

# Activity: Design on a Dime

## Objective:

Students will be able to utilize reusable or biodegradable materials to create sustainable gardening systems.

## Materials:

- Empty toilet paper rolls
- Duct tape
- Paper towels
- Toilet paper
- Water
- Soil or other growing mediums
- Used egg cartons, k-cups or water bottles
- Seeds packets such as radish, beets
- Glue
- Meter stick
- Markers

## Essential Questions:

1. What are three advantages of using the seed tape versus planting seeds directly in the ground?
2. Explain the importance of using biodegradable materials for planting.
3. Justify how the use of the two design systems supports a sustainable garden.

## Directions:

1. Divide students into groups of three to five students. Start by having students in their group either create the seed tape or the seed starter (directions below) to show them an example of a possible item that would help with the school garden.
2. Students will research different ways to start, grow or plant seeds for their school garden. As a group the students will decide what they are going to design and create using as many recycled items as possible. Some examples are waterers, irrigation, self-watering systems, planting tools, planters/containers, germinating tools, or greenhouses. Students will submit design and supply list to the teacher for approval.

## Seed Tape:

1. Measure a 24-inch length of toilet paper using the meter stick
2. Cut toilet paper in half lengthwise
3. Read seed packet for the recommended spacing

4. Use marker to mark each spot for seed on toilet paper (larger seeds are easier for this)
5. Add a dot of glue to each mark
6. Using tweezers, place seed on glue, allow to dry
7. Roll seed tape onto spool
8. Tape can be placed in garden and then covered with soil

## Seed Starter:

1. Cut toilet paper roll in half using scissors
2. Cut four slits on one end and then fold into each other to secure the bottom of the pot
3. Secure with tape
4. Place soil inside tube
5. Add desired seed according to required seed depth
6. Repeat for several planters needed
7. After a few weeks when seeds have sprouted, remove the bottom of toilet paper roll
8. Place in soil

## Extensions:

1. Create a machine to drop seed into the ground using recycled materials.
2. Explore different seed starting media. Is there any recycled material that can be used? Which is the most cost effective?
3. Is there a better product than toilet paper that can be used to create seed tape? Compare alternate methods with the toilet paper method.
4. Students can do a comparison of using the seed tape versus planting in the ground. Which method has a better plant yield?

