

Use a Key to open up your Nature Knowledge: Dichotomous Keys

Learning how to identify animals and plants can be tricky. One great way is to use a key.

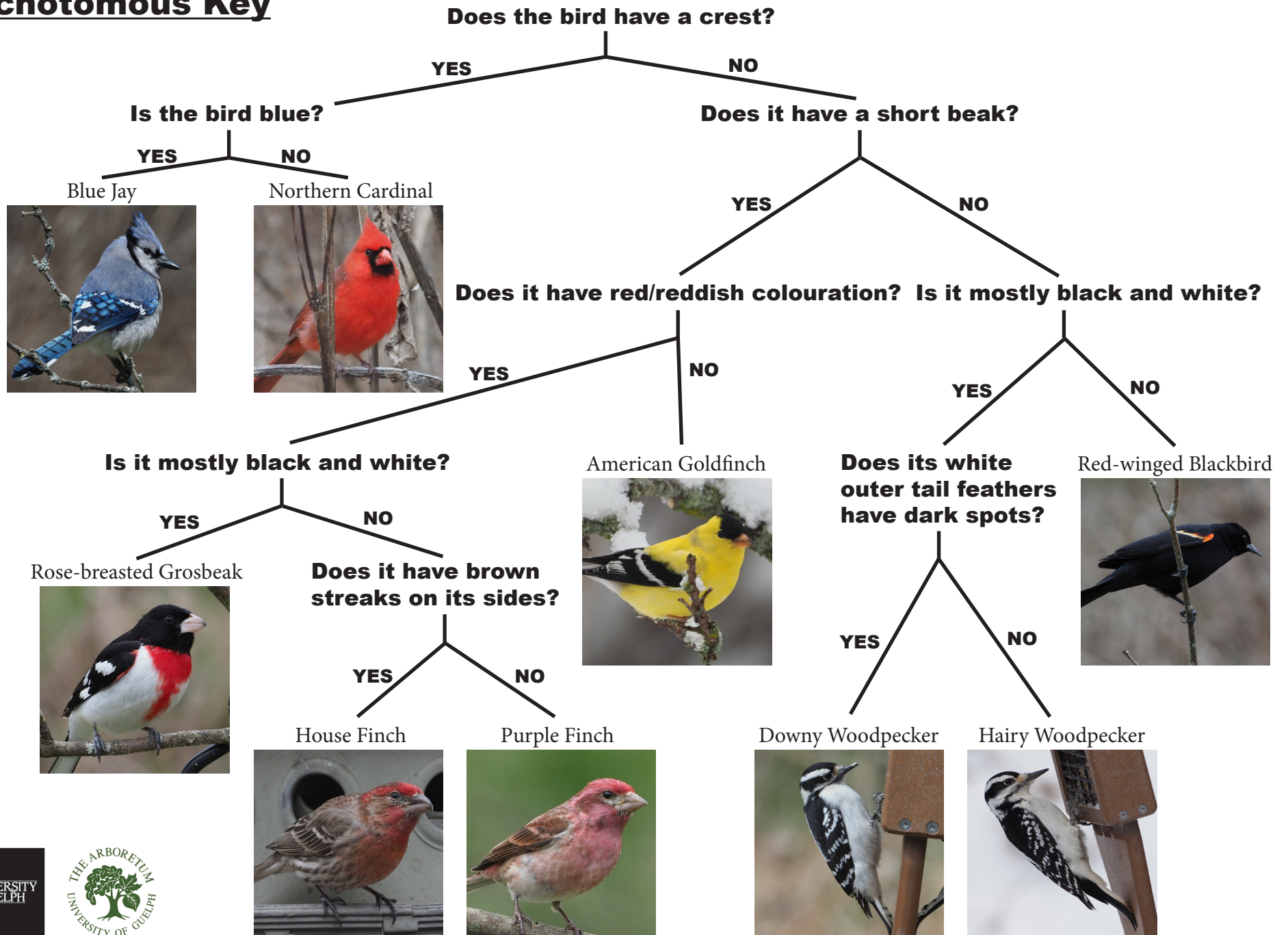
How a Dichotomous Key works

A scientific key is a tool that allows you to identify different things in the natural world, including plants and animals. A dichotomous key is a specific type of scientific key. The word “dichotomous” (pronounced “die-cot-o-mus”) means “divided into two parts” and a “key” refers to a series of questions that help you to identify something. So, a dichotomous key gives you two choices at each step to describe something. By answering these questions, the key leads you to the correct name of the thing you are trying to identify.

Let’s give a dichotomous key a try. Suppose you wanted to be able to tell apart these nine backyard birds. The next page shows you a dichotomous key with a series of yes or no questions that separates the birds until you get to each species. You only need to read the questions that give you the correct answer. For example, to identify the blue bird, you would only have to answer two questions. First, does the bird have a crest? Yes. Then, is the bird blue? Yes. Then the answer is Blue Jay. You didn’t have to ask the other questions in the key because they didn’t relate to the path of questions that you were on. Now pick one of the other birds shown here and use the dichotomous key to figure out the bird’s common name. Did it work? Try it with a few of the birds to get familiar with using one of these keys.



Backyard Bird Dichotomous Key



Make your own Leaf Dichotomous Keys!



To help you identify native tree species based on their leaves, it is important that you can accurately describe the leaves! Work through the “Leaf Characteristics” worksheet to know how to describe leaves. Once you do that, try this activity on dichotomous keys. Making the key will also help you learn leaf characteristics.

Materials

- “Native Tree Leaves in your Neighbourhood” biodiversity sheet
- Leaf Characteristics sheets
- blank piece of paper or notebook
- pencil and eraser

Activity #1

It’s time for you to try making your own dichotomous key. Use this list of leaves:

- Kentucky Coffee Tree
- Ash
- Sugar Maple
- Silver Maple
- Ohio Buckeye
- Red Oak
- White Oak
- Elm
- Redbud
- Willow

Look at the photos of the leaves on your “Native Tree Leaves in your Neighbourhood” biodiversity sheet first. Then make a list of each leaf’s characteristics such as leaf shape and margin type. Now see if you can come up with yes or no questions to separate them all out in a dichotomous key. Feel free to use your own words for things you notice as well such as “heart-shaped” or “skinny.” Write your first question, then draw a yes line and a no line. Then ask your next questions. It may take more than one try to get it to work smoothly. Once you are done writing out your key, ask a family member to try it! Do you think you could do it with more leaves shown on the biodiversity sheet?

Activity #2

Outside time! Go outside and collect 10-12 different tree leaves. Even if you don’t know what they are, you can still make a dichotomous key. Number your leaves and make a key. Once again, see if a family member can use your key to get to the correct leaf. If you have access to a camera or cell phone, take photos of your leaves, print them and cut them out. Or try drawing your leaves. Can you make a dichotomous key with photos or drawings like the bird example key? If you have a big piece of bristol board, try this with the real leaves and some tape!

Did you find that after trying these activities you understood leaf characteristics better? If you did, it was likely because you practiced with real examples and had to actually use the characteristics instead of just reading about them. Well done!