

Understanding soil

In the slide show...

- What is soil?
- Different soil tests

Emma Maxwell
Ash & Elm Horticulture

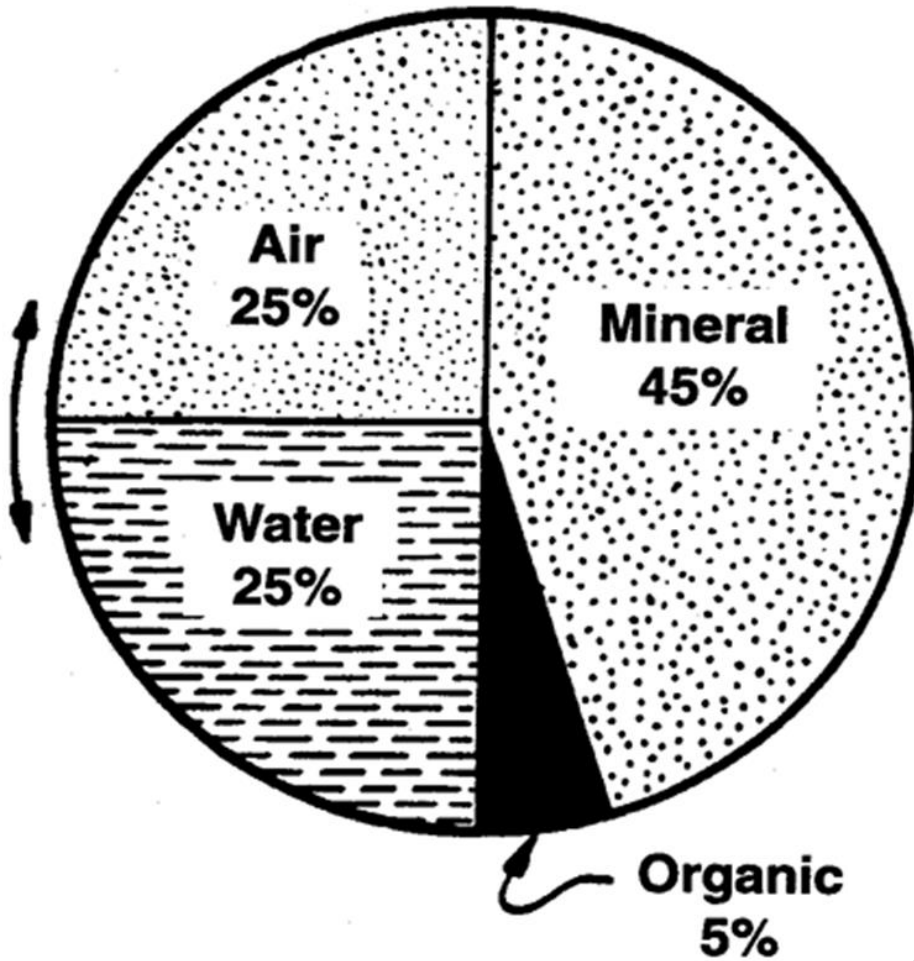


- Soil Texture
- Soil Structure
- pH Testing
- Simple Soil improvements

Understanding Soils



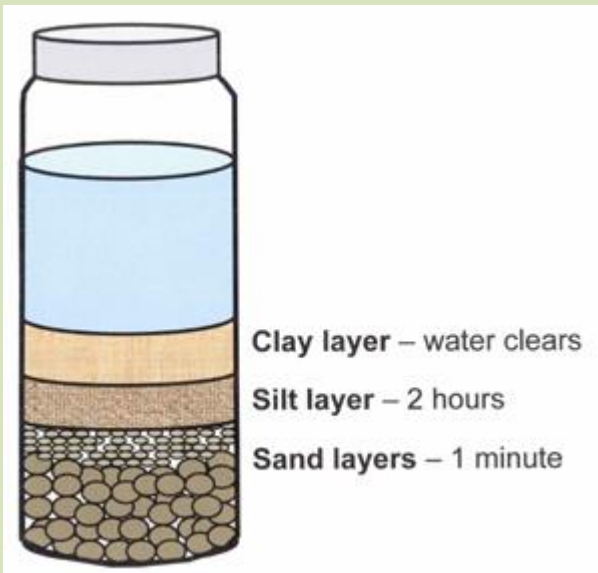
What is soil?



Know your soil

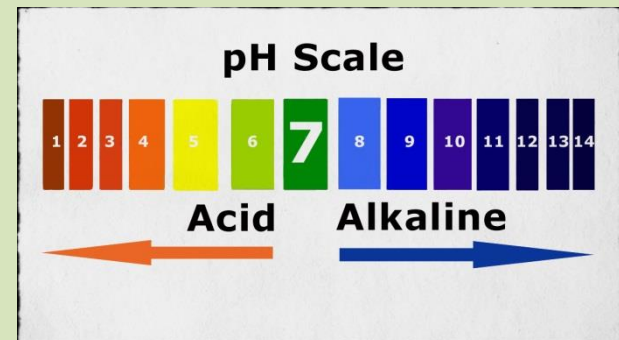
- Soil Texture

- How does it feel?
- Particle sizes
- Organic content

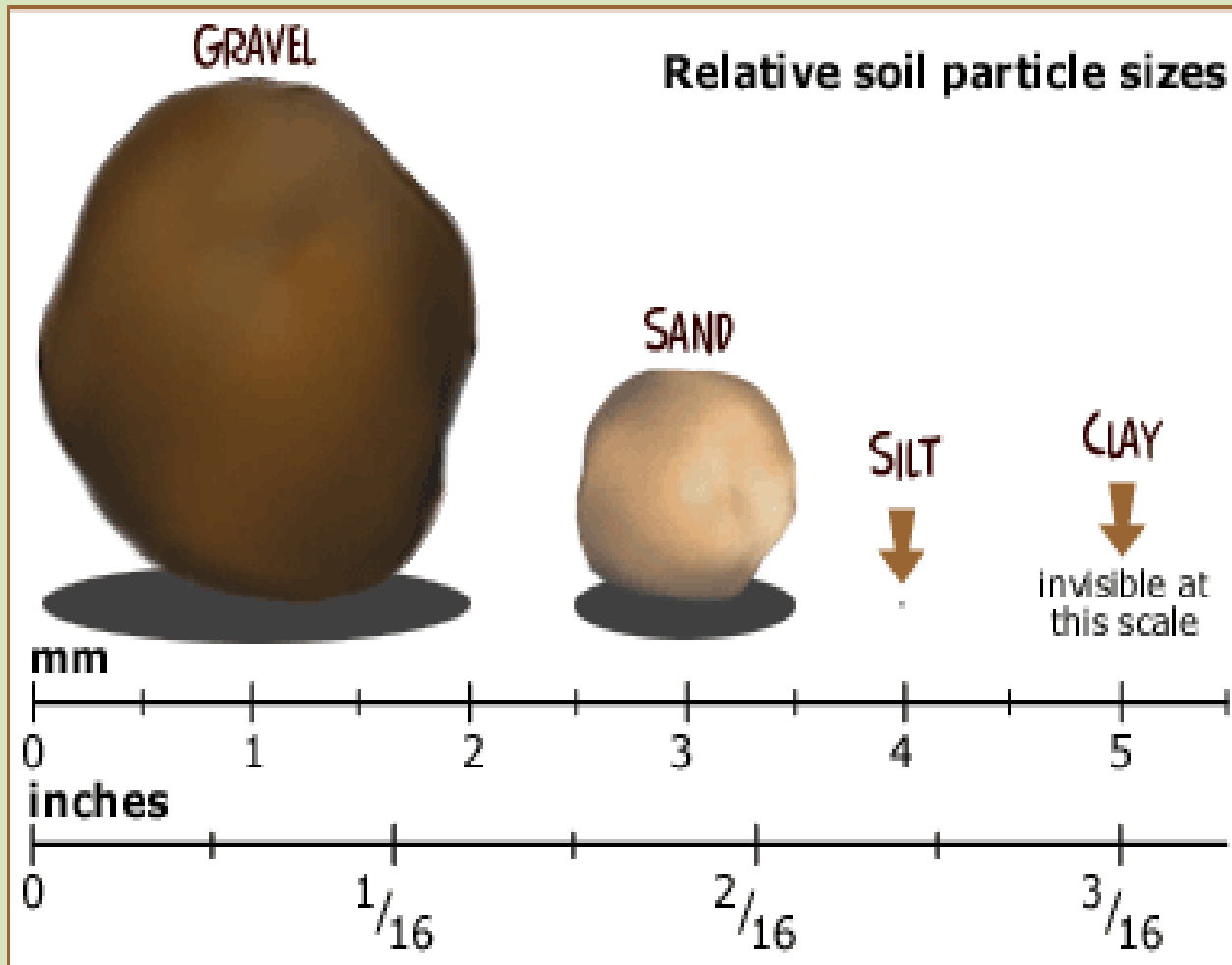


- pH

- Simple test
- Know what plants suit your soil



Soil Texture



Sandy

- Large particle
 - Large air gaps
-
- Disadvantages
 - Poor soil
 - Water and nutrients drain away too quickly
 - Susceptible to erosion
 - Advantages
 - Dries out quickly
 - work at anytime of year

Clay

- Very small particle
- Very small air gaps

- Disadvantages

- Poor drainage
- Susceptible to compaction
- Heavy to work
- Slow to warm in spring
- Dries to hard clods in summer

- Advantages

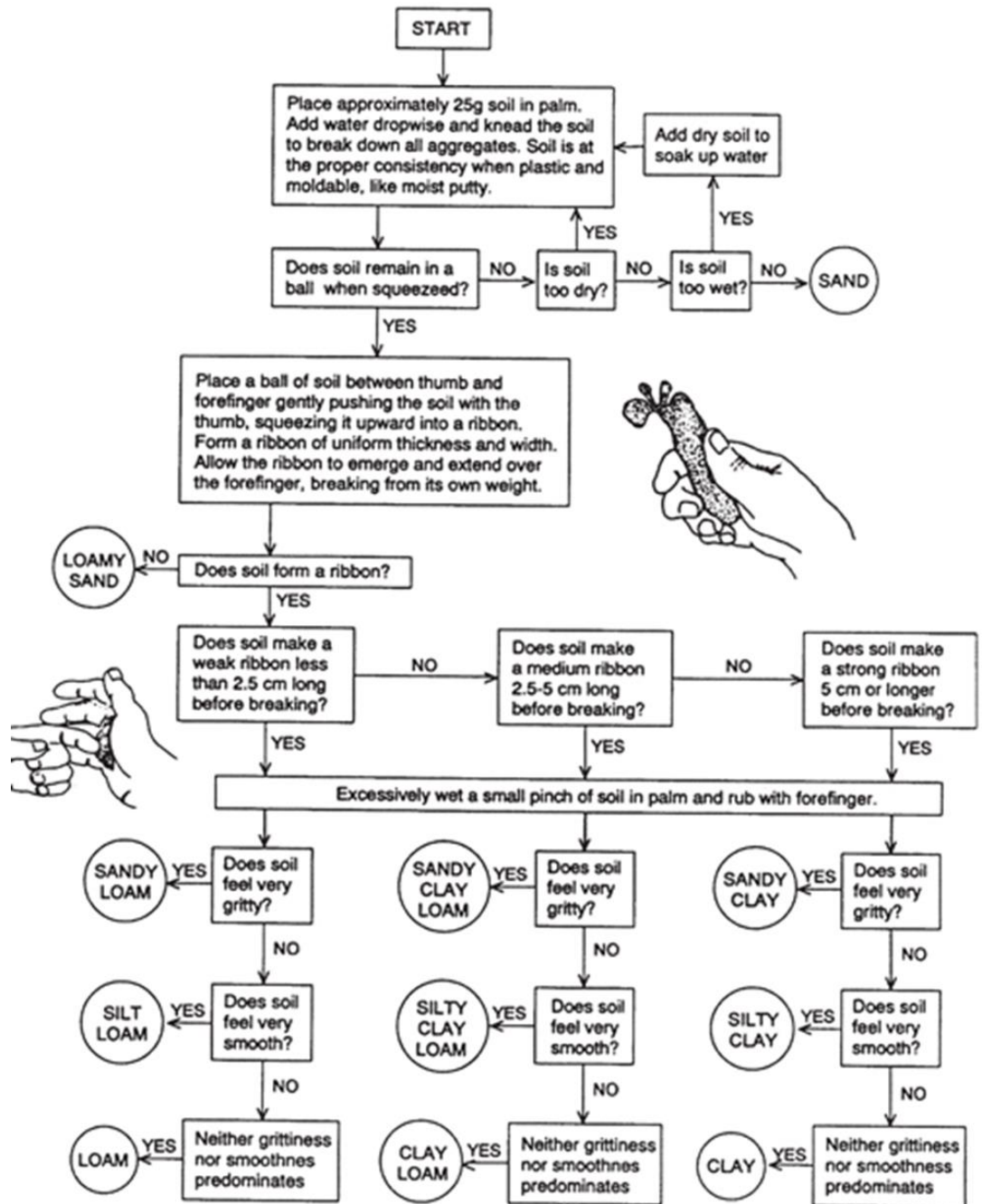
- Fertile soil
- Good water retention

Loam

- Mix of particle sizes & organic matter
- Ideal for growing plants
- Fine crumbly texture
- Retains water well
- Contains a good balance of nutrients

Let's look at
you soil
sample...

Soil Texture test



Soil Improvement

- Sandy soils
 - Add organic matter to retain moisture
 - Well rotted farmyard manure
 - Compost
 - Green manures
- Clay soils
 - Add organic matter
 - To flocculate clay particles, creating larger aggregates called flocs
 - Add grit or sand
 - to open soil and increase drainage
 - Lime to flocculate particles
 - also alters pH, making acid soils more alkaline
- Avoid bare soil
 - Rare in natural environments

Organic matter

- Increases micro fauna
- Improves soil texture
- Retains moisture
- Releases excess water
- Holds onto nutrients
- Keeps the soil alive
- Creates mycorrhizal networks



What is organic matter?

Anything once alive

High nutrient

- Garden compost
- FYM
- Chicken manure

Low nutrient

- Bark chippings
- Straw
- Leaf mould

Soil Structure

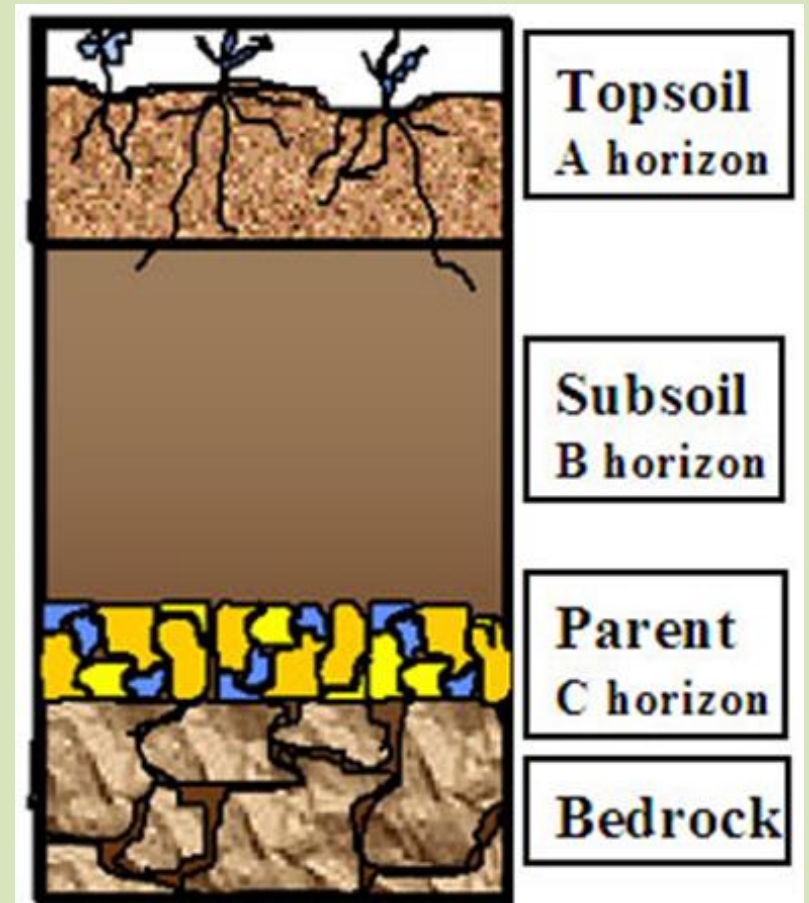
Structure relates to how the soil particles are aggregated into crumbs.

- Top soil
 - Rich in organic matter
 - Full of living micro organisms & worms
- Sub soil
 - Less organic matter
 - Closer to mineral origins

Soil structure can easily be damaged by over working

Soil profile

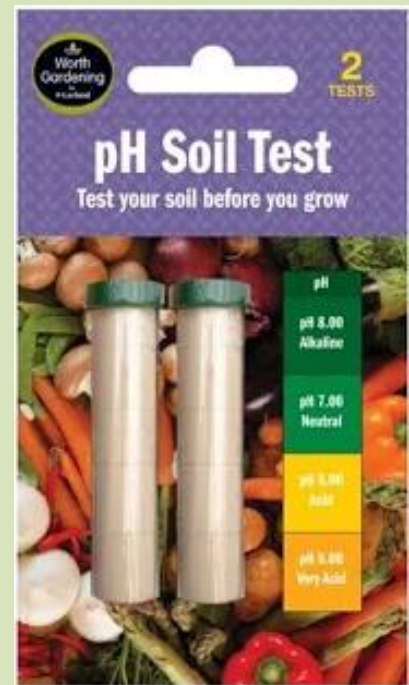
- Dig a hole
 - what do you see?
 - What depth
 - What colour





pH Test

- Use a home kit
 - Easy quick indicator
- Send a sample to lab
 - Costs £50+
 - Farming connect occasionally offer them free
- Ask neighbours
 - Gives an indicator of soil of the region



pH

- pH7 = Neutral
- Lower than 7 = Acidic
- Higher than 7 = Alkaline

Different plants like different pH

- Acid lovers
 - Soft fruit, legumes
- Alkaline lovers
 - Brassicas

Soil is a living organism

<https://www.youtube.com/watch?v=8ugaL6wsXME&t=5s>

11.55mins

Recap

- What is...
 - Soil?
 - Soil texture?
- What plants like different soil pH?
 - Acid
 - Alkaline

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<http://www.ashandelms.co.uk/>