

# GROW IT

## LEARNING OUTCOMES

Having completed this badge members will be able to:

- explain how to plant a seed or bulb to maximise its growth potential;
- grow a plant from a seed/bulb;
- identify the parts of a plant;
- explain how to care for a plant to keep it alive.



## BADGE REQUIREMENTS

1. Identify the parts and functions of a plant.
2. Know how to plant a seed or bulb.
3. Explain how to care for a plant.
4. Grow a plant.
5. Record a plant's progress.
6. Identify basic gardening tools, their safe use and how to care for them.

### ADVENTURERS SUNBEAMS

#### grow it



#### CATEGORY

Have a go

#### TIME FRAME

Four weeks

#### AIM

To know how to nurture a plant from seed.





# Teaching ideas

A visit to a local plant nursery could benefit members. Enquire as to the possibility of having a staff member to talk about plants and present a tour of the complex. Leaders may like to purchase badge requirement supplies from this plant nursery. Members could be introduced to a wide variety of plants, ways and methods of growing plants, products available to help grow flowers and vegetables, and how plants are prepared for the commercial market. An *Activity Approval Form* must be completed and forwarded to DHQ at least one month before the activity.

The following badge requirements are written in a sequential order. Start with **Badge requirements 1 and 2** on week 1, then follow on with **Badge requirements 3, 4 and 5** in the following weeks. **Badge requirement 6** can be done at any time.



## 1. Identify the parts of a plant.

Brainstorm with members about any plants that may grow in a garden (for example, flowers, vegetables, herbs, shrubs and trees). This could be at the members' homes or some other place.

Establish that all plants have a root system and a shoot system which feed the plant from the roots, through the stem, to the leaves. Use **Leader's Resource 1** to identify the various parts of a plant system.

Leaders need to provide a variety of plants that grow from different root systems, e.g. tap root – carrot, turnip; fibrous – grass, sweet peas; bulb – daffodil, tulip.

From observation of several different varieties of plants, discuss with the children how a plant receives nutrients (food and water) from the soil through the roots. Are all root systems the same?

**Handout 1** may be used to identify the parts of a plant. Answers are on **Leader's Resource 1**.

## Experiments

- **Root systems.** Use a large onion or other bulb and a glass jar with a mouth small enough to sit the onion on top. Fill the jar with water, then place the onion on top with the 'root' end touching the water. Each week note what has happened. (*A root system should begin to develop and grow down into the water.*) Leader must make sure that the water level is maintained in the bottle.
- **Food movement in a plant.** To show how the nutrients are carried through the stem system, cut a stalk of celery or a carnation and place this in a glass of water in which food colouring has been added. Make sure the bottom of the stalk is placed in the base of the glass. Ask the children to observe from time to time what is happening to the stalk/flower. (*Colour should be slowly rising in the stalk/flower*) Why do members think this is happening?
- **Garden observation.** Look for a plant pot that may have been sat on the lawn, a toy such as a swing set, trampoline or climbing frame that is left out in the garden all the time. What happens when you move them? What has happened to the grass underneath? Why is it yellow or dead underneath? Conclude that the objects have blocked out the sunlight and therefore the chlorophyll cannot form in the plant.

# Teaching ideas

## Game

Play a game of 'Snap' using **Leader's Resource 2**. Photocopy each page twice to make a set of cards. Laminate to make them more durable. Shuffle the cards and play the game.

## 2. Know how to plant a seed or bulb.

Purchase a variety of seed packets of flowers and vegetables and some varieties of bulbs from the local plant nursery or supermarket. Choose varieties that will sprout within a week or two. The varieties chosen will depend on the season of the year in which the badge is to be attempted and the environment/climate of your group's location that is; tropical, cool, temperate.



Purchase some small pots or seed-raising containers. Using seed-raising soil mix allow the members to fill their containers. Provide a little water in a watering can to moisten the soil.

Show the children the different types of seeds. Some are really fine and very small (alyssum), some are long and thin (marigold), some are round like a little pebble (sweet pea) and some are curved (bean). Bulbs also come in different shapes and sizes.



Prepare the soil for planting. If necessary follow instructions on the packaging.

- Larger seeds – push a hole into the soil with a finger and place the seed in the hole and close it over.
- Small seeds – level the soil and sprinkle the seed on top, cover with another fine layer of soil.
- Bulbs – cool bulbs for several weeks before planting; dig a deep hole and carefully put the bulb in the soil the correct way up. The rooting end needs to be able to grow down into the soil.

Members choose one flower and one vegetable to plant in their pot. Taking cuttings may also be a cheap option.



TEACHING  
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# Teaching ideas



## 3. Explain how to care for a plant.

Brainstorm with children what things a plant needs to successfully grow. Answers should include soil, water, sunlight and fertiliser.

### Soils

Plants need to get nutrients (food) from the soil it is sown or planted in. Not every soil is the same and plants sometimes require a specific soil type to help them grow. Soils can be sandy, clayey, moist, acidic, and so on. To know what conditions a particular plant prefers, the information on the seed/bulb packaging should tell you. If possible show the members samples of different soil types.

### Water

All plants need some water. Some like a lot, and some like little. In Australia, the native plants have adapted to the harsh, hot climate and don't require a lot of water. They are very good plants to have in the garden when there are water restrictions in times of drought. If a plant gets too much water it can begin to rot and die very quickly.

### Sunlight

Plants either enjoy full sun or prefer shady, cool places. Check seed packets for the preferred sunlight needed for specific plants.

Experiment – Show the members two identical plants. For one week keep one pot plant in the light and the other in a dark place. Are there any differences in the two plants? Week two: repeat the process as for week one keeping the same pot in the light and the other in the dark. What observations can the members make? Week three: stand both pots in the sunlight. What has happened? *(Don't forget to water the plants – the one in the dark with a smaller amount.)* What conclusions can be made from this experiment? *(Plants need sunlight to keep them healthy and to grow well.)*

### Fertiliser

Especially with potted plants, the soil nutrients are quickly used by the plant. It is necessary to supplement the natural soil food with fertiliser. Commercial products are sold in gardening departments in shops but members can make their own fertiliser using natural organic matter from their home kitchen. Ask members to bring vegetable peelings (not seeded waste such as pumpkin and melons), leaves and some grass clippings from home to make your own compost. What can the members see happening week by week to those scraps?

It may be possible to invite a person from the local council to explain how a worm farm is set up and the benefits the compost formed has on plants.

### Garden pests

Some creepy-crawly things in the garden, such as worms, are good for the garden as they help break up the soil and allow air to reach the roots of plants. Some other creatures, like snails and caterpillars, can destroy the plants by eating them. Vegetable gardens especially need to be protected because humans expect to eat the fruits and vegetables for their own nourishment. Insect repellent products are harmful and must never be touched by children. Slugs can be deterred by using salt

# Teaching ideas

around the plant. Home made sprays can be made using chilli, garlic, rhubarb leaves, coffee, chrysanthemum, or even the bugs themselves.

## Caterpillar spray – Chrysanthemum

Pyrethrin, a natural insecticide found in some plants is relatively nontoxic to humans and only slightly toxic to aquatic life, so it may be the best choice for home gardens. A natural source of pyrethrin is the chrysanthemum plant.

To make a home-made garden bug spray soak crushed or cut up chrysanthemum flowers or leaves in a bucket of water for 1 day, filter through cheese cloth or an old pillow case, then pour in to a spray bottle or hose-end sprayer. To make it even stronger add basil, rosemary, peppermint, garlic, marigold leaves and flowers, or sage leaves to the bucket of water to soak.

## Bug Juice

This is a mixture made by catching a number of the target pests, pounding them into a mash and then mixing this with water. Equal parts of the mash is mixed with the water then strained and then diluted, i.e. a teaspoon of mixture in a bucket of water. It appears that this discourages the pest species very quickly. It may be that it encourages species-specific disease.

## Aphid spray – Rhubarb

A spray may be made from soaking the poisonous leaves of rhubarb. The mixture remains active and therefore poisonous to humans for three days.

Recipe: Soak a kilo of rhubarb leaves in three litres of water for thirty minutes. Add 15 grams of pure soap flakes. The mix is then diluted 1:1 for use.

Check the internet or gardening books for more interesting recipes and pest solutions.



### 4. Grow a plant.

The seed planted in **Badge requirement 2** may take some time to actually grow. In light of the badge time frame it would be best to purchase (*or have seeded some weeks previous*) seedlings that may be planted out into a garden or larger pots. The Adventurers/Sunbeams may like, where possible, to make a group garden at your hall or at someone's home.

Members can separate seedlings and plant them into individual pots or transplant them directly into a garden.



### 5. Record a plant's progress.

**Handout 2** may be used to record the member's plant progress. Be sure to record the plant's name, the date planted, category of plant (flower/vegetable), seed or bulb, the soil type preferred. Each day record any signs of growth and what was done to help it grow (watered, fertilised, amount of sunlight, removed weeds).



TEACHING  
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# Teaching ideas



## 6. Identify basic gardening tools, their safe use and how to care for them.

Garden tools can be varied but a basic set would consist of:

- spade
- shovel
- hoe
- fork
- rake
- hand trowel
- mattock
- wheelbarrow
- hose or watering can
- compost facility

For members the most common tools would be hand tools, e.g. small spade and fork, and a watering can or spray bottle.

Discuss with members the safety issues in handling garden tools. Provide a variety of tools for them to handle and observe.

How can tools be cared for? (*Keep them clean, oil wooden handles, store in a safe dry place, sharpen blades or tines, use them for the jobs they were meant for.*)

What can happen if we do not care for the garden tools? (*They can rust or handles split if left out in the rain, if still dirty they are not ready to use straight away and could be harder to clean, if not used for the job they were meant for they could be ruined and/or break.*)

**Handout 3** may be used to assist in identifying a basic garden tool set.

### Game

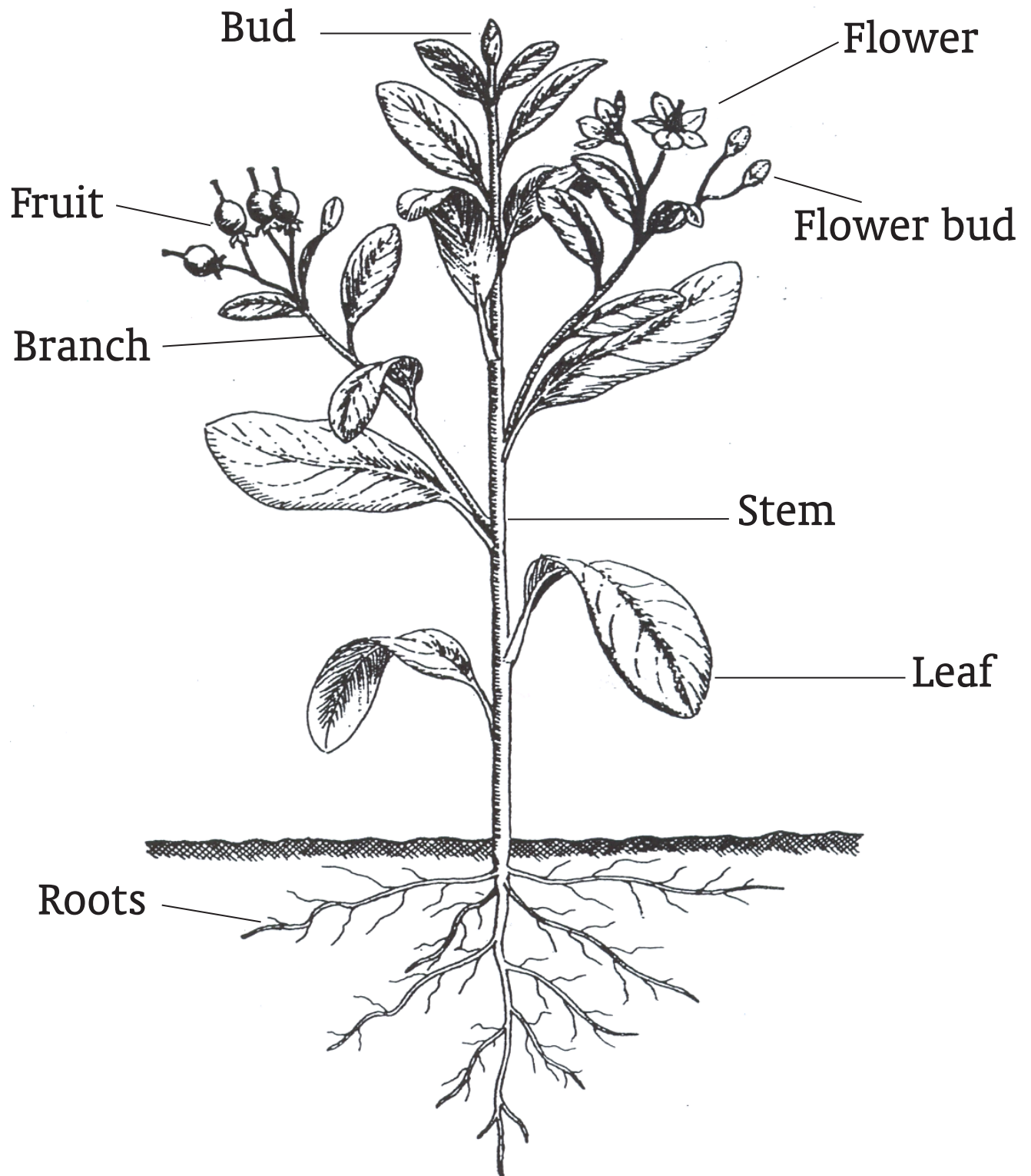
Play 'Kim's game' using a variety of small garden tools. The prize for the winner could be a child's gardening kit.

### Fundraising ideas

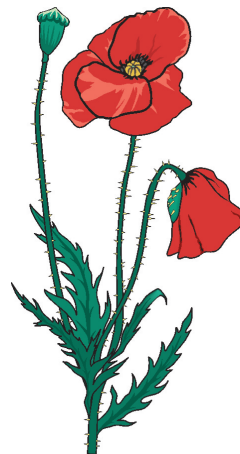
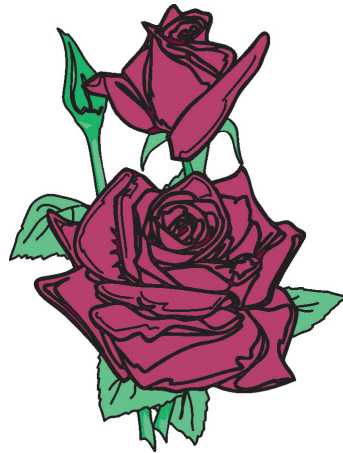
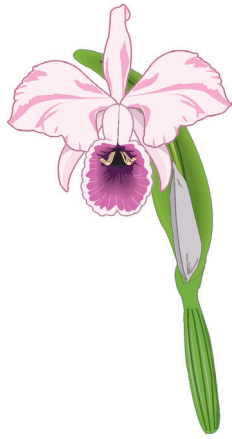
- Plants are a good source of fundraising. Members can plant out seedlings into pots to sell.
- Commercial bulb companies provide fundraising activities for clubs and schools.
- [www.easy-fundraising-ideas.com](http://www.easy-fundraising-ideas.com)



# Leader's Resource 1

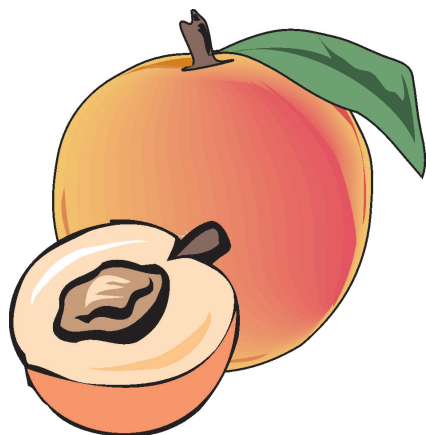
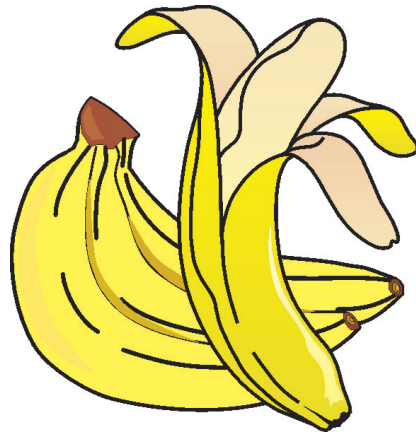
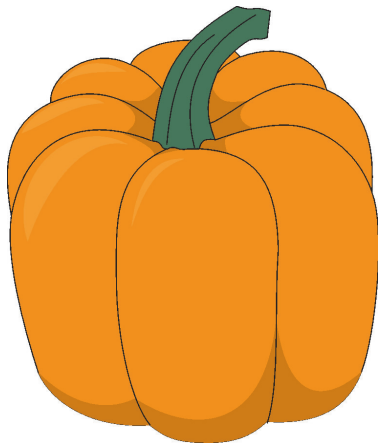
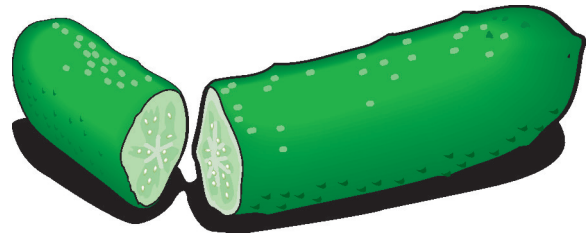
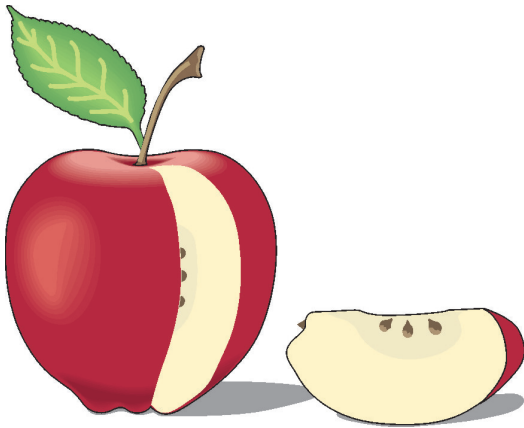
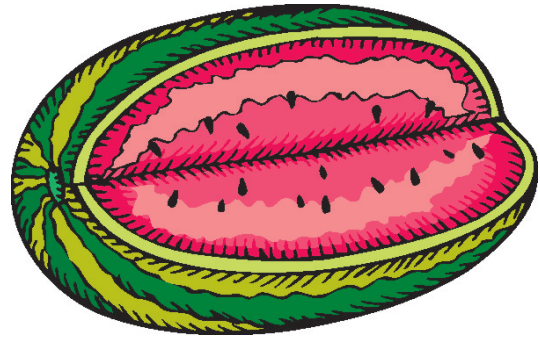


# Leader's Resource 2





# Leader's Resource 2 (Contd.)



# HANDOUT 1

## Adventurers/sunbeams

### Plant Pants

Unscramble the parts of a plant and then label the picture.

tsroo

tems

feal

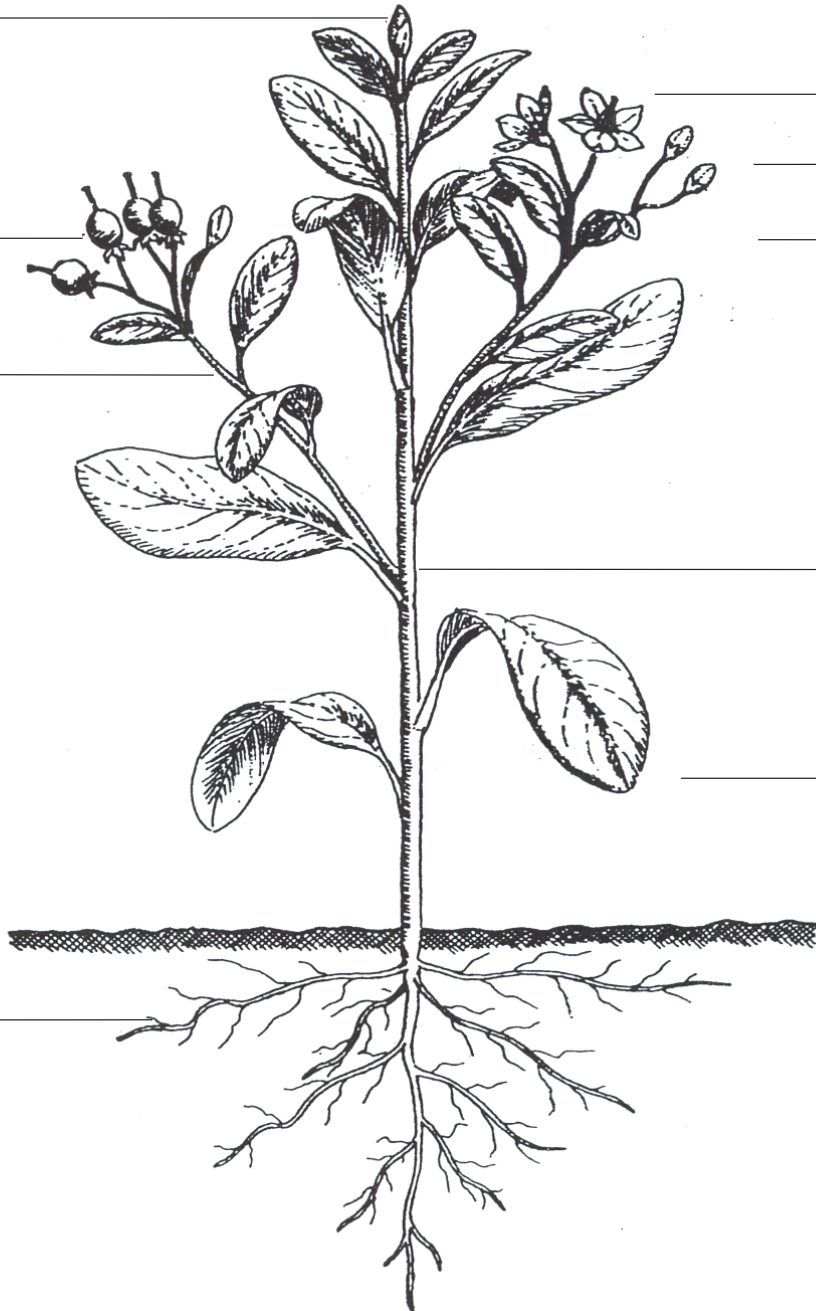
erowfl

werflo dub

tuifr

chanrb

ubd



# HANDOUT 2

## Adventurers/sunbeams

Member's Name: \_\_\_\_\_

Members record the details of the plant for which they are caring.

Plant's Name _____		Date planted _____	
Plant category	Grown from	Soil type referred	Location
<input type="checkbox"/> flower <input type="checkbox"/> vegetable	<input type="checkbox"/> seed <input type="checkbox"/> seedling <input type="checkbox"/> bulb <input type="checkbox"/> cutting	<input type="checkbox"/> clayey <input type="checkbox"/> sandy loam <input type="checkbox"/> well-drained loam	<input type="checkbox"/> full sun <input type="checkbox"/> partial sun <input type="checkbox"/> shady



Observation	Water	Amount of sunlight	Fertilised	Weeded, sprayed for pests
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

# HANDOUT 3

## Adventurers/sunbeams

Circle the correct items for a basic gardening tool set.



# Devotional ideas



1. **Title:** God Cares

**Bible:** Psalm 23

**Thought:** God's care is reflected through the colours of nature

**Supplies:** Bible or recording of 23rd Psalm, aerosol can lid, florist Oasis®, varieties of green leaves (enough for each member)

Read Psalm 23 or play the recording. Ask the members to listen to the reading and clap once when they hear a part that shows the Lord's care for us. Give special emphasis to verses 2 and 6.

**Activity:** Show the members how to make a floral art piece using the oasis foam and leaves. Place the oasis into the lid and arrange a variety of leaves in the oasis. Provide supplies for members to make their own item.

**Prayer:** Thank you Lord that you care for us so much. Thank you that your goodness and love will always be with us. Amen.



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# Devotional ideas



2 Title: Like A Tree

Bible: Jeremiah 17:7 - 8

Thought: Those who trust God have a firm foundation

Supplies: A Bible, two plastic trees one with a base and one without a base

Trees are quite beautiful and magnificent. The tallest tree in the world is a Californian Redwood that has its own name – Hyperion. It is 379 feet tall. It's amazing that a tree could grow that tall.

Display the plastic tree without a base and try to make it stand. Ask members why it won't stand up. (*Response: it has no base or roots.*)

Display the tree with a base and ask members what makes it stand up. Ask members to think about the Hyperion and what makes it stand up? The roots hold it up, balance it, feed it, find water for it, and stop it blowing away. We need something to hold us up and stop us blowing away.

Read Jeremiah 17:7 - 8.

When we trust in God we are like a tree that has a strong foundation – or strong roots. Trusting in God's power helps us when we feel afraid, when we feel uncertain. Trusting that God is real, that He loves and cares and protects us will help us throughout our whole life to grow strong and tall. Thank God for His love and care and His presence with us every day.

# Devotional ideas



**3. Title:** The New Emperor

**Bible:** Proverbs 10:9

**Thought:** Honesty always pays off

**Supplies:** Bible

The emperor was getting old and needed to find someone to rule when he died. He called all the children to his palace and told them that he would choose one of them to replace him. He said, 'I'm going to give each of you a very special seed. You are to plant it and care for it. In one year's time you will bring your pot with the seed back here. I will then choose one of you to be the new emperor.'

Ling was one of the boys and he took his seed home. With his mother's help he planted the seed in a pot of soil and cared for it every day. He made sure it was watered and got enough sunshine.

A few months later some of the children in Ling's neighbourhood were talking about how their seeds were doing. They had strong small stems and some had the beginnings of their first leaf, but Ling's seed had not grown at all. His pot only had soil and somewhere buried inside a seed.

Ling was very disappointed – he felt that he had failed. More time went by and still Ling's seed had not grown, even though everyone else's seeds were growing into tall plants.

Then it came time to take the seeds back to the emperor. Some children carried pots with tall leafy plants, some plants had flowered, some plants were in large pots carried by two adults. Ling brought his little pot of soil with the seed buried somewhere inside.

The emperor inspected all of the plants and was very impressed. Finally he came to Ling. The children around Ling laughed at his pot, and Ling shuffled his feet, embarrassed. The emperor asked Ling his name and then said to everyone, 'Behold your new emperor, Ling!'

Ling could not believe it. He wasn't even able to grow his seed, how could he be the emperor? Then the emperor said, 'One year ago today, I gave all the children a seed. I told them to plant it, water it, and bring it back to me today. But I gave them all boiled seeds which would not grow. Everyone except Ling has brought me trees and plants and flowers. When you found the seed would not grow, you replaced it with a seed that would grow. Ling was the only one with the courage and honesty to bring me a pot with my seed in it. Therefore he is the one who will be the new emperor.'

Ask members why the emperor chose Ling. Help them to see that the emperor rewarded Ling's honesty. Read Proverbs 10:9. Challenge members to be honest in all they do.



DEVOTIONAL  
IDEAS



# Devotional ideas



## 4. Title:

Weeds in the garden

## Bible:

Matthew 13:40 - 41 (NIV)

## Thought:

Parable of the weeds

## Supplies:

Bible, a hoe and some weed killer

Even though we prepare the soil and mix in the best compost and fertiliser weeds still grow up in a garden. Weeds are one of the biggest problems in a garden. Weeds rob the soil of nutrients, they choke out the good plants, they take all the water, then they go to seed and multiply faster than the plants that we have planted. What can we do to prevent this?

*(Show the hoe and weedkiller.)* We could take a hoe and dig out the weeds but you might accidentally chop into the other plants. We could poison the weeds. This poison really works no weed can survive. The trouble is this weed killer does not know the difference between a tomato plant or a dandelion and we kill the lot. Sometimes it is best to leave the weeds until everything is ready to harvest.

One time Jesus told a story that compared his church to a garden that was infested with weeds. Sometimes there may be people in the church that don't really belong. They do things that aren't very loving and they don't seem to believe what the Bible teaches. They sometimes say hateful things about the other members of the church and try to hurt them. They are like weeds in a garden.

We have to be very careful about trying to remove those people from the church. In his story, Jesus said that we shouldn't worry about pulling up the weeds that grow around us. If we do, we may do more harm than good. He suggests that we leave the weeds for God to take care of – and concentrate on doing what he want us to do – which is producing good fruit.

Whenever you see someone in the church that you don't think should be there, before you grab your hoe or your weed killer, remember the advice of Jesus. Just leave it up to God to separate the weeds from the good plants. If we try to take matters into our own hands, we will probably do more harm than good.

**Prayer:** Dear Father, help us to love one another and leave the matter of judgement in your hands. Amen