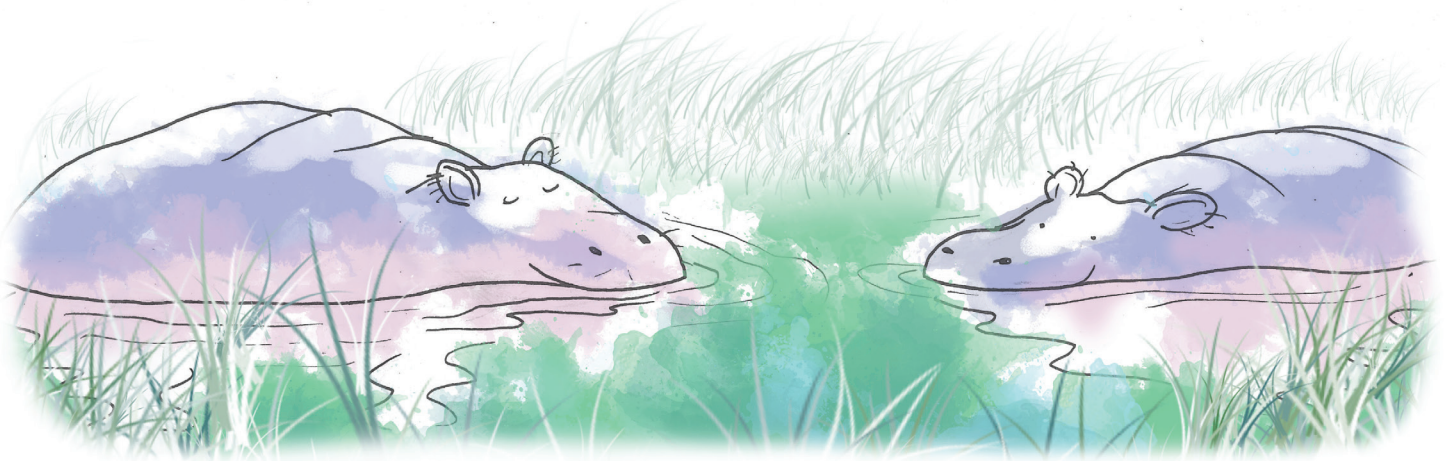


**KEY
STAGE 2**

HAPPY HIPPOS

Learn more about the Pygmy Hippos at ZSL London Zoo



**LET'S WORK
FOR WILDLIFE**

Animals and their habitats face increasing threats across the world. Donate to ZSL to help build a future where animals are valued and their conservation assured. ZSL is a registered charity in England and Wales no: 208728

This pack includes the following activities:

Art and design

Students will apply art and design techniques to compose a multimedia underwater hippo picture

English

Students will create a story or write a report about pygmy hippos

Geography

Students will choose suitable number operations to solve 'real life' geometric problems

Science

Students will identify the needs of pygmy hippos in captivity and describe some basic biology of pygmy hippos

Art and Design

Intended learning outcomes

- Students will apply art and design techniques to convey a message to an audience

Activities

LA

1. Compose a multimedia underwater hippo picture, inspired by the illustrator Melanie Mikecz image “Underwater Hippo”

Steps:

- a. Draw your pygmy hippo in oil pastel or wax crayon. Remember that anything you draw with a white crayon will stay white later. Don't forget to add the swamp bed, plants and other animals that you want in your picture.
- b. Use a blue crayon/pastel to draw a water line across your page.
- c. Mix a small amount of blue tempera paint with water.
- d. Use a sponge brush to apply the watery paint all over your picture – keeping to below the water line you have drawn.
- e. Use a paper towel to blot away any excess paint

MA

2. Make a collage using images of the pygmy hippo habitat, the food they eat, threats from humans, predators etc. to fill a pygmy hippo outline. Look at Tony Cragg's work for an idea of how the collage could be composed [See pygmy hippo outline resource]

MA Extension

Use your class collage as the focal point of an exhibition to raise money for the Pygmy Hippos. You could display other art work, compose poems, and broadcast a news report to help your audience learn about pygmy hippos

HA

3. Design a plan for a pygmy hippo enclosure using scale and 2D images

HA Extension 1

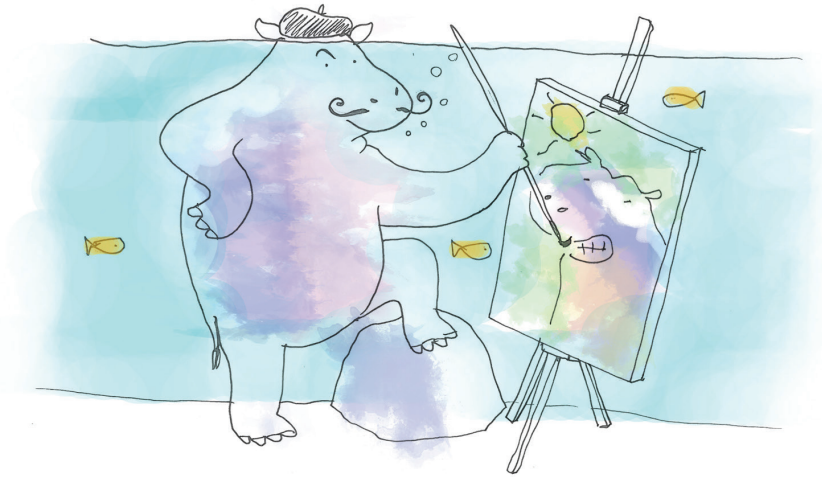
Think about what the animal needs. ZSL London Zoo has a duty to keep animals happy and meeting the “Five Freedoms” (<http://www.defra.gov.uk/fawc/about/five-freedoms/>). Your students should think about:

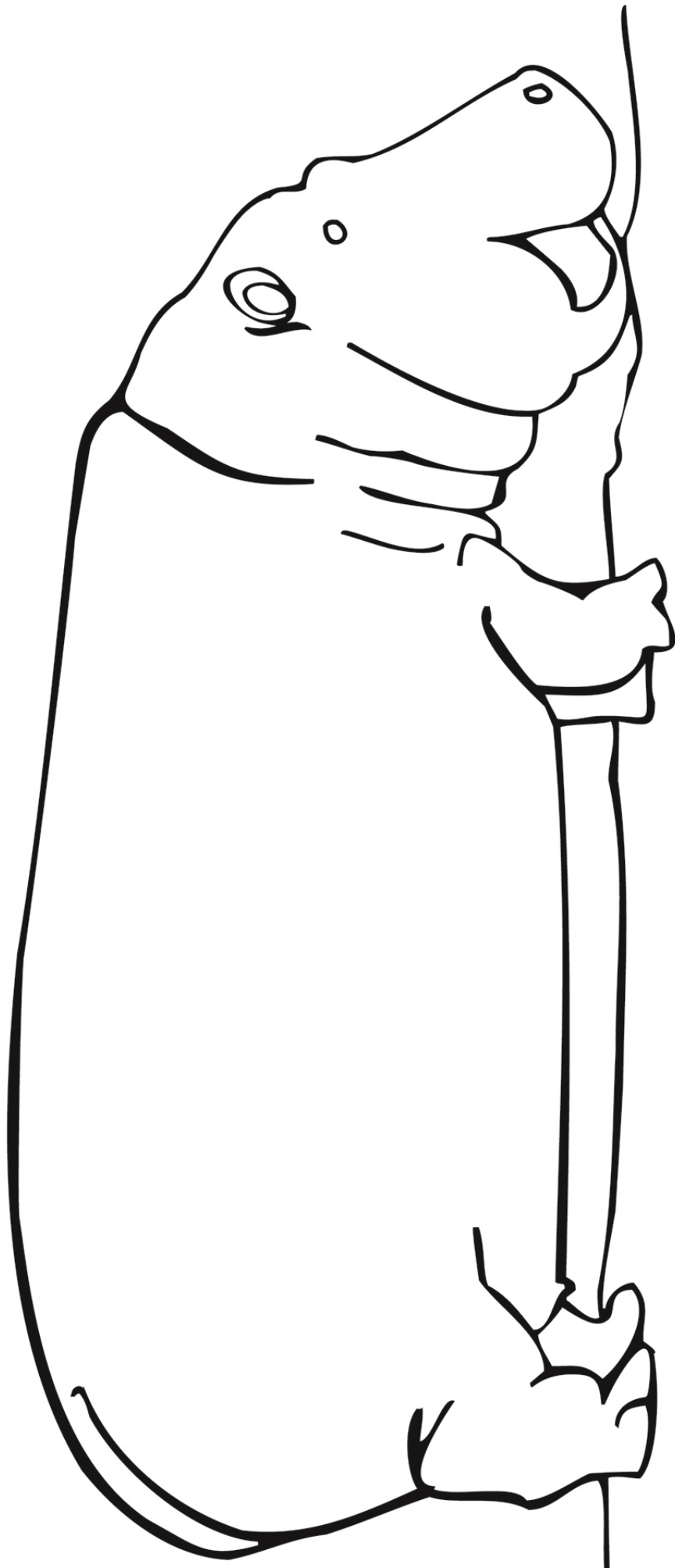
- Somewhere for the pygmy hippos to eat and access drinking water
- A comfortable temperature pool for the pygmy hippos that they can access, Somewhere for the pygmy hippo to sleep and relax
- Toys for the hippos to keep them active and stop boredom
- A place where the pygmy hippo can hide if it doesn't want to be watched
- Somewhere for the hippos to stay when it is bad weather
- Access for the zoo keepers to safely access and clean the enclosure
- An area where visitors can watch the pygmy hippos and learn more about them

HA Extension 2

Use found materials to create a scale 3D model.

E.g. Twigs for trees, stones for boulders, moss for grass, yoghurt pot for the pool etc.





English

Intended Learning Outcomes

- Students will use written and spoken word to interest and educate their audience
- Students will use dramatic techniques to explore and understand the circumstances of other people

Activities

LA:

1. Create a story about a pygmy hippo coming to live with you. What might you need to give them to eat, sleep, so it is comfortable?

LA Extension:

Design an enclosure for the pygmy hippos and write a report to ZSL London Zoo advising our keepers on what they should include in their enclosure.

Dear ZSL London Zoo,

As a pygmy hippo this is what I would like in my enclosure...

...Signed Thug the Pygmy Hippo

MA:

2. Create a report which can be filmed, recorded as a podcast, or written in the style of a newspaper article introducing the pygmy hippo to a British audience. What new facts can you find to include?

MA Extension

What if a pygmy hippo was the journalist writing about humans. How do they feel about the way that we treat them and their habitat?

HA:

3. Debate in character. Allow students time to research and prepare for their side of the argument using the statements on the resource cards as a starting point.

"Should deforestation be banned to save the pygmy hippos?"

"Should African governments spend money on saving pygmy hippos?"

HA Extension

Students act out a scene using the statements as a stimulus. The rest of the children are "spectators". The children or the teacher can shout freeze at any time and question the characters as to why they are behaving a certain way, and suggest an alternative. For example "Why are you burning the trees?" "To make space for crops" "Can you try just cutting down the trees you need to stop forest fires, and replant trees in fields you no longer use?". The characters then act out this new scenario. If the students think this will not work, they can stop the action again and discuss why.



Pygmy hippo statement cards resource

Farmers

- With more people on the planet, farmers need to grow more and more crops like cocoa, coffee, and palm nut each year
- To produce rice we need to first drain the swamps
- The quickest way to clear land for farming is “slash and burn”
- Animals like pygmy hippos eat and damage our crops – if we have no crops, we have nothing to sell

Villagers

- We don't know much about pygmy hippos – we had heard that they are able to kill a human and that their skin is bullet proof
- It is a long way to the supermarket – if we need meat it is easier to hunt what we find in the forest
- Pygmy hippos damage our fishing nets making it hard to catch fish to eat
- There is not a lot of money in our village

Conservation Scientists

- We want to save the pygmy hippo from extinction as they are very unique animals
- We want people to stop cutting down the trees and draining the swamps so that pygmy hippos have a place to live
- We want local people to learn about pygmy hippos and understand why they should be protected
- We need to do lots of research and patrolling to protect an endangered species. This costs a lot of money

Poachers

- Most of the villagers eat meat which we catch and sell from the forests
- Sometimes our traps catch unexpected animals which we can also sell
- Rich people in towns like to eat unusual meats. We make a lot more money from a pygmy hippo than a chicken
- Parts of the pygmy hippo that are not eaten can be sold to be used in traditional medicines

Pygmy Hippos

- There are less than 3,000 of us left in the wild. With people cutting down our forest it is very hard to move from one place to another to find our friends and family
- We are scared of people – some hunt us
- We are herbivores, we only eat plants
- We weigh about half a tonne and can be very clumsy. We don't always look where we are going and can squash things that get in our way

British Supermarkets

- Our shoppers want a wide variety of products as cheap as possible
- Palm oil is found in around 80% of products we sell like biscuits, soap, makeup, and peanut butter
- Some of our most popular products include rice, coffee, chocolate, newspapers, tinned products and toilet roll
- Many of our shoppers want to protect the environment by recycling and buying responsible products

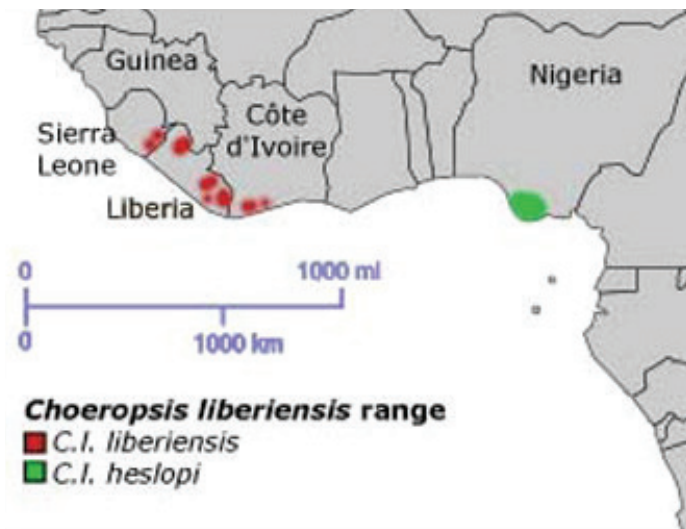
Geography

Intended learning outcomes:

- Students can identify and describe where pygmy hippos come from and can list some reasons for these animals being endangered
- Students can identify the needs of pygmy hippos in a zoo enclosure

LA

Pygmy hippos live in rivers and swamps of lowland forest of Western Africa.



The keepers at London Zoo want to make their new enclosure as similar to their habitat as possible. Can you design a new enclosure for Thug and Nicky? Look at the images of pygmy hippo homes below and create your own enclosure for our two pygmy hippos! Draw your new enclosure in the box below.



LA extension:

Explain why you have chosen certain items from the selection of items provided. How can you make sure this enclosure is environmentally friendly?

MA

Pygmy hippos live near streams and swamps of rainforest in Western Africa. They are endangered out in the wild, can you think of any reasons why? List them below:

MA extension

What can zoos like London Zoo do to help these animals from becoming extinct?

HA

Pygmy hippos' natural habitat is warm and moist. The Pygmy hippos prefer a temperature of around 20°C for the inside of their enclosure. How would you make sure their new enclosure has the same conditions?

Find out what the humidity should be for the inside of their house to be similar to their natural habitat. How would you measure this and keep it at the same level?

HA extension

London zoo wants to be as sustainable as possible. Heating up the enclosure will be the main factor for using up large amounts of energy. Think of a renewable energy source that will help keep the pygmy hippos warm at their new London Zoo enclosure without harming the planet!

Mathematics

Intended learning outcomes

- Students will choose suitable number operations to solve 'real life' geometrical problems.
- Students will identify and use appropriate standard units
- Students will calculate perimeters and areas of simple shapes

Activities *(for relevant answers see back of booklet)*

LA:

1. If Thug is 175cm long and Nicky is 158cm long, how much longer is Thug?
2. If Thug is 83cm tall and Nicky is 75cm tall, how much taller is Thug?
3. Nicky weighs 228kg and Thug weigh 316kg:
 - a. Every day?
 - b. Every week?
 - c. In the month of September?
 - d. Every year?



LA Extension:

Please provide students with a 1cm grid 10x10cm.

5. The keepers at ZSL are thinking of building a new enclosure for Thug and Nicky and need your help!
- a. Using the grid, can you design a new enclosure, making sure to include all of the things Thug and Nicky need to enjoy themselves? When you are finished, draw Thug and Nicky in opposite corners of the enclosure.

You need to include:

- 4 water trays
- 2 food areas
- 11 bushes/trees
- 6 large rocks/stones (etc. - any other items you would usually find there!)

- b. Can you give directions through a clear path so that one can find the other?

MA:

6. The keepers at ZSL are of thinking of building a new enclosure for Nicky and Thug. They have 60 metres of fencing to use.
- a. Can you design three different rectangular-shaped enclosures that each have a perimeter of 60m?
- b. What is the area of each enclosure?

MA Extension:

7. What's the smallest area enclosure you can create with a perimeter of 60m? (This can be an irregular shape)
8. What's the largest area enclosure you can create with a perimeter of 60m? (This can be an irregular shape)

HA:

9. On a hot day, Thug drinks 40 litres of water. However, the keepers only have a 30 litre and a 50 litre bucket. Can you measure out exactly 40 litres using only these two buckets? You can refill as many times as you need using the tap.

(Read question to students and give 5 minutes for students to generate ideas as how to solve problem. Discuss ideas as a class, letting students know that the buckets aren't calibrated so they can't just measure 40 litres in the 50 litre bucket, and that they are not able to estimate as the measurement needs to be exact. No other containers are available to use.)

10. The keepers at ZSL are thinking of building a new enclosure for Nicky and Thug. They have 40 metres of fencing to use and need to build the enclosure in a closed rectangular shape.
- a. How many different enclosures can they make and what would the area of each be?
- b. Working systematically, can you find all of the combinations?
(Example of working systematically: 1m x 19m x 1m x 19m; 2m x 18m x 2m x 18m; 3m x 17m x 3m x 17m etc.)
- c. Which enclosure would you recommend they build? Why?

Answers

Mathematics

1. 17cm
2. 8cm
3. a. 544kg b. 88kg
4. a. 2.5kg b. 17.5kg c. 525kg d. 912.5kg
6. a. For example, 15m x 15m; 10m x 20m; 12m x 18m
b. For examples above 225m²; 200m²; 216m²
7. 29m²
8. 225m²
9. Fill the 50 litre bucket, and pour into 30 litre bucket, leaving 20 litres in the 50 litre bucket.
Empty the 30 litre bucket.
Pour the 20 litres from the 50 litre bucket into the 30 litre bucket.
Refill the 50 litre bucket and pour 10 litres from it to fill the 30 litre bucket.
That leaves 40 litres in the 50 litre bucket.

Science

Intended learning outcomes:

- Students can identify some of the needs of pygmy hippos in captivity
- Students can describe some basic biology of pygmy hippos

Pygmy hippos are herbivores and like to eat grasses, tender shoots, ferns, shrubs, leaves and fallen fruit out in the wild. At London Zoo the keepers feed Thug and Nicky a mixture of herbivore pellet leaves and vegetables.

LA

Some of Thug and Nicky's food at London Zoo is given to them in large bowls. Choose the most suitable type of bowl for our hippos and explain why below.



I chose the _____ bowl because

LA extension

Explain why you chose your hippo feeding bowl in terms of what material it is made of. Complete the comparison table below for the advantages and disadvantages of each bowl type, to help you justify your answer:

Bowl type	Advantages	Disadvantages
Plastic		
Ceramic		
Metal		

MA

Looking after Thug and Nicky at London Zoo is not easy! The Keepers have to ensure they are happy and healthy animals. Their keepers will interact with both of them regularly by rubbing their bellies and 'showering' them with lukewarm water to make sure their skin does not dry out! Thug and Nicky are trained to open their mouths wide regularly so that the keepers can check their teeth and gums for cuts, damage or infections.

The keepers will also have to ensure that Thug and Nicky don't get overweight. Find out what the ideal weight for a male and female pygmy hippo should be and explain how you would ensure Thug and Nicky stay within this range.

MA extension

Create a monthly chart where you could record Thug and Nicky's weight. If you were a pygmy hippo keeper at London Zoo how would you train your animals to be easily weighed regularly? Explain your method below.

HA

Enrichment happens every day at the zoo. Enrichment can sometimes be given to the animals as toys or games for them to play with or find. Most animals are also given enrichment at feeding times to encourage them to behave the same way they would out in the wild whilst feeding.

Can you explain what enrichment is? What enrichment can you come up with for Thug and Nicky's feeding time? Draw it in the box and explain below:

HA extension:

Explain why enrichment is important for captive animals and compare the pygmy hippo enrichment you designed with enrichment the keepers might give to the giraffes- for example placing 'browse' branches (branches with leaves for the giraffes to eat) high up on their enclosure to encourage their natural feeding behaviour).