2025 National Forest Week Forest Fun Booklet

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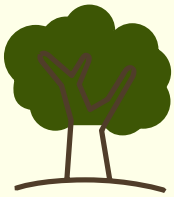
PARTS OF A TREE



CROWN

The crown of a tree is composed of branches, twigs, and leaves. The branches and twigs support the leaves, allowing them to receive sunlight, which is vital for food production. In addition, branches and twigs also support the flowers and fruit of a tree.

FLOWERS

Tree flowers produce fruit, which encase seeds. Within each seed lies the beginning of a new tree. Tree seeds are dispersed by wind, wildlife, and water

TRUNK

The trunk is the main stem of a tree and has two primary functions: to support the crown of branches, twigs, and leaves and to transport food and water throughout the tree. Cutting through the outer bark would expose many different layers. The outer bark of a tree protects the inside of the tree from injury and acts as an insulator against cold and heat. The phloem is soft and serves to distribute the food produced in leaves to every living cell in a tree. The xylem or sapwood distributes water up the trunk to the leaves, where food is manufactured. The Cambium is the thin growing layer found between the xylem and the phloem. The heartwood is the accumulation of older wood which no longer carries sap.

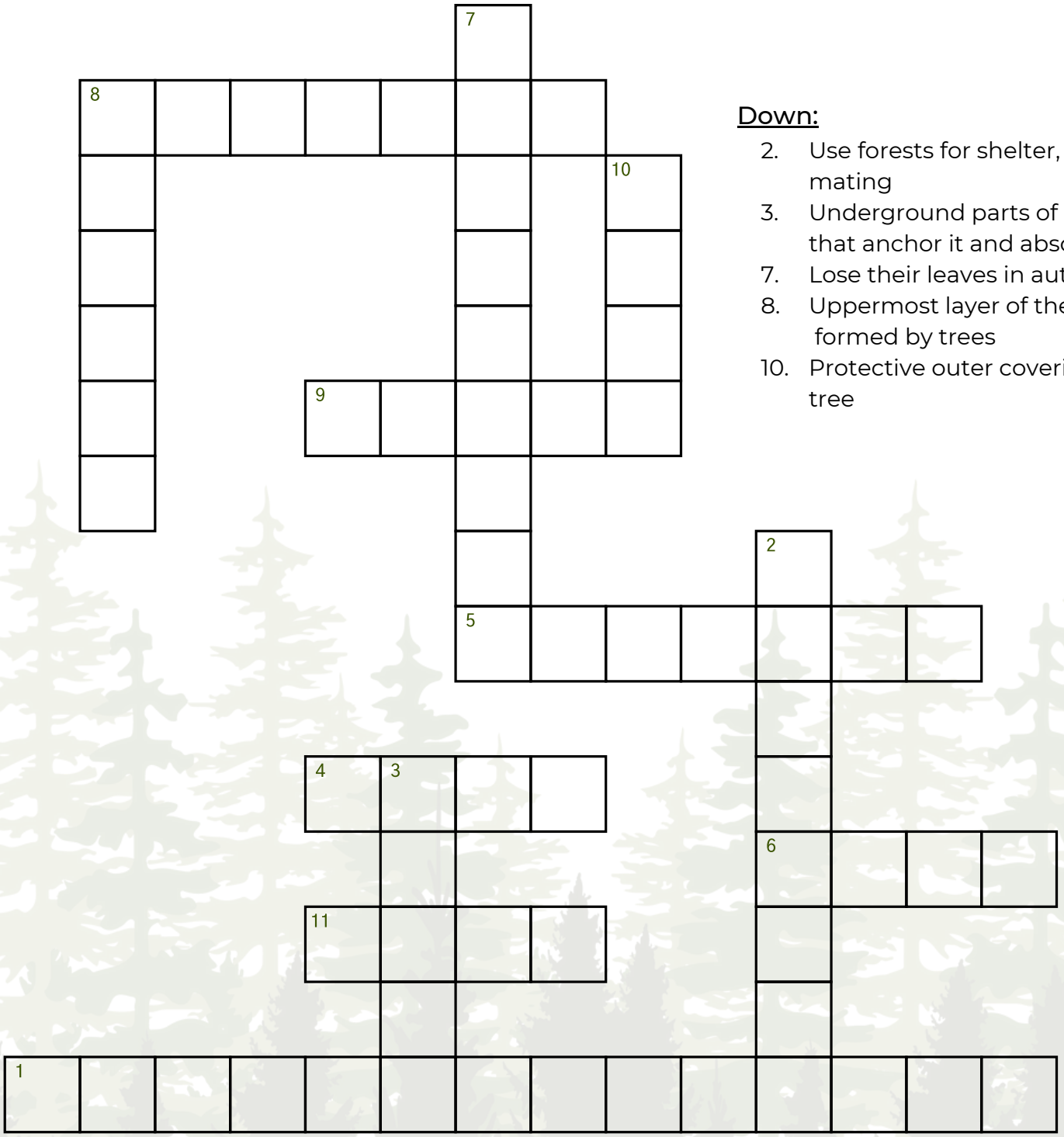
LEAVES

Leaves are the manufacturers of food for trees. Food is produced through the process of photosynthesis, which means “putting together with light”. Powered by sunlight, the green substance in leaves called chlorophyll uses carbon dioxide and water to produce carbohydrates. Also, through the process, oxygen is released through tiny pores called stomata and water is released through the process of transpiration. In a way, trees act like a giant air conditioner, cooling the air with water vapour and expelling oxygen, which we need to breathe. Leaves come in many different shapes and sizes and are attached to the twig in different patterns. For example, some leaves, like the maples, are attached opposite one another. Others, like the oak, are arranged alternately on the twig. Observing shapes and the arrangement of leaves helps identify trees.

ROOTS

Roots are the network found underground that helps to anchor the tree. In addition, roots help in absorbing water and nutrients from the soil, which the trees use to manufacture food and grow.

FOREST FUN
CROSSWORD



Down:

2. Use forests for shelter, food, and mating
3. Underground parts of a tree that anchor it and absorb water
7. Lose their leaves in autumn
8. Uppermost layer of the forest formed by trees
10. Protective outer covering of a tree

Across:

1. The process by which trees make food from sunlight
4. Falls in the forest, and no one is around to hear it, does it make a sound?
5. Young, or newly planted tree
6. Primary food-making, energy-capturing organs
8. Trees that bear seeds in cones
9. Main stem of a tree
11. Upper layer of Earth in which plants grow

LEAFO Bingo

With more than 80 native tree species growing in Ontario it is no surprise that tree leaves come in a wide variety of shapes, sizes, and arrangements. Each species of tree has its own unique set of leaves with characteristics that distinguishes it from the rest. By learning common leaf characteristics, you can improve your tree identification skills!

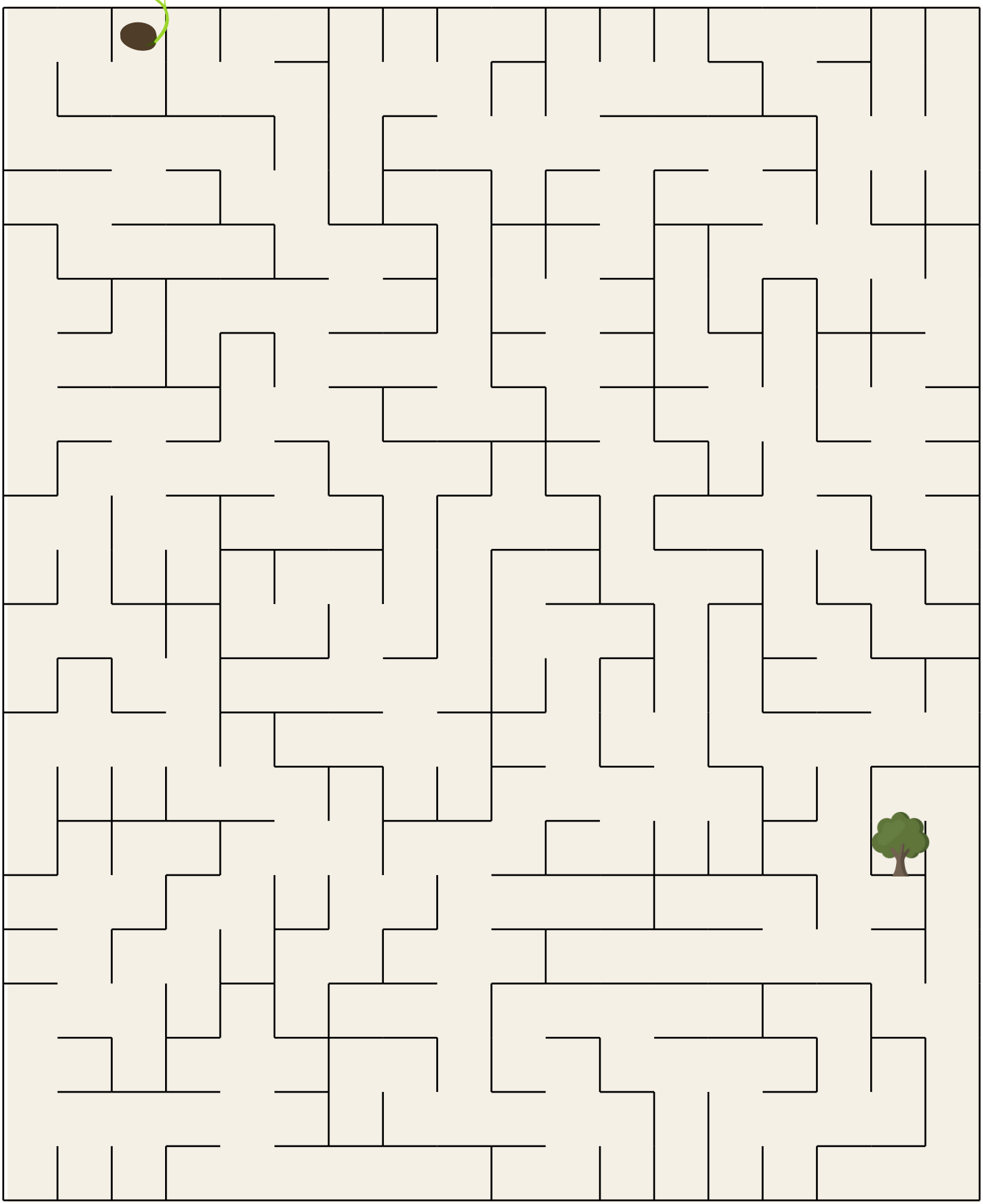
Next time you are heading out for a walk, print out a copy and see how many you can find. Can you complete a single line, just the borders, fill the whole card or even make an X? Many leaves will display more than one of the listed characteristics, challenge yourself to find a unique leaf for each box. Remember to leave living leaves on their trees. Good luck!

 Alternate leaves	 Asymmetrical Base	 Coniferous	 Cordate (Heart Shaped)	 Curved/Twisted Needles
 Deciduous	 Deltoid (Triangle Shaped)	 Double Compound	 Lobed	 Narrow
 Needles	 Palmately Compound	Free Space!	 Opposite Leaves	 Oval
 Not Lobed	 Pinnately Compound	 Oak	 Rough Edges	 Scales
 Smooth Edges	 Maple	 Symmetrical Base	 Wedge	 White Pine

Focus on Forests is Canada's leading forest education program, engaging youth and educators in learning more about our forests. Focus on Forests is a program of Forests Canada. Visit www.ForestsCanada.ca for other great activities, factsheets and lesson plans!

WATCH YOUR SEED GROW!

From forests to trees, it all starts with seeds!
Can you take your seedling through the maze
and watch your tree grow?



SCAVENGER HUNT

Our forests are beautiful—so be gentle as you walk through them. If you are collecting any of the items below, make sure that they have already fallen on the ground. For those items that are not on the ground, just observe and check off that you've found them. Let the searching begin!

ACORN	LEAF	FLOWERS	TWIG
BARK	SEED	NEEDLE	CONE
MUSHROOM	SOIL	MOSS	BRANCH
TRUNK	FEATHER	ROCK	BUD

DRAW A SOUND SCAPE

Close your eyes, and let the sounds of the natural environment around you wash over you. What do you hear? Take a few minutes to absorb the sounds of the forest around you, and write down what you hear or feel, or draw whatever catches your eye.

CAN YOU ID THE LEAF?

Match the leaf to its tree species!

Maple Leaf

Oak Leaf

Pine Needle

Sycamore Leaf

Birch Leaf

DISCOVER YOUR FOREST

TRUE COLOURS

GOAL: Learn about plant pigments and discover what causes fall colours.

BACKGROUND:

Chlorophyll is a green pigment in most plants, primarily responsible for photosynthesis, the process that plants use to create their own food using sunlight, carbon dioxide, and water. This pigment is responsible for the lush green colour of our forests.

Chlorophyll isn't the only pigment in leaves, however! All plants have invisible secondary pigments that serve vital functions in the leaf and shine through in the autumn. Chlorophyll disappears when deciduous trees such as oaks, maples, and even tamaracks, experience shorter days and cooler temperatures as seasons change. As the leaves receive less sunlight, chlorophyll levels drop, but the other pigments remain. The leaves appear to be a different colour, even though the pigments were there the whole time!

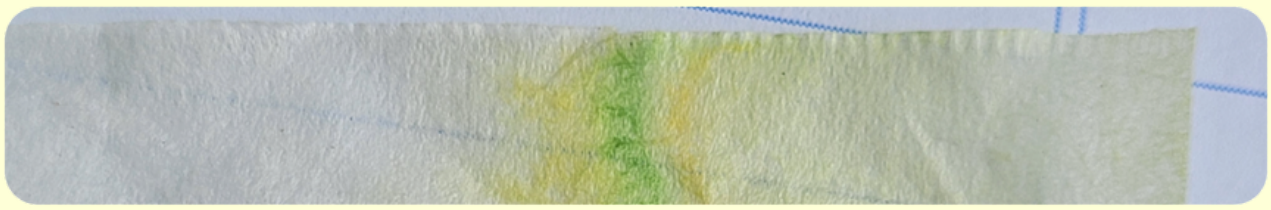
There are two categories of secondary pigments. Carotenoids appear as yellow to orange. They are the same pigments responsible for the colour of carrots. Anthocyanins appear as red to blue and play a silent role throughout the year as protectors from UV light.

The following experiment works because the pigments in the leaves can dissolve in alcohol. The molecules of different pigments are different sizes, which allow the smaller ones (including most carotenoids and some anthocyanins) to travel through the filter paper faster than the larger ones, such as chlorophyll. As molecules of the same size move at the same speed, coloured bands will form on the filter paper as the liquid is dispersed and then dries. This separation of pigments through the filter paper is called chromatography.

MATERIALS:

- A glass jar
- Rubbing alcohol
- Coffee filter
- Green leaves
- Pencil
- Tape
- Scissors
- Mortar & pestle (or a spoon and a bowl)
- Clean paper

1. Collect a single green leaf each from outside.
2. Tear the leave into small pieces and mash into a pulp using the mortar and pestle.
3. Put the leaf mash into a jar and add just enough rubbing alcohol to cover. Let stand for 5 minutes.
4. While the leaf mash stands, cut a piece of coffee filter paper that will touch the bottom, without bunching, while taped to a pencil, about 2.5 cm x 10 cm.
5. After 5 minutes, balance the pencil atop the jar and lower the filter paper into the jar. It should only just touch the bottom – if too long, remove and cut.
6. When liquid has moved halfway up the filter paper, remove it from the jar and lay it on a fresh sheet of paper to dry.
7. Observe the bands of colour that appear after the filter paper has dried.



EXTENSION:

Collect and test the leaves of different tree species. What are the differences between species?

Save your filter paper and wait until the leaves of your chosen tree change. Compare the colour of the changed leaves to the bands on the filter paper. Did the experiment predict what colour the leaves would turn?

Preform the True Colours experiment with leaves that have already changed colour. Are there any differences in the resulting filter paper? Why or why not?

ANSWER KEY

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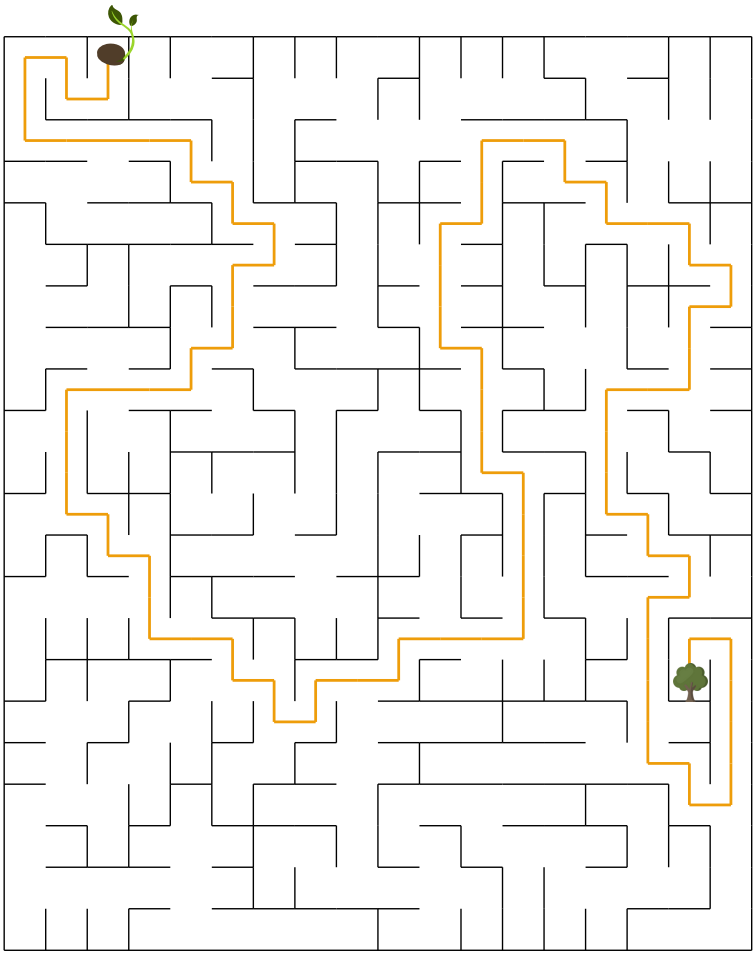

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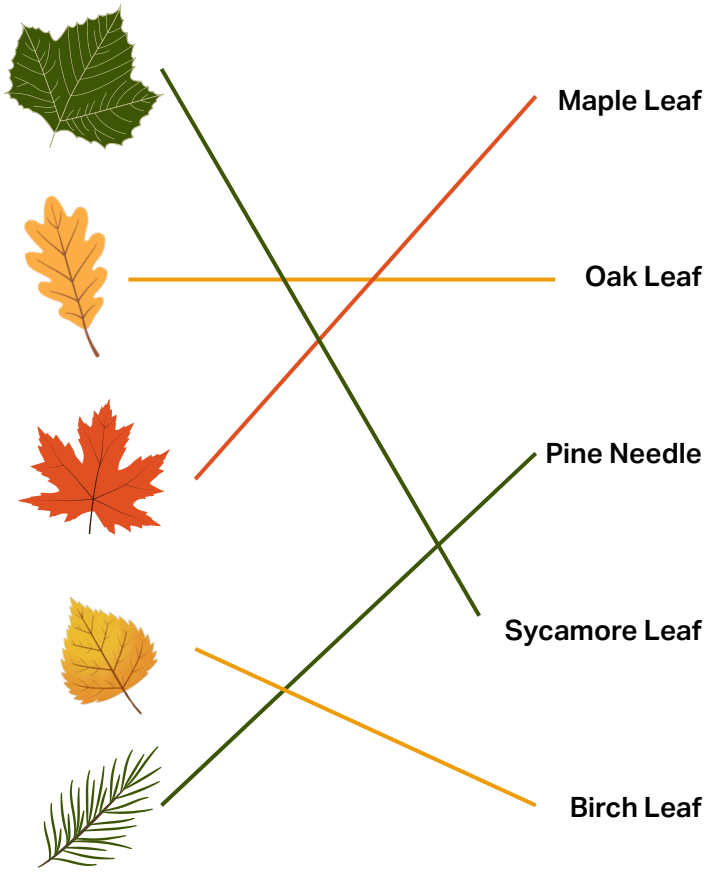


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