LESSON 3

WALT: observe features of living things and sort them in to different groups.

*I can answer questions about the features of insects, arachnids and plants found in the local area.

**I understand why it is important to make accurate observations when describing features of living things.

***I can create a branching database/dichotomous key to sort and identify local invertebrates.

There are about nine million different types of living thing on Earth – and they are all named!
Can you write that number in figures?

Which species do you think humans are the most similar to?

In fact around 98% of chimp genes (tiny parts in all your cells which give you certain characteristics, e.g. colour of eyes, and which can be passed on to the next generation) are the same as human genes, but there are obvious differences in appearance and behaviour. Can you think of some differences?

Chimps: more hairy, different shaped jaw & nose, move around on all 4 limbs, have longer arms & shorter legs.

Sorting this large number of species into groups based on similarities helps people to know which living thing is being talked about. Scientists can be sure they are investigating the same species. Two, very large, groups of living things are animals and plants. We are part of the animal kingdom. These groups are however still too big (about 7.8 million animal species) so they have to be sub-divided. Animals are split into vertebrates and invertebrates. *Can anyone explain what those words mean?*

Invertebrates have no backbone (spine) and vertebrates do.

There are far more invertebrates than vertebrates – some are very simple like sponges, others are more complex like insects, spiders (arachnids) and molluscs.

Vertebrates are split again into fish, amphibians, reptiles, birds and mammals.

Am I a reptile or an amphibian?

https://www.youtube.com/watch?v=mRidGna-V4E&safe=active

Branching databases.

Which questions can we ask to sort these leaves into groups?

Your challenge is to create a branching database (aka dichotomous key) using photos of insects and minibeasts.

Look carefully at the features that the living things do and don't have.

Which questions will you use?

WILF: Use a key to identify an animal or plant

Has the animal got legs?

YES

NO

NO

YES

NO

YES

YES

NO

YES

NO

Vertebrates

These are animals with backbones.

Vertebrates are divided into five groups:
1. Mammals
2. Birds
3. Fish
4. Reptiles
5. Amphibians

Some examples of vertebrates:
humans, elephants, cows, dolphins, cats, sparrows, frogs, fish and crocodiles.

Invertebrates

These are animals without backbones.

Invertebrates are divided into further groups. These include:
Insects, Annelids, Protozoa, Crustaceans, Molluscs, Arachnids and Echinoderms.

Some examples of invertebrates:
ladybirds, squids, bees, snails, centipedes, wasps and flies.

Challenge: use vocabulary from these classification cards to help you with your branching database...

Extension.

Scientists use a classification key to sort the millions of species of living things in to groups and name them. It is a 'key' for unlocking the identification of a living thing or other object. Point out that new species of living things are still being discovered, especially in more remote places like the deepest parts of the oceans or in thick rainforest. Recent finds include a new jellyfish off Italian cost, a new type of praying mantis in Rwanda and some new dancing frogs in India.

Look at the example on the next page.

Branching database – dichotomous key

Minibeast

spider

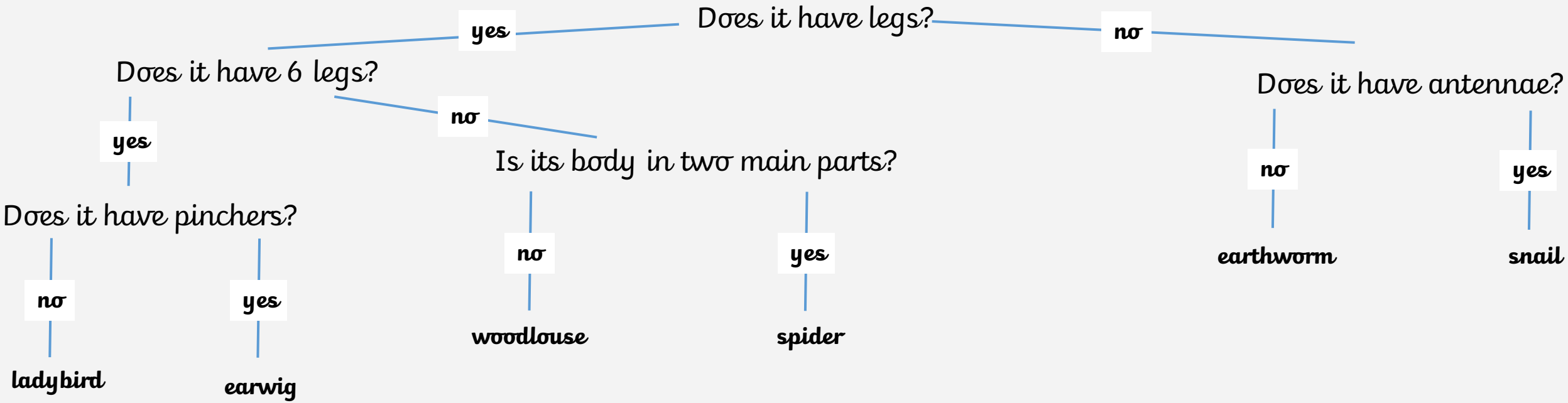
woodlouse

snail

ladybird

earthworm

earwig



Sorting Minibeasts – as questions and answers


spider


woodlouse


snail


ladybird


earthworm


earwig

1. Does it have legs?

Yes – go to 2
No – go to 3

2. Does it have 6 legs?

Yes – go to 4
No – go to 5

3. Does it have antennae?

Yes – It is a snail
No – It is an earthworm

4. Does it have pinchers?

Yes – It is an earwig
No – It is a ladybird

5. Is its body in two main parts?

Yes – It is a spider
No – It is a woodlouse