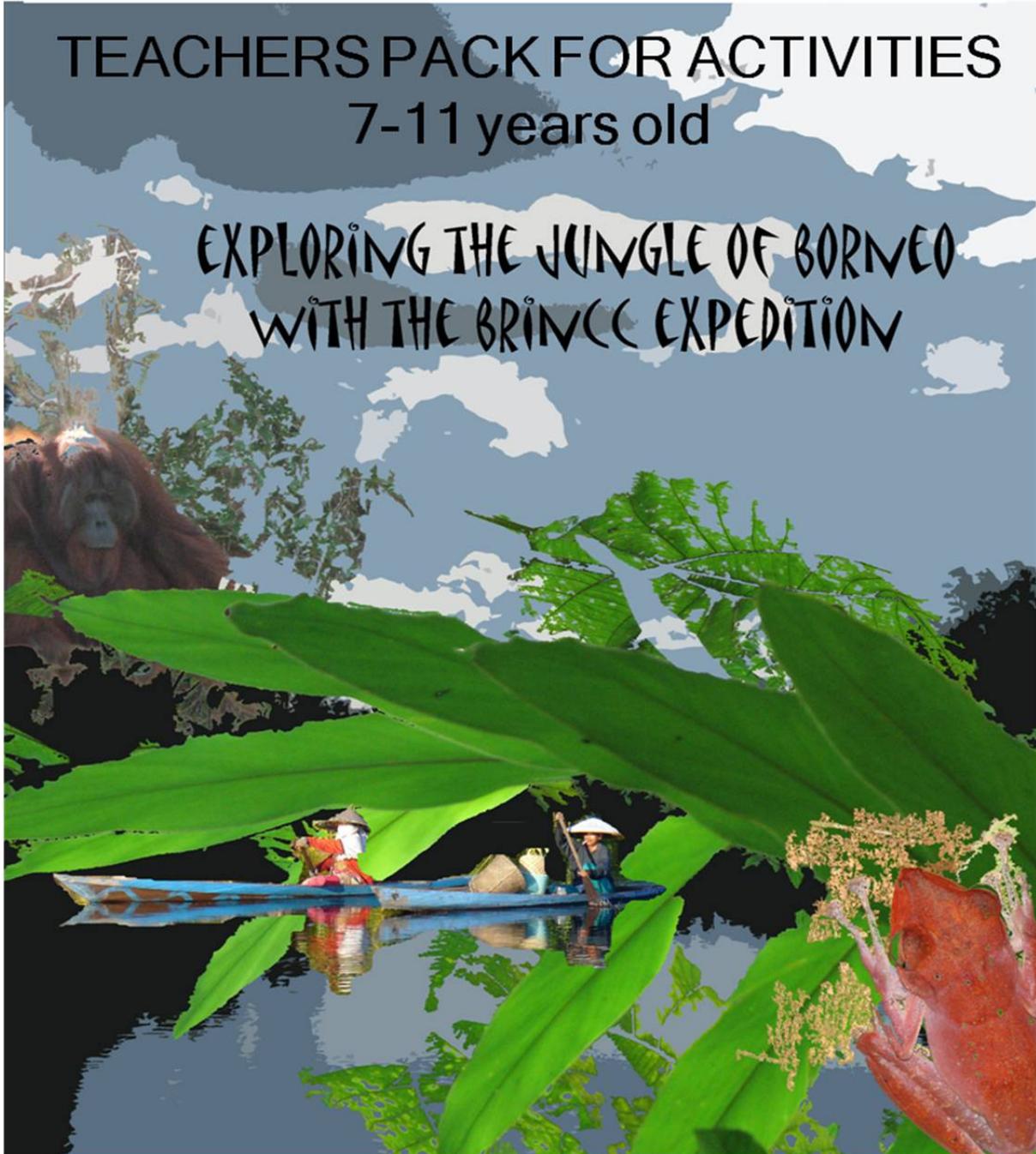




BARITO RIVER INITIATIVE FOR NATURE CONSERVATION AND COMMUNITIES

TEACHERS PACK FOR ACTIVITIES 7-11 years old

EXPLORING THE JUNGLE OF BORNEO WITH THE BRINCC EXPEDITION



WELCOME TO BRINCC

This pack is to help you lead the children through the activities in the booklet and to allow you to provide answers to their questions.

We hope this material and the answers provided will allow you to integrate our expedition and the associated learning outcomes into your lessons with a minimum of preparation time.

We have already trialled this booklet and outcomes with 130 children in Singapore.

If you feel you need extra help or information please feel free to email us brinccborneo@googlemail.com

Very best wishes,

The BRINCC team

Activity 2 (page 5)

The children need to think of ways the rainforest is being destroyed by humans.

Some examples of this are:

- Fire
- Cutting down trees (deforestation for wood)
- Cutting down trees for plantations (e.g. palm oil)
- Building roads
- Creating mines (e.g. coal mines)
- Clearing forest to make new towns or villages
- Soil erosion so trees have no more support (floods)

Other things which can affect the rainforest, and which are valid answers though not human-related, are:

- Earthquakes
- Tsunamis
- Hunting of animals (very bad but this does not directly destroy the forest)

Activity 3 and 4 (page 6 and 7)

This involves a game.

You need:

1. Blankets (enough for about 5-6 children/blanket or sheet)
2. Lots of space
3. A white-board to write down suggestions

Aims

- The children all start out standing on a blanket
- This blanket represents their forest home and they are a family of gibbons
- Ask the children to think of ways the forest can be destroyed (activity 1).
- As they suggest each one, write it down and after each destruction of the forest, you need to fold the blanket smaller to represent the forest getting smaller.
- The children cannot step off the “forest” once it has been made smaller otherwise their family are out the game.
- With 5 possible forest destruction issues you can fold the forest very small, thus forcing the children to squash together. This helps them realise what little space the gibbons have if we destroy their home.
- Now ask what we humans can do to help create more space (forest) for the gibbons? This means the children should suggest planting trees, so you ask them to unfold the blankets to create more forest.

- Ask what else the children think the gibbon would have little of if the forest was very small? We want them to say food as well as space in this.
- You can then ask the children (once they are all sitting down quietly in the big forest) how many different types of food they eat in their lives? This is a lot for most humans. You can also tell them that gibbons and orang-utans need about 200 different trees to help them find food including fruit, leaves, insects, flowers and honey. The apes, like humans, need a varied diet to obtain enough vitamins and minerals.
- **CONCLUSIONS:** animals need space to live and lots of different trees to find food. Ask the children to complete Activity 3 about the problems (not all the answers on the page are bad) and then ask them to complete Activity 4 to think about solutions (keywords are provided)

Activity 5 (page 8)

The River Life Game

You will need:

1. Lots of rope or string in bright colours
2. A card or laminated paper with all the names of the “hubs” on pages 9 and 10 (e.g. mammals, fish, humans etc)
3. Assign one child to represent each hub
4. Ask the other children to think about which hubs would be linked.
5. Tell the story of Senang (below) and ask the children to make the living links e.g. humans eat fish so link humans and fish; fish live in the river so link those.
6. This will end in a bit of a tangle but this is to illustrate how complex the web of life is around a river.
7. Then ask the children to complete their own links on pages 9 and 10. There are 2 pages to allow the children to practice and then draw a final version if they want.

Linkin' River Life Game - narrative

- Instructions are highlighted
- Carry out the exercise without the booklet, there will be time to recap at the end. This also reinforces the message a second time and allows the children to enjoy the first part in its own right
- Encourage children to answer your and ask their own questions (only if they lift their hand!) : this will create a more relaxed environment and make them feel involved

Senang is a man who lives in a village by a healthy river in Borneo. Senang owns a boat, which he made with wood from the trees that grow around his village (**link people to plants and back again**). He uses his boat to fish in the river (**link people to fish**) to provide food for his family and for something to trade. He also uses his boat to travel along the river when he needs supplies and goes to the nearest market village to trade (**link people to river**). The fish Senang eats (and all the other ones) feed on plants that grow in the water (**link fish to plants**), insects that live on and around the river (link fish to insects) and sometimes on amphibians too, like the amazing and mysterious Borneo river shark (**link fish to amphibians and reptiles**). The river shark is completely unknown to science, do you think it might also eat... people?? (**link fish and people, if you dare**). The smaller fish who live in the river are also food for larger fish, like the river shark (**link fish to river to fish**), and birds like the colourful kingfisher (**link birds to fish**) or the Buffy Fish Owl. Have we forgotten anyone? Yes! Mammals also eat fish.

Every now and then, Senang goes into the forest to hunt small mammals and collect plants to supplement his diet and cure

illnesses (**link people to mammals and plants**). On one of his trips he hears some noises in the canopy. When he looks up he sees a group of crazy furry ninjas singing loudly. Well, not really, but that's what gibbons look like. After their song, they settle down to something to eat, in a fig tree (**link mammals and plants**). Primates like gibbons and orang-utans rely on trees for somewhere to live, in family groups or alone (**another link**). Many animal species are vegetarians and rely on plants and their fruits for food (**link birds, amphibians and insects to plants**) and the fig tree is particularly important, because it produces lots and lots of fruit when no other food is available. Animals are also important for the trees, because they disperse their seed (**link plants and animals**). Some animals are carnivores and prey on other animals (**link mammals to birds, amphibians and insects, birds to insects, mammals and, difficult to do in the classroom, but get them to draw an arrow that winds around on itself for mammals hunting mammals in the booklet**). The secretive and beautiful Clouded Leopard, who some members of the team have seen in real life and in the wild, is a mammal at the top of the food chain and hunts other small mammals.

(For the team: things should be pretty tangled by now, but other connections that you could highlight are:

- **all groups connect to the river for food, water, transport, reproductive medium/ protection (definitely do this one)**
- **people and insects, for food (mosquitoes feeding on people and people eating gross stuff like maggots or beetles)**

- **mammals to people, if people get hunted by animals**
- **parasitic/symbiotic relationships linking animals for food / protection / other**

Now, one day some loggers come to Senang's village and tell him they're going to cut down some trees. Unfortunately, Senang agrees/ doesn't have a choice in the matter and lots of the trees surrounding the village are cut down and transported away to be sold.

Once the trees are gone, there is nothing left to hold the river banks together and during the next rainy season there are some land slides, which means that the river banks turn to mud and fall into the river.

With fewer trees and a dirty, polluted river, what is going to happen to the wildlife?

(Start with the kid who represents the plant: cut all his strings, this represents the effect of deforestation)

Mammals (like the gibbons and the orang-utans) as well as birds, insects and some amphibians have less food and fewer places to live: just think that some of these creatures live their whole life in the canopy and never touch the ground!

A polluted river **(cut all river connections)** will lead to fish dying so the birds, mammals and people who eat fish will have less food and could die of hunger.

(most of the links should have come down by now)

When one species is affected, there will always be a consequence for someone else. This includes people.

(Recap the exercise by getting the kids to sit down and write down all the connections in their booklet.)

Activity 6 (page 11)

Ask the children to think about what would break the links in the web of life.

This can be done in the game, where the links (rope) are dropped when something happens or discussed once the children are back in their seats.

Activity 7 (pages 12-14)

These are questions specifically about Asian apes.

You can ask the class to go online and find the answers.

The correct answers are

Q1 – orang-utans as they spend most of their life along

Q2 – this is the gibbons as they sing a duet to mark their territory

Q3 – A young orang-utan will spend up to 9 years with its mother before leaving her and becoming independent

Q4 – Gibbons live in a family group of an adult male, adult female and 1 to 3 offspring

Q5 – Gibbons and orang-utans eat fruit, leaves, insects, flowers, honey and bark (orang-utans only)

Q6 – Gibbons have the longest hands and fingers as these are specially adapted to swing through the forest (a little like humans do on the monkey-bars in the playground)

Activity 8 (page 15)

The Identification Game.

Download the powerpoint presentation from the BRINCC website. This is a game where the photos of the animals, plants or insects have been zoomed in. The children need to guess what they are looking at. The answers are on the slides so the children can copy the spelling.

All the photos are taken by the BRINCC team in the rainforests of Borneo.

The full names of the species and the answers you should aim for from the children are (in brackets) are below:

1. Tarantula (spider)
2. Brown wood owl (owl)
3. Clouded leopard (leopard)
4. Wagglers' pit viper (snake)
5. Pitcher plant (similar to a Venus-fly trap)
6. Tree frog (frog)
7. Butterfly
8. Gibbon (remember these are apes not monkeys)
9. Dragonfly
10. Squirrel
11. Hairy caterpillar (caterpillar) – you can ask what the children think about the bright colours (the caterpillar is poisonous and is warning birds not to eat it)
12. Tarsier (nocturnal monkey)

13. Caddisfly (insect will do) – this has built a house of small twigs and is only about 3cm tall
14. Orang-utan (eating banana). Again this is an ape not a monkey
15. Praying mantis
16. Proboscis monkey (monkey)
17. Rhinoceros beetle (beetle)
18. Stick insect (the children may need to be told a clue e.g. this creature resembles a twig)
19. Sun bear (bear)
20. Leaf insect
21. Bat

Activity 10 (pages 17 and 18)

Fantastic Forest Facts

This is for the children to do at home or online in class.

The answers are:

Q1 Is it true or false that many birds and animals live and die in the Rainforest without ever touching the ground?

Answer - True! The canopy is so diverse and plentiful, they never feel the need to touch base with their ground dwelling neighbours

Q2 When the female Hornbill, the symbol of the world famous BRINCC Expedition, is ready to lay her eggs does she

- a. get her mate to build a nest, then lays the eggs
- b. lays the eggs in another bird's nest
- c. walls herself in her nest, in the hollow of a tree, for three months

Answer: c. She leaves a small opening so her mate can pass food to her and the chicks. She breaks down the entrance only when the chicks are ready to fly. And why does she make herself a small prison-like nest? To protect her chicks from predators like snakes!

Q3 The Rafflesia flower is large plant, with five beautiful red and white petals. Is it

- a. a parasitic plant that smells of rotten carrion
- b. a mushroom in disguise
- c. a sweet smelling forest favourite

Answer - a. It stinks! It needs to attract animals that normally feed on rotten carrion. However, it is extremely rare and (fortunately for our noses) only flowers (and smells) for a few days.

Q4 How does this snake get around in the rainforest canopy?

- a. it slithers along tree branches
- b. it coils itself like a spring and jumps along like Tigger
- c. it glides through the air

Answer - c. It glides! Just like this!





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