

## pH, WORMS & BUGS: AGES 8-14

## What is pH?

It is a measure of how acid a liquid or soil is. The range is between 0 -14: Acid is 0-6, Neutral is 7, Alkaline is 8-14

#### How do we measure pH?

There are many difference metres that can be purchased. Also litmus paper which is inexpensive. Instructions will be given with these.

## Why is pH important?

In gardening it is very useful to know the soil pH. This is because plants need certain nutrients to grow. The soil pH affects which nutrients are available in the soil for a plant to take in to grow. Many plants but not all like a neutral soil.

#### Reference Chart

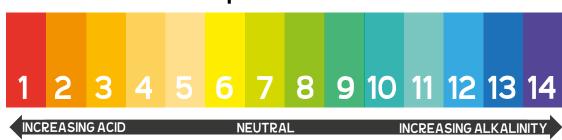
Shows how pH affects the availability of plant nutrients. Gardening books will give information regarding soil pH for plants.

The session included collecting soil from different areas of the garden and tested and recorded the results. It was also compared to the pH of shop bought compost. (See chart below to record)

#### **Worm Count**

The students also noted how many worms they found in the different areas.

## pH Chart



LOCATION	WHERE SOIL WAS COLLECTED?	WHAT WAS THE pH?	DID YOU SEE ANY WORMS?









**WORMS ACTIVITY: AGES 2-8** 

# **WORMS ARE AMAZING!**

Worms break down soil so it is fertile for growing plants so they are' the gardeners best friend'

The famous scientist Charles Darwin studied worms for 39 years and said 'LIFE

There are 34,000 different worms

On Earth.

On Earth.

If worms are accidentally cut in half the part with the saddle (pink fat segment) lives

Thatch out little worms

Worms only ear dead material dead material as of soil

hey can live up to 10 years!

Worms are HERMAPHRODITE each worm is male and female

Worms have lived on earth for 600 million years

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## MAKING A WORMERY

## Whu?

To show how worms break down dead materials to make compost

#### Time?

To make about half an hour. Time to observe the worms activity will be a couple of weeks

## **Equipment**

Group: Can be made in big glass jar or old glass fish tank Individual: Make in clean glass jars (note safety keep on flat surface)



Sand or and fine gravel

Old leaves

Food, veg and fruit peelings, tea leaves

• Earth worms collected in plastic pots

• Card to make a lid

Black paper or card

Scissors

• Elastic band or masking tape to fix lid to jar

Old spoons and trowels

#### Method

- 1. Find a flat surface to work on table or on the ground
- 2. Put thick layers of soil then sand/gravel until pot is almost full. Leave about 7cms clear to the jar top
- 3. Children collect worms...tell them to be gentle with the worms
- 4. Talk about worms how amazing they are!
- 5. Worms are put in jars and put leaves and food waste on top
- 6. Make a lid and fix it. Make a few holes in the lid
- 7. Put the black card around the jar
- 8. Put the jar in a safe place
- 9. Check that the soil does not dry out
- 10. After a couple of weeks. See what has happened to the food. The worms will have pulled it down into the soil and sand and made compost.
- 11. The worms will need to be returned to the soil after the observations has taken place









## **BUG HUNT: ANY AGE**

## Bug ID Charts & Book

The Woodland Trust Nature Detectives has a great chart to download:

www.woodlandtrust.org.uk/naturedetectives/ activities/2015/06/creepy-crawly-spotter-sheet/

- ·Bugs can be hunted at any time when out in gardens, woods, fields or beach
- ·Bugs will hide under logs, stones or in hollows of tree trunks. On wild flowers and in bushes and in long grass. Always lift up logs etc very slowly and quietly or the bugs will hide away
- · Children need to be told to be gentle when getting them into pots etc
- · It is possible to collect in pots, in fabric, and in nets but be very careful, using small brushes or soft pieces of wood
- · After looking at them then PUT THE BUG BACK WHERE THEY WERE FOUND

#### **Equipment**

- · There are many types of bug pots/lens/microscopic hand lens
- · You can also use binoculars 'the wrong way round'!

#### Have FUN!





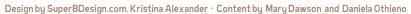


















## MINI CREATURES FOUND IN SUMMERFIELDS WOOD

## DRAGON & DAMSELFLIES

(Odonta)

Azure Damselfly Large Red Damselfly **Broad-bodies Chaser** Common Darter Southern Hawker Vagrant Darter





## **BUTTERFLIES & MOTHS**

(Lepidoptera)

Comma Common Blue Gatekeeper **Holly Blue** Large Skipper

Meadow Brown

Peacock

Purple Hairstreak

Red Admiral

**Small Copper** 

Small Tortoiseshell

**Small White** 

Speckled Wood







2-spot Ladybird 7-spot Ladybird

10-spot Ladybird

14-spot Ladybird

Cream Spot Ladybird

Orange Ladybird



**MILLIPEDE** 











## RESOURCES

sussexmothgroup.org.uk Information about local species as well as Sussex Moth Group and local Hastings branch events

rx-wildlife.squarespace.com Events and wildlife sightings from **Dungeness to Hastings** 

mothscount.org Lots of information about moths

nationalmothnight.info An annual national counting scheme

ukmoths.org.uk

Help identify British moths

hantsmoths.org.uk

Great site to help identify moths and a handy 'What's flying now guide which lists 100 most common moths for any week of the year

ukleps.org

Dedicated to identification of eggs, larva and pupa of many British moths and butterflies

**BUTTERFLIES** butterfly-conservation.org

buglife.org.uk

**BEES** 

bumblebeeconservation.org beewalk.org.uk

BATS bats.org.uk

**LADYBIRDS** ladybird-survey.org **DRAGONFLIES** british-dragonflies.org.uk **AMPHIBIANS AND REPTILES** arc-trust.org

**GENERAL SITES** 

rspb.org.uk

wildlifetrusts.org

gov.uk/government/organisations/ natural-england

Government's adviser for the natural environment in England. Information and policies

plantlife.org.uk

British conservation charity working nationally and internationally to save threatened wild flowers, plants and fungi

woodlandtrust.org.uk

rspca.org.uk/adviceandwelfare/litter Raising awareness of how littering and rubbish affects animals

LOCAL SITES

sussexwildlifetrust.org.uk sussexwildlifetrust.org.uk/rye harbour Forest School, Nature Tots, bird watching, beach cleans etc

rspca.org.uk/mallydams

educationfuturestrust.org Forest and beach school

**EDUCATIONAL RESOURCES** & ACTIVITIES

muddyfaces.co.uk Resources for children

for schools

field-studies-council.org Resource of environmental field studies papers available as pdf downloads. Aimed at non-specialists

rbkc.gov.uk/subsites/wildlife.aspx The Ecology Centre at Holland Park runs a series of events, activities. educational visits and workshops

woodlandtrust.org.uk/naturedetectives/ Discover exciting wildlife activities to help kids explore nature!

outdoorstudiosarts.com Artist-led workshops for creative experiential learning that explores environments, landscape, and place

#### **GARDENING ADVICE**

rhs.org.uk/science/conservation-biodiversity/.../plants-for-pollinators Pollinator advice and downloadable lists from Royal Horticultural Society gardenersworld.com

Practical gardening advice on what to do in your garden and greenhouse

#### SPOTTER GUIDES, IDENTIFICATION SHEETS & APPS

Helping you to spot & identify wildlife and nature

wildlifewatch.org.uk/spotting-sheets

nationaltrust.org.uk/lists/summer-wildlife-spotter-guides

rspb.org.uk/birds-and-wildlife/wildlife-guides/identify-a-bird/

plantlife.org.uk/uk/discover-wild-plants-nature/spotter-sheets

reading.ac.uk/Herbarium/KiteSite/hrb-KSsppidguides.aspx

opalexplorenature.org/identification

nhm.ac.uk/take-part/identify-nature/

buglife.org.uk/bugs-and-habitats/bug-identifier

ispotnature.org/

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