

Catching every raindrop

Make the most of every drop of rainwater by installing water butts or rain gardens. This will give you water to sustainably support nature on your site.



Benefits for nature

Capturing rainwater before it reaches the drain – either with water butts or rain gardens – helps to sustainably manage water on your site. Rainwater is a natural and environmentally friendly option for irrigation and for topping up ponds, benefiting plants, soil, and water health. Using rainwater saves the energy and greenhouse gas emissions associated with collecting, cleaning, and transporting mains water and saves your school money on its water bills too.



Benefits for people

Rainwater capture reduces the burden on drainage systems during heavy rainfall, reducing the risk of flooding on site. Rain gardens bring nature right up to the school building, supporting learners to have daily access to nature, and providing a direct route to engage with the concepts of sustainability and climate resilience.



Is it easy to do?

Setting up water butts is simple and can be adapted to fit the available space. Water butts come in various sizes and designs, making them suitable for both small and large sites. Rain gardens need careful design to ensure the water flows in the right direction and drains away at the right speed. Stormwater planters come in kits so are an easy first step.



Where to start?

Walk around your buildings and note where the drainpipes are coming down – is there scope for a stormwater planter or water butt to be added? Note where you want to use the water as well – where are the planters or flowerbeds you'd like to be watering?

Cost

£-£££

Season

Any time

Impact for nature

Medium

Key Vocabulary

Grey spaces Spaces that have no, or very few, plants e.g. playgrounds, paths, car parks, tarmac and asphalt.

Green spaces

Spaces that have some plants already.

Rain garden

An area of flowerbed connected directly to a drainpipe, so rainwater flows straight to the plants and not down the drain. Rain gardens are specially designed on a gradual slope with deep gravel areas beneath the plants to allow water to drain away very slowly.

Stormwater planter

"A rain garden in a box" - a type of rain garden that is a planter/raised bed, placed directly under a drainpipe.

If you think you'd like to **Catch every raindrop**, the rest of this document will show you how...

Planning and design

Water butts

Placing water butts strategically around the site allows for efficient water collection and use from multiple areas. By using rainwater for watering plants and gardens, schools can promote sustainable water usage, especially during drier periods. Water butt kits are the easiest solution. They include a water butt, stand and a tap at the base. Kits come with the connections needed to attach the water butt to a standard plastic drainpipe. Water butts are designed so that once they are full, any further rainwater will flow down the drainpipe like normal.

Check the diameter of the drainpipes you are connecting to, and whether they are square or round, before buying them. If your drainpipes are not a standard size, or are made from metal rather than plastic, this might not be so easy to install and you may need to seek specialist advice.

Kits come with full instructions, and the empty butts are lightweight and easy for a single person to handle and install. Ensure it is sited on a flat surface, using a base to elevate the tap to a comfortable height.

You can buy water butts from DIY or trade stores, or from your local council. Your local council may offer discounted rates on certain products.

Capacity: 100 litre slimline water butts are great for small spaces, but the water will not last you through an extended period of dry weather if you are using it regularly. If you can, get larger capacity water butts (200 litres or more). This may seem like a lot, but it is only the equivalent of two or three average baths. Site them in multiple places around your building to maximise the water you are harvesting.

If a large water butt would stick out too far from the building, consider installing multiple slimline ones next to each other – you can connect them so that as one becomes full the water flows into the next. Water butt connection kits, or linking kits, are cheap to buy and quite easy to install. If multiple butts are used, rotate the use of each one to keep stores fresh.



Stormwater planters

Stormwater planters are an easy solution that can be bought as a kit or you can make your own – just make sure to build in the right drainage. The planter needs to be deep (75cm or more), with a waterproof lining and an overflow pipe for if the water levels get too high (either feeding back into the drain if no soil will be washed out with it, or into a natural e.g. grassy area). The stormwater planter is layered, with gravel for drainage at the bottom, covered by a permeable membrane to separate it from the soil. Soil is then placed on top and planted up with plants that can withstand both wet and dry conditions.

Search online for ‘stormwater planter design’ to find diagrams showing how to do this.

Rain gardens

Rain gardens, like stormwater planters, are connected to a drainpipe and have layers of gravel on a gentle slope to channel water from drainpipes away from buildings into natural areas. This gives rainwater more time to soak away. They cover a larger area and are generally set in the ground, rather than in a container. A rain garden could be connected to a water butt, stormwater planter, channel or ‘rain chain’. Diverting water through channels or similar can be good fun for children to play with and learn from! They are different to ponds because the water is allowed to drain away into the soil, so they will be dry when the weather is dry and wet after it has rained. They need careful design to ensure water flows correctly, but are perfect for sustainable water management.

The RHS website gives step by step guidance on how to create a rain garden, including suggested plants to include and how to avoid problems with water flow.



Access and connection to surrounding habitats

When planning where to put the water butts, consider both where the drainpipes are and the size of roof they are draining, but also where you want to use the water you have collected. Putting them in multiple places around the buildings, or on sheds or outbuildings, means you will not have to carry the water so far when you come to use it.

Water butts can also be integrated with rain gardens, collecting the water in the water butt first, and then allowing any excess to run into a rain garden.

Rain gardens need to be sited carefully to ensure water flows in the right direction. If you need to walk over a rain garden, consider adding stepping stones so it can still be crossed when it is wet and boggy.

Sustainability and maintenance on education sites

Emptying and scrubbing out water butts once a year helps to keep the water clean and reduce the growth of bacteria.

The RHS website has advice on collecting and storing rainwater.

If the water becomes smelly, you can still use it in a watering can. There may be a build-up of fallen leaves or other debris collected in the bottom of the butt. In this case, empty it and clean it out. At the same time, check the gutters that feed the water butt and clean them out if needed. Chemical additives are not cost effective (they run out of the water butt with the water and do not address the root cause of the problem).

Solar-powered automated drip watering systems can be connected to a water butt and use the water to irrigate plants without you needing to do anything. These systems can detect the light and/or temperature levels and adjust watering accordingly. This can be a great option to sustain plants over the summer holidays. Prices start from around £85.00.

You can expect a typical plastic water butt to last 10-15 years. Replacement taps or drainpipe attachments, if needed, are cheap to buy and easy to install.

Safety considerations

- Use an enclosed water butt or one with a lid that children cannot easily remove, to prevent children accessing deep water.
- Bear in mind that the water is not suitable for drinking. Wash hands after using it and before eating.
- Site the water butt in the shade if you can, as the water will be kept cooler, reducing the growth of bacteria. You could also insulate it, paint it white, or create shade around it to prevent the growth of potentially harmful bacteria during periods of warm weather. At high temperatures, *Legionella* bacteria can multiply to dangerous levels. Washing hands after using water butts, and regularly using the water so it isn't sitting there for long periods of time help to keep it fresh and clean.
- Keep the guttering clear of debris as the organic material can encourage the growth of bacteria in the collected water.
- Keep water storage containers such as tanks and butts clean by emptying and scrubbing out once a year.
- Use a watering can when using the water – never use hose or sprinkler attachments that create a fine mist of water as breathing in the water butt water may be harmful.
- Empty the water out of garden hoses after use and do not leave full hoses in the sun after use.
- Avoid splashing water around when watering pots.
- Rain gardens avoid some of the potential issues and maintenance needs of water butts as the water feeds directly into a planter or flowerbed where it is used directly by the plants.
- The RHS website gives advice for safely using water in the garden.
www.rhs.org.uk/garden-jobs/water-collecting-storing-and-using



For more quality-assured learning resources visit
www.educationnaturepark.org.uk

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