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Wet and wild!

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We are grateful to Hymns Ancient and Modern for a grant towards the costs of Messy Adventures – **hymnsam.co.uk**

Theme: water

MESSY CHURCH GOES WILD CHAPTER LINK: 5 – CARING ABOUT CLIMATE AND WEATHER

Aim: to discover more about God and about good stewardship of water through discovering and reflecting on water.

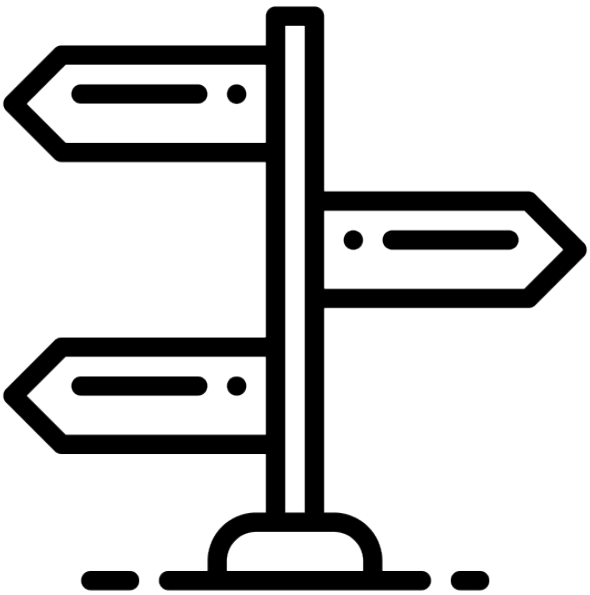
Science advisors: Dave Gregory and Karen Fisher

Messy Church values:

- Christ-centred – learning about Jesus' baptism (Mark 1:9–11) and Jesus as the water of life through discovering more about the properties of water.
- Hospitality – water as part of habitats for all sorts of creatures; the interlinked and interdependent nature of the planet.
- Celebration – the joy of getting wet; thankfulness for the gift of water.
- Creativity – imagining different ways of using and saving water and how water sustains life.
- All-age – opportunities for adults and children to reflect on how they can make a difference in their use of water.

Section 1 On the move

For each location you visit, carry out a risk assessment. Open water, rivers and riverbanks have particular safety concerns. Think about sharp objects in the water/by the banks, slippery banks of ponds/lakes/rivers/streams and the need for life jackets and throw ropes. Also, if families are handling water beware of the risk of water-borne diseases and the need for good hygiene practice.



1 Paved/tarmacked area (road, path, carpark, driveway)

- In many of our urban areas, a lot of green open spaces and front gardens have been covered by hard surfaces – tarmac, concrete and block paving. Together, explore what impact this has upon water in these environments.

- Pour some water over the tarmac and observe it, then pour some on a grassy verge and observe it.

- Talk about the problems of water falling on hard surfaces with no way of sinking into the ground. Do the advantages of the hard surface for the person living there outweigh the environmental problems? What other surfaces could be used?

- Whose homes, as well as human beings' homes, are affected by the block paving or tarmac?

- How many properties have water butts? (Explain what one is if needed.)

- Where do the drainpipes from properties go (straight into the road/pavement/into pipes or on to a lawn or natural surface)?

- Can we control the water, such as during extreme thunderstorms? Or do we have to live with where water wants to flow in our environment?

- Tell the story of Moses: when God was helping his people escape from Egypt, God made a dry path for them across the Red Sea. Can you get from one side of the tarmac to the other without treading on the wet patches/getting your feet wet?

Ask: what questions do you have about this?

Suggestions for specialist input: environmental scientist, civil engineer, town planner, architect.

2 Drain/sewer/ditch

- Pause by a hydrant, maintenance hole cover, ditch or drain.

- Talk about the way the writers of the Old Testament had a worldview that God separated water from dry land (for example Proverbs 3:20) and so do human beings today. Why do we want to separate water from dry land? (Talk about floods, travel, homes, cultivating crops, dry land for animals to graze.)

- Is trying to control water always a good thing? What would our landscape look like if we let it go wild and uncontrolled? Where could we control water in a more natural way to 'mimic' natural processes? For examples in the UK, check out this document from the Environment Agency on 'Using the power of nature to increase flood resilience' (**assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1027997/Using_the_power_of_nature_to_increase_flood_resilience.PDF**).

- Talk about the way human beings use water to flush away things that we don't want.

- Talk about what happens when those systems get clogged up. Share revolting examples – e.g. fatbergs – they can be found on the internet!

- Bung up a piece of piping or a trench in the ground with rubbish and try to pour water through it.

- Talk about the way our lives can get clogged up with rubbish too, and how we need to get rid of it before things work properly for us. Jesus is like a sewage engineer doing the dirtiest job of all on the cross to make the world work again.

Ask: what questions do you have about this?

Suggestions for specialist input: environmental scientist, architect, hydrologist.

3 Running water

- As you pause by a stretch of running water, talk about what makes it move and what direction rivers travel in.

- Use a compass to check your stretch of water's orientation.

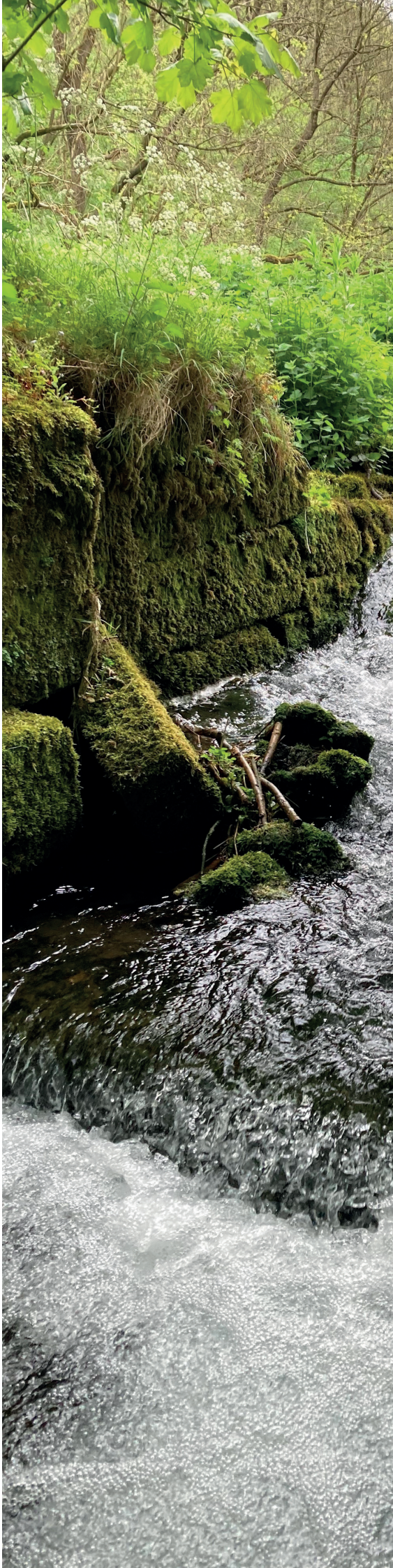
- If possible, dam a stream and talk about water pressure. How much material do you need to stop the water flowing freely? Does it depend upon the type of natural material in the river – plants, sticks, stones, rocks?

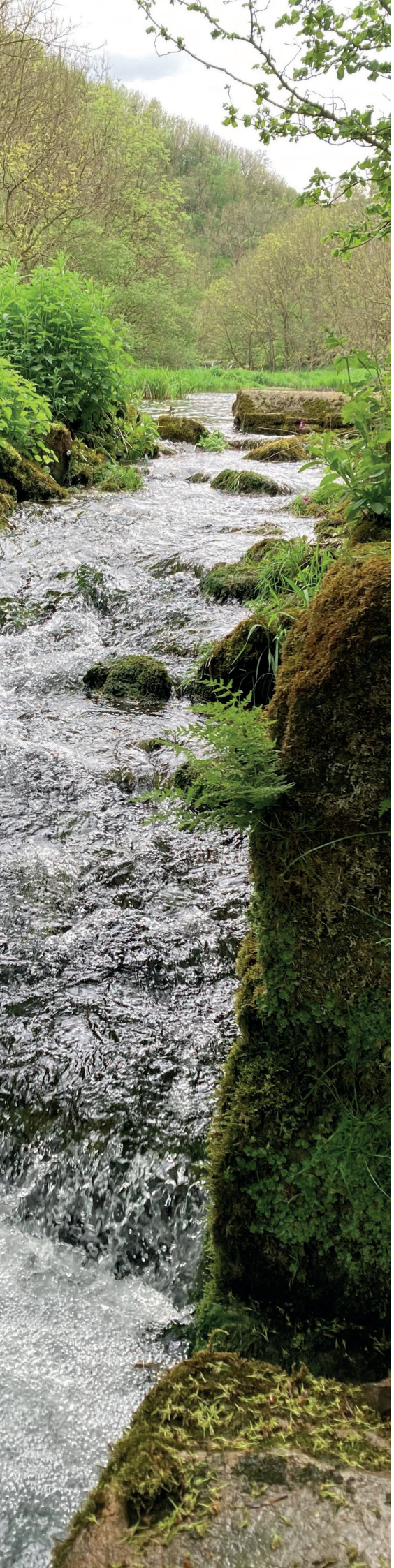
- Talk about the exciting way beavers are being reintroduced to Britain and the effect they are having on flooding. For more information check out this document from Rewilding Britain (rewildingbritain.org.uk/explore-rewilding/reintroductions-key-species/rewilding-superstars/eurasian-beaver?gclid=Cj0KCQiAqvaNBhDLARIsAH1Pq517IDEmlW-BDQpTqW5gDTJDAoIGgeyzimtdKJchci9sXVlzFw6_ENIaAoybEALw_wcB%5C).

- What is at the bottom of the river – gravel, sand, mud? What is at the banks/sides – vegetation, trees? How does this affect the flow of water?

- What is in the river that you can't see – invertebrates, fish, pollution? How would you know if the river is healthy?

- What life does water support that we can't see – invertebrates, fish? How do these things help to sustain our lives?





- Use OS maps to help you mark out in the mud the location of your local streams, rivers, canals and reservoirs.

- Count the number of different species along the banks. As you walk along the bank of the river, use a stick to measure how the depth of the water changes. (**NOTE: carry out a careful risk assessment for this activity – do you need floating devices and a throw rope in case someone falls in?**) As you do these activities, read aloud from Ezekiel 47:1–12 the vision of what a river can do in a landscape. What do you think this passage is really about? Who does the river give life too? What plants and creatures enjoy living in the marshy and swampy areas near rivers, even if human beings can't live there?

Ask: what questions do you have about this?

Suggestions for specialist input: environmental scientist, zoologist, botanist, Wildlife Trust, farmer, civil engineer.

4 Public toilets/drinking fountain/site of pump/spring/well

- Explore what we use water for and talk about the privilege of having it in our homes.

- Find out where water in your local area comes from – groundwater or reservoir; or from an underground source such as a well or borehole?

- How much water do we use each day and how does that compare with other countries? Is our consumption sustainable? How can we reduce how much we use?

- Talk about parts of the world where people still have to fetch water on foot.

- Talk about how Australian First Nations navigated by and to water – use this resource from the Queensland Government to help you (**resources.qld.gov.au/__data/assets/pdf_file/0007/1408282/aboriginal-peoples-manage-water-resources.pdf**).

- Discuss place names associated with water. You can look up their meaning on the internet.

- Have a drink of water and reflect on the privilege it is to have clean, easily accessible drinking water.

- Reflect on how much of 'me' is made up of water – about 60 % of our bodies by weight!

- Do a dramatised reading of the Samaritan woman at the well from John 4 and talk about how the story makes you feel about Jesus.

Ask: what questions do you have about this?

Suggestions for specialist input: environmental scientist, historian, biologist, medical scientist.

5 Church building

- Explore how water is used in the community and worshipping life of your church.

- Ancient buildings were often built on the site of an even older holy well or spring. If your church building is old, explore its history to find out if it is connected with a well or spring.

- Church buildings – old or new – have some way of baptising people who want to become Christians. Some do this by sprinkling water on people; others by immersing the whole of a person in water. Can you find a font or baptistry in your church building?

- Some churches also have ancient 'piscinas' where the priest would wash his hands symbolically. What does this signify? Read Exodus 30:18–19.

- Some churches 'asperge' people by flicking them with water to symbolise forgiveness.

- When Paul met Jesus, his friend Ananias told him, 'And now what are you waiting for? Get up, be baptised and wash your sins away, calling on his name' (Acts 22:16). Talk about why water is important as a symbol and a sign to Christians.

- Make sprinklers out of bunches of rosemary tied together or soft feathery foliage and 'asperge' each other.

- Look at the outside of the church building and discover how rainwater is managed on a big building: the shape of the roof, drainpipes, gutters, gargoyles and drains etc.

- Talk about what this church could do to harvest the water from the building. Some buildings collect rainwater from the roof to use in flushing toilets. More simply, you could collect it in water butts to water the grass and garden.

Ask: what questions do you have about this?

Suggestions for specialist input: minister, architect, historian.

6 Puddles

- Find some muddy puddles and have a good jump in them.

- Talk about the way your muddy puddle is linked to the clouds above you, way out of reach.

- Talk about the water cycle, evaporation, the clouds, condensation and rain etc. – you could use the information on this page from the Met Office (**metoffice.gov.uk/weather/learn-about/weather/how-weather-works/water-cycle**).

- Boil a kettle for hot drinks and link the action of the steam to the whole water cycle.

- Read Job 36:26–28. The writer of Job observed the world around him, as a scientist observes it closely today, and Job gave God the credit for the amazing things happening in it including rainfall.

- Talk about the privilege of living on a 'blue planet', where water has played such a part in making an environment where life can flourish, especially when so many planets around our skies are waterless and apparently lifeless.

- Talk about the search for water on the moon and Mars. Discuss the way the moon influences the tides on earth and how what is under our feet is connected with what is way above our heads.

- How do you see science and faith working together for the good of the planet and of people?

Ask: what questions do you have about this?

Suggestions for specialist input: environmental scientist, climatologist, hydrologist, astronomer.

Celebration and prayer

Invite everyone to share one new thing they've learned today and one thing they're going to do this week that's different because of what you've done today. Remember to ask about how you all got on next time you meet.

Prayer beside water

What would you like to pray for today? We've seen today how water changes things, and God can change things through our prayers. If you'd like to pray for something to change (perhaps an illness, a difficult situation or a problem), then find a natural object such as a stone, a stick, a leaf or a blade of grass – and as you hold it, silently tell God what you need him to change, then throw or place it into the water and let go of it.

As you leave

Invite everyone to talk on your way home about where you saw God at work today.

Section 2 Adventure area in one spot

Meet at a water source (pond, lake, beach, stream, well, spring or similar).

- How does an expanse of natural water make you feel? Survey the group before you arrive at the water and after you have spent time there and compare. Has the water made a difference? Does looking at and listening to water often make us feel more relaxed? Often people find flowing water, or the sound of waves on a beach relaxing. Some scientists think this is because of the effect the rhythm of the sound has upon the brain. Others find that it brings back memories of beautiful places we might have seen or visited.

- Invite people to take a printed copy of the story of Jesus cooking breakfast on the beach (John 21:1–14) and explore the area to find the best spot to read the story together. Ask everyone to imagine the story happening there. Build a boat from logs, stones or leaves on the land and act out the story together. If possible, build a campfire and cook flatbread or dough twists on peeled sticks. If not, make a pretend campfire from natural materials and share flatbreads and dips.

- Use a selection of the activities in section 3 to explore the properties of water.

- Explore what biodiversity there is in the water through pond dipping. Use this blog by the Woodland Trust for advice on how to do this (**woodlandtrust.org.uk/blog/2019/08/how-to-pond-dip**). Explore the biodiversity around the water source too – look for tracks and burrows or dens, listen to birds and insects and count the different species within a square metre.

- Survey any pollution and litter, and reflect on what dangers these items create for the wildlife.

- Do a litter-pick before you leave.

Wonder:

- How has this body of water changed the area around it?

- If water brings life, what places, people or organisations in your city/town/village are like water-sources, bringing life, colour, growth and diversity?

- What can we not see that is sustained by water? Think about the microscopic life that is in the water. Check out pictures on the internet. Are you surprised at the detail and beauty there is even in the smallest living thing? What might this say to us about what is important to God?

- Read John 4:13–14. Jesus says his water is the best and will never run dry. Look at some water and remember Jesus' words. Ask people to think of what water they need to ask Jesus for so they can know greater life.

- A creature underwater in this pond/lake probably assumes the underwater world is all there is. What might there be beyond our horizons that we can't move into as we are?

- Look for reflections, and consider how a reflection on a watery surface looks the same or different from the actual thing being reflected. What does 'reflection' mean? Do you have thoughts that bounce off books, films or people, like light reflects off water? What does it mean to be a 'reflective person'?

Suggestions for specialist input: environmental scientist, naturalist, zoologist, botanist, Wildlife Trust, farmer.

Section 3 Activities

1 It's a home

You'll need: a bucket of water brought from a puddle or pond; dropper; microscope; microscope slide. A relatively cheap microscope such as those in children's science sets will be sufficient for this activity.

What to do: place a drop of water on to the microscope slide. Look at the drop using the microscope. What do you see? Are there things that are moving? Or does everything stay still? Is everything the same shape or is there variety in what the objects look like? Can you identify any creatures? Watch a video (such as **youtube.com/watch?v=7JwVfAldL2o**) to help identify the creatures you are seeing. Or check out this pond identification guide (**microscopy-uk.org.uk/pond**) which contains pictures of different animals.

Big thinking: even a drop of water is teaming with life. In a single drop of pond water there may be a million or more organisms, both plants and animals along with bacteria and viruses. The plants, such as algae, and some bacteria use a chemical called chlorophyl to make energy from sunlight – just like green plants on land. This is called photosynthesis where sunlight and carbon dioxide are used to make energy for the plant to live on, releasing oxygen in the process. Millions of years ago, the ancestors of these tiny plants and bacteria were some of the first life on earth and caused the oxygen levels in the atmosphere to grow so other life can exist. The microscopic animals that eat these green plants and bacteria end up getting coloured green. It's a good job the different coloured vegetables we eat don't do the same to us!

? **Big question:** read Genesis 1:20–22. It says 'God said, "Let the waters bring forth swarms of living creatures…" So God created the great sea monsters and every living creature that moves, of every kind, with which the waters swarm… And God saw that it was good!' (NRSV). How does seeing the teaming microscopic life in a drop of water help get a bigger picture of God's creative activity and care? What might it mean for how he cares for us?

Psalm 8:6–8 says, 'You made [humans] rulers over the works of your hands; you put everything under their feet:… the fish in the sea, all that swim the paths of the seas' (NIV). How can we care for even the smallest life? What would stop the water being a good home for these creatures? Talk about how we can care for the rivers and oceans.

2 It's for drinking

You'll need: space to run around; water to drink; reusable water bottles or unbreakable cups to drink from.

What to do: play a running game until you get thirsty. Talk about how you know you're thirsty and why the body sends these signals. How does it feel to have a drink of water? What do you notice about your body now?

Big thinking: you lose water as you exercise – as much as one to two litres an hour depending on how long and how fast you run. The water is lost through breathing in and out more rapidly and through sweating. As you exercise, you get hot. Sweating helps cool the body as when the water on your skin evaporates it uses your body heat to turn the water into water vapour.

It's important to drink to top up the water you lose, otherwise you will get dehydrated. The body is made up of a lot of water – around 60% – and within it are chemicals that help your body work well, such as sodium, potassium and calcium. They are called electrolytes and help your nerves and muscles work well. If your body loses too much water, the concentration of electrolytes increases and your body will not work so well and you will feel ill. Your body might survive one or two months without food, but you can only live for around three days without water!

? **Big question:** Jesus said, 'Whoever believes in me will never be thirsty' (John 6:35). What do you think he meant? Some people here have a water bottle with them all the time to top up their bodies with water anytime, anywhere. Ask some of them how they keep 'topped up' with Jesus?

3 It's liquid, solid and gas

You'll need: water; water pistols or squirty bottles; ice cubes in a cool box and gloves or cloths to hold them; kettle; jar; campfire materials; drinks.

What to do: explore the different 'phases' – solid, liquid, gas – with these activities.

- **Ice:** play a 'guess what I'm drawing' game with ice cubes on a hard surface e.g. paving slabs, boulders.

- **Water:** have a water fight using water pistols or squirty bottles, or (for a calmer version) squirt patterns on a flat surface, like a path or bed of sand.

- **Gas:** (to be supervised by an adult – steam from a boiling kettle will scald skin badly) boil a kettle on a campfire or portable camping stove. Place a heat resistance plate or jar above the spout and watch the steam (which is water vapour at 100 degrees centigrade) condense back to liquid water. You can end the activity by making hot chocolate for everyone with the hot water!

Big thinking: water is a very simple chemical made up of one oxygen atom and two hydrogen atoms. It is the most common substance on the surface of the earth, the only planet we know where it can exist as a solid, liquid and gas. Water is the third most common substance in all the universe. In fact, scientists think the water on earth came from space when comets (giant snowballs in space) bombarded the earth when it was very young.

Water has some amazing properties. It is one of the few substances that when condenses (freezes) from a liquid to a solid, it expands rather than shrinks. Also, ice is lighter than water and so floats. A good thing too! If ice were heavier than water, the ice forming on top of a lake would sink, but then more ice would form on the surface and keep on sinking until all the ocean was frozen!

And while less than one per cent – one part in a hundred – of the earth's atmosphere is water vapour, this is responsible for three quarters of the greenhouse effect which warms our planet by 30 degrees centigrade and makes life here possible. Without it, the earth would be a frozen snowball in space! In fact, earth is the only planet we know where ice, liquid water and water vapour can exist together.

? **Big question:** together, ice, liquid water and water vapour make our planet suitable for life. Some people compare the three states of water with the Trinity. Ice, water and steam are all the same substance yet are different. In a similar sort of way, God the Father, Jesus the Son and God the Holy Spirit are all God yet are different. How do we need each of the members of the Trinity to have life?

4 It holds up things

You'll need: objects of different sizes, weights and made up of different materials collected from your outdoor surroundings; a clear bowl of water; some mud.

What to do: experiment with the different objects. Which one of them will float on water? Which of them will sink? Think about their properties. Does their weight, size or surface area make a difference to whether they sink or float? What is the heaviest object that you can get to float? Make some mud balls of differing sizes. How big a mud ball can you get to float on the surface of the water?

Big thinking: you might think that objects that are heavier than water would sink. And that is often the case. But spread the weight out over a larger area and you might get it to float. Think about a boat floating on water. The material it's made of is denser than water, and as a single lump would sink. But made into a bowl shape, it can float. The mud balls are heavier than water – they are made up of water and bits of crushed stone. But if you make them small enough, you may be able to get them to float.

Small objects will also float because water has a skin. This is called surface tension and is caused by the water molecules at the surface of the water being attracted to one another more than the air. Some very light animals like water boatmen and other insects can walk on water because of surface tension.

? **Big question:** the Bible says 'I will hold you up with my victorious right hand' (Isaiah 41:10, NLT) – what do you think this means? Is there anything we can do that would mean that God would not 'hold us up'?

5 It cools down

You'll need: a bowl of cold water to dip participants hands in.

What to do: get each person to dip one of their hands into the water in the bowl. Then, hold their hands in front of them and takes turns to blow on each of them repeatedly. Ask them what they feel. Does one hand feel cooler than the other? Which one – the dry hand or the wet hand?

Big thinking: you need to give water heat energy for it to evaporate. In liquid water, the molecules are close together while in a gas they are far apart. You need heat energy to pull the molecules apart, which comes from their surroundings. In this case, the heat energy comes from your hand. As the water evaporates off your wet hand, it will cool the palm of your hand. This is why sweating is important for the human body to control its temperature. You will notice a stronger cooling if you use hand alcohol rub rather than water as the alcohol needs more heat energy to evaporate so cools your hand faster.

Water also helps to cool our surroundings. On a hot day, in build-up areas, places by fountains, ponds or rivers are cooler because the evaporation of water cools the surroundings. This is why in ancient houses in hot countries you will find a pond or fountain in the garden. As the earth warms due to global warming, we may need to have more open water in our towns and cities to keep them cool. It will also help the wildlife too.

? **Big question:** when tempers or situations get heated, like when you have an argument, we often use the phrase 'to cool things down'. How do you feel when you have had an argument? What helps you to cool down? What can you do to help calm the situation? Jesus said that the Holy Spirit was like a river of living water (John 7:37–39). Later in the Bible is says that the Holy Spirit will help us to be loving, joyful, bring peace, have patience, show kindness and generosity, stay faithful, be gentle and have self-control (Galatians 5:22–23). How can the river of God's Spirit help you to stay cool?

6 It is powerful

You'll need: several empty cans or bottles standing up, some distance away; some water pistols of varying strengths. You could also include a hose with a spray nozzle that can give a powerful jet of water.

What to do: stand the objects on stands or a table some distance from the participants. Use the various water pistols and hose to try and knock them down. If you are using a hose, use different settings on the nozzle – from jet to spray – to try and knock things over. How concentrated does the spray have to be before it will achieve this?

Big thinking: water can feel very soft and soothing. But it can also be very powerful. We can enjoy floating in a calm sea. Yet that same sea, when the waves are big, can knock us off our feet. Or think about falling rain. It can be refreshing on a cooling day. But heavy rain can wash soil way and cause houses and bridges to collapse. Walking along a river valley in the mountains can show us how powerful water is. Over a long period of time – perhaps millions of years – it can wear down (erode) rock to carve a deep valley. On a small scale, small, high-speed jets of water can cut through stone and steel.

Big question: when we say the Lord's Prayer we say: 'The power and the glory are yours.' What does this mean? How does God use power? How do we see God's power? Strong and powerful? Or strong yet gentle?

7 It can be clean or dirty

You'll need: some soil; water; clear jug; clear plastic cup or container; sand; small piece of cotton/cheese cloth; sieve or tea strainer.

What to do: mix soil and water in the jug. Place the cloth into the sieve or tea strainer and cover with sand. Put this on top of a plastic cup or container. Poor the dirty water slowly through the sand and cloth in the sieve and ensure that clear water coming through goes into clear cup or container. The water should now become clear and soil stays on the sponge/sand. But if it's not totally clear the first time, repeat the process. How many times do you have to filter it to make it clear? You could repeat this experiment with different thicknesses of sand in the sieve. Or replace some of sand with coarse gravel, small stones, or bits of broken up clay pots. Which mixture is most effective at filtering the soil from the water?

Big thinking: you have just made a simple water filtration device. The sand allows the water to flow through, while the soil in the water is trapped by the sand. This technique is very old – it was used in the ancient world to clean dirty water – and is still used in modern sewage works today to treat the waste from our homes. In parts of the world, where people do not access to clean water, simple sand filters can clean water making it safer to drink. As they are used, the sand becomes home for microscopic organisms which also remove bugs that might make people ill.

? **Big question:** in Jesus' time, just like in many places around the world today, people struggled to find water that was as clean and clear as we get from our taps. Often, they got it from a well. Jesus once had a conversation with a woman at a well and said to her; 'Everyone who drinks of this water will be thirsty again, but those who drink of the water that I will give them will never be thirsty. The water that I will give will become in them a spring of water gushing up to eternal life' (John 4:13, NRSV).

Repeat the experiment again while everyone watches. Invite them to look at the water that is muddy. What things have they done or experienced in their lives that might make the water of their lives muddy. And then as they watch the water being cleaned by the filter, invite them to ask Jesus to provide them with his clean water of life.

Find out how you can help people get access to clean water by looking at the work of WaterAid –could your Messy Church adopt them as a project?

8 It keeps us healthy

You'll need: mud or dirt; a bowl of water; some towels.

What to do: get the families to play with the mud, getting their hands (or feet dirty!). Now use the water to wash themselves clean. Search the internet for ways to do this well!

Big thinking: in developed countries, a lot of the illnesses that people used to catch such as cholera, dysentery and typhoid are not so common anymore. Sadly, they are still common in many poorer countries around the world. We often think that this is due to the way science has given us better treatments. But having access to clean water, better sewers and waste treatment played a large part in stopping these illnesses. And so does washing our hands! One way these illnesses spread is that we touch contaminated surfaces and then put our fingers in our mouths. While washing our hands with clean water cannot remove all the microscopic bacteria that make us ill, it does help to keep them under control.

? **Big question:** the Bible says that Jesus washed the feet of the disciples (John 13:4–5). Some churches re-enact this on Maundy Thursday, by washing each other's feet. The disciples would not have worn socks so their feet would have gotten really dirty through their sandals. Washing feet was the job of a servant. Why do you think Jesus washed the feet of the disciples? What might that mean for us?

9 It changes the shape of things

You'll need: seed trays; soil; small stones or gravel; different size sticks and twigs (or wooden forks and cocktail sticks); wooden blocks or similar to raise one end of the seed trays on; small watering cans.

What to do: fill the seed trays with soil. Into one, stick some of the twigs. Before you do so, split the end of the twig that will go in the soil into pieces – these are like the roots of trees. Do something similar with the sticks in another tray. Alternatively, use wooden forks and cocktail sticks. These represent different types of vegetation. To another seed tray add some of the small stones or gravel and mix well. Leave the final tray with only soil in it.

Now, elevate one end of the trays on the wooden blocks or something similar. Gently pour the water from the watering can on to the one elevated end of the tray and let the water run down the tray. Can you see any difference in the amount of soil that is washed away? Is more or less washed away with the sticks, twigs and stony soil that with bare soil. Does changing the rate at which the water is poured make a difference? Raise the end of the tray higher or lower. Does this make a difference?

Big thinking: water has the power to change the shape of the landscape. It can move soil and rocks around, but how much it so does depends on lots of factors. How heavy the rain or flow of water is? Has the slope got vegetation on it? How steep is the slope? Whose roots can help stabilise the soil and create pathways that the water can flow through?

Water is powerful, and even more powerful in combination with humans. In time past, many mountains were covered in trees which prevented the soil from being washed away by heavy rain. But once the trees were chopped down by people, a lot of the soil was lost. And it's not just the soil that is washed away. Today we use lots of chemicals on our farmland to help crops grow, particularly nitrogen. But the rain washes this off into rivers and the oceans where they make algae grow. When this dies, its decomposition uses up oxygen in the water leaving none for living creatures like fish to breath. This leads to 'dead zones' in the ocean where there is little life.

? **Big question:** the people who lived long ago knew of the power of water to erode rocks and wash away soil; 'But the mountain falls and crumbles away, and the rock is removed from its place; the waters wear away the stones; the torrents wash away the soil of the earth' (Job 14:18–19, NRSV). In the stories of creation, God tells Adam to look after the soil (Genesis 2:15). Think about how we might look after the land around us?

Jesus talked about good, fruitful soil as an image of the good lives God wants us to live (Matthew 13:8). How can we keep the soil of our lives good? What will stop its goodness being washed away by the storms of life – the difficulties and temptations that come our way?

10 It can be moved and stopped

You'll need: a piece of land with a slight slope that you are able to dig small trenches in; some tools for digging trenches; water and something to pour it with.

What to do: dig some trenches that will allow water to flow down them. Make some wider and others narrower. Make some straight and some with zig zags. Then try to make them the same length. Now pour water into them and watch how the water flows down each. Down which one does the water travel fastest? Vary the rate at which you pour the water in to the top of the trench? Can you make water flood out of the different trenches? If so, which one has the worst floods?

Now collect sticks, stones and other natural materials from around you. Use them to build a dam in the trenches. Have another go and pouring water down them. In which one is it easiest to stop the flow of water?

Big thinking: streams and river rarely flow in straight lines. Their shape is determined by the type of ground they flow through and the gradient of the slope. On steep surfaces they may flow straighter, although may go around harder rock that is more difficult to cut through. In flatter areas, rivers will twist back and forth – this is called meandering.

Understanding what shapes the flow of a river can help us prevent flooding. In the past we have tried to build concrete walls to stop rivers from flooding in towns. But we are now realising it is better to work with nature to prevent flooding. For example, if a town is being flooded, introducing meanders upstream of the town can slow the flow of water after heavy rain down the river and encourage flooding where there are no people living. This is an example of natural river management.

? **Big question:** a writer in the Bible sounds as if he was in deep trouble: 'Save me, O God, for the waters have come up to my neck. I sink in the miry depths… I have come into deep waters; the floods engulf me… Rescue me from the mire, do not let me sink… Do not let the floodwaters engulf me' (Psalm 69:1–2 and 14–15). Have you ever faced a situation where you have felt out of your depth, where you did not know how to do something or whether you could face your difficulty? Did you try to sort it out alone, or did you ask God for help? How did you grow in trusting God through the experience?

Bigger activities

- Create a wildlife pond.
- Create a rain garden – see the RHS website for more information.
- Visit a sewage farm.
- Repair a damaged riverbank – you will need permission from the landowner and local authority or Environment Agency. Or contact a local Wildlife Trust who could help with this.
- Reduce hard surfaces at your house or at church.
- Plant a tree or a number of trees.
- Raise money for Toilet Twinning or Water Aid (there's even a Messy Church Toilet Twinning session – **messychurch.org.uk/toilet-twinning**).
- Install a water butt at a home or at church.
- Explore a hydroelectric plant.

Section 4 Celebration

This celebration invites the group to share any Bible stories involving water, but you could focus on a single watery Bible story to suit the occasion. For example you might want to celebrate a special Messy Church Goes Wild baptism by sharing the story of Jesus' own baptism in the River Jordan (Mark 1:9–11).

Have members of the team primed to take part as storytellers. Gather around your water. One leader starts off: 'This water reminds me of a story. Do you remember, when people on earth were really messing up, God asked Noah to build an ark?' Improvise telling the story briefly from memory, with the next person following straight on, with another water story, e.g. 'Oh yes! But this water reminds ME of…' gradually inviting everyone in the group who can think of one to share their water story, either from the Bible or from elsewhere (a storybook, their own experience, a trip to the seaside or similar).

You might want to sing together. Some songs could be inspired by the stories you share, such as 'Wade in the water,' 'The animals went in two by two,' 'One more river' and could be incorporated into the storytelling above.

Prayer

Invite everyone to get their hands wet and to look at the water on their hands. What does it make you think about? What thank you, sorry or please prayers would you like to say to God in response? You could pray these aloud, in small groups or silently in your heart. Finish with the Messy Grace.

Section 5 Eating together

Pick an idea from the Messy take-out menu or another source for outdoor meals, snacks and treats. Ideas for food and drink include watermelon, water biscuits, pork pie (made with hot water pastry), poaching eggs, vegetables or fruit in water and drinks made with both plain water or juice. You could also experiment with different hot or cold infusions or tea and coffee, which would go with the theme and provide a talking point.