

Science – Year 3/4A Summer 1

States of Matter

What's the Matter?

Session 5

Resource Pack

Session 5 Teachers' Notes

Indoor Sealed Garden

You will need a large lidded clear plastic storage box to create a sealed garden with its own miniature water cycle that mirrors the natural world. Once sealed, the amount of water inside is fixed and will evaporate, condense and drip back into the soil (like rain). Water will also be used by the plants for photosynthesis and water produced as a bi-product of respiration which will be released as vapour from the underside of the leaves (transpiration). It is important that the sides are transparent so that the children can see the plants inside. Try to choose one where the lid fits tightly. If it is not a tight seal you may have to use duct tape around the lid, once the garden is set up to prevent water vapour escaping.

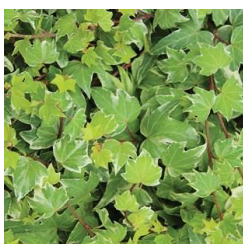


Choosing Plants for the garden

Choose plants with different heights and colours of foliage for best effect. You could choose house plants like ferns.



Alternatively choose foliage bedding plants. It is probably best to avoid flowering bedding because you will not be able to dead head them to prolong the flowering time.



There are lots of interesting varieties to choose from that will add plenty of colour and texture to the garden. Bedding plants can usually be bought quite cheaply in little plug pots or small trays.

Managing the task

Choose small groups, e.g. 3-4 at a time to come and help create the garden whilst the rest of the class continue with their independent task. Share out the tasks between the groups:

- Emptying and levelling the compost
- Planting - use old spoons or small trowels if you have them

- Creating other features in the garden for aesthetic effect, e.g. paths, fences, tepees, natural sculptures (clusters of pebbles) and interesting arrangements of natural materials, (logs, lichens, moss).



- Making other features for the garden (see above) which introduce an enjoyable creative element to the task and create more tasks so that all the children will have an important contribution to the outcome. You will also be able to increase the number of children working on the garden at one time.

Tips

- Sand and gravel are really useful for creating paths and separate areas
- Lolly sticks can easily be made into decking
- A few twigs or matchsticks can form a fence
- Moss will make a great lawn
- Use dolls house furniture, small world figures or little items made from construction toys to add interest
- Avoid making ponds from a dish of real water because too much water in the tank will affect the health of your plants and possibly cause rot or mildew, instead, use foil or similar reflective/blue material to simulate water
- Avoid using cardboard or paper as this will get soggy, instead use recycled items, e.g. a plant pot made from the cap of a tube of puree or the lid of a bottle. A watering can or other items could be modelled from plasticine

Watering the Garden

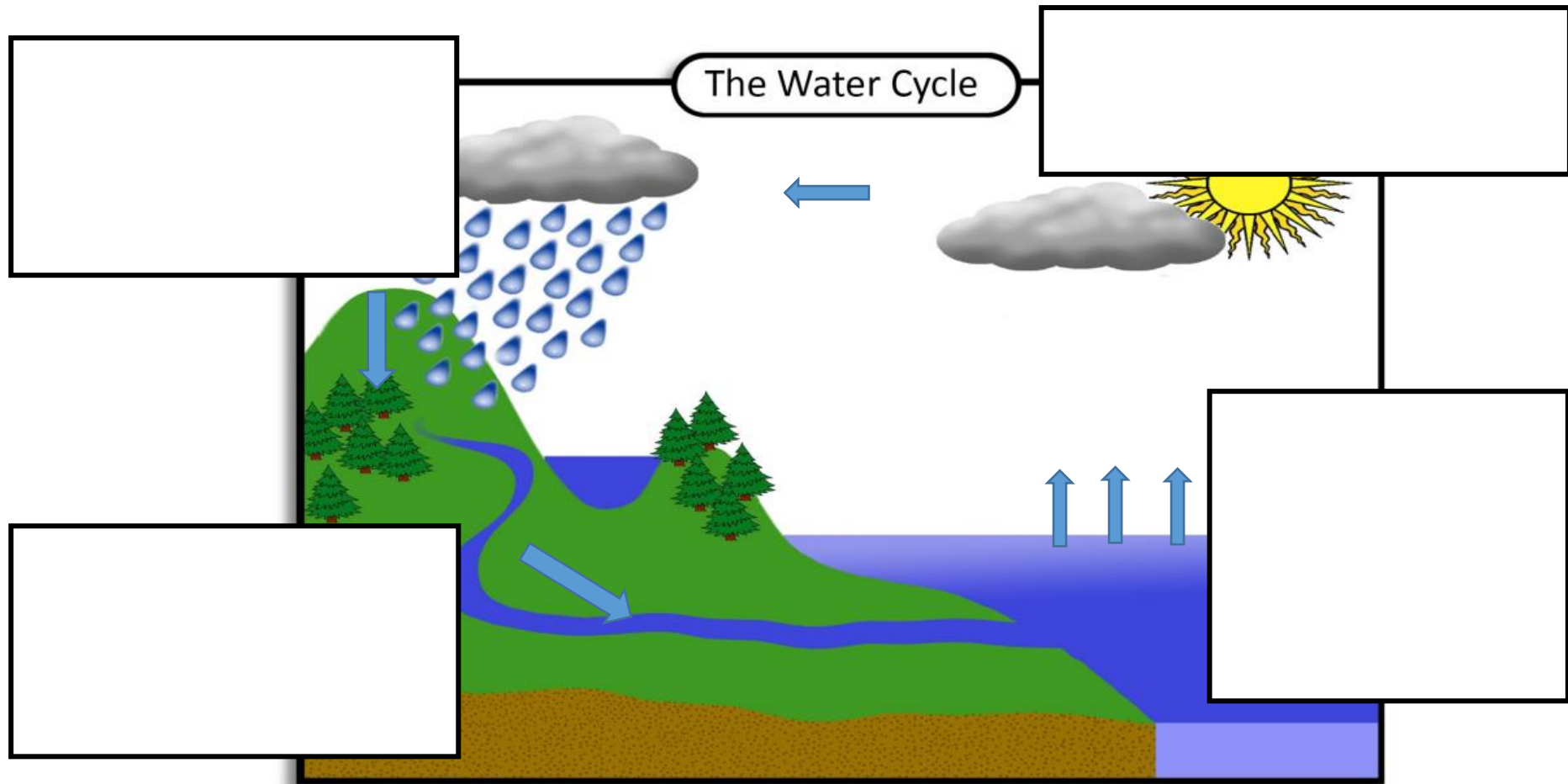
Once the garden is finished, you will need to water it before sealing it up. It is important to add the right amount of water - too much and your plants will get mildew or rot, too little and they will die. Read the planting advice on the plants you are using. If they require well drained soil you should take care to add only enough water to dampen the soil, so the roots are not sitting in water. Add water a little at a time, you can always add more!

Health and Safety

Commercial compost should be free from harmful bacteria but you may decide to provide gloves anyway. Children should be advised to keep their hands away from their mouths and wash their hands after the task.

I can describe the water cycle using the correct scientific words

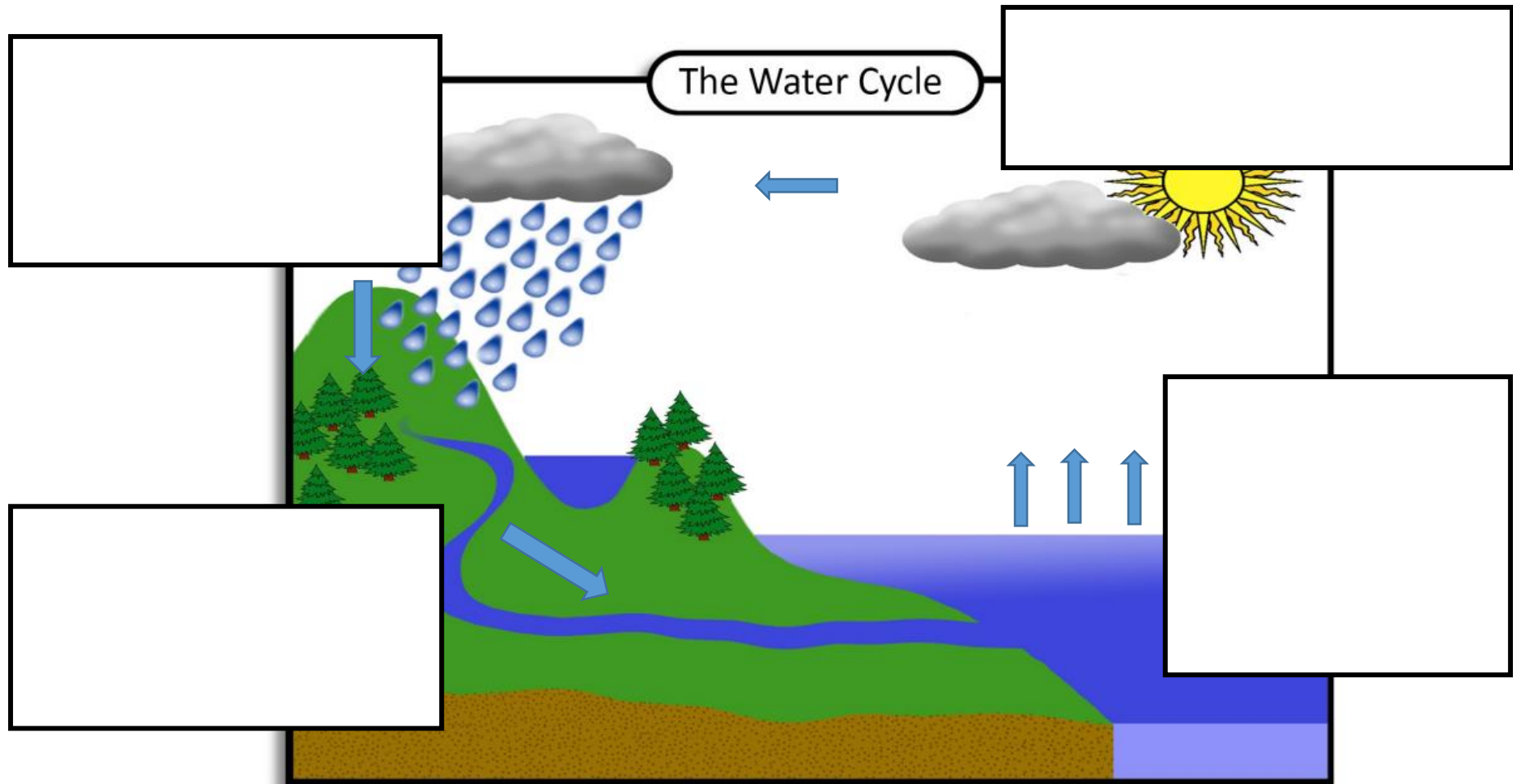
Name:



Explain the water cycle by writing what is happening in each of the boxes. Here are some scientific words to include: **evaporation**, **water vapour**, **invisible**, **condensation**, **clouds**, **precipitation**, **flow**, **rivers** and **sea**. You may think of even more. Each time you use a scientific word, underline it with a ruler to make it stand out.

I can describe the water cycle using the correct scientific words

Name:



Explain the water cycle by writing what is happening in each of the boxes. Try to use as many scientific words as you can. Each time you use one, underline it with a ruler to make it stand out.

The Water Cycle Song

Water travels in a cycle, yes it does.

Water travels in a cycle, yes it does.

It goes up as evaporation,

Forms clouds as condensation,

Then falls down as precipitation, yes it does.

Water travels in a cycle, yes it does.

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