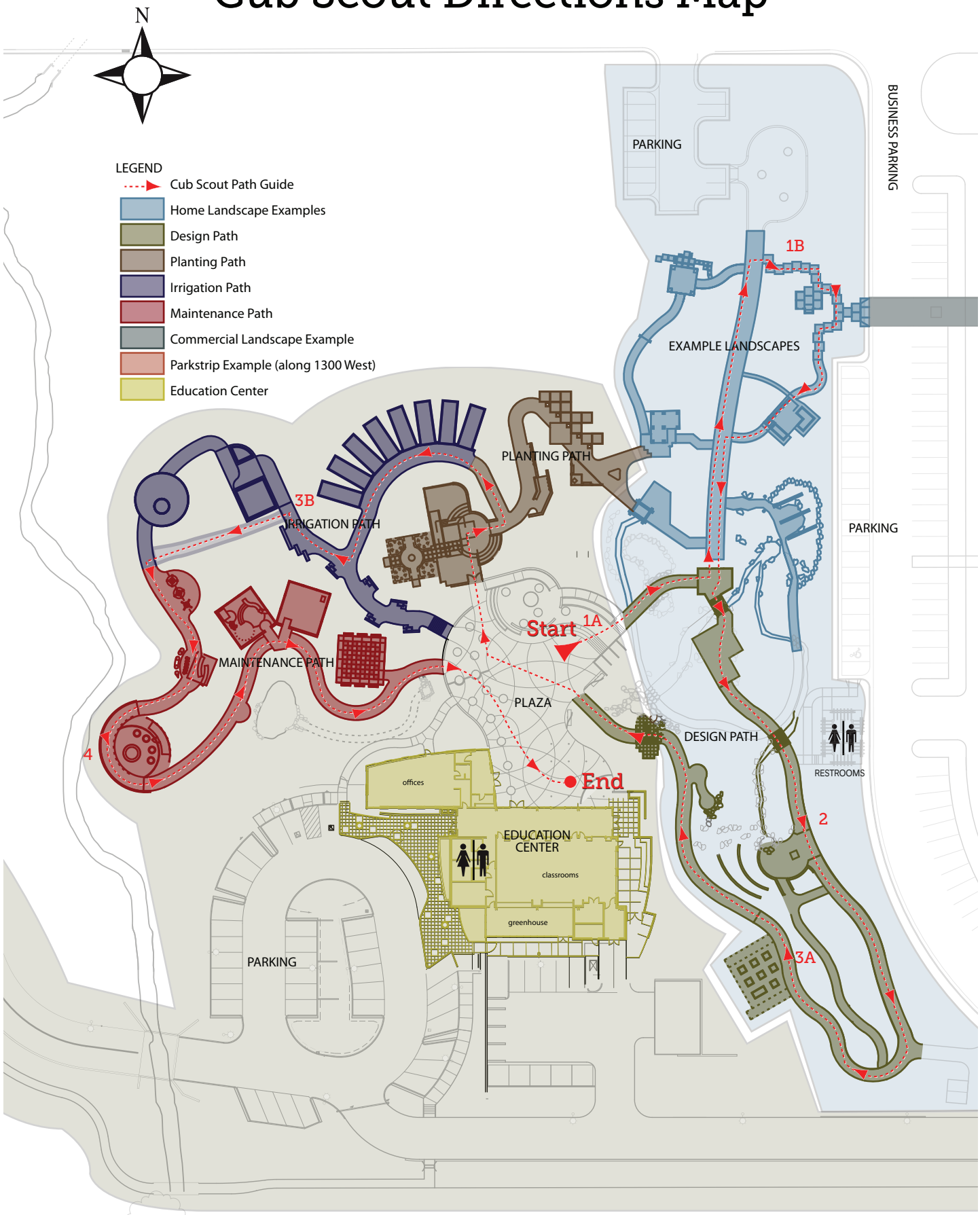
   > Grass clippings, leaves, twigs and fruit and vegetable peelings can all be turned into useful fertilizer for your garden. Using compost reduces the amount of garbage sent to the landfill and helps to provide food for plants and also helps the soil to hold more water. Worms and other insects help to break down the compost.

2. Have the cub scouts dig into the compost and use magnifying glasses to look for insects and worms.

3. Use the bag of example compost items to discuss what can be put in a compost pile. Have the scouts circle the items on their worksheet that can be composted. The correct answers are shown below.

Leaves	**Twigs**	Plastic bottle	Rocks	Garbage
Grass clippings	Hamburger	**Vegetable peelings**	Logs	

Cub Scout Directions Map



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