FOSSILS AND THE ICE AGE

Activity Pack -- FREE Resource

Ages 6-10 | No Prior Reading Required

Classroom, Library and Home Use

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Ice Age or Dinosaur Age?

Long ago, in the freezing Ice Age, woolly mammoths trudged through snow. Much further back, in the steamy age of the dinosaurs, giant reptiles roamed among ferns and volcanoes. We know about them from fossils -- nature's time capsules.

Activity 1: Sort It Out

Clue	Ice Age	Dinosaur Age
Woolly mammoths with long curved tusks	[ ]	[ ]
Triceratops with three horns	[ ]	[ ]
Glaciers and snow everywhere	[ ]	[ ]
Giant ferns, warm air and volcanoes	[ ]	[ ]
Tyrannosaurus rex	[ ]	[ ]

Activity 2: How a Fossil Forms

Number the steps from 1 to 4.

Step	Order
Over a very long time, minerals replace the bone and it turns to stone.	____
An animal dies and its bones are buried in mud or sand.	____
Scientists dig up the fossil and study it.	____
More and more layers of mud and sand pile on top.	____

Think About It

* Why are fossils called 'nature's time capsules'?

* What can a fossil footprint tell us about an animal?

Giants by the Metre

Ice Age animals and dinosaurs were enormous! Let's compare their sizes using metres.

Activity 1: Compare the Sizes

Animal	About How Big
Woolly mammoth (tall)	**3 m**
Triceratops (long)	**9 m**
Tyrannosaurus rex (long)	**12 m**
A child (tall)	**1 m**

1. Which animal is the longest? _____

2. How much longer is T. rex than Triceratops? _____ m

3. How many children, standing on each other's heads, would be as tall as a mammoth? _____

Activity 2: A Long, Long Time Ago

Number these from 1 (longest ago) to 3 (most recent).

Event	Order
Woolly mammoths roamed the Ice Age (thousands of years ago)	____
You were born	____
Dinosaurs died out (about 66 million years ago)	____

Think About It

* Why do you think it's hard to imagine millions of years?

* How could you measure 12 metres in your playground?

Built for the Cold

Woolly mammoths were built for the cold. Their thick fur and long tusks helped them survive freezing Ice Age winters. Animals have body features that help them live in their habitat.

Activity 1: Would It Help in the Cold?

Feature	Helps	Doesn't help
Thick, shaggy fur	[ ]	[ ]
Small ears that don't lose much heat	[ ]	[ ]
Long tusks to dig through snow for plants	[ ]	[ ]
Thin skin with no fur	[ ]	[ ]
Living together in a herd	[ ]	[ ]

Activity 2: Design an Ice Age Animal

DRAW AN ANIMAL BUILT FOR THE ICE AGE. LABEL THREE FEATURES THAT HELP IT SURVIVE:

My animal is called: _____

Think About It

* Why might living in a herd help an animal survive?

* Which animals today are built for the cold?

Lost and Found

Note to students:
This worksheet explores personal feelings. There are no right or wrong answers -- your thoughts are your own. Sharing is always optional. If any question brings up big feelings, please talk with a trusted adult.

Getting lost or separated from your family can feel very scary. Kind helpers, and knowing what to do, can help us find our way back.

Activity 1: Feeling Check-In

Circle the words that show how you feel.

When I can't find my family, I feel:
Scared Worried Alone Teary Other: _____

When someone kind helps me, I feel:
Safe Calm Thankful Better Other: _____

When I help someone who is scared, I feel:
Kind Proud Brave Happy Other: _____

Activity 2: If I Get Lost

My safety plan:
1. Stay where I am and stay calm.
2. A safe helper I could ask: _____
3. My grown-up's name and phone number I know: _____

Think About It

* How can a kind face help someone who is scared?

* Who are the safe helpers you could ask if you got lost?

Evidence, Then Caring

When scientists have a mystery to solve, they don't just guess -- they look for evidence. And once we learn about animals, the next step is caring for the ones alive today.

Activity 1: Guess or Evidence?

Statement	Guess	Evidence
A fossil footprint shows how big the animal's foot was	[ ]	[ ]
I think dinosaurs were purple	[ ]	[ ]
Fossil teeth show T. rex had huge, sharp teeth	[ ]	[ ]
Frozen mammoths have been found with thick fur	[ ]	[ ]
I bet mammoths loved playing in snow	[ ]	[ ]

Activity 2: Caring Is the Next Step

Choose an animal alive today that needs protecting.

Animal: _____

Why it needs help: _____

One way people can help: _____

Think About It

* Why is evidence better than a guess?

* How can learning about extinct animals help us protect animals today?

My Time Traveller Goals

Remember the past so we can make a better future. Here is a challenge: be a fossil detective and an animal protector this week.

Activity 1: My Goals

Write or draw one goal for each time.

Goal Tier	My Goal	How I Will Do It	When I Will Start
THIS WEEK			
THIS TERM			
THIS YEAR			

Activity 2: Fossil Detective Tracker

Colour a star each day you do it.

I did it!	Mon	Tue	Wed	Thu	Fri
I learned a fact about a prehistoric animal	*	*	*	*	*
I looked for evidence before deciding	*	*	*	*	*
I helped someone who felt scared	*	*	*	*	*
I did something kind for an animal	*	*	*	*	*
I shared what I learned	*	*	*	*	*

Think About It

* If you could travel back in time, which animal would you visit? Why?

* Write your own time traveller motto in 10 words or fewer.

Teacher's Companion

No Prior Reading Required
This pack is fully standalone. No book or characters are referenced. Any student can complete these worksheets without prior reading. Suitable for classroom, library, and home learning programmes. This pack is an excerpt of a full book-specific learning pack available with purchase at **learningsmart.au**

Australian Curriculum Alignment

Learning Area	Strand	Year Level	Content Description (summary)
Science	Biological Sciences	Yr 1-4	Living things have features that help them survive; fossils show past life (WS1, WS3)
Science	Earth and Space Sciences	Yr 1-4	Earth's surface changes over very long time scales (WS1, WS2)
Mathematics	Measurement	Yr 1-4	Compare lengths in metres; order events in time (WS2)
Design and Technologies	Design Processes	Yr 1-4	Design an animal with features suited to its environment (WS3)
Health and PE	Personal, Social and Community Health	Yr 1-4	Plan for safety if lost; identify safe helpers (WS4)
Gen. Capabilities	Critical and Creative Thinking	Yr 1-4	Distinguish evidence from guesses (WS5)
Cross-curriculum Priority	Sustainability	Yr 1-4	Protecting living things today (WS5)

16 Key Fossils and the Ice Age Lessons

#	Lesson
1	In the Ice Age, much of Earth was covered in ice and glaciers.
2	Woolly mammoths had thick fur and long curved tusks.
3	Mammoths lived together in herds.
4	Dinosaurs lived millions of years before mammoths.
5	Dinosaurs died out about 66 million years ago.
6	Many scientists think a huge asteroid caused the dinosaurs to die out.
7	Dinosaurs and humans never lived at the same time.
8	Some dinosaurs ate plants; others were fierce hunters.
9	Fossils form when buried remains are slowly replaced by minerals.
10	Fossils are nature's time capsules.
11	Body features help animals survive in their habitat.
12	Scientists look for evidence instead of guessing.
13	Mammoths likely died out because of changing climate, less food and human hunting.
14	Extinct means gone forever.
15	Learning is the first step; caring is the next.
16	Big idea: Remember the past so we can make a better future.

Answer Keys and Discussion Guidance

WS1 -- Sort It Out (Answers)
Ice Age: mammoths; glaciers and snow. Dinosaur Age: Triceratops; giant ferns and volcanoes; T. rex. Fossil steps: 3, 1, 4, 2.

WS2 -- Giants by the Metre (Answers)
1. Tyrannosaurus rex. 2. 3 m. 3. 3 children. Order: dinosaurs died out 1; mammoths 2; you were born 3. Sizes are approximate.

WS3 -- Built for the Cold (Answers)
Helps: thick fur; small ears; long tusks; living in a herd. Doesn't help: thin skin with no fur.

WS4 -- Sensitivity Note for Educators
Getting lost can be a frightening topic, and some students may be separated from family members. Keep the focus on safety planning. Do NOT require sharing. If a student discloses a concern, follow your school's wellbeing and child safety protocol.

WS5 -- Guess or Evidence? (Answers)
Evidence: fossil footprint; fossil teeth; frozen mammoths with fur. Guess: dinosaurs were purple; mammoths loved snow.

WS6 -- Challenge Tracker
There are no correct scores. Celebrate every attempt; any day left blank is a chance for a gentle reminder, not correction.

Upsell Note for Educators
This generic pack is based on the Learning Smart book series. The full book-specific learning pack -- which references the characters, story moments, and adventure narrative -- is available with book purchase or subscription at **learningsmart.au**. Book-specific packs significantly increase student engagement and reading motivation.

Differentiation Strategies

Level	Strategy	Example Application
Below Level (support)	Reduce written output; use sentence starters; allow verbal responses; pair with peer.	WS2: measure the sizes with a trundle wheel in the playground. WS4: use feeling faces instead of writing.
On Level (standard)	Complete all activities as written. Use discussion partner for Think About It sections.	Standard completion with class debrief of Think About It questions.
Extension (enrichment)	Make a salt-dough 'fossil' imprint and write how a real fossil forms.	WS5: research an endangered Australian animal and present ways to help it.

7 Discussion Questions

1. What was the Ice Age like? How did mammoths survive the cold?
2. How can we help someone who is lost or scared?
3. How do fossils help us learn about animals that lived long ago?
4. Did dinosaurs and humans ever live at the same time? How do we know?
5. Why do scientists look for evidence instead of just guessing?
6. What does 'extinct' mean? Why does it matter?
7. How can we help protect animals living today?

Classroom Display Ideas

Time Travel Timeline: A long line from the dinosaurs to today, with pictures at the right places.

Fossil Museum: Salt-dough fossils with labels explaining how real fossils form.

Giants by the Metre: Tape lengths on the floor showing a mammoth, Triceratops and T. rex.

Ice Age Animal Designs: Display the WS3 designs with their labelled survival features.

Evidence Board: A detective-style board sorting guesses from evidence.

Protect Them Now: Posters about endangered animals and how to help.

Want the Full Adventure?

This free activity pack is inspired by the **Learning Smart book series** -- everyday adventures about character, confidence and growing into a kind, capable leader.

The Full Book-Specific Learning Pack Includes:

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