

# TALLER DELS ÉSSERS VIUS :

## *Descobrim animals petits i observem l'aquari.*

### **Què volem ensenyar ?**

#### **Idea de la vida en un ecosistema**

L'observació d'éssers vius permet fer un paral·lelisme entre la vida dels organismes vius i la nostra. Les observacions ajuden a fer-nos una representació del món i permeten pensar-hi.

### **Per a què ?**

#### **Per endinsar-nos en la idea de varietat, adaptació i interdependència**

Promoure la mirada sobre la diversitat i la importància de *l'habitat*

### **Com ?**

#### **Apropant-nos al món biològic .Experimentar l'observació científica**

Generant contextos amplis d'aprenentatge i de comunicació a partir d'observacions guiades i activitats experimentals.

Facilitant als nens els processos que connecten el conèixer individual amb els coneixements organitzats.

# PROJECT MINIBEASTS

## MINIBEASTS

### WHAT?

*An exciting start to an investigation on animals types, habitats and classification.*

To introduce children to the wide variety of life to be found in their own immediate environment. To identify the conditions animals need to sustain life.

### WHY?

*To develop respect of the needs of animals*

Animals always captivate children's interest and are therefore a rich source of investigations. It is important that children gain an early understanding of need to conserve wildlife and their habitats.

### HOW?

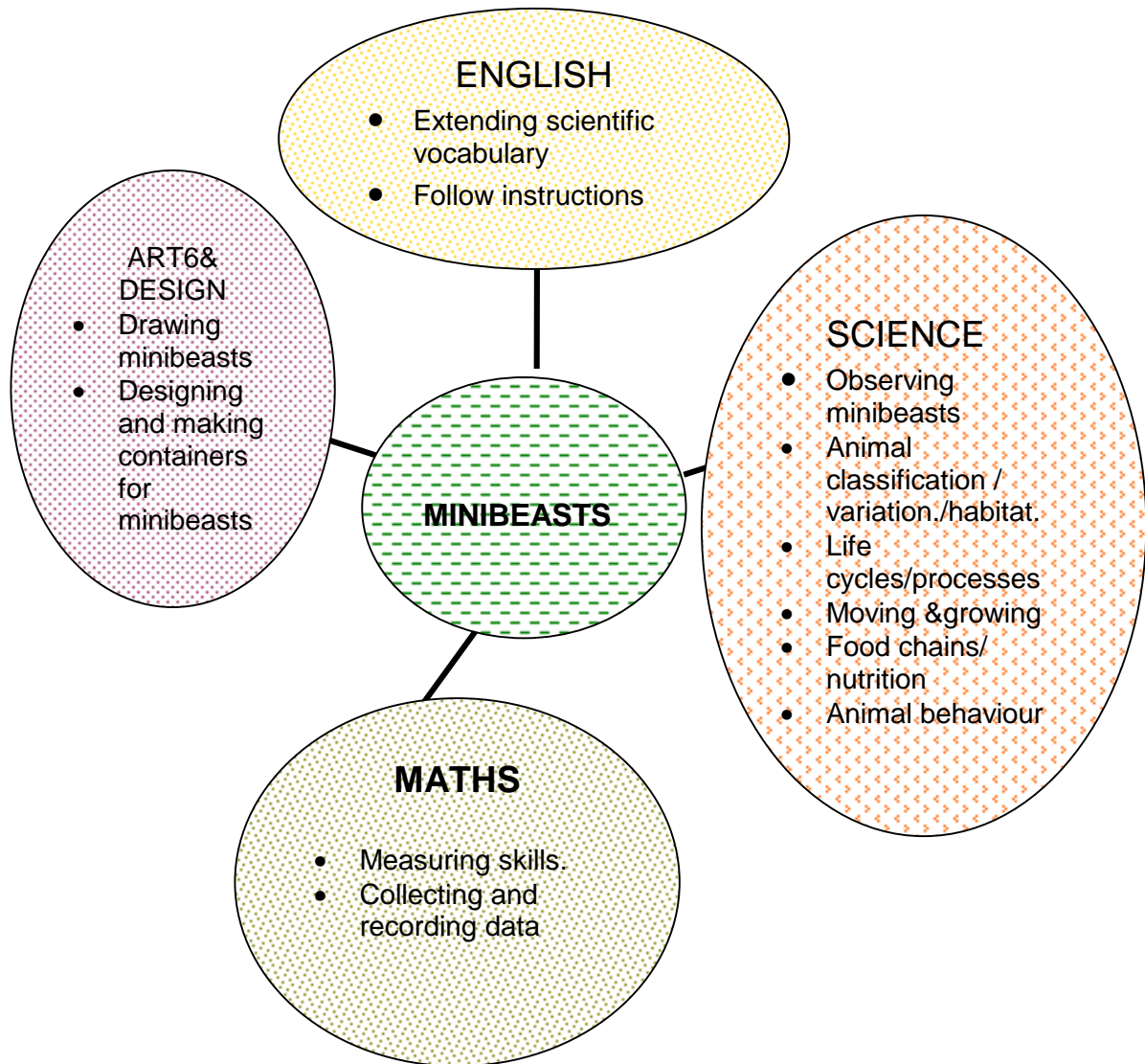
*Observing minibeasts*

The ability to recognize animals enables children to communicate effectively about living things which interest or concern them.

Recognize and identify a range of common animals.

Respond to suggestions of how to find things out

Use simple equipment provided and make observations related to their task



### What are minibeasts ?

**Minibeasts** is just the name for a very *small animal*. Even some of them are *tiny*. There are millions of different types.

Most minibeasts belong to a group called *invertebrates-animals without backbones*.

### Main minibeasts groups

VERTEBRATES	INVERTEBRATES	
<b>Amphibians</b> Like <b>frog</b>	<b>Insects</b> Like an <b>ant</b>	<b>Molluscs</b> Like a <b>snail</b>
	<b>Arachnids</b> Like a <b>spider</b>	<b>Myriapods</b> Like a <b>centipede</b>
<b>Fish</b> Like <b>stickleback</b>	<b>Crustaceans</b> Like a <b>crab</b>	

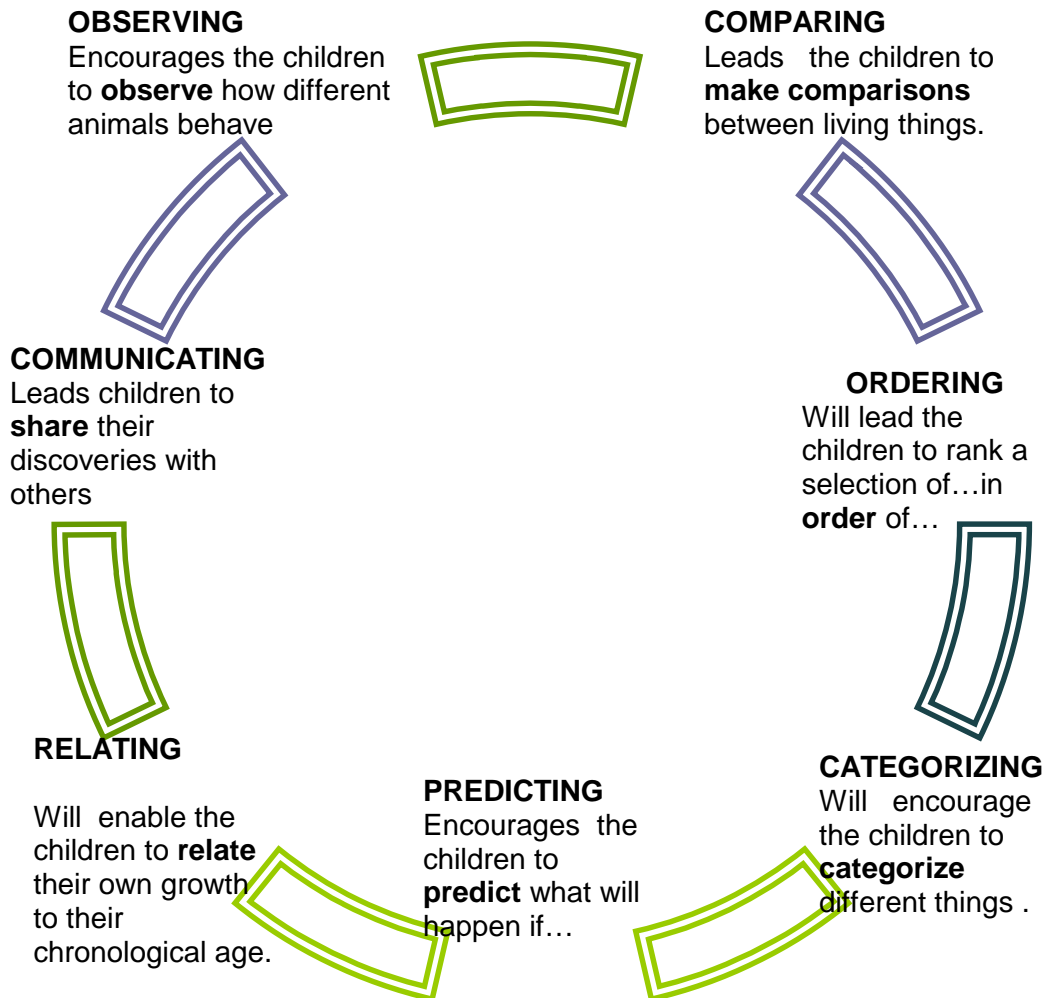
Minibeasts are very adaptable.

They can live on land, in water and in the air, in deserts and on mountain peaks. Wherever you live there will be minibeasts.

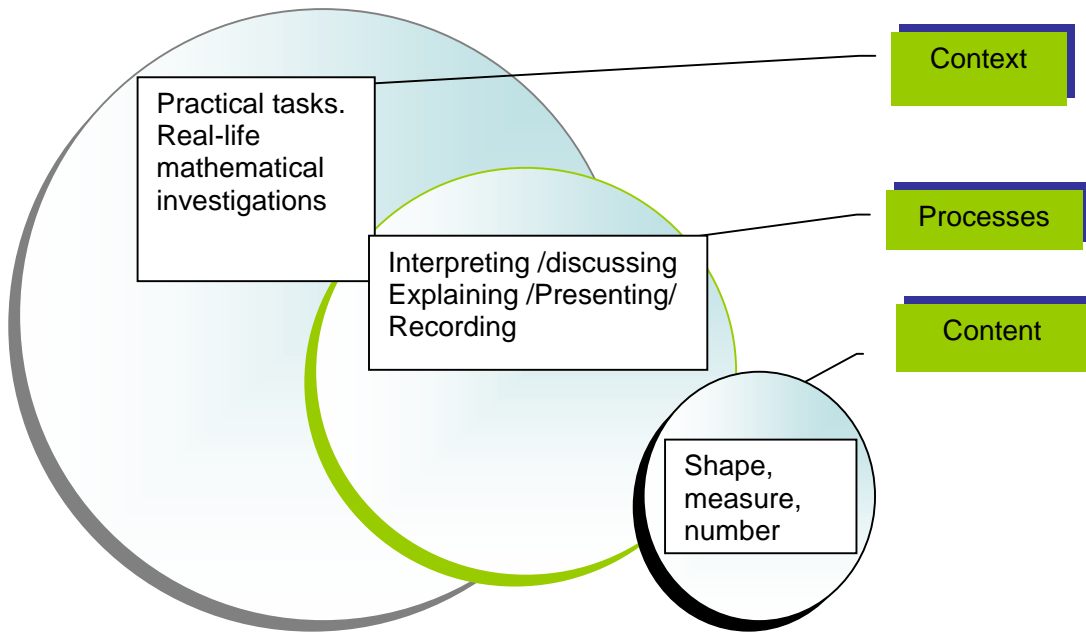
- **Teacher's Notes**

- Invite the children to observe a variety of living things
- Children use thinking processes to help carry out their experiments throughout their investigations

**Scientific thinking process**



○ **Using and applying mathematics**



Daily, in real-life situations, we are naturally involved in using and applying mathematics. We can estimate, measure, calculate, compare.

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## MINIBEASTS

### What to do?

- **Observing**

#### Nature walk

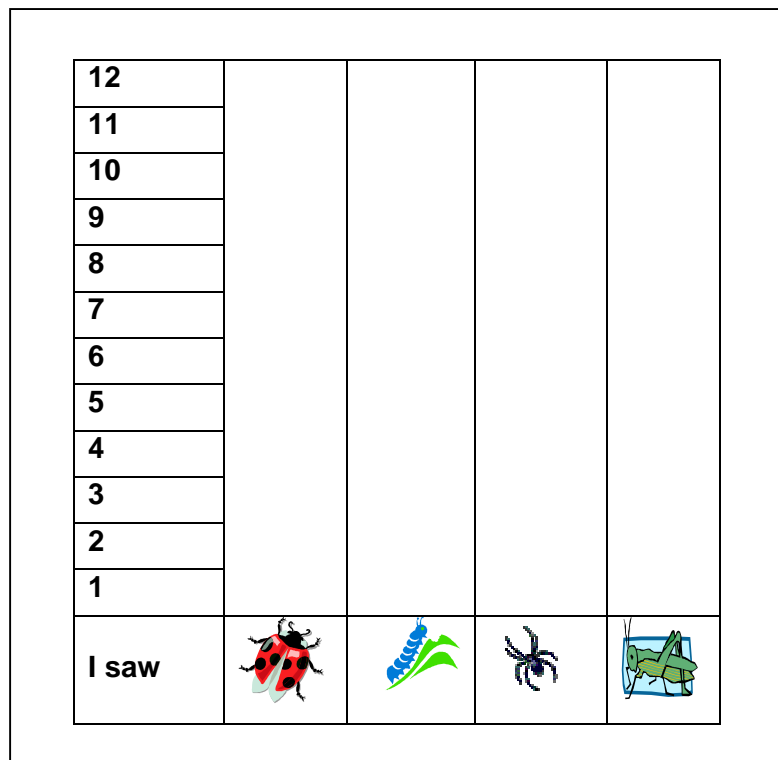
- Take the children on a nature walk around the school ground.

Encourage them to look out for different animals. Introduce the name of the animals .

- On return to the school suggest to the children to draw one picture to represent something they remember.
- Discuss about the walk, make a list of all the things they found. While they are showing their drawings they can say:

**"I saw 1 worm"**

Record the results in a graph and count *How many ..... have you seen?*





### A discovery table

- Display a table and put all the collecting things on it, with all them you are going to be introduced in a Science discovery:

Looking, observing, touching, listening, asking and reading.



Try to find pictures about animals' homes and lifestyles.

- **Comparing**

#### What are minibeasts?





- Display different kind of animals and talk about the differences. You can use plastic animals or just some pictures or flash cards.

- Classify the animals in order of their size:

*it is a big animal, it is a small animal, it is a tiny animal.*

- Talk about the number of legs and classify them:

Create a graph about : *How many legs they have?*

						
						
<b>How many legs have they got?</b>	<b>none</b>	<b>2 legs</b>	<b>4 legs</b>	<b>6 legs</b>	<b>8 legs</b>	<b>More than 8</b>

- Discuss the results with the children and ask them if the smaller & tiny animals are the ones that have more legs.
- Introduce the idea about the meaning of minibeasts.

Explain them that MINIBEASTS is just a name for a very small animal.

Show them some kind of posters about minibeasts and talk about the kind of animals they can see on it.

**MINI BEASTS**

Spider worm  
 Bee Caterpillar  
 Snail  
 Ladybird Fly  
 Ant  
 Grasshopper  
 Beetle  
 Dragonfly  
 Centipede  
 Butterfly  
 Cockroach  
 Moth Wasp

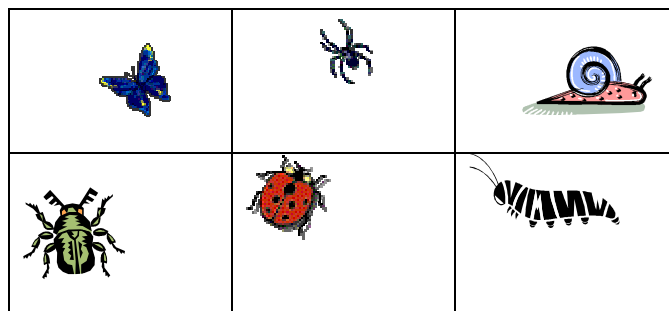
*Publisher by McDonald books and Posters colourful learning*

- Compare the animals that they can see now with the ones they found on the nature walk.

• **Communicating**

**BINGO MINIBEAST**

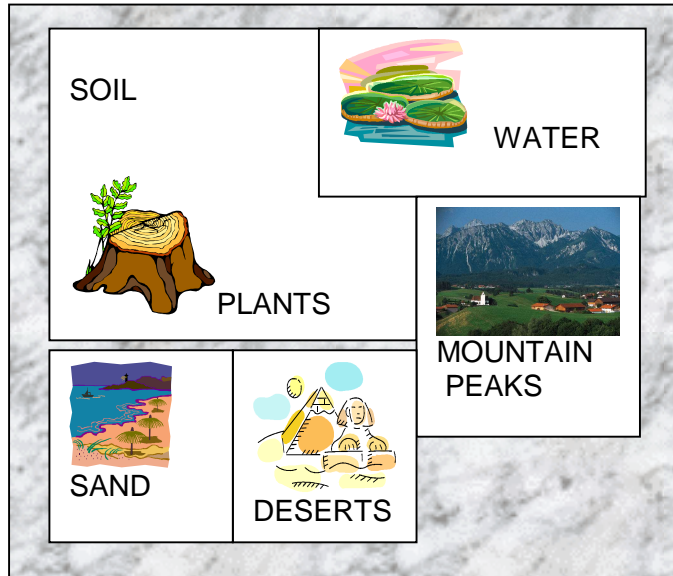
Show to the children six minibeasts and say the word. Ask the children to repeat the word with you. Encourage them to draw the six animals .  
 Play the bingo with the children.



- **Knowledge and understand the world**

- **Where can we find minibeasts?**

Display some pictures about the different habitats where you can look for minibeasts.



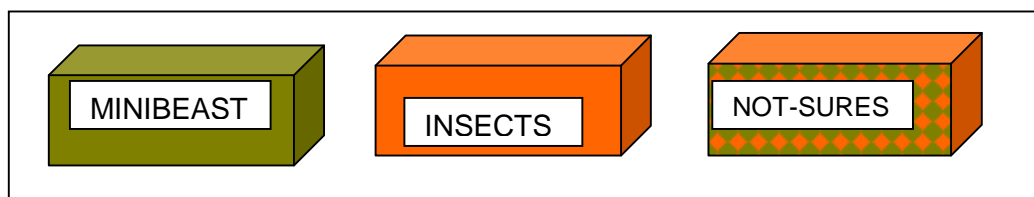
- Let the children help with some pictures from magazines to create the *HABITAT MINIBEASTS* board and label each habitat.
- Provide a range of different minibeasts pictures and encourage children to display them on the board according to their habitat.
- Talk about that some minibeasts are harmless to you, but you could easily damage them. Tell to the children that they look like a giant for the minibeasts...

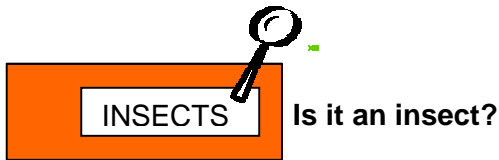
- **Categorizing**

**Be a minibeast detective**

- Try to find different minibeasts.  
Use a large plastic pot or tub to keep the creatures.  
Only keep the minibeasts for a short time.
- Observe the different minibeasts .Sort them on boxes and classify them Try to find out which ones are ***insects . minibeasts or you are not sure.***

.Display some books on to help the classification.





- Have fun playing a game which involves to create an Ant.

You are going to introduce *the main parts of an insect*.

### The ant

**Equipment:** plasticine, matches, dice

Ask the children to throw the dice. You must start by throwing a **1** for the *head*.

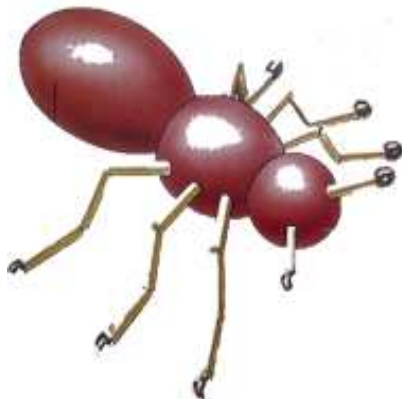
Roll a small ball of plasticine about 1 centimetre across for the head.

Now shake a 2 for the *thorax*. Roll a small ball of plasticine about 2 centimetres across for the thorax.

Shake a 4 for each antenna (you need two) Join these to the head

Once you have the thorax you need to shake a 3 for the *abdomen*. Roll a small ball of plasticine about 3centimetres across for it and join to the thorax.

Now shake a 6 for each leg.



Now you can recognize if your minibeast is an insect!

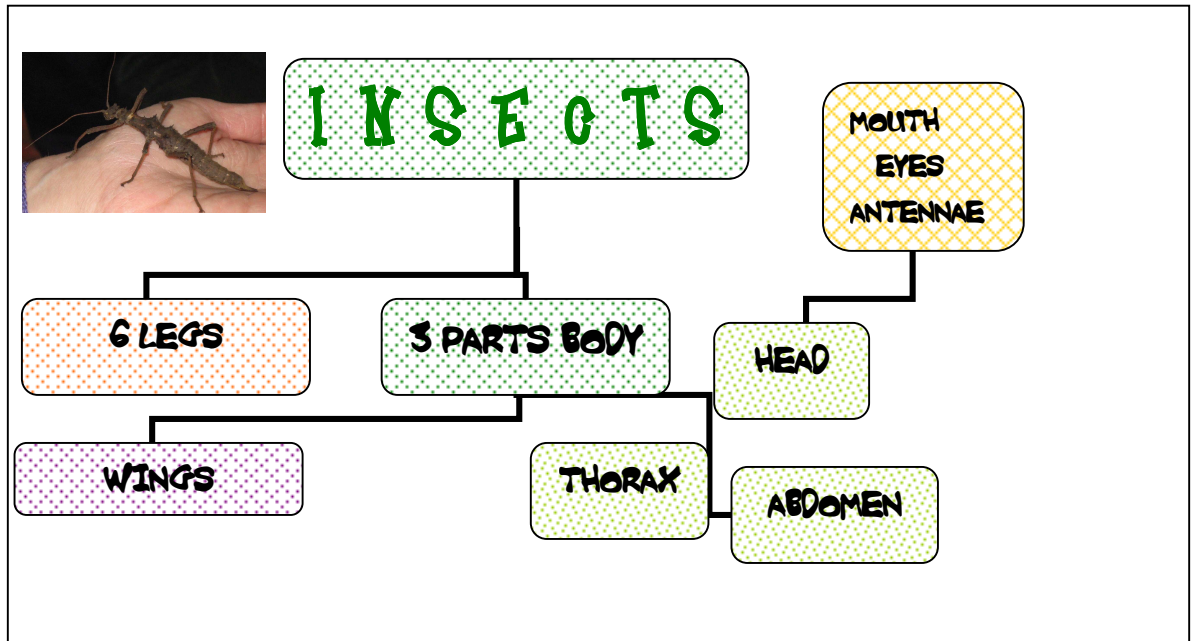
*3 parts* to its *body*,  
*6 jointed legs* and  
*2 antennae*.  
Most of them have **wings**.

- **Relating**

- Ask the children if they have anything in common with an insect.  
Let's them to thing about if they have joined legs to the body, a pair of eyes,
- Let's them to know in which way their body is different from an insect's body:  
No backbones, no wings , size.

- **Communicating**

**Mind map**



- **Keen on insects**

**Ant safari**

- Encourage children to *find ant colonies* thriving in the garden.

Sit in the garden and ask the children :

*How many ants can you see in the row?*

*How long is the ant's row?*

\*You can provide some objects to the children to measure the length of the row like paperclips , graduated sticks, parts of the body (hand –spans).  
Talk about the length of the row.

- Discuss with them that ants life in colony and tell them that different members of the colony have different jobs to do. Talk with them about “the *Queen*” and “the *Workers*”.  
They enjoy eating sweet things
- Let's them to draw the movement the ants do on their way to find food and bring it back to the colony.

- **Creative development**

Make three-dimensional models of an imaginary *Ant colony* with the different members and jobs:

*The Queen*, she lays the eggs in a chamber into the ground. When is adult is much larger.

The workers:

The *nurses*, they tend the young.

The *cleaners*

The *forages*, they look for food and feed the other workers, by passing liquid food directly into their mouths

- **Make a formicarium**

Equipment: two sheets of Perspex 25 centimetres square, one sheet 5 x 25 centimetres, three wooden battens 5 x25 centimetres and 15 millimetres thick, screws, tape.

- **Comparing**

### A SEVEN SPOT LADYBIRD

**Wings:**

How many wings are there?

**TWO PAIR OF WINGS**



**Legs:**

How many legs does it have?

**6 LEGS**

**Body:**

What colour and shape is the body?

**ROUND BODY**

(like a half ball)

**RED OR YELLOW and**

**BLACK SPOTS**

**Head**

Does it have eyes?

**2 EYES**

Which way does it move?

**UP, DOWN, BACKWARDS,**

**FORWARDS**

Does it have antennae or feelers?

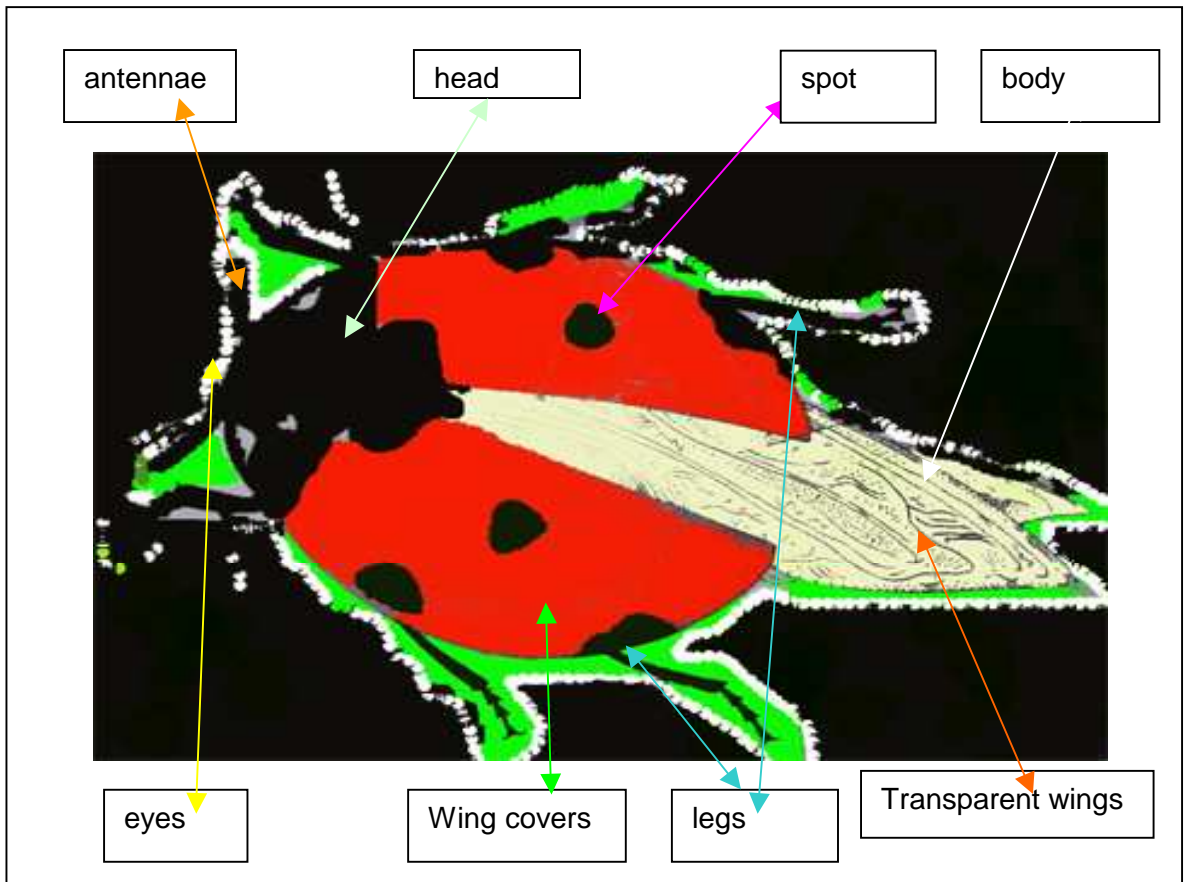
**2 FEELERS and 2 JAWS**

**Habitat:**

Where does it live?

in **PLANTS** or **FLOWERS**

- Encourage children to draw the *seven spot ladybird* and label each part of the body.



- **Knowledge and understand the world**

- Talk about that for various reasons insects are many different colours.
- Check the colour of these minibeast checking “the minibeast poster” and the material from the “discovery table” Talk about their colours, classify them and say the sentence, for example:

The **Ladybird** is **red** & **black**

Spider Snail Bee caterpillar Fly Ant Beetle worm Moth Centipede  
Butterfly Cockroach Wasp Ladybird Grasshopper Dragonfly

- **Creative development**

**Make a giant ladybird.**

Use newspaper, paste balloon, paint.

Cover a round balloon with papier mâché. Leave it to dry and cut the balloon shape in half.

Mark on you ladybird's head, thorax and wing cases and then paint its bright warning colours. Sellotape on some pipe cleaner legs.

- **Bugs or minibeasts**

**Observing**



- Try to find in a book which of these animals are not insects.

Remember that insects have 6 legs.

Help children to recognize which ones are not insects:



Ask them:

**Question 1:** *Has the minibeast got legs?*

**Yes No**  
Go Q3 Q2

**Question 2:** *Has the minibeast got a body divided into segments?*

**Yes No**

**Question 3:** *Has the minibeast got more than 6 legs?*

**Yes No**  
Go Q4 Q5

**Question 4:** *Is it the minibeast long and thin with lots of segments?*

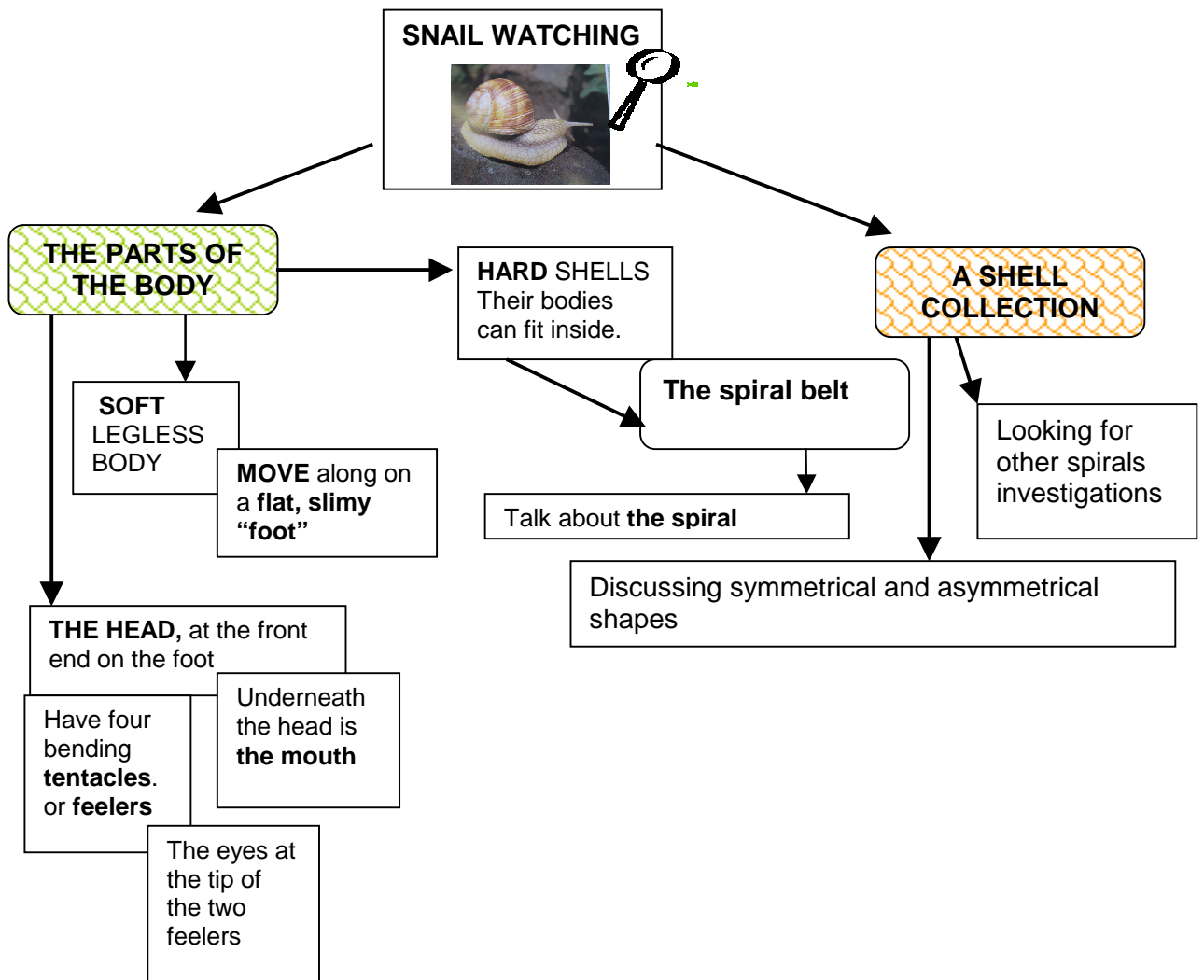
**Yes No**

**Question 5:** *Has the minibeast got long nose with antennae at the end?*

**Yes No**



- Comparing



- **Observing:**

- Size**

- How big is it?
    - Measure the snail's shell and the length of its outstretched body.  
\*Put some millimetre –square graph paper under the snail, will help you measure it.

- Colour**

- What colour is it?

- Shape**

- What shape is its shell?
      - Rounded spirals?
      - Pointed spirals?

- **Behaviour**

- Put the snail on glass. Look through the glass how they glide along.

- Look what the snail do when it moves:
        - .What happens with its head?
        - .What happens with its foot?
        - .What happens with the rest of the body?

- (\*When the snail wants to move its head and foot come out of the shell, but the rest of the body stays inside.)

- What happen if you gently touch a snail on its head?
        - Watch how snails use their tentacles to find food.

- **Categorizing**

- Snail collection***

- There are plenty of snails in the gardens. Encourage children to look for different kinds of snails
    - Talk about their habitat:

- Snails usually hide when it is hot and sunny and come out when it is cool and damp.



- Set up the snail-table.

- Record how many different kinds of snails you have in the collection.

- Classify them using the criteria you have been observing in the last activity:  
*the size, the colour, the shape of the spiral shell*



- **Communicating**

- **Caring for snails**

Snails are easy to look after. All kind eat living or dead plants.  
 You will need jars or plastic.


- Put a little bit of soil and a small tuft of grass at the bottom of the jar.
  - Make holes in the lids. Make sure it is not left in bright sunshine. Snails feels safer in dim light.
  - Sprinkle the soil with water to make it moist.
  - Put little piles of different things into the container: leaf litter, lettuce, potato peel, cake, crumbs, an apple core.
  - Remove uneaten food after a day or so.

See which type of food the animals like the best.

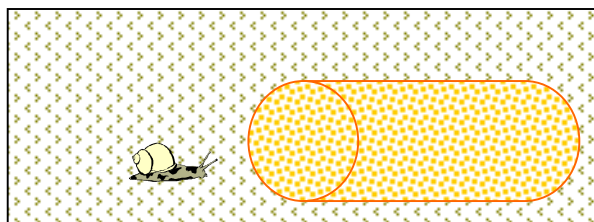
THE FAVOURITE FOOD	leaf litter	lettuce	potato peel	cake	crumbs	apple core
						
						

- **Predicting**

***Do snails have a home?***

A snail carries its home, it's the shell on its back 

- Explore if snails returns to the same shelters.
  - Leave an old flower pot or margarine tub on its side in a damp place in the leafy undergrowth.
  - Mark the snails shell with a little dots of snail polish or waterproof paint.
  - Check daily to see if snails visit. If you get a visitor paint a red spot on its shell and see if it returns.

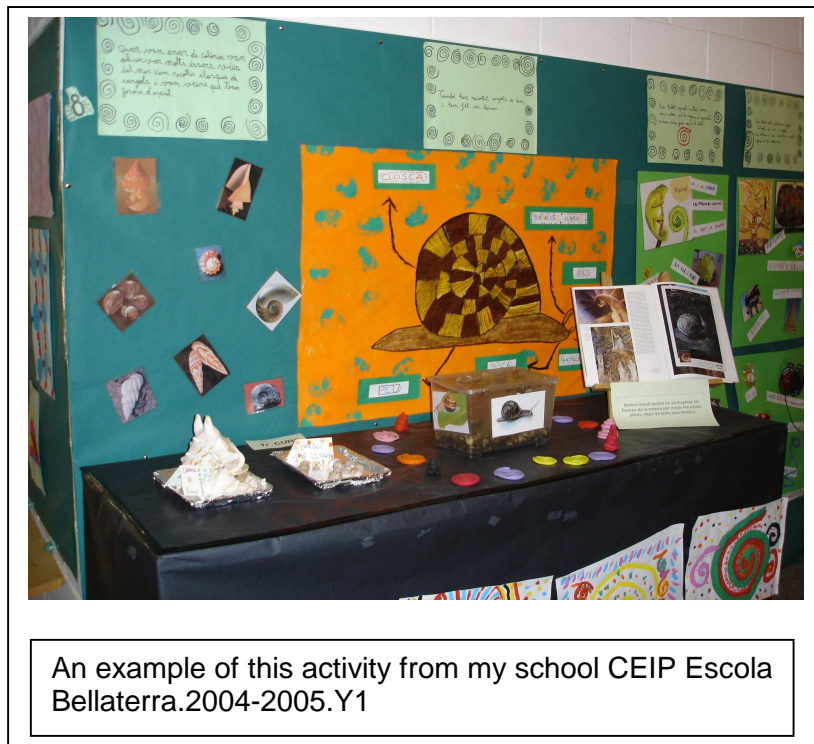


- **A snail race**

- Invite children to predict which snail is going to be the winner in the snail race.
- Put four or five snails on a sheet of clear plastic. Wait till they have come out and starting to move.
- Check how long does it take to each snail to arrive at the end of the plastic.
- If you turn the plastic upside down you can see the trail of slime that snails have left during their moving.
- You can measure the length of the trail slime and check if they are equal or different.

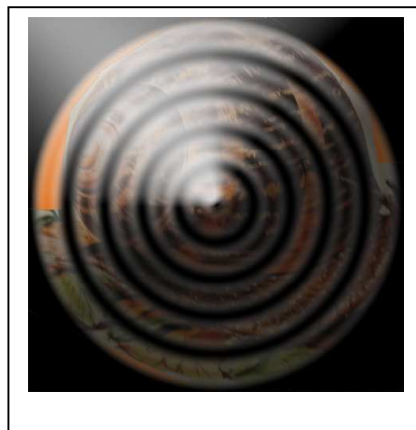
- **Knowledge and understand the world**

**Spirals investigation**



- **Creative development**

Observe the shell through the magnifying glasses and encourage children to draw the spiral belt.



- Recording data

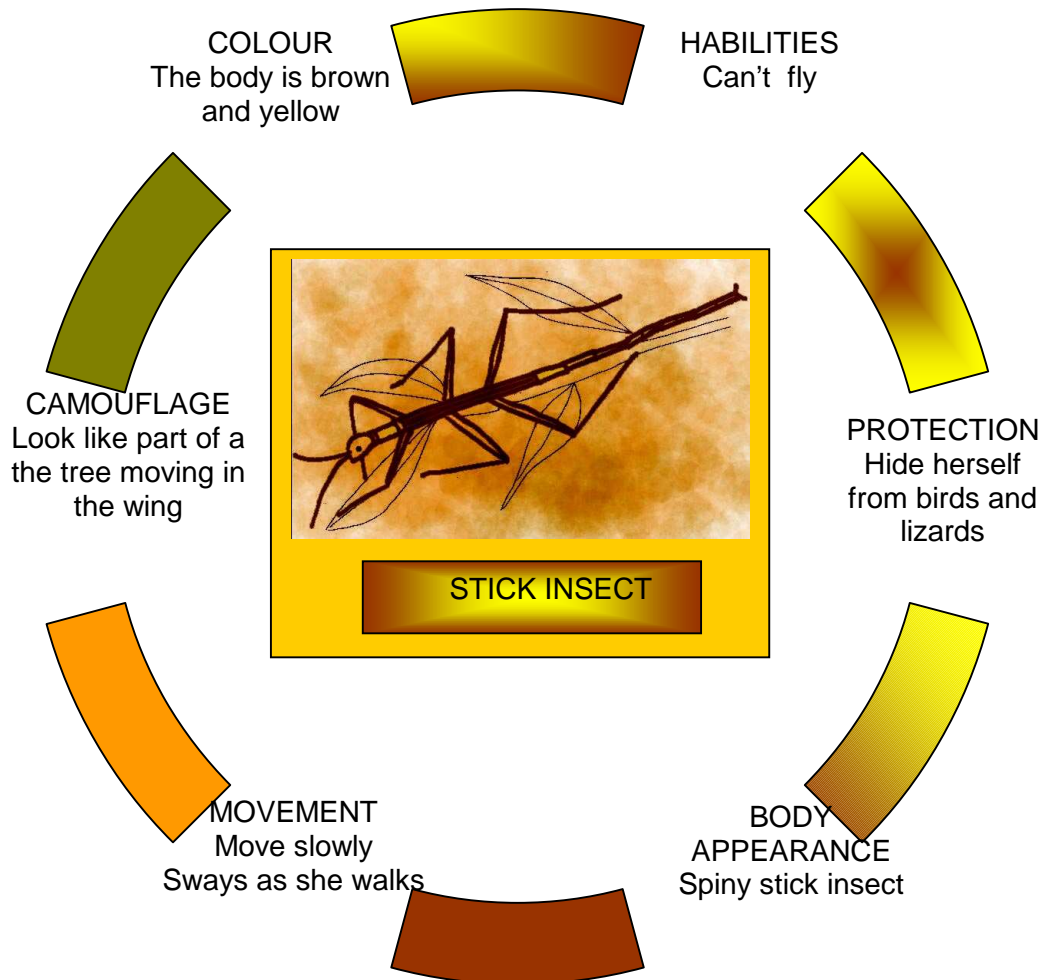
- Mind map



- Invite children to draw each concept to help them to understand and display on the board.

- Talk about other minibeast which make interesting structures.

- **Stick insect**



- **Earthworm**

**EARTHWORM**

**BODY**  
The head is more pointed than the other end

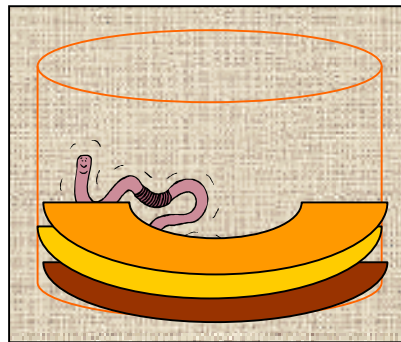
**FEED**  
PULL dead leaves down into the soil and eat them

**HABITAT**  
MAKE tunnels in the soil.  
Usually come to the surface at night.

**HABILITIES**  
HELP mix the minerals into the soil

- **Making a wormery**

Fill a jar with layers of soil and sand.  
 Make sure the soil is damp, then put some leaves on top.  
 Put the worms in the jar.  
 Cover the jar with a dark cloth.  
 The worms will start to tunnel.  
 In a few days the soil and sand will be mixed up.  
 Feed worms with leaves  
 \*Children should wear rubber gloves when handling worms and soil.



- **Communicating**

Encourage the children to make observational drawings to look closely the shape of the tunnels, the colour of the soil and the movement of the worms.

Materials we need	1 <sup>st</sup> observation	2 <sup>nd</sup> observation	3 <sup>rd</sup> observation

- **Measure your worms**

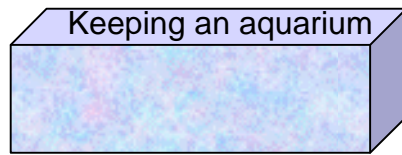
The longest worm is-----cm long.  
 The shortest worm is-----cm long.  
 The fattest worm is -----cm long.

\*Children need to wash their hands after this activity and scrub their finger-nails after handling the worms.

- **Knowledge and understand the world**

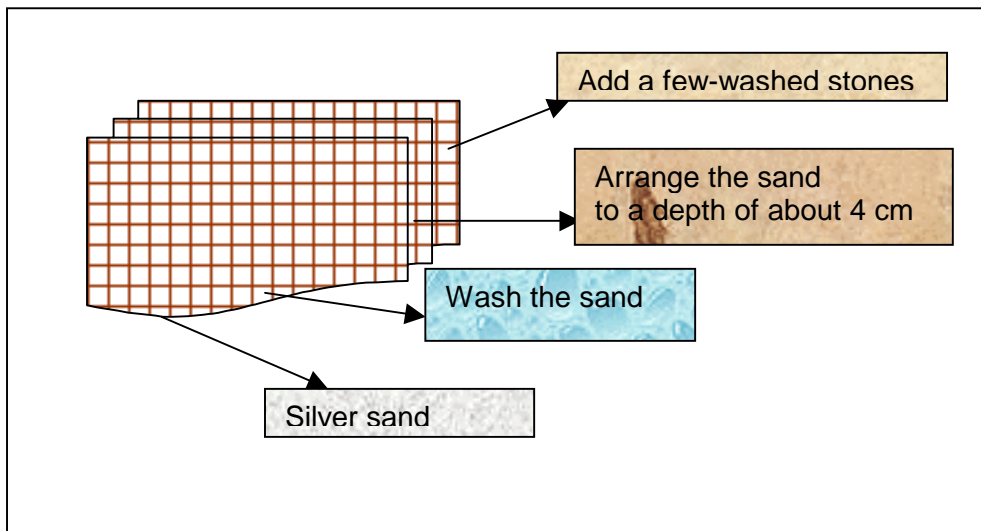
Talk with the children that there are millions of earthworms constantly tunnelling beneath the soil.  
 There are also many types of earthworm.  
 Encourage children to look for some pictures about the different earthworms and discuss about the colour, the size .Display the pictures on the board.

- **Observing water animals**



- **Setting up an aquarium**

1. Select a suitable container.  
A glass aquarium can be bought from a pet shop.
2. Obtain the bottom material.  
Silver sand from horticultural shops.  
Wash the sand well to remove dust.  
Arrange it in the container to a depth of about 4 cm.  
Add a few-washed stones –for visual effect.  
Provide shelter for the animals.
  - Children must be involved in setting up the aquarium.  
At this point encourage the children to draw the sequence of the process.



3. Add water.

Tap water is adequate. It is advisable to use water that has been standing overnight.  
Pour the water, try to not disrupt the bottom material.  
Do not overfill; fill to about two-thirds of the depth and allow a high .



o Exploring with capacity

Before to add the water spend some time with the children brainstorming all the different units they can think of, mass, capacity, or length

Ask children to estimate how much water they will need. It is a very good experience of capacity. Use the the capacity vocabulary:

*Full- nearly full- half full-nearly empty –empty.*

Counting cups.



Compare the capacity of different containers by measuring with non-standard units and counting the number requires.


Pupils need to count the number of times that a smaller container is refilled in order to fill a larger one.


Record how many egg cupfuls each container need to be fill.







o Ask them “Which container holds more water?”

1. How many cups of water do you think the  will hold?  
I think the  will hold....cups of water.

2. Fill it and find out.  
I used .... cups to fill the 

3. Now use some other things to fill the 

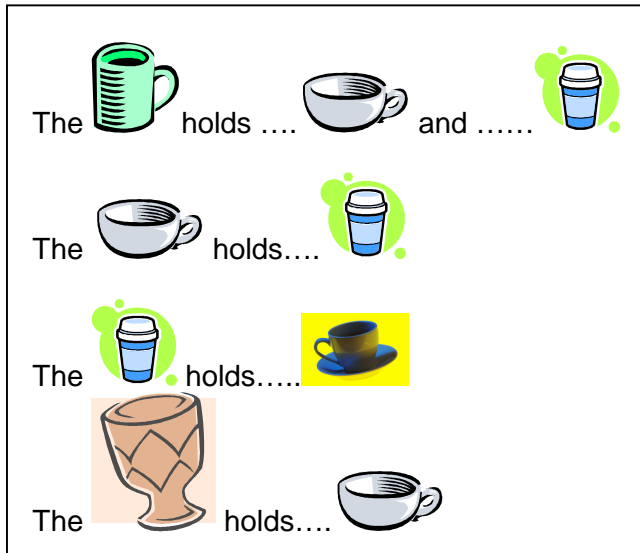
I used  .....to fill the 

I used  .....to fill the 

- o Capacity comparison

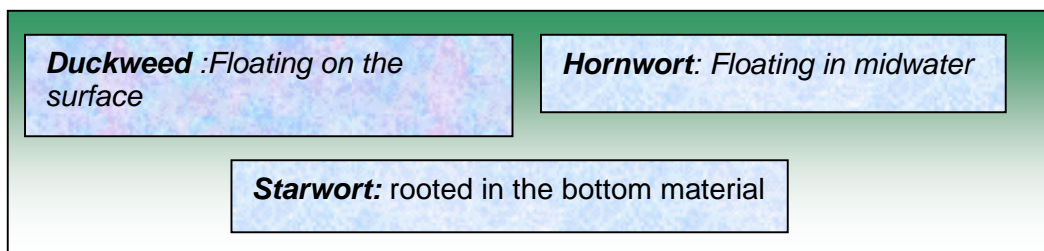
The results from the children's work could be used to make a pictorial block graph, with pictures of egg cups representing the numbers required to fill each container.

**Which one holds more?**



4. Add some plants

Water living plants are kept in the aquarium. Remember that water plants need air so that the aquarium should have a large water surface .Try to provide a *starwort* ,a *hornwort*, and *duckweed*.



5. Add some animals

Goldfish might be added for additional interest. The fish need food which can be obtained from a pet shop.

6. Add a cover

This keeps out dust

Stand the container in a convenient place. Do not keep it in direct sunlight.

A well balanced aquarium will need little maintenance. Should the water become murky try to adding some snails or reducing the light.

• **Observing the aquatic life**

- Look at the different fishes.  
 How many of them are big fishes?  
 How many are little fishes?
- Choose two or three fishes and keep a journal to record observations:  
 What time of the day the different fishes are most active?  
 How do they swim? Fast-slow-alone-
- Look at the physical structures of the fishes.

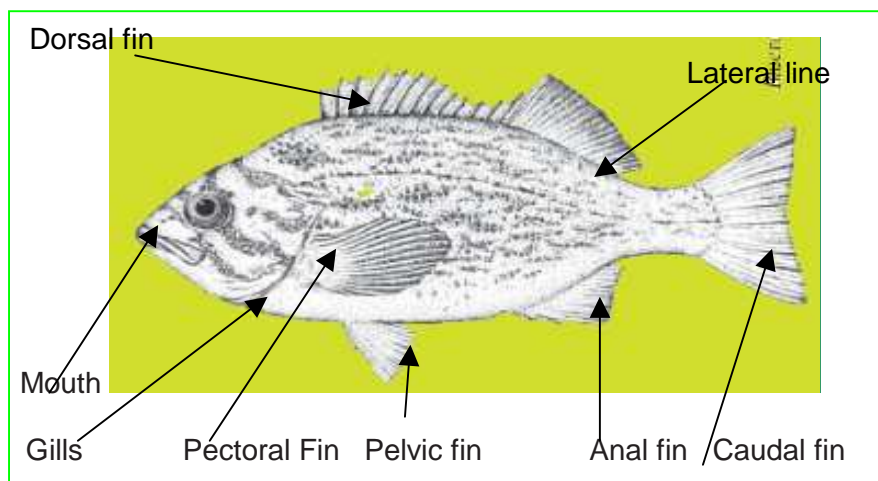


What shape are the bodies?	What shape are the tails?	How are their eyes?	What colour are the fish?
<b>Flattened</b> (flat top to bottom)	Rounded	Big	Yellow
<b>Deep-bodied</b> (flat side to side)	Squared	Small	Orange
<b>Streamlined or torpedo-like</b>	Forked	Looking upward	Red
	Pointed or indented	Looking downward	Blue
			Pink

• **Investigating**

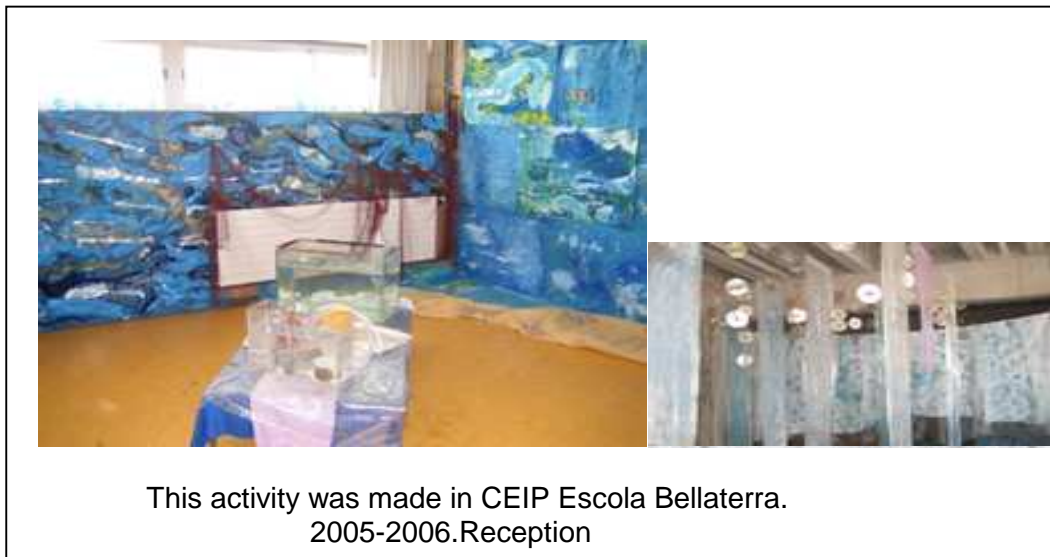
**A fish is a fish**

- Draw a blank fish body on a piece of paper and label the body parts.
- Talk to the children about:  
 What body parts does a fish use to swim?  
 What does it need to breathe?  
 How does it protect itself?  
 How does it sense its surroundings?  
 What body parts does it use to catch and eat its food?



- **Creative development**
  - **Water movements**

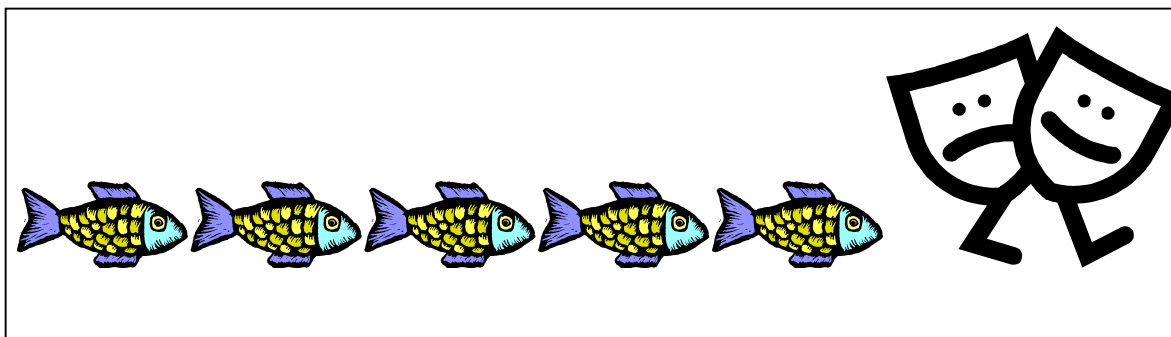
Ask the children to use their bodies to represent different forms of moving water, e.g., raindrops, waterfalls ,waves or aquatic animals while they are listening some aquatic music. You can talk about the different kinds of lines or creatures they have created. Encourage them to draw their movements and show them to the rest in a mural.



- **Arts and crafts.**

### FISH FINGER PUPPETS

Use pieces of felt and fabric to create fish finger puppets (and other sea life!). Put on a puppet show in front of you and sing the song: **Fishing numbers**



- **Design an Aquarium**

**M A T E R I A L S**

- Shoe box or other cardboard box like a tissue box.
- Construction paper
- Favourite arts and crafts materials
- Scissors
- Glue

Encourage children to design their own aquarium exhibition!

Make a diorama. Decorate and cut out some of fishy creatures.  
Tie threads of different lengths to them.  
Use a darning needle to push the end of each thread through the top of the box.

Decorate the outside of the box

Write labels to describe your aquarium:

sea anemone – jellyfish -tiny fish- seaweeds- starfish- tropical fish- seahorse-  
crab- clown fish- scallop- sea snail- sea lug- turtle- sponge...

