

Get To Know Your Soil Workbook

**A beginners activity guide to exploring the
wonderful world of soil!**



Worksheet Instructions

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The following are activities to help you better understand the soil underneath your feet. Follow the instructions below and have fun!

Put Your Senses to Work Worksheet

Supplies:

- 3 small containers (jars, plastic containers, etc.)
- Small shovel
- Worksheet and pen/pencil

Instructions:

- Collect 3 soil samples from 3 different areas.
- Place each soil sample in a separate container and label.
- Use the worksheet to record your observations.

Soil Texture Test Worksheet

Supplies:

- 3 soil samples from 3 different areas
- Water
- Worksheet and pen/pencil

Instructions:

- Using one soil sample at a time, add a few drops of water to the soil sample.
- Follow the guide on the worksheet to find out what type of soil you are holding.

Soil Chemistry Test Worksheet

Supplies:

- Soil samples
- LaMotte Soil Test Instructions Sheet
- Soil testing kit (if you do have access to a soil kit you can find instructions on how to make a testing kit at home in following pages)

Instructions: Follow the steps described in the Get to Know Your Soil Video to test your soil.

Put Your Senses to Work!



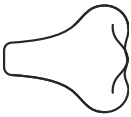
Use your senses!

What does the soil look like?

What does the soil smell like?

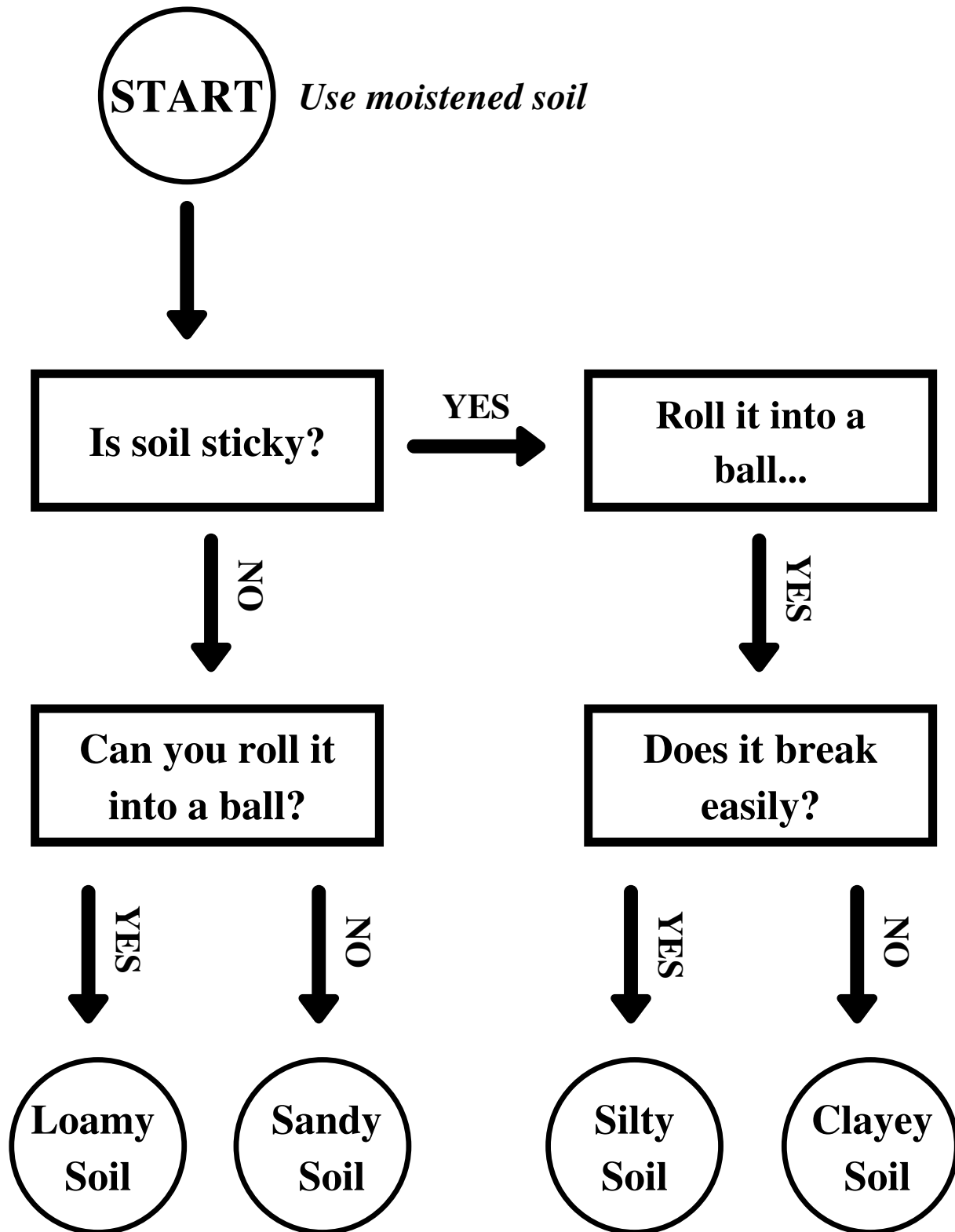
What does the soil feel like?

My Soil Sample Observations

	Sample 1	Sample 2	Sample 3
 What I see			
 What I feel			
 What I smell			



Soil Texture Test



To learn more about each type of soil look at the following page!



Soil Types

Soil texture (the size of particles in the soil) determine the type of soil.

Sand



Consists of small to medium particles of weathered rock. Poor water holding capacity (water drains rapidly). Cannot hold onto nutrients well.

Silt



Consists of smaller particles of weathered rock than sand. Holds water well. Can hold limited nutrients.

Clay



Consists of the smallest particles of weathered rock. Little to no space between particles allowing for high water holding capacity. Holds onto nutrients well.

Loam




Combination of sand, silt and clay. Great ability to hold water and nutrients. Most suitable for farming.

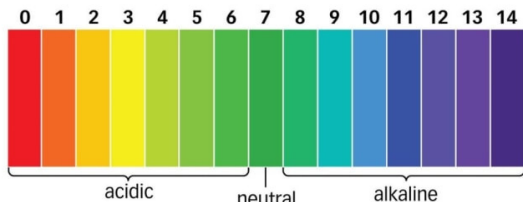
Soil Chemistry Test

Follow this link to find the instructions for conducting your own LaMotte soil test. Fill out the worksheet below with your findings!

There are 4 major factors to look for when testing your soil. The soil's pH (level of acidity) and the amount of three major nutrients; phosphorous, nitrogen and potassium.

pH Test →  → Record pH number here: _____

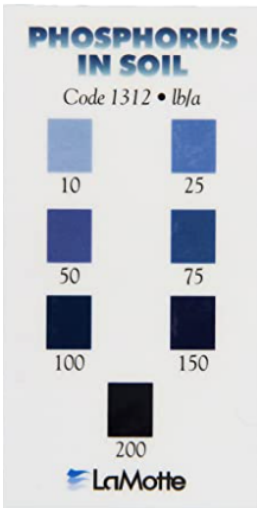
Is the soil alkaline, neutral or acidic?



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

acidic neutral alkaline

Match color reaction with pH color chart

Phosphorous Test →  → Record number here: _____

Determine level of phosphorous using chart below:

Match color reaction with phosphorous color chart

Low	0-50 lb/acre
Medium	50-100 lb/acre
High	100+ lb/acre

Soil Chemistry Test

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Follow this link to find the instructions for conducting your own LaMotte soil test. Fill out the worksheet below with your findings!

There are 4 major factors to look for when testing you soil. The soil's pH levels (acidity levels) and the levels of three major nutrients, phosphorous, nitrogen and potassium.

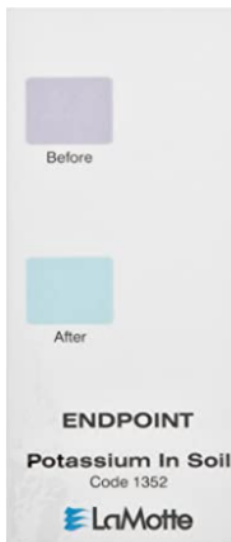
Nitrogen Test



Record level here: _____

Match color reaction
with nitrogen color chart

**Potassium
Test**



How many drops added? _____

Determine the level of potassium
using chart below:

<u># of drops added</u>	<u>Potassium Level</u>
0-8	very high
10-12	high
14	medium
16-18	medium low
20+	very low

Record number of drops added
until color changes from purple
to blue

Home Made Soil Testing Kit

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Test your soil with items you may find at home!

Supplies:

- Soil samples
- Vinegar
- Distilled water
- Baking soda

Directions: Find out which of the following two tests your soil samples reacts to! Record your observations below.

1. Place 2 tablespoons of soil into a bowl and add 1/2 cup of vinegar. If the mixture fizzes, you have **alkaline/basic** soil (pH greater than 7).
2. Place 2 tablespoons of soil into a bowl and add a few drops of distilled water to moisten the soil. Add 1/2 cup of baking soda. If the mixture fizzes you have **acidic soil** (pH less than 7).

If the soil mixture does not react to either test, you have soil with a neutral pH (pH of 7). A very high or very low soil pH may result in plant nutrient deficiency or toxicity.

Observations	
Sample 1	
Sample 2	
Sample 3	

Additional Resources

- **Where to find a LaMotte soil testing kit**
<https://lamotte.com/products/environmental-science-education/soil-testing/soil-test-kits/>
- **Soil, Water and Plant Testing Laboratory at Colorado State University**
<http://www.soiltestinglab.colostate.edu/>
- **Seeds of Change**
www.seedsofchange.com
- **Gardening for Kids**
www.kidsgardening.com
- **National Gardening Association**
www.garden.org
- **Garden Web Forums**
www.gardenweb.com
- **United States Department of Agriculture**
www.nrcs.usda.gov
- **South Platte Basin**
www.southplattebasin.com







Everyday is Earth Day...

We are committed to making an impact every day of the year.

The Healthy Rivers Fund invests donations from people throughout Colorado to help local organizations sustain their communities. These groups complete improvement and protection projects to keep our waterways healthy, accessible, and full of life.

Take a look [here](#) to view our projects on an interactive map and see everything we are doing to contribute to a better world.

