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Wild and weedy!

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and Graham Hartland

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

Theme: plants and moss

MESSY CHURCH GOES WILD CHAPTER LINK: 3 – CARING FOR TREES AND PLANTS

Aim: to discover more about God by how plants grow and how through them God provides vegetation and food that sustains our planet.

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Remember to complete a risk assessment for each adventure and ensure you are fully compliant with good safeguarding procedures.

Messy Church values:

- Christ-centred – discovering more about God the creator as we research how plants grow and explore what is needed to grow God's kingdom through Jesus' parable of the sower (Mathew 13:1–23).

- Hospitality – plants are a vital food source for animals and humans that we need to share.

- Celebration – the joy of being united to Jesus, the vine, as a branch that produces fruit.

- Creativity – imagining different ways of using plants, fruit and vegetables to enjoy God's creation.

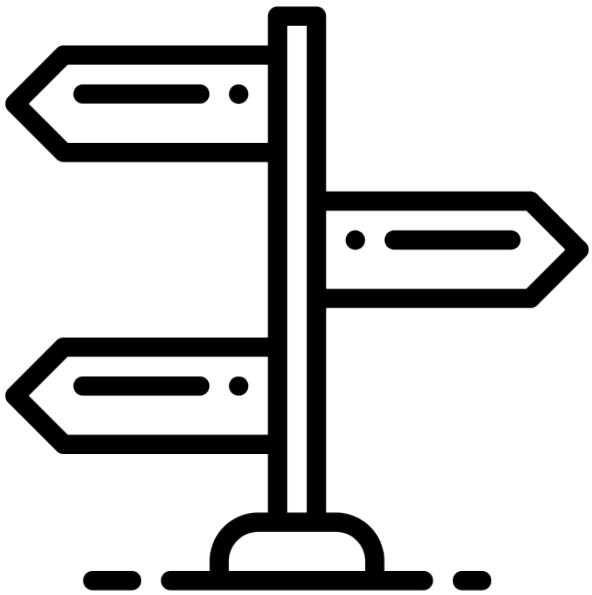
- All-age – opportunities for adults and children to reflect on the beauty and variety of God's creation in plants and in the provision of food.

Locations: any open space with plants in.

If these are inaccessible: containers/flowerpots containing a variety of plants, vegetables and moss.

Section 1 On the move

Pause at different stops on an adventure around your area. Visit the places before the event and carry out a risk assessment. Then issue the health and safety precautions needed for your situation. The below stops can be used in any order. Each stop has suggestions for local experts you could invite to add specialist knowledge and local context to the adventure.



1 Field/playing field

- Use a plants guide, such as this one (**field-studies-council.org/shop/publications/playing-field-plants-guide**) to help ensure people know the difference between grasses, plantains and yarrow.

- Look carefully at a patch of grass – you could use a magnifying glass – what can you see?

- A magnifying glass will show that the veins on the blade are parallel and run along together, whereas with other plants – like tree leaves – they are branched.

- Is every blade the same shape and colour?
  - Did you know there are thought to be over 12,000 different species of grass? In the UK there are 160 species.

- Talk about what grass is used for and why it is important.
  - Grass positively impacts the climate, clean water and air quality by absorbing carbon dioxide from the atmosphere as well as binding the soil together to reduce erosion. This article (**independent.co.ug/farmers-resort-to-growing-napier-grass-to-control-erosion-run-off-water**) talks about using Napier (or elephant) grass in Kabale, Uganda to reduce erosion and landslides after heavy rainfall.
  - Approximately 2.5 square metres of grass produces enough oxygen each day for one adult.
  - Grass is an important food source for animals and can be preserved by a natural process to produce silage, which is used as a winter fodder (food).
  - Grass is in many of the foods and drinks that we consume, e.g. wheatgrass, barley, sugar – but humans don't eat garden lawns! Sugar cane is a grass, just very tall and long lasting.
  - Grass can be used to make paper and even a roof!

- Have you heard of photosynthesis?
  - This is the process by which energy from light is used by plants to create sugars and starch. Its raw materials are carbon dioxide from the air and water from the soil. It produces oxygen as a waste material! It is a myth that plants get their food from the soil: it merely acts like a vitamin pill, supplying extra atoms (like nitrogen and phosphorous) to make proteins and DNA.

- Can you name some games/sports that are played on grass?

- What is turf? When and where is it used? What is the difference between grass and turf?
  - Careful here: turf is simply a mix of hardy grasses that can survive being regularly mowed and walked on. Most folk will simply look and see 'grass'.

- Some people replace grass with an artificial substitute – what impact might this have on the environment?
  - Artificial grass – now in its third generation – is a complex mixture of rubber and synthetic (i.e. plastic) strands. Whilst it does not need mowing, it has no water retention, no habitat worth and has been shown to add microplastics to the environment. Equally, for some places, like airports, having a year-long green contrast to grey runways that drains quickly, has no stones or rocks in it, and dissuades wildlife (like flocks of birds) from nesting is clearly an advantage.

- Isaiah 40:8 says, 'The grass withers and the flowers fall, but the word of our God endures forever.' How do you feel about created things like grass and flowers changing with the seasons? Do you feel glad that God's word doesn't change like they do? Why has the writer chosen grass and flowers rather than trees?
  - Many plants die in dry or winter seasons, and the writer uses this image to emphasise the permanence of God's word, in that it does not fade away. One might also consider the role of water in a desert, causing brief bursts of vibrant colour – but only every decade or two. This might encourage those who are 'going through a dry spell' that there are as many people's experiences of God as there are habitats in the world. Talk through how people experience God: is it always pretty flowers in our spiritual life? Or is it the occasional bloom amidst hard dryness? What can we do about this?

Ask: what questions do you have about this?

Suggestions for specialist input: environmental scientist, gardener, horticulturist, green keeper.

2 Vegetable garden/allotment

- What different colours can you see? Can you see something for each colour of the rainbow?
  - It is recommended that this visit occurs either in April/May or August/September unless there are some very keen gardeners. Blooms fade after a week or so, and fruits only come into their colours as they ripen. In the other parts of the year it's just green.

- Look at a selection of seeds – can you identify what they will grow into? Do some planting if it's the right season. If it isn't, what other work needs doing in this garden?
  - You will need some plastic pots to keep the seeds in. You might consider labelling each pot A, B and C and have an answer key to hand to make this activity work. Bonus points for those who can correctly suggest the maximum depth each seed can be in the ground. Normally small seeds can't be planted as deep as bigger seeds as they don't have as much food stored. And if that's confusing… each seed is a life support package for a baby plant, to keep it alive and growing until the shoot reaches the light and can make its own food.

- What fruit and vegetables can you see growing? Is there anything you've never tasted?
  - You could do some taste testing if you have permission to, or else bring some samples with you. This clearly needs a pre-visit to check what is growing. Allotment holders are always (well, almost always!) very friendly and happy to answer questions. But it is recommended that you take samples of the growing vegetables rather than 'scrump' what is growing there. Children will act as locusts on soft fruits like raspberries and blackcurrants, and one pea pod is never enough!

- Talk about God's provision of good things for us to eat. Over many centuries, God's people have always celebrated the harvest.

- Why is it important to celebrate the harvest? Do people in towns and cities need to do the same celebrations? Should we also celebrate shops and supermarkets?
  - It is important that urban citizens recognise the importance of those others who work the land, whether in this country or abroad. It's also an encouragement to get people trying to grow their own food: chillies grow well on windowsills and old baths can be repurposed as raised beds to grow beans, tomatoes, carrots, chard, parsnips and leeks.

- Retell the story found in Daniel 1. How does this help us to understand that fruit and vegetables are good for us to eat? Are you getting your five-a-day portions of fruit and vegetables? Do you think what you eat matters to God?
  - This is an interesting story and there will be those who notice the fact that Daniel and his friends drank water rather than wine as well, which may have made them not have hangovers. If people are going to be vegetarians, then they need a wide diet to get the vitamins and minerals as well as the essential amino acids and oils needed for a healthy body. In the UK, the NHS recommends five portions of fruit and vegetables every day and give these suggestions (**nhs.uk/live-well/eat-well/5-a-day-portion-sizes**) for ideas and portion sizes. Note that potatoes, yams, cassava and plantain don't count! If you read the article, you'll also notice that blended smoothies can increase tooth decay because of the released sugars. Biblical scholars will note the body is described as a 'temple of the Holy Spirit' (1 Corinthians 6:19) and some might use this to suggest we look after ourselves in mind, body and spirit. Others might argue that this is simply about sexual immorality (and to avoid it) so might not be applicable to physical fitness!

Ask: what questions do you have about this?

Suggestions for specialist input: gardener or dietician.






3 Roadside/car park/pavement

- As you pause by the roadside (in a car park or on a path), what vegetation can you see? How do you think it got there? Talk about how seeds are sown by birds, insects and the wind.
  - In western Europe you will see the ubiquitous dandelion, whose parachute-like seeds are blown from the flowerheads as a childhood game. Any plant which is hardy and resilient can end up growing in the most unlikely places. This article (**wiselivingmagazine.co.uk/property/garden/best-plants-for-urban-gardens**) talks all about 'car park' plants!

- What use are these wildflowers, grasses and nettles? Are they just weeds? What is the difference between a plant and a weed?
  - Buddleia is an amazing butterfly attractor but can spread incredibly easily. This is a great example of a 'plant' which is growing in the right place, and a 'weed' which does not. And that is the only difference. As humans we need to remember that 'the wrong plant' for us can be 'the right plant' for something else. In western Europe, stinging nettles can be identified by looking for the hairs on its stem, its drooping, catkin flowers and oval, toothed leaves as well as the more obvious (and painful) way! Insects use them as food. For example, stinging nettles are a source of food for many butterflies including the Comma, the Painted Lady and the Red Admiral. Have a look at this article (**highburywildlifegarden.org.uk/the-garden/bees-faves/stinging-nettle**) all about how nettles are good for wildlife.

- Can you find any plants breaking through the road/path? How does that happen?
  - Roots are tiny so can get into the smallest of cracks. Then they grow, bit by bit. Each little expansion causes a slight widening of the crack in the road/path and it gradually gets bigger and bigger.

- Are there any dandelions nearby? What do you know about dandelions – are they a plant or a weed? Did you know they are edible? Would you eat a dandelion? They contain vitamins A and C, calcium, fibre, manganese, iron, potassium and protein!
  - The answer is that (as we saw earlier) weeds are simply plants in the 'wrong place' for humans. People who fancy eating dandelions may be advised that the French name for these is 'pissenlit' owing to their diuretic properties – they make you go to the toilet much more than usual!

- Read the parable of the sower or act it out together (Matthew 13:3–9). What do you think Jesus was saying in this story?
  - Scattering seeds in amongst rough ground, on pavements, or on thin soil and then comparing their progress against those in pots will be a lovely idea for illustrating this.

Ask: what questions do you have about this?

Suggestions for specialist input: environmental scientist, botanist, landscape architect.

4 Woodland/buildings

Please note: this section talks about mosses. Mosses are very important for the environment and many creatures live within them. Some are very rare too. Be careful what you pick – always leave a large amount so they can regrow.

- Can you find any moss? What is it? How does it differ from other plants? What does it feel like?
  - It doesn't have roots, seeds or flowers. Instead, mosses have special capsules which grow above the green leaves. These contain spores which are single-celled (so they are microscopically small) and have no food store unlike the multicellular and food-rich seeds. There are thought to be up to 25,000 different species. How many can you find here?

- What conditions does moss like to grow in?
  - Moist, damp, shady conditions are best for moss, however, it can grow in extreme conditions from hot deserts to cold, damp caves. In the UK it can be found in woodlands and on the side of buildings.

- How is moss good for the environment?
  - It soaks up rainfall, maintains moisture in the soil, keeps conditions humid, impacts temperature control, stabilises soil and provides a good microhabitat for creatures.
  - Because of the tiny leaf structures which act as nucleating points for moisture in the air, the plants can survive in very dry areas, such as deserts. This is even being investigated to prevent splashback in men's toilets – you can read about that here (**theverge.com/2016/6/7/11876454/this-tiny-desert-moss-may-hold-the-key-to-making-sure-there-s-less-urine-on-the-men-s-room-floor-**)!

- Moss is believed to have ancestors dating back 450 million years and more than 100 fossil moss species have been identified from 66 million years ago! What does this teach us about how much God loves the created world?

Ask: what questions do you have about this?

Suggestions for specialist input: environmental scientist, botanist, gardener.

5 Park/garden

- How many different flowers can you see? Can you name them all?
  - You could use phone apps such as Plant Snap or Picture This to find out any you don't know! There are also flower identification packs available online.

- Can you identify the different parts of a flower? Use a magnifying glass to see them even more clearly.
  - Note that what we call flowers are those happily pollinated by insects. Plants like grass have their pollen carried off by the wind, and thus their flowers are smaller, less colourful and utterly unscented. This means that things like petals, stamens and carpels will look different to bigger flowers like roses.

- Flowers usually have a distinct perfume. Without picking them, see if you can smell some of those around you.
  - Gently tap the flower and check inside the petals for insects before smelling. Getting a bee in your nose is not recommended!

- What insects are on the flowers? How do flowers help plants reproduce? Talk about pollination and how this happens.
  - Check that folk are happy distinguishing between seeds (baby plants and a food store) and pollen (effectively plant sperm). Dandelion seeds are not the pollen! Also flowers do not always look like flowers. The catkins on birch trees or the flowers of oak trees will not look blousy and blooming. Hay fever sufferers may have weather apps on their phones which detail the different pollens currently in the air. Birch pollen, like grass pollen, is wafted in the wind and irritates the immune system of humans causing the dribbly mess in our eyes and nose! Insect-pollinated flowers, like roses and poppies, don't cause this irritation as they are carried by insects.

- See if you can all learn the names of three new plants or flowers today. Encourage folk to draw the flowers and label important differentiating parts. This would be good for an art class or to teach observation to people. You may want to have photographs of actual flowers available so that these can be placed side by side to 'spot the difference'.

- What's the difference between annual plants and perennial plants? Annual plants only last one year; perennial plants last longer. In the UK, busy lizzies would be annuals, whereas buddleias would be perennials. If the plant has a woody stem, it's likely to be perennial.

- Talk about what good things there are about flowers.

- When and why do we give flowers to people? How does it make you feel when you are given flowers? What do different flowers mean in different cultures, perhaps there are people from different cultures in your group who know?
  - For example, red roses mean 'I love you' in the UK but are used at funerals in Latvia. Often this symbolic use of flowers is included in paintings and stained glass. Mary – the mother of Jesus – often has lilies around her as identification; St Cecilia holds roses; passion flowers are so called because of the 'crown of thorns' formed by their radial filaments. This is one guide (**bloomandwild.com/floriography-language-of-flowers-meaning**) all about floriography which can help people choose the right flowers to convey the right message!

- As well as adding beauty, what part do flowers play in protecting the environment?
  - Plants increase the oxygen in the air, minimise soil erosion and conserve water.

- Read Matthew 6:24–33. As you look at the flowers here, think about what Jesus means. In a world where lots of people really worry about their image, do these words help us to be happy?
  - How might 'seeking God's kingdom first' change how we think about ourselves? How can we help those who find their appearance unattractive?

Ask: what questions do you have about this?

Suggestions for specialist input: florist, horticulturist or gardener.

6 Market/florist/greengrocers/garden centre

- How do the people who work here serve the community? If they have time, talk to them about what they love about their work and how they think it helps people. Think about how you see God at work in this place and in the work of these people.

- Can you make an A to Z of fruit and vegetables, plants and flowers?

- Talk about the seasons – in the UK, spring, summer, autumn and winter – and how this impacts the flowers and plants we see and the fruit and vegetables we eat. Talk about how global warming is affecting our seasons and what we can grow.

- Are there any special plants, flowers, fruit or vegetables associated with Christian festivals like Christmas, Easter or Pentecost? (Pentecost was originally a harvest festival)

- Read Genesis 8:22, when God promises Noah after the flood: 'As long as the earth endures, seedtime and harvest, cold and heat, summer and winter, day and night will never cease.' Can you learn this verse by heart? What brings you comfort and reassurance in this verse?

Ask: what questions do you have about this?

Suggestions for specialist input: florist, greengrocer or minister.

Celebration and prayer

See section 4: Celebration

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 place where there are lots of plants growing (e.g. park/garden/allotment). Make sure you visit the places before the event and create a risk assessment. Then issue the health and safety precautions needed for your situation.

- Use the phone apps Plant Snap or Picture This to help you name the plants in this area.

- Make a list of the names of all the plants you can find within a square metre of ground: does the number surprise you?

- Use a selection of the activities in sections 1 and 3 to explore flowers and plants.

- Walk round the space looking for what's dead and what's alive here. What looks dead but is dormant, what has died but is helping other life to live? What are the different ways plants show they are alive? Come back together and talk about what you've observed.

- This is season dependant. In the temperate summers, there will be fewer dormant plants compared to the winters. In winter, deciduous trees will be dormant, as will daffodil and snowdrop bulbs in the soil.

- Talk about what Jesus said in John 12:24: 'Very truly I tell you, unless a grain of wheat falls to the ground and dies, it remains only a single seed. But if it dies, it produces many seeds.'

- Talk about the pollination process.
  - Role play how pollen gets from one flower's anthers to another's stigma. Animal-carried pollen needs to have a friendly animal (bee/butterfly/moth/bird/bat/mouse) to hitchhike; wind-carried pollen just needs a breath of fresh air. If you have a microscope to hand, this (**microscopemaster.com/pollen-under-the-microscope.html**) is a useful website to explain how to look at pollen grains.
  - Otherwise get photos (electron micrographs ideally) of different pollen grains. There are plenty available online.

- Can you find any seeds here? What seeds would you find in a different season?

- How do seeds spread about?
  - Talk about the different ways they disperse and demonstrate any from this space if they are in season. You could bring it to life by getting people to play a game running around in the 'style' of different seeds: the leader shouts a seed and everyone does the action. Ash helicopters – spin round; dandelion clocks – with arms above your head, run to one side of the space; vetch explosions – jump from crouching into a star jump like a bomb going off; coconut float – pick up a partner and carry them to another side of the space like a wave carrying a floating seed; burr – clamp a hand on to a partner like a burr grips on to an animal's coat. You can invent more of your own, of course.
  - Here (**bbc.co.uk/bitesize/clips/znvfb9q**) is a video all about seed dispersal video which is designed for UK Key Stage two level (ages seven to eleven).
  - Other activities include this seed dispersal lesson (**schoolgardening.rhs.org.uk/Resources/Lesson-Plan/Seed-dispersal**) – although, this would need more planning in advance if not done in the autumn – or this seed dispersal activity (**generationgenius.com/activities/pollination-and-seed-dispersal-activity-for-kids**) where the resulting 'helicopters' are fun to drop and this always works. Investigate what happens when the wings are clipped, and whether the wind helps or hinders their wider distribution. If it's a still day, use a hair dryer or a fan to create wind currents.

- Complete a short survey with the people around you, asking them about their favourite flowers, fruit, vegetables etc., then read together Genesis 1:11–13. Talk about why you think God thought what had been created was good. Take the group to a plant or seed in the space that has made you think, wonder or question today and explain why.

- Standing or sitting in a circle, what one thing would you like to say to God as you think about the plants you've seen today?

- How can you leave this place even better than you found it?

Wonder:

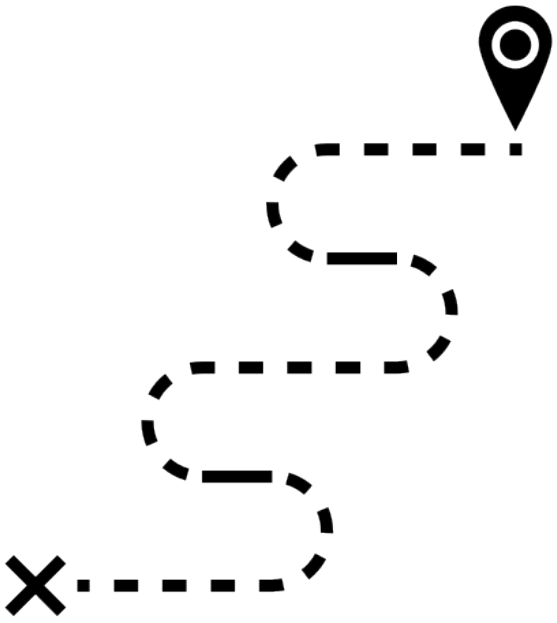
- What do you think is God's favourite flower? Why?

- What is your favourite colour that you can see right now? Do you think God has a favourite colour?

- Talk together about what plants can teach us about who God is and how much God loves the created world, including us.

- Which fruit and vegetables do you like? Are there any you don't like? Do you think Jesus enjoyed eating fruit and vegetables? Can you remember any stories in the Bible where he eats any?

Suggestions for specialist input: horticulturist, botanist, farmer, gardener or minister.



Section 3 Activities to explore plants and moss

1 Nature's art

Please don't pick wild or planted flowers from public gardens or parks and do not break bits off living plants.

You'll need: a bucket or paper bag to collect bits of plants – twigs, leaves, grass, moss, wildflowers, petals etc.

What to do: create a collage on the grass using bits of plants that you can find around you. You could try and make a rainbow or write your name.

Big thinking: this activity is most suitable in the temperate latitudes of autumn where the green chlorophyll has been withdrawn from leaves so that the yellow, orange and red pigments are more easily seen. Summer flowers are also suitable, as long as they are not picked from the wild. Some shops will sell 'gone over' flowers for a reduced cost, which extends the time period in which this activity can take place. Forward planning is essential!

? **Big question:** what would the world be like if there were no plants or flowers? How do you think the world of nature helps us understand God as the creator of all things?

2 Taste test

Pre-check for allergies to chosen items. Some folk have allergies to apples, and even the hairs on uncooked peach skins. Yes, really.

You'll need: a variety of fruit and vegetables – it is probably easier for these to be ready chopped and served from tubs or a paper bag; a globe or world map to look up countries.

What to do: arrange a tasting session of exotic fruit and vegetables. Can people guess what part of the world they originally come from? See if you can find it on the world map.

Big thinking: fruit comes from pollinated flowers and is the result of the plant eggs (ovules) being fertilised and developing into seeds. This often needs long sunny days to grow properly. Plant hormones like gibberellins can be sprayed on flowers to create seedless fruits as this mimics the chemicals made by the developing seeds. Other plant hormones like ethene and carbon dioxide can alter how fruits ripen, which is how green and hard bananas can come from Caribbean islands and arrive undamaged to be eaten yellow and soft in European shops.

? **Big question:** which fruit/vegetable comes from furthest away? Why can't we grow everything in the UK? What is the impact on the environment of shipping fruit and vegetables many miles?

3 Seed and plant pairs

You'll need: various seeds, pips or fruit stones; a selection of fruit and vegetables.

What to do: see if people are able to pair up the seeds with the fruit they will grow into.

Big thinking: big plants often have big seeds so having pictures of the adult plants with an indication of scale next to them will help people get an idea of size. Clearly having the actual plants will be helpful, but this requires planning, and is seasonally, culturally and nationally dependent. But some seeds such as acorns, which are smaller than coconuts, can grow into bigger plants! Plants that come from the same family (like pumpkin and butternut squash) have seeds which look similar.

? **Big question:** it isn't always easy to identify what a seed might grow into just by looking at it. How and when can we tell what a seed will become? Jesus said of people, 'By their fruit you will recognise them' (Matthew 7:20). What do you think he means by this?

4 Nature praise wands

You'll need: sticks; various leaves and petals; string or twine.

What to do: make a simple wand using a stick and decorate it with leaves and petals that can be waved during the celebration. Wind some string or twine around a stick, securing it at the top and bottom. Decorate the wand by tucking various leaves and flower petals under the string or twine. Use your wand, and a good amount of space either side, to wave to praise God for the wonder of his creation during the celebration.

The wand could be used to illustrate the wide diversity of life in the plant world. Or the range of plants that have meant something to the individual participant. Allow the person to talk through why they have chosen these particular items and what this tells us about their view of God.

Big thinking: each plant is the unique product of its genes – and their variations called alleles. Just as each person is an individual because of the alleles they have inherited, so are plants. This genetic lottery gives rise to different varieties of the same plant. For example, apples have different tastes, colours, textures and ripening times. Potatoes and plantains also show this.

Big question: does the beauty and wonder of creation make it easy for us to praise and thank God? Should we praise God even for the things we don't like? (e.g. Brussel sprouts) Why?

5 Signature survey

You'll need: printed copies of a list of fruit and vegetables; pens.

What to do: ask people which of the fruit and vegetables they like on the list, and if there are any they don't like. Try and get a different person for each one.

Big thinking: our genetics can determine whether we like or dislike certain foods. The makers of the spread Marmite conducted a frivolous survey which turned up some interesting results – have a read here (**dnafit.com/downloads/MarmiteGenetics_WhitePaper_Final.pdf**). The findings suggested some differences in the DNA which correlates with tasting Marmite as savoury, bitter or neutral.

This kind of analysis also helps us to understand why some folk find Brussel sprouts nice to eat but others find them unpalatable. Crossbreeding old varieties has resulted in a decrease of the glucosinolates which caused them to taste bitter, but at the cost of the plants being more vulnerable to pests. This article (**npr.org/sections/thesalt/2019/10/30/773457637/from-culinary-dud-to-stud-how-dutch-plant-breeders-built-our-brussels-sprouts-bo?t=1641815290238**) talks more about it.

? **Big question:** what fruit and vegetables do you like and dislike? Why do you think we are all different in our likes and dislikes? Psalm 139:14 says, 'I praise you because I am fearfully and wonderfully made'. Does this help us understand how we are all different?

6 Berry painting

Check for allergies if people are going to eat the juices. Ensure all items are sparkling clean and not shared with other people.

You'll need: a selection of berries (e.g. strawberries, raspberries, blueberries, blackberries, gooseberries, cherries etc.); paint palette or saucers; paper; teaspoons; pens.

What to do: using various berries and just your fingers, paint a picture. Using either your fingers or the back of a teaspoon, crush the berries on a paint palette or saucer and create a picture using the crushed fruit. You could write on your picture, 'God loves me berry much.' It will smell lovely, and you can even lick your fingers!

Big thinking: plants which colonise wider areas quicker are likely to survive in more places. Thus, those that produce fruit which birds prefer to eat are at an advantage. The fruits are swallowed whole, squished in the bird's stomach, and the hard stone is… ejected out the other end. This 'stone' is really a seed with armour plating to protect it from the digestive enzymes of the avian intestines. Once out it can then – at the right time – germinate into a new plant.

The colours are to make the ripe fruit stand out against the green foliage. Consider (in the UK) blackberries which start small and green and then turn to a dark purple when ready to be eaten.

This selection for 'most colourful' and 'most tasty' is what drives natural selection; humans have 'naturally' used this principle in the process of breeding – or artificial selection – to form more (to humans) useful plants and indeed animals. Similar things happened turning the tall grass teosinte to maize; likewise the wild wheats einkorn and emmer have turned into what we call wheat today.

Big question: which berries do you like to eat best? Are they sweet or sour? Psalm 34:8 says, 'Taste and see that the Lord is good.' How can we do this?

7 Paint brushes

You'll need: twigs; grass; pine needles; leaves; string or twine; paper; paint.

What to do: make your own paint brushes by gathering grass etc. for bristles and twigs for the handle. Attach the natural bristles around the twigs by wrapping string or twine around them. See what patterns you can paint using the brushes you have made. You could use these with the moss graffiti below! In this activity it is recommended that thick poster paint is used in order to stick effectively to the bristles of the natural brushes.

Big thinking: two-dimensional graphical representation of three-dimensional objects has been at the heart of human art for around 30,000 years. Our abilities at art help us to understand, shape, form and indicate what we find important enough to make a permanent record of. Before photography was cheap and widespread, biologists had to be good illustrators and painters. Beatrix Potter, before being the creator of Peter Rabbit and Miss Tiggywinkle, published a paper in 1897 on fungi which she illustrated with her own drawings. In contrast, Charles Darwin's drawing skills were lacking, so all we have are his diagrams.

It is worth encouraging people to learn to communicate in this medium as colour and shape can help to trigger eloquence where simple textual stimulation can fail. Everyone is different…

? **Big question:** have you ever tried to paint a picture of a landscape, plant or flower? Was it difficult? Is it easy to get the tiny details right? How does it make us feel to know that God cares about every tiny detail of our lives? (See Matthew 6:25–30)

8 Moss graffiti or art

Please be careful how you collect moss. Do not collect more than you need, or just from a single location. Make sure you leave some behind so that you do not disturb the habitat that is home to lots of lovely creatures.

You'll need: moss; sugar; buttermilk or yoghurt; water; blender; container; paintbrush.

What to do: make a paint from moss that can be used on any porous surface (brick or stone wall). Carefully remove as much soil as possible from under the moss and then break into small pieces to put in the blender. Add buttermilk or yoghurt, sugar and water and blend until completely smooth. Use it to paint. You might want to paint a shape using a stencil made of cardboard. Or paint a message that others will be able to read such as 'Please look after our world' or 'God loves you.' Detailed photographic instructions can be found here (**wikihow.com/Make-Moss-Graffiti**). Make sure you have permission from the owner of the surface before you create your own Banksy!

Big thinking: moss has no roots so is adapted for damp areas. The moss in the paint will continue to grow, but you will need to keep it moist. Make sure you water it by misting every other day (more often in hot weather!) and ensure it is not in direct sunlight otherwise the moss will dry out and die. A north wall of a church might be a good place to place a cross or an ichthus, symbolic of God's love for creation by creation.

Humans have used mosses for millennia. Some peoples have eaten it for food, while others have used it for insulation and roofing material in buildings. Native Americans used dried moss for wound dressings as they are very absorbent – it can soak up to 20 times its own weight in water. It has also been used for babies' nappies!

? **Big question:** think about what conditions moss needs to grow? How is it different from other plants, for example grass? What is the same? What do you need to grow with God? How is it different and the same as others? Read Matthew 6:27–30. Do you trust God to provide what you need to grow?

9 Grass heads

You'll need: tights or stockings; grass seed; compost; scissors; empty yoghurt pot or cup; crafts eyes/mouths; PVA glue; elastic bands.

What to do: have a go at growing some grass to make hair for a grass head. Place two to three tablespoons of grass seed into the stocking and add compost until it makes a suitable size for a head. Secure by tying a knot in the end but leave the excess stocking attached. Decorate your grass head by drawing a face. If you want to make ears or a nose, simply pinch the compost and secure with an elastic band. At home you can put water in a cup or yoghurt pot and place your grass head in it making sure the excess stocking remains wet. Place it in a sunny window and see what happens. Add water to the pot as needed.

Big thinking: grass seed will germinate, sending its roots into the compost to hunt for water. When this has been found, the rest of the baby plant will emerge as a white shoot. Over time this will go green as light stimulates the genes for making chlorophyll. And then the grass will make nice leaves allowing your stocking person to have delightfully green hair.

A similar – and more edible version – can be carried out with cress seeds on cotton wool. Key to both activities is a) the time to do it and b) the requirement to keep the apparatus moist otherwise the seedlings will dry out and die.

The requirement for light can be simply demonstrated by placing a couple of sets in a dark cupboard. The resulting shoots will be pale, thin, and tall. This is called 'etiolation' and is the result of the shoot putting their all into finding light as soon as possible. Such plants will not survive long as they exhaust themselves.

? **Big question:** Isaiah 40:8 says, 'The grass withers and the flowers fall, but the word of our God endures forever.' What do you think this means?

If you do the dark experiment, what does this suggest about our need to stay in contact with God: look at Isaiah 40:31: 'But those who hope in the Lord will renew their strength. They will soar on wings like eagles; they will run and not grow weary, they will walk and not be faint.' Consider what 'walking in the light of Christ' might mean for us as individuals.

10 Fruit or salad kebabs

Check allergies before doing this activity.

You'll need: kebab sticks/skewers; chopped fruit or vegetables (as many different varieties as possible – you could try to do the colours of the rainbow); plates; pens.

What to do: make some fruit or salad kebabs that can be enjoyed when eating together later. Carefully place the chopped pieces of fruit and vegetables on to the stick/skewer. Put it on a plate ready to enjoy later.

Big thinking: as well as being delicious, fruits are a good source of sugars, water and a variety of vitamins and minerals. Download this five-a-day portion guide (**nhs.uk/livewell/5aday/documents/downloads/5aday_portion_guide.pdf**) which could be printed out and placed next to the sources of fruit so that the skewer could be evaluated on a scale of one to five according to how many daily portions it represents.

More details of the nutrients in each vegetable and fruit can be found on pages 20–24 of this report (**assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/167942/Nutrient_analysis_of_fruit_and_vegetables_-_Summary_Report.pdf**). You could make a chart from this listing the nutritional value of the vegetables and fruit that is available. Prizes could be awarded for which skewer best meets the Recommended Daily Allowances (RDAs) for vitamins and minerals. Just remember that potatoes, yams, cassava and plantains do not count!

As well as vegetables and fruit helping us to be healthy, eating them helps the planet to be healthy too. Keeping cows and other animals to provide meat that we eat produces a lot of carbon dioxide – and people often cut down forests to make room for them. Eating a more vegetarian diet reduces carbon dioxide emissions and helps tackle climate change.

Big question: why do we need to eat fruit and vegetables? Retell the story found in Daniel 1 to see if there are any clues there.

There are passages in the Bible about the value of eating vegetables. Look at Genesis 2:15–16 from the story of how the world was made: 'Then the Lord God took the man and

placed him in the Garden of Eden to cultivate and keep it. And the Lord God commanded him, “You may eat freely from every tree of the garden…”’

Compare it with Isaiah 11:6: ‘And the wolf will dwell with the lamb, and the leopard will lie down with the kid, and the calf and the young lion and the fatling together; and a little child will lead them.’ This describes God’s new creation that he is wanting to bring to the world.

Reflect on these passages. What might you do to make your diet healthier for yourself and for the planet? How do you think God would want us to live in a world where people don’t always have enough food and where the climate is changing?

Bigger activities

- Organise some simple team/parachute games to enjoy playing on the grass.

- Make a compost heap or leaf bin.

- Visit a garden. The Yellow Book Garden Scheme is a list of which local folk open up their gardens to raise money for charity. Alternatively, stately homes open their gardens up for viewing. Other places, like Heligan, Kew or Wisley are available in the UK or in France the Château du Clos Lucé is also worth wandering around.

- Have a garden produce/plant sale and collect money to buy a gift to support farmers in a part of the world where growing is difficult because of global warming (e.g. through Oxfam who do a very fine 'pile of pooh' gift, Tearfund's seeds and tools gift, or Christian Aid's cocoa saplings gift).

- Plan how to rewild part of your churchyard. Seek advice from the local rangers and ecological groups before putting spade to soil: there may already be colonies of interesting things there, and some of these may be legally protected, like dormice or bats.

- Practise different gardening techniques like pruning, transplanting and making cuttings. Woody prunings can be placed in tall containers of water to root. These can then be planted out or sold off. Use the resources and expertise of your local community to create something interesting on waste ground. And if you want something counter cultural, have a look at Guerrilla Gardening (**guerrillagardening.org**).

- Plan a community orchard or sensory garden. Again, check local regulations and get the authorities on your side. It is essential to protect young trees from hungry herbivores: rabbits, deer and elephants will happily munch saplings and use them to create more rabbits, deer and elephants. Actually, elephants will just trample the plants first and then possibly eat what's left!

- Join in a campaign to save the rainforest or ancient woodlands. Such campaigns have had some success in the UK. Checking whether a healthy tree has a Tree Preservation Order is useful. Older hollow trees may be homes for protected species like bats).

Section 4 Celebration

Tell Jesus' parable of the sower from Matthew 13:1–13, throwing out a handful of wild birdseed every time the sower sows some seed. Use the area around you for inspiration – there may be a path, rocks, a bramble patch or some nice bare earth into which to throw the seed, for instance.

If not, different parts of your group can 'become' the different settings and can play along, with a little invitation, becoming the birds, the people walking along the path, the seedlings growing rootlessly on the rocky ground or the invasive thorny plants throttling the plants between them. (You might need to issue a warning about the dangers of strangling other people beforehand, just saying!) For the final part, the 'good ground', encompass everyone there in your gestures to imply they are now all the good ground and see how they respond – the dramatic response may surprise you.

Alternatively, you may be in a spot, like a garden, where you could prepare a small area of ground by removing the top layer of plants and divide up the patch into the four areas of the story with an old wooden ruler or similar laid down as a path, some pebbles, some invasive species like a bramble or dock and some bare ground. Tell the story in miniature, sprinkling the seed in the various areas as you tell it. You could do a follow up session using the same spot once the seed has had time to grow. (Just be aware that if you use birdseed, you might have to 'weed out' one or two of the plants when they grow, as some mixes can contain hemp, which you need a licence to cultivate.)

Invite everyone, or each family, to ask one question about the parable. Respond to each one in an affirming way that makes space for thinking: don't feel you need to answer the questions, just encourage them, however apparently silly. Have a question of your own to share too. You could finish by saying that Jesus told stories like this so that people would go away asking questions.

Invite everyone to go and collect a seed from the plants or grasses around you, if the season is right. Obviously talk about the different sorts of seeds and how they are dispersed. If not, pass round sunflower seeds or other seed suitable for wild birds, warning people not to eat them. (You might need to give the carers/parents custody of the seeds to be on the safe side). Invite everyone to stand in a circle facing outwards, and mention that you all have a seed to sow, like the man in Jesus' story. What is the seed in the story really? Explain you're all going to let go of your seed in a moment, so each spend a moment, if they want to, telling God silently what that seed means to them. Then on the count of three, everyone throws, buries or blows their seed away. Spend a moment thinking about what it feels like to sow a seed like that and what it means – what might this area look like when the growing season comes, how change can happen, how God works in the created world…

Finish by turning inwards and saying the Messy Grace together.

Section 5 Eating together

Pick an idea from the Messy take-out menu or another source for outdoor meals, snacks and treats. Bake bread dough twists, halved and scooped oranges with a dollop of chocolate cake mix inside, corn on the cob, potatoes, leeks, carrots, bananas, cooking apples with currants in the middle over a campfire, popcorn, fry or kebab mushrooms, tomatoes, courgette, pepper chunks; test the strength of chillies, make egg and cress sandwiches with homegrown cress.