

# Fingerprint painting!



## Overall details

Objective	To introduce various native biodiversity in Singapore with a fun and easy activity
Summary	An engaging activity for participants to paint using their fingers and through this activity, they will be able to learn about the native biodiversity that is present in Singapore with various examples given in the guide.
Duration	20 minutes
What you will need:	<p>Materials:</p> <ul style="list-style-type: none"><li>• Guide (provided)</li><li>• Acrylic paint</li><li>• Paper</li><li>• Black marker or pen</li></ul> <p>Tools:</p> <ul style="list-style-type: none"><li>• Hairdryer (optional)</li></ul>
Remarks	Guide can be found on page 3

## Activity description

Participants will dip their fingers in paint and paint different shapes onto the piece of paper. Once the paint is dry, participants can use the marker to draw the animals on top of their respective fingerprint paintings or explore designing it with their own imagination! A guide is provided in page 3 but any other animal could be used in this activity.

The flora and fauna present in the activity are given in the table below

Asian honey bee ( <i>Apis cerana</i> )	Hawksbill turtle ( <i>Eretmochelys imbricata</i> )
Coastal horseshoe crab ( <i>Tachypleus gigas</i> )	Lesser mouse-deer ( <i>Tragulus kanchil</i> )
Common rose ( <i>Pachliopta aristolochiae</i> )	Lipstick plant ( <i>Aeschynanthus pulcher</i> )
Copper-cheeked frog ( <i>Hylarana chalconota</i> )	Malayan ixora ( <i>Ixora congesta</i> )
Dugong ( <i>Dugong dugon</i> )	Spoon seagrass ( <i>Halophila ovalis</i> )
False clown anemonefish ( <i>Amphiprion ocellaris</i> )	White-collared kingfisher ( <i>Todiramphus chloris</i> )

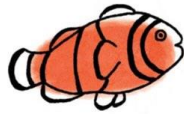
## How to conduct the workshop

No.	Suggested Flow	Facilitators Notes
1	Pull up the guide on your computer or print it out. Prepare the paints and papers for the painting process.	Print the template in colour to match the actual colour of native flora and fauna.
2	Dip the participant's finger in the paint and place the paint-covered finger onto the piece of paper. Paint multiple fingerprints in order to save time during the drying process.	Encourage the participant to use the colour for each designated animal in order to match the colour of the animal or plant.
3	Dry the painting with a hairdryer or just by air-drying.	Participants can go and wash their hands during this point in time.
4	After the painting is dry, a marker or pen can be used to draw over the fingerprints that were painted.	Refer to the guide for some examples of what animals can be drawn. Any other animal can also be used for this activity but do encourage the participants to use native animals.

Image of completed template:



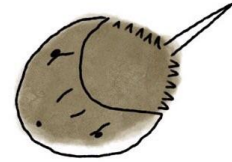
Malayan ixora  
*Ixora congesta*



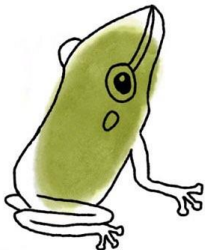
Clown anemonefish  
*Amphiprion ocellaris*



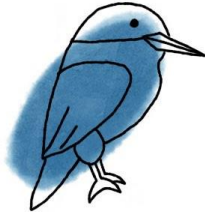
Asian honey bee  
*Apis cerana*



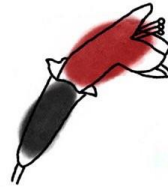
Costal horseshoe crab  
*Tachypleus gigas*



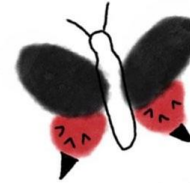
Copper-cheeked Frog  
*Hylarana chalconota*



White-collared Kingfisher  
*Todiramphus chloris*



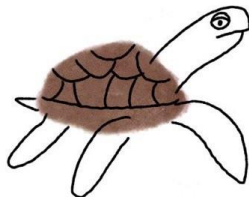
Lipsticks plant  
*Aeschynanthus pulcher*



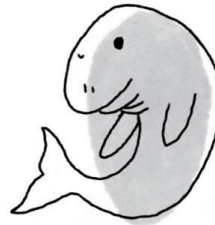
Common rose  
*Pachliopta aristolochiae*



Spoon seagrass  
*Halophila ovalis*



Hawksbill turtle  
*Eretmochelys imbricata*



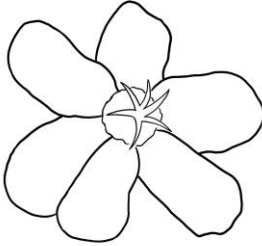




Dugong  
*Dugong dugon*



Lesser mouse-deer  
*Tragulus kanchil*

Extra plants and animals:


Name	Image
Asian water monitor ( <i>Varanus salvator</i> )	
Indo-pacific humpback dolphin ( <i>Sousa chinensis</i> )	
Simpoh lak ( <i>Dillenia excelsa</i> )	

<p>Smooth-coated otter (<i>Lutrogale perspicillata</i>)</p>	
<p>Sunda pangolin (<i>Manis javanica</i>)</p>	

## **Background information**

The following pages are supplementary information on the topics covered in this workshop. Facilitators are recommended to read them to get a better idea of what the workshops aim to teach participants. Below are more details of the local animals that we have featured in the activity.

### **Species of flora featured**

Native name	Information
<p data-bbox="203 615 711 653">Lipstick plant (<i>Aeschynanthus pulcher</i>)</p>  <p data-bbox="203 1266 743 1331">Photo credit: NParks Flora&amp;FaunaWeb, Tamako Kobayashi</p>	<p data-bbox="768 615 922 653"><u>Description:</u></p> <ul data-bbox="813 657 1419 1121" style="list-style-type: none"><li>- It has thick, fleshy leaves that are oval shaped with smooth leaf edges.</li><li>- It is systematically arranged along its long trailing stems in pairs.</li><li>- Its bright red, tubular flowers are encircled at the base by dark red, tubular modified leaves.</li><li>- The modified leaves called sepals are densely covered in short, white hairs.</li><li>- The flowers are vertically oriented and group up in small clusters at the tips of its stem.</li><li>- It is a very common house plant in Singapore due to its aesthetic flowers.</li></ul>

Malayan ixora (*Ixora congesta*)



Photo Credit: NParks Flora&FaunaWeb

Description:

- The malayan ixora can appear as a woody shrub or short understory tree that grows from 2m to 7m tall.
- It has large, thick and leathery leaves which can grow from 12-30cm long and are egg-shaped.
- The older leaves are dark green on the top and light green on the underside while young leaves are a brown colour with obvious veins.
- The flowers first appear a bright yellow and as they mature, turn into a reddish-orange colour with red stalks.
- The flowers are also clustered together in clusters 15-20cm wide.
- The plant produces nectar for insects such as ants and butterflies.

<https://www.nparks.gov.sg/florafaunaweb/flora/2/1/2128>

Simpoh lak (*Dillenia excelsa*)



Photo credit: NParks Flora&FaunaWeb,  
Tee Swee Ping

Description:

- The flowers of the simpoh lak have a deep red centre and are pollinated by carpenter bees as well as small beetles and flies that scramble over the flowers.
- The flower has no scent and produces no nectar.
- Flowers are large (8-10cm) and are showy, typically with 5 large bright petals.
- The flowers usually bloom in the early morning at around 3am and drop off at the end of the day.



Spoon seagrass (*Halophila ovalis*)






Photo Credit: wildsingapore, Ria Tan

Description:

- It is small and has oval, spoon-shaped leaves.
- It can grow up to 0.5 - 1.5cm wide and 0.5 - 2.5cm long.
- The leaf edge is smooth and there are cross veins within its leaf margin (intramarginal vein). The leaves are also held on a long thick stalk,
- The leaves appear in pairs from smooth, thin, white rhizomes (underground stems) which grow to 0.2 cm in diameter.
- It is commonly seen on many of our northern and southern shores.
- They may either form large meadow or small patches.
- It is usually found 30m or deeper in shallow subtidal areas to deeper waters.
- It can tolerate areas with lower concentration of salt as well as water that contains high concentration of dissolved salts.

## Species of fauna featured

Native name	Information
<p>Asian honey bee (<i>Apis cerana</i>)</p>  <p>Photo credit: Zestin W.W. Soh</p>	<p><u>Description:</u></p> <ul style="list-style-type: none"> <li>- It is primarily yellow and has brown/black bands.</li> <li>- The asian honey bee is the most common bee in Singapore.</li> <li>- The asian honey bee will pollinate a wide range of flowers which have available pollen and nectar.</li> <li>- The scout bee will search for a flower using their sense of sight and smell.</li> <li>- After finding a suitable flower, it will dance to communicate a location to other sister bees to collect the pollen.</li> </ul> <p><u>Habitat:</u></p> <ul style="list-style-type: none"> <li>- Asian honey bees usually build their nests in tree holes, overturned pots and under roofs.</li> <li>- The asian honey bee hive consists of multiple parallel wax combs next to one another.</li> </ul> <p><u>Diet:</u></p> <ul style="list-style-type: none"> <li>- Its primary diet consists of nectar and pollen.</li> </ul>
<p>Asian water monitor (<i>Varanus salvator</i>)</p>  <p>Photo credit: NParks Flora&amp;FaunaWeb, Robert Teo</p>	<p><u>Description:</u></p> <ul style="list-style-type: none"> <li>- There are three native monitor lizard species in Singapore, namely the asian water monitor (<i>Varanus salvator</i>), clouded monitor lizard (<i>Varanus nebulous</i>), and the dumeril's monitor (<i>Varanus dumerilii</i>).</li> <li>- The asian water monitor is the largest species of monitor lizard in Singapore, growing up to 3m in length.</li> <li>- It is the most commonly found monitor lizard in Singapore.</li> <li>- Its skin colour ranges from dark brown to black and is covered with keeled scales.</li> <li>- It has very strong and compressed tails that it uses for defense against other predators.</li> </ul> <p><u>Habitat:</u></p> <ul style="list-style-type: none"> <li>- It is commonly found in mangrove habitats and low lying water body regions.</li> </ul>

	<p><u>Diet:</u></p> <ul style="list-style-type: none"> <li>- Asian water monitors eat a variety of insects and meat; they are carnivorous.</li> <li>- They also play an important role as scavengers and play a part in removing dead animals from the environment.</li> </ul> <p><u>Behaviour:</u></p> <ul style="list-style-type: none"> <li>- It is innately shy and usually stays away from humans.</li> <li>- Keep your distance when observing as it may attack you as a form of defence if you get too close to it.</li> </ul>
<p>Clown anemonefish (<i>Amphiprion ocellaris</i>)</p>  <p>Photo Credit: Joy Wong</p>	<p><u>Description:</u></p> <ul style="list-style-type: none"> <li>- It can grow to between 5 to 13cm and is orange coloured with 3 vertical white stripes.</li> <li>- Its fins are rounded and have a fringe of black.</li> </ul> <p><u>Behaviour:</u></p> <ul style="list-style-type: none"> <li>- Anemonefishes of the same species are usually found in groups in the same anemone.</li> <li>- Anemonefish have a symbiotic relationship with sea anemones as the sea anemones will protect the anemonefish from predators and the anemonefish helps to remove parasites and drives off intruders from the sea anemone.</li> </ul> <p><u>Diet:</u></p> <ul style="list-style-type: none"> <li>- It waits until the anemone has stung and eaten its prey and it eats up the leftovers.</li> <li>- It also eats dead anemone tentacles, plankton, molluscs, crustacea and certain parasites that it finds on the host sea anemone's body.</li> </ul> <p><u>Fun fact:</u></p> <ul style="list-style-type: none"> <li>- Anemonefish can change their gender.</li> <li>- The largest clown anemonefish will be the female while the second largest will be the dominant male and the rest are non-dominant males.</li> </ul>

Coastal horseshoe crab (*Tachypleus gigas*)



Photo Credit: NParks Flora&FaunaWeb, Heok Hui

Description:

- Horseshoe crabs have been known to be around for the past 400 million years and hence are known as 'living fossils'.
- Its structure has not changed at least in the last 200 million years.
- There are two species of horseshoe crabs that can be found in Singapore, namely the mangrove horseshoe crab (*Carcinoscopus rotundicauda*) and coastal horseshoe crab.
- The coastal horseshoe crab is the largest horseshoe crab species in Singapore.
- It grows to about 25cm in diameter.
- Its circular shell can either be greyish or brown.

Habitat:

- It is sometimes encountered on sandy shores near reefs, seagrass meadows, in mangroves or muddy bottoms.

Behaviour:

- Horseshoe crabs are often spotted with the smaller male clinging to the top of the larger female.
- During the breeding season, the horseshoe crabs will remain on the shallow end of the mudflat or sandflat where it is the most oxygenated to lay its eggs

Diet:

- Horseshoe crabs play an important role in the ecosystem as their eggs are a source of food for migratory birds such as the sandpiper (*Actitis hypoleucos*) and the ruddy turnstone (*Arenaria interpres*).

Common rose (*Pachliopta aristolochiae*)

Description:

- It has a bright red body and red and white spots on its hindwings
- Its bright colours warn predators that it does not taste good and should be avoided.
- It was originally a jungle species but it is drawn to cultivated areas such as our urban parks where its host plant is being grown in these areas.
- Its host plant is the dutchman's pipe



Photo credit: NParks Flora&FaunaWeb,  
Robin Ngiam

(*Aristolochia acuminata*).

Copper-cheeked frog (*Hylarana chalconota*)



Photo credit: Li Tianjiao

Description:

- The colour of the copper-cheeked frog ranges from bright green to shades of yellow or brown.
- Its snout is pointed, and there is generally a dark stripe extending from the eye to the snout.
- Its hind legs are long and slender, tips of fingers and toes flattened into disks.
- Copper-cheeked frogs are small in size, usually less than 4 cm in length but are able to grow up to 7cm in length.

Habitat:

- It is often found in forest streams with running water.
- It can also be found in shallow streams in various forests in Singapore.

Behaviour:

- Its call sounds like dripping water.
- Click on the link below to hear the sound of its call.
- <https://www.ecologyasia.com/mp3/chalconota-cf-%20labialis.mp3>

Dugong (*Dugong dugon*)

Description:

- It has a streamlined body with a round head.
- Its thick and smooth skin is dull brownish-grey in colour and slightly covered in hair.
- It has stiff bristles on its upper lip.





Photo Credit: Channel NewsAsia

- Its thick forelimbs and paddle-like flippers help it to steer while swimming and it also helps it to move along the seabed during feeding.

Behaviour:

- It breathes air the same way as the other mammals and will need to resurface often for oxygen. Hence, its dives usually last less than three minutes.
- Its fluked tail helps to propel it forward when swimming.

Spotted at:

- Dugongs have been sighted mainly in the Johor Straits off the northeastern coast of mainland Singapore.
- Dugongs can also be spotted in the waters off the Changi coast, off Labrador Beach and around the northeastern islands of Pulau Ubin and Pulau Tekong.

Diet:

- Dugongs feed on marine plants, mainly seagrass.

Hawksbill turtle (*Eretmochelys imbricata*)



Photo Credit: NParks Flora&FaunaWeb,  
Karenne Tun

Description:

- It has a brown shell which is coloured with bright and sporadic yellow and orange patches.
- The upper jaw of the hawksbill turtle juts out beyond the lower one, giving its mouth the beak-like shape.
- Another unique feature of the hawksbill turtle is that there are claws on its front flippers, unlike other sea turtles.

Behaviour:

- Hawksbill turtles prefer shallow coral reefs and avoids deep waters

Spotted at:

- It can be spotted along the Singapore Strait.
- Females have also been spotted laying eggs on East Coast Park.

Diet:

- It feeds on fish, as well as cephalopods (octopus, squid and cuttlefish).

Why they are endangered:

- Hawksbill turtles have been greatly affected by sea pollution and loss of nesting beaches due to land reclamation.
- Many hawksbill turtles have also been caught in fishing nets and died.

Indo-pacific humpback dolphin  
(*Sousa chinensis*)

Description:

- It is usually brown, grey, black in colour and a paler colour beneath.
- Sometimes it is also referred to as 'pink dolphin'.

Diet:

- It feeds on fish, octopus, squid and cuttlefish.

Behaviour:

- It does not go near boats as it is shy.
- It travels in small sizes of school consisting of three to eight animals.
- It is also sighted in singles or pairs.

Spotted at:



Photo credit: NParks Flora&FaunaWeb, Kelvin Lim

- It is regularly spotted in the waters of our southern islands.

#### Lesser mouse-deer (*Tragulus kanchil*)



Photo credits: Issac Sim

#### Description:

- Compared to its cousin, the greater mouse-deer, it is smaller in size, measuring around 40 to 50cm in length.
- It has a reddish brown upper body, whereas the centre of the back of its neck is darker in colour.
- It has three white stripes pattern at the underside of its neck.
- It has a small and short tail.
- Each of its feet has two main hooves and four toes.
- Its coat comes in colour from grey to reddish-brown.

#### Behaviour:

- It is active both during the day and night.
- It is usually alone and can occasionally be found in pairs.

#### Habitat:

- Lesser mouse-deers reside in mature forests and are distributed around our Central Catchment Nature Reserve (CCNR).

#### Diet:

- Its diet consists of leaves, fallen fruits, fungi and shoots.

#### Fun Fact:

- It is the world's smallest hoofed animal.



Smooth-coated otter (*Lutrogale perspicillata*)



Photo credit: Max Khoo

Description:

- It is the largest otter species in Southeast Asia.
- Its fur is thick, velvety and smooth; giving it its name.
- Its fur has two layers: the outer layer fur is called the guard fur.
- The guard fur keeps their underfur dry under water so that it can retain its body heat.
- It has shorter front legs compared to its rear legs, which helps with swimming.

Habitat:

- It is primarily found in low land and water bodies.
- A very sociable creature and are usually found in family groups.
- Family groups comprising a breeding pair and up to four young born that will nest and hunt together.
- It marks its territory with a strong musky scent and this behaviour is known as sprainting.

Diet:

- It eats primarily fish, but also turtles, and molluscs, such as clams and snails.

Dos and Donts when you encounter an otter:

- Observe them from a distance. Going too close to the otters may frighten them.
- Avoid talking loudly and do not use flash photography as noise and light may scare and provoke the otters.
- Do not feed the otters. The otters have their own food in the environment and their natural eating habits keep the ecosystem healthy.
- Do not litter or leave sharp objects in the water. This may hurt the otter families.

Sunda pangolin (*Manis javanica*)



Photo credit: NParks Flora&FaunaWeb, Ingg Thong

Description:

- The sunda pangolin is the only scaled mammal in the world.
- Its body and tail are covered with brown scales.
- It has long claws on the feet and long and tapered tails.
- It is insectivorous and mainly nocturnal.

Why they are endangered:

- The sunda pangolin is globally threatened with extinction.
- It is the world's most trafficked mammal as it is valued for its meat and scales, which are used in traditional medicine.
- In Singapore, roadkill is the major threat for sunda pangolin.

Behaviour:

- It curls up into an armour ball when they feel threatened and may even release a foul smell to deter its predators.
- The infant can sometimes be seen riding on its mother's tails as she forages for food.

White-collared kingfisher (*Todiramphus chloris*)



Photo credit: NParks Flora&FaunaWeb, Cai Yixiong

Description:

- White-collared kingfishers can be distinguished by its blue feathers on the upper part of its body and head with a white chest and body. It has a black bill and feet.
- The juvenile looks similar to the adult but it has feathers that are greener. It also has dark vermiculations (marking that resemble the track that worms make) on their chests.
- An adult sized kingfisher measures around 24 - 26 cm in size.

Habitat:

- Its main habitats are mangrove and coastal areas as well as parks, such as Singapore Botanic Gardens, Bidadari, Lorong Halus, Pasir Ris Park, Sungei Buloh Wetland Reserve and Pulau Ubin.

Diet:

- It feeds on fish, crabs and other crustaceans, lizards, small snakes,

	<p>frogs, earthworms and insects.</p> <p><u>Fun facts:</u></p> <ul style="list-style-type: none"> <li>- The white-collared kingfisher was featured on the S\$10 Bird Series currency notes issued between 1976 and 1984 by the Monetary Authority of Singapore .</li> <li>- It was also featured in 2001 when the Bird Series CashCards were launched by the Singapore Mint to celebrate the 25th anniversary of the launch of the currency notes.</li> </ul>
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For more information on our native flora and fauna, visit:  
<https://www.nparks.gov.sg/florafaunaweb/>

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