

How to collect rainwater



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Introduction

This lesson shows students how to set up two types of rain collector systems. Special emphasis is made of the importance of knowing how to catch rain, not only to use on a garden but also to capture and store before and after an emergency or natural disaster.

This lesson has been prepared for **elementary-level students** but can easily be adapted for older students and adults.



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Lesson preparation

This lesson shows students two methods of setting up a rain collector. The **first method** involves clipping a tarpaulin to a fence, railing or wall, so choose the lesson location accordingly. The **second method** is a Business Grow-designed system that captures both rainwater and water poured from a watering container.

First method preparation

- Lay out all equipment: tarpaulin, pegs, can, brochures, etc.
- Set/hook up the score card clipboard.
- Tie string or colored material to the fence, railing or wall to show where to put pegs.
- Fill up watering cans and put them on ground.
- Put the handouts (see below) in an obvious location.

Second method preparation

- Place the bag of soil and soil scoops next to the planter water saving equipment.

It is recommended that teachers do at least two practice deliveries of this lesson, in particular to determine where to set up the rain collector and position equipment.

Documents required

- How to Set Up a Rain Collector.doc [Handout]
- Planter water-saving system brochure [Handout]
- Water tank/jerry can photo, [here](#)
- Water butt photo (1), [here](#)
- Water butt photo (2), [here](#)
- Balcony rain collector photo – p5.

General teaching notes

Engage students as much as possible by:

- Asking lots of questions – make them think.
- Ask them to review key steps.
- Do and show everything, then ask students to repeat the steps themselves.
- If planning to create a record of this class, ask someone to take photos, video, etc. of set up, close ups of students, etc.

Lesson outline

The following is a general suggested outline of this lesson:

- **Welcome**, thank you for coming, etc.
- **Explain** what the goal is and what you are going to do today. (“If you have any questions, please ask.”)
- **Show** some simple ways to collect rain.
- **Explain** why it is a good idea to collect rain.
- **Explain** how to store water.
- **Show** the components of a rain collector and ask students for ideas on how to set it up.
- **Do a demonstration** – Set up rain collector – ask for volunteers to help?
- **Run a competition.**
- **Set up and demonstrate the planter water-saving system.**
- **Distribute handouts.**

LESSON NOTES

START:

Welcome, thank you for coming, etc.

We usually learn about how to grow plants, but today we are going to learn how to capture what feeds plants.

Have you thought how would you obtain water if a big earthquake hit the city – like the big one that hit Tohoku in 2011 – and the water supply was damaged and no water came out when you turned on the tap?

[Take suggestions]. Whose families have water stored at home in case of emergencies?

How many days do you think it would last if your family was drinking it, cooking with it and washing with it? One good idea is to collect rain, so today we are going to learn two ways to collect rain **and** have a competition while we are doing it.



How can we collect rain water in a place like this?

[Take suggestions]. I've been thinking long and hard and I've come up with the perfect way – and it's so small it fits in my waist bag. Does anyone want to see it?

[Put a **paper cup** on the ground and pour water into it.]

Pretend this is rain. How's that? Is that OK? .

[Put a **can** on the ground. Repeat above.]

No? How about this? Is this OK? Has anyone got any better ideas? [Take suggestions]. No, well, there is a better way. Let's learn two easy ways to collect rainwater, using this equipment [point to it.]

Why collect rainwater?

But first of all, WHY would we want to collect rainwater?

[Take suggestions.]

..like this? [Show Balcony rain collector photo.]

Well, first of all, it's free – and that's great!

1. Collecting rainwater helps increase water independence and saves money.
2. By setting up a simple rain collector system over a terrace, balcony or other open space like this, water can be collected and used inside the house, to wash your bike, and if it is filtered, for drinking and cooking.
3. Captured rain water can also be used to water your rooftop garden. This will be very useful if there isn't a tap or water supply nearby.
4. Collecting rain water could also save your and your family's lives, especially if there is a big earthquake and we can't get any water from our taps, so it is really important to know how to collect rain water.

Storing rainwater

A simple first step to storing water – like a 'water bank' – is to buy some water tanks like this [Show Water tank/jerry can photo], fill them with water and store them at home.

[Use personal anecdote] I store water in water tanks beside my house and usually have 100 liters ready for an emergency.

If you set up lots of rain collectors at school or home, and collected and stored water in water tanks, if a big earthquake hits and the water supply is cut off, you will have lots of water.

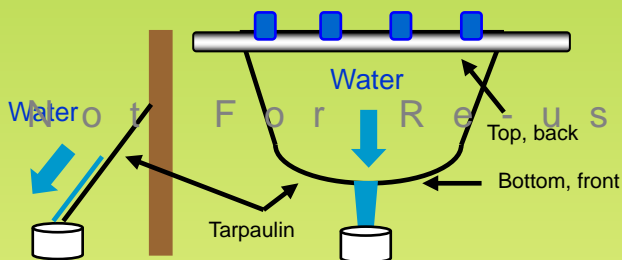
[Show 2 x water butt photos.]

If you set up lots of rain collectors on a rooftop like this one [hold up Balcony rain collector photo], you could collect 1,000s of liters of water. [← Adjust as necessary.]

OK, so **what** things do we need to collect rainwater? [Introduce all components.]

How can we collect rainwater?

[Demonstrate how to set up tarpaulin, or ask students to figure out how to do it.



Put watering can on the ground, pour water onto the tarpaulin and show how it drains into the watering can/bucket. If there is a water tank, use the water tank and funnel instead.]

Imagine this is rain [Pour water onto tarpaulin. Review the components.]

Can anyone guess how much it would cost to buy these? [Provide a rough estimate. Announce the competition.]

Competition

This is a team competition to set up a rain collector and fill up a watering can in the shortest time.

Tell students to form teams of 4-5 and explain what they have to do:

- Clip the tarpaulin to a fence, wall, railing, etc. so that it angles down. Students can hold the sides if necessary.
- Pour water down the tarpaulin to fill the watering can, then
- Fold up the tarpaulin and put all equipment behind a peg or marker for the next team.



[Tell team members to decide amongst themselves who is going to:

- Hold tarpaulin sides
- Clip tarpaulin to fence
- Pour water
- Catch water.

Tell students they can pour water down any way they like but they have to fill the watering can – so they should hold up the sides and do it carefully.

Are you ready?! Are you sure? Go!

Award a prize to the fastest team.]

Planter water-saving system

This Business Grow-designed system is the second method of capturing rain water.

For full setup instructions, see: Planter water saving system.pdf

It is best to set this up first and see how long it takes before demonstrating it to students.

Once the mesh is in position, scoop some soil into 1-2 planters, put them on the mesh, get students to lift up and hold the mesh, get another student to pour water into the planters, and 2 other students to capture the water in a container.

Then mention how the water can be used on plants and how this water capture system captures and recycles not only rain but tap water and lets you use it again. Where to position it? Anywhere outside above a water tank. If time is limited, do not use soil.

Conclusion

Congratulate the students on what they have done, review main points, distribute handouts.

Equipment shopping list

ITEM	HAVE / Y/N	NOTES
For simple rain collector		
Tarpaulin / plastic sheet		
Strong pegs		
String or colored material		
Watering cans x 2		
Cup		
1 x can		
2 x funnels		
Optional: 20L water tank		
For planter water-saving system		
Grill		
Polystyrene bricks		
Poles or strips of a flat material		
Plastic sheet		This can simply be a large plastic rubbish bag
Planters/pots + pot nets that fit		
Pack scoreboard: A4 paper (a few sheets) on piece of cardboard, marker pens		
Optional: Soil and soil scoops		

<p>DISCLAIMER</p> <p>The author has attempted to make the information in this document as accurate as possible, but it is provided as a general guide only and he accepts no responsibility for any loss, damages or inconvenience sustained by anyone resulting from use of this information.</p>	<p>INFORMATION BROCHURES</p> <ul style="list-style-type: none"> ● Urban Farming Consulting – Schools Find out how sustainability-focused food production can benefit your school >> Here ● School Sustainability Strategy – Fantastic food. For life >> Here ● School urban farming sustainability program in action >> Here
	<p>For more information, ideas and advice</p> <p>Jonathon Walsh, urban farming consultant</p> <ul style="list-style-type: none"> ● Garden design, consulting, installation & maintenance ● Gardening demonstrations, food growing kits ● Vertical garden setup and advice ● Business sustainability consulting. <p>E-mail: info@businessgrow.net URL: www.businessgrow.net/Green.htm</p>

BALCONY RAIN COLLECTOR

