Dressing Up Bag

Dinosaur Dress-up

Use the questions on this sheet to explore the items in your bag more closely and understand their significance for the dinosaur that they belong to.

Encourage your group to experiment with the items whilst attempting some of the questions. This bag can be used throughout the Fossil Stories gallery.

Introduction

You are going to be transported back in time to the Mesozoic period, and become a dinosaur.

- **How long ago was the Mesozoic period ?**

(The Mesozoic is the name covering the Triassic, Jurassic and Cretaceous. It is sometimes called the Age of Reptiles. It covered the time from about 252—66 million years ago)

In this bag are four items. in order to become a dinosaur you should wear the items which each represents a characteristic of four famous dinosaurs.

The Bag

The bag is going to give us some clues to what we might find inside. Encourage the group to feel the different textures on the bag

- **Can you name the dinosaurs on the bag?**

Tyrannosaurus rex; Spinosaurus; Triceratops; Pterodactyl

- **What do you think we might find in it?**

Tyrannosaurus rex arms

Find *T. rex* in the Fossil Stories gallery, try on the glove-like arms of the *T. rex* and explore the questions below:

- Can you find the *T. rex* skeleton?
- Describe its arms (what's odd about them?)
- What do you think the arms were used for?
- What food do you think it ate?
- How do we know that the *T. rex* existed?

Triceratops head

Have one of the students try on the head:

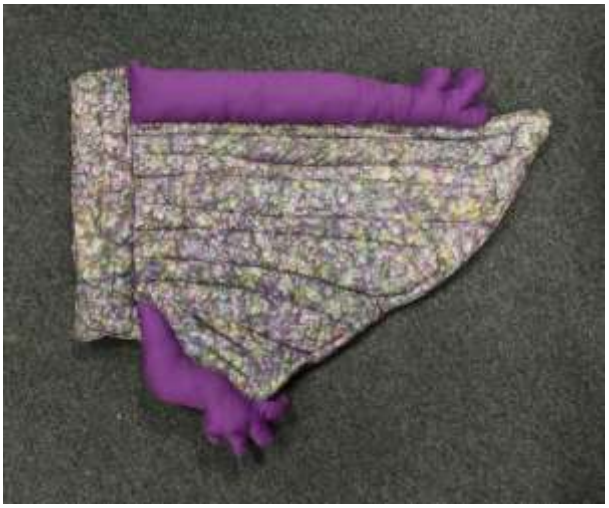
- Describe the head.
- What do you think the horns were used for?
- How do you think the head helped the *triceratops* to survive?
- What do you think the *Triceratops* eat?

Spinosaurus spine

Wear the spine like a backpack, and become the largest meat eating dinosaur:

- Describe its spine
- Would you like to have a spine on your back?
- Why do you think the spine was so big?
- Did the spine help the *Spinosaurus* survive?
- Do you think this would have been a big dinosaur?

Pterodactyl wings



Try on the wings of this flying reptile:

- Describe the shape and size of the wings.
- How do you think the wings helped the *Pterodactyl* to survive?
- Where do you think it may have lived?
- Which modern animal does it remind you of?

Which dinosaur is your favourite?

- Which of the four dinosaurs do you think was the biggest? (Spinosaurus)
- Why do you think the dinosaurs are not around today?
- When you wear the costume—stop like a dinosaur and make a dinosaur roar!

Try the extension activities for further fun ways to explore this bag.

Dinosaur Dress-up

Use this extension sheet in your group to explore the bag further and think about the different costume parts.

Survival of the fittest

As a herd of dinosaurs explore the Fossil Stories gallery whilst dressed as dinosaurs and find all five objects below:

- The Iguanodon skull
- The *Archaeopteryx* model
- The Royal Python
- The fossil showing footprints of a *Cheirotherium*
- The fossilised cycads

In order for a dinosaur to survive, it had to be better at using its environment (fitter) than the other animals around it. If your group found all of the objects above, then you are showing the skills to succeed in this environment.

Feature spotting

Look at the images provided in the bag, they each show a dinosaur. Dinosaurs each had their own special features, so we can tell them apart.

Image 1 (Stegosaurus)

- Can you name this dinosaur?
- What do you see?
- What special features can you see (eg plates on its back)?
- How do you think these features helped the dinosaur to survive?

Image 2 (Brachiosaurus)

- Can you name this dinosaur?
- What special features does it have?
- What is different to the dinosaur in image 1?
- How do this dinosaur's features help it to survive?

Create a dinosaur

Combine the different costume parts to create your own unique dinosaur.

Try using the *Triceratops* head and the *Pterodactyl* wings together

- What do you think this dinosaur would be called?
- Would this dinosaur survive against the *T. rex* ?
- What do you think this dinosaur would eat?

Explore by using the *T. rex* arms and the *Spinosaurus* spine together

- What would you call this dinosaur?
- Where do you think this dinosaur would live?
- What is the word for an animal that eats meat?

Can you think of any other combinations to create a dinosaur?

- **Talk about the dinosaur you have made with the rest of your group**
- **What would you name your dinosaur?**

Dino Director

Try this fun acting game using the dinosaur parts provided in the bag

Whilst in costume, try walking around like a dinosaur in front of your group.

- How would you walk?
- Would you be make a noise?
- Would you be moving fast or slow?

As a dinosaur, you have just found some food, show your group what you would do:

- Would you quietly sneak up on it?
- Or would you loudly attack it?

You are running away from an angry *T. rex.*

- Describe to your group how you are feeling
- Is the *T. rex* making any noises?

Explorer Bag

Dinosaur Explorer

This bag should be used in the Fossil Stories gallery. Use the questions on this sheet to allow your group to explore and think about the objects and the bag more closely.

Encourage your group to use the equipment when trying to locate things in the gallery.

Introduction

You are going to become a dinosaur explorer.

- What is the name for people who dig up dinosaurs? (Palaeontologist)

In this bag are some different tools and objects that might help you become a dinosaur explorer.

- What tools and equipment do you think we would need to be palaeontologists?

The Bag

- How does this bag feel?
- What can you spot on the bag?
- What words can you use to describe the bag?
- Can you see any fossils on the bag?
- Have you ever found a fossil?
- Where can you find fossils?

(In rocks. At the seaside, in quarries, by rivers—anywhere rocks are exposed)

Feathers

- Describe how this object feels.
- Can you think of anything that has feathers? (bird)
- Find an ancient creature with feathers (look for the archaeopteryx material near the *T rex*)
- What is this creature called? (archaeopteryx)
- Can you find out any facts about it? (it is half way between a dinosaur and a bird)
- Where would you go if you could fly?

Leaf

- How does the leaf feel?
- What do leaves come from?
- What kind of animals eat leaves today?
- What kind of dinosaurs might have eaten leaves?
- Can you find a fossilised leaf in the gallery?

Shells

- How do the shells feel inside and outside?
- Where might you find shells?
- Can you find any fossil shells in the gallery?
- Can you spot some different shaped shells?
- Where did these creatures live?

Tooth/Claw

- Describe how these objects feel.
- What do you think they could be?
- What kind of dinosaurs do you think might have had sharp claws or teeth?
- What do you think these dinosaur might have eaten?
- Can you find a dinosaur with sharp teeth in the gallery?

Tools

- What tools do palaeontologists use? (hammer, trowel, brush, magnifier, hard hat)
- How does the brush feel?
- Why does a palaeontologist have a brush?
- What does a magnifying glass do?
- Look through the magnifier: what do things look like?
- How would you use the trowel?

Try the extension activities for further fun ways to explore this bag.

Dinosaur Explorer

Use the extension activities on this sheet to allow your group to explore and think about the objects and the bag more closely.

Fossil clues

Look at the pictures in envelope 1
In your group try and decide what you think these would have looked like as fossils.
How do you think they would feel?

Fossils that we see are usually the harder parts of dinosaurs or creatures, like bones, with the soft bits having decomposed.

Fossil matching

Now look at the pictures in envelope 2.
In your groups match up the fossil to the creature it came from using the pictures in envelope 1.
What bits have gone and which bits have been fossilised?

Spot

See if you can spot any of these fossils in the gallery.
Can you see any other fossils in the gallery?
How do you think these fossils would have looked like when they were alive?

Cube

The cube has 6 different directions to help your group explore the gallery. Take turns rolling the cube and doing what the cube tells you too.

Acting

Pretend that you are a Palaeontologist.

Find your tools and equipment.

Pretend that you are excavating and that you come across a fossil

- how would you feel?
- would you be excited?

Pretend you have found a fossil, and that you are holding it in your hand.

Tell your group what it looks like, and how it feels.

- What colour is it?
- What texture does it have?
- What shape is it?

Now get your tools. Show the group how you think you would use the tools.

What would you do with the brush? Demonstrate to the group.

What is your fossil from? Is it part of a dinosaur or an other mysterious creature?

Imagine that if you touched the fossil you were transported to the time of the dinosaurs.

What does this other world look like?

- is it scary or exciting?
- can you see any dinosaurs?
- describe your world to your group

Fossilisation Bag

Fossilisation

Use the questions on this sheet and objects in the bag to explore the theme of fossilization.
Encourage your group to handle the objects, feeling the shapes and textures. Please handle the fossils with care, they are all real and very, very old!

Introduction

You are going to become a fossil finder.

- Can you name any types of fossils?
- In this bag are some different fossils. To get a fossil out of the rock, we need some special tools. Can you think of what tools you might use?

The Bag

Encourage the group to feel the bag.

- What can you see on the bag?
- Think of 5 words to describe what you see on this bag.
- Can you see any animals on the bag?
- Can you see any plants on the bag?

Inside the bag you will find a collection of 5 small pockets. In each pocket is a different type of fossil. Pass these around the group.

Keep reading to find out more about each of these fossils. The fossils can be discussed in any order.

Fossil questions:

- Have you ever seen a fossil before?
- How do you think you should handle them?
- What do they look like?
- How do they feel?
- What do you think they could have been?

Use the fossils in cases around the gallery to help you learn more about each type of fossil and to see images of what they would have looked like alive. See also the images on the following sheets.

Trilobite

- Can you imagine what it might have looked like when it was alive?
  Does it look like any insects or creatures we see around today?
- What parts of the creature do you think have rotted away? (legs)

Ammonite

- Where do you think it might have lived? (in the sea)
- Which bit of it is fossilised and which bits are missing (this is the shell; the soft bits have gone)

Belemnites

These creatures looked like squid. They had 10 arms or tentacles.

- Do you think this creature would live on land or in the sea? (in the sea)
- Which bit of the animal could this be? (it is a 'guard' bone from inside it— unlike squid it had a hard skeleton)

Crinoid

This creature would have lived under the sea. It looked like a plant but it was actually an animal.

- Can you find the stem?
- What do you think the rest of this animal would have looked like? (look in the gallery to find bigger specimens and reconstructions)

Echnoid

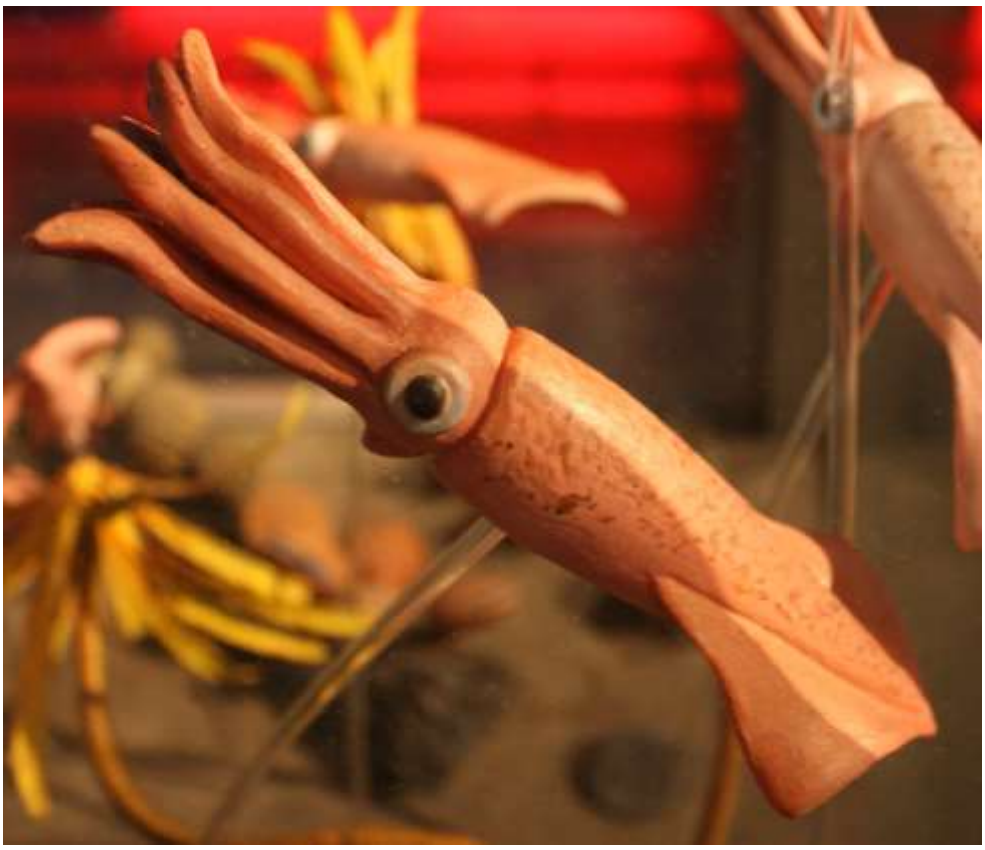
This is the shell of a fossil sea urchin. It would have had spines sticking out of it.

- Do you think it would be good or bad to touch?
- What do you think happened to the spines (they fell off and they don't fossilise as easily as the shell)

Trilobite

Ammonite

Belemnite



Crinoid

Echinoid

"Phyllacanthus" by Didier Descouens - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons - http://commons.wikimedia.org/wiki/File:Phyllacanthus.jpg#/media/File:Phyllacanthus.jpg

"Paracentrotus lividus profil" by FredD - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons - http://commons.wikimedia.org/wiki/File:Paracentrotus_lividus_profil.JPG#/media/File:Paracentrotus_lividus_profil.JPG

Fossilising an Ammonite

Take out the box and have a look at the knitted prehistoric animal.

- What animal do you think you're holding?

(it is an ammonite)

- Have you seen this animal anywhere else today?

(look on the front of the bag—and in the gallery if you have already explored it)

- Where do you think ammonites lived?

(in the sea)

- What do you think the different bits are?

(the curly bit is a shell and the bit with tentacles is soft parts—head and tentacles)

- Does it remind you of any creatures alive today?

(they are related to squid and nautilus)

To make the fossil….

⇒ When the ammonite died, it sank to the bottom of the sea and all the soft parts rotted or were eaten by other creatures, leaving the shell.

Take the tentacles off the model

⇒ Sand and mud settled out of the sea water on top of the fossil, covering it up in layers over millions of years.

Put the flaps down one by one over the ammonite –what do you think each might represent?

⇒ As the sediment squashed together over millions of years, it turned to rock, and the shell buried inside it turned to rock as well.

⇒ After the ammonite had been buried for millions of years, palaeontologists came along and dug the fossil up.

Now lift the flaps back to dig out the fossil. When you get to the last one, lift out the box and find the ammonite fossil underneath.

Please put the box back together when you have finished, ready for the next group!

Question sheet

Habitats Bag

Habitats

Use the questions on this sheet to allow your group to explore and think about the objects and the bag more closely.

This bag should be used in the Carboniferous Seas and Swamp sections of the gallery and around the *T rex*.

Swamp vs. Sea bag

- Go to the Carboniferous Seas and Swamp section of the gallery
- Look at both sides of the bag before you open it (one side is sea the other swamp)
- In your group come up with 3-5 words to describe each habitat.
- Does anyone have any ideas about what creatures might live in each habitat?
- Can you match the habitat with the correct part of the gallery?

Encourage the group to think of what types of creatures might live in these different habitats using the below cues:

- What are they called?
- What will they look like?
- Do they have any special features?

Animal Spotting

Find the fossils and models of some animals which lived in the sea and others which lived in swamps.

Look at each of the creatures to see what characteristics make them suitable for their watery or swampy habitat (look for fins or legs, body shape etc).

This gallery has fossils of some of the world's oldest four legged animals—early amphibians living in the swamps.

Who lives where?

The aim of this activity is to match up the four creatures to their habitat: swamp or sea.

The blue section represents the sea, and the brown section represents the swamp. Each of the creatures will have adapted specially to their habitat.

Matching up

- First look at each creature individually, coming up with 3 words to describe each one (encourage discussion about colour and whether the creature appears to have limbs or fins).
- Place each creature on the side of the background the group thinks that creature belongs to—do they live in a swamp or in the sea?

Spot

- Try to find the models or fossils of each of the four creatures in the Carboniferous seas and swamps sections. Did they put the creature in the right habitat?

Creating Creatures

This activity uses the gold animals on blue felt. Before the group begins engaging with this activity remove all the body parts from the felt.

- As a group, first look at all of the body parts in the pile. What are they—tail, leg, fin?
- Then place the body parts on the reptile and the fish, one by one, discussing why the body parts belong to that particular creature eg. a fish uses its streamlined tail to help it swim.

Habitats

Newsham Swamp and Hell Creek

The two lift-the-flap painted fabric habitats represent Newsham Swamp, a Carboniferous Habitat in Northumberland (320 million years ago) and Hell Creek, a late Cretaceous Habitat in North America (66 million years ago).

Use the Newsham Swamp picture in the Carboniferous Swamps area of the gallery and the Hell Creek picture by the *Tyrannosaurus rex*. There are also envelopes of pictures of the animals and their fossils to use with the habitat images and labelled prints of the canvases.

Newsham Swamp

Look at the picture of the swamp and the different animals and plants living there.

- Can you think what sort of animals they are? (look in the Newsham Swamp envelope for more details and pictures)
- Which animals would stay in the water and which would come out onto the land?
- Lift the flaps to see the fossils which are left behind from these animals.
- Can you find the real fossils in the gallery?

Did you know that—

- The wood from the forests around these swamps is what made coal
- You won't find dinosaur fossils around Newcastle—our rocks are too old to have dinosaurs in them
- Plants can become fossils too—on the picture, look under the flap on the Lepidodendron. Can you find any plant fossils in the gallery? There are some really big ones...

Habitats

Hell Creek

Hell Creek is in the northern USA and many of the best known dinosaurs have been found there, including *T rex*. The rocks are from the very end of the age of the dinosaurs—the last part of the Cretaceous.

See the Hell Creek envelope of images for more pictures of the creatures and their fossils.

Can you find:

- *Tyrannosaurus rex*
- Edmontosaurus (a duckbilled, plant eating dinosaur)
- Triceratops
- Ornithomimus (a feathery dinosaur a bit like an ostrich)
- Borealosuchus (a crocodile)
- Trionyx (a turtle)
- A nest of dinosaur eggs

Lift the flaps to find some of their fossils…..

Did you know that—

- dinosaur skin can be fossilised, not just their bones (look under Edmontosaurus)
- sometimes a fossil can be a whole skeleton, sometimes just part of one—look under the dinosaurs to see different fossils
- Our *T rex* is a cast of Big Mike, from Hell Creek (also known as MOR555 or Devil Rex). Although he's called Mike, s/he may actually be a girl!

We don't know what colour these dinosaurs would have been—do you think they would have used their colour to hide or to stand out? What colour do you think they might have been?

Newsham Swamp

Hell Creek

Palm trees

Sequoia

Tyrannosaurus rex

Edmontosaurus

Trionyx (turtle)

Ornithomimus

Cycad —
lift to find the
dinosaur eggs!

Triceratops

Borealosuchus
(ancient crocodile)

Story Bag

A T rex story

Read the story to your group, and use the directions at the end to help your group decide how the story might end.

Encourage your group to hold the hand and finger puppets, and maybe even act the story out against the fold out background on the story bag.

You could tell the story to the group in a space near *T rex*. This bag is to be used near the Mesozoic Lands plinth.

Dino bag

Encourage the group to explore the dinosaur story bag. The bag can be folded out to be made larger. This is the landscape our story will take place on.

- How does the bag feel?
- What different things can you see on the landscape?
- Do you think it looks like a exciting place to live?
- What kind of dinosaurs and creatures do you think we might come across in this story?

Now turn over the page to find out a little about each of our characters.

Characters

Find out more about the characters from the story by reading the information on this page.

T rex

Can you see the skeleton of *T rex* in the gallery? Do you think he looks scary?

T rex was a carnivore, he liked to eat other dinosaurs and had very sharp teeth.

Fish

The fish was shiny and covered in loads of scales to protect it from predators.

Can you see its fin? This was to help it swim fast.

Hypsilophodon

This dinosaur liked to eat plants.
It also ran very fast on its 2 long legs.

Snake

Can you find the fossilized snake (look near the *T rex*)? It would have looked very similar to snakes we have around today.

Scutellosaurus
This dinosaur was covered in loads of small spikes. It had a small head and a very long tail.

This dinosaur was good at camouflage.

Archaeopteryx
Was part bird and part dinosaur and was covered in feathers.

Can you flap your arms like a flying archaeopteryx?

Extension questions

- How do you think these prehistoric animals will be able to escape the *T rex* in our story?
- Which is your favourite prehistoric animal?
- Can you see any evidence of these creatures in our gallery?
- Do you think we would be able to find fossilized evidence of all of these creatures? Remember soft parts didn't turn into a fossil.

The Tale of the Terrible *Tyrannosaurus*

Tyrannosaurus rex is a carnivore, the other dinosaurs better watch out
If this meat eater with a very empty stomach is prowling about!
The hungry *T. rex* spots a *hypsilophodon* grazing on some leaves he has found
The *T. rex* is off, his heavy hind legs thumping across the ground
The *hypsilophodon* hears him coming and sets off swiftly on his way
He definitely doesn't want to be "*tyrannosaurus* dinner" today.
Two long legs and a very strong tail help the *hypsilophodon* run FAST!
He turns to look behind him and …phew, the *T. rex* has given up at last.

The *T. rex*, his stomach rumbling, turns back to the trees
And spots an *archaeopteryx* swooping down from the leaves.
He thunders forward and opens up his jaws to catch his feathery dinner
But the *archaeopteryx* is off, flying high, and *T. rex* is getting thinner!

Giving up, he drops his head, and wait… his luck is in
He spots a snake slithering along the ground just below his chin
He stretches down and opens his mouth to grab the scaly meal
But, before he can, the snake slithers away, oh, how hungry *T. rex* must feel!
The snake disappears before his eyes as it slithers towards the lake
Behind the rocks? Under the rushes? Where is it, for goodness sake?

Question sheet

The *T. rex*, feeling thirsty too, follows towards the water
Perhaps a drink will fill him up until he finds some dinner.
A flat fish is splashing in the shallows at the edge of the lake
T. rex will swallow it in one bite if it doesn't swim and make an escape!
The fish feels the water ripple as the *T. rex* takes a drink
And off it swims, just in time, before the *T. rex* can think.

No fish, no meat, whatever will the *T. rex* eat?
His stomach's really empty and he's hunting for a treat
Along the banks of the lake to the swamp
Off he goes, stomp, stomp, stomp!

Wait a minute, what's this, food at last?
A *scutullosaurus* is moving in the swampy grass
But the *T. rex* isn't quite so lucky
The *scutullosaurus* is extremely plucky
He's brave enough to stop moving and freeze
Then he's camouflaged amongst the leaves

And poor *T. rex* can't see him anymore
Frustrated, he stomps away with a roar
The *scutullosaurus* lives another day
The *T. rex* has stomped off, far away.

Can you decide *T. rex's* fate?

And finish our story before it's too late?

Where do you think the story should go?

Can you think of a good ending? Do you know?

The sun is setting and the day's nearly over

So, before you finish the story, you might want to

consider…

NEXT…..What is going to happen?

Use these questions to try to choose an ending for the story with your group.

- Does the *T rex* finally hunt something to eat, and if he does, how does he catch his prey? Think about what his strengths and weaknesses are.
- Are there any predators that might hunt the *T rex*? Does he get eaten himself?
- Are there any features in the pre-historic landscape on the bag that might inspire or add to an exciting ending?
- Do you have any ideas for a great ending that are inspired by the dinosaur facts you already know?
- Will your ending rhyme?
- Can you make a list of adjectives (describing words) to help you when you're describing the dinosaurs or the prehistoric world in the story?
- Can you act out the story with the puppets and the bag while someone reads the story aloud?
- Can you find the pre-historic creatures that the *T rex* hunts in the story in our Fossil Stories gallery, here at the museum?
- Can you write your own pre-historic story?