

REGIONAL FLOOD CONTROL DISTRICT



Beat the Flood!

Background

Steep mountain slopes and hard desert surfaces cause the rainwater to run off rapidly and concentrate in the urbanized areas at lower elevations. The Clark County Regional Flood Control District helps prevent flooding by constructing a network of channels, and detention basins.

A **detention basin** is a flood control facility to “detain” the flow of water. These facilities act like a bathtub and allow a lot of flood water in quickly then releases that water slowly through channels.

Learn more about how a detention basin and channel work by making your own!

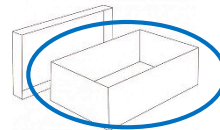
Materials

- tape
- 1 pencil or pen
- 1 straw (represents the channel coming out of the detention basin)
- 1 shoe box (represents the detention basin)
- 1 plastic bag (make sure the bag has no holes!)
- water

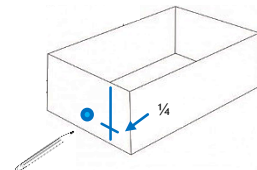
Instructions

You are an engineer for the Clark County Regional Flood Control District, design and build your own detention basin!

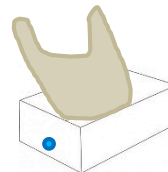
Step 1: Use the bottom (large) part of the shoe box as your detention basin.



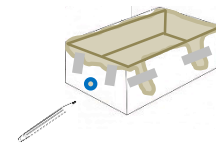
Step 2: Using the pen or pencil, carefully poke a hole in 1/4 up from the bottom on any side of the shoe box.



Step 3: Place the plastic bag inside of the shoe box so it lines the inside of the box and tape the plastic bag to the sides of the shoe box to secure it.



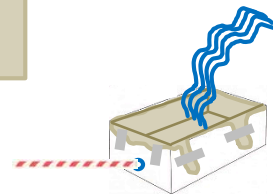
Step 4: Use the pen or pencil and poke it through the previously poked hole in the box and this time pierce through the plastic bag carefully.



Step 5: Insert half the straw into the hole you made and secure it from the outside with tape.



Step 6: Pour water into the shoe box lined with the plastic bag and watch your detention basin at work!



Remember: NEVER play or swim in a detention basin or a wash! They are dangerous and dirty!

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How Does It Compare?

Directions: Use the formula below to figure out how much water your detention can hold and compare it to other detention basins in the valley using the “Did You Know?” section below.

Do The Math:

Step 1: Find the volume of your shoe box detention basin in cubic inches.

Hint: Volume of your shoe box (aka parallelepiped) is height x width x length

$$v = h \times w \times l$$

Step 2: Convert the volume of your shoe box detention basin to cubic feet.

Hint: Divide the volume of your shoe box detention basin by 1728 to

$$1 \text{ cu ft.} = 1728 \text{ cu in.}$$

Step 3: The answer you come up with is how many cubic feet of water your detention basin can hold! Compare the size of your detention basin with other detention basins through the valley.

Did You Know?

Let's figure out how your detention basin compares to the detention basins in the valley!

Detention Basin	How Many Cubic Feet Can It Hold?
Red Rock Detention Basin	87,424,920 cu ft. of water
Lakes Detention Basin at Desert Breeze Park	6,403,320 cu ft. of water
Charlie Frias Park	2,670,320 cu ft. of water
Gowan North Detention Basin at Bunker Park	40,118,760 cu ft. of water
Lone Mountain Detention Basin at Majestic Park	38,681,280 cu ft. of water
Lower Las Vegas Detention Basin at Sandstone Ridge Park	30,492,000 cu ft. of water
Upper Las Vegas Wash Detention Basin	79,976,160 cu ft. of water

