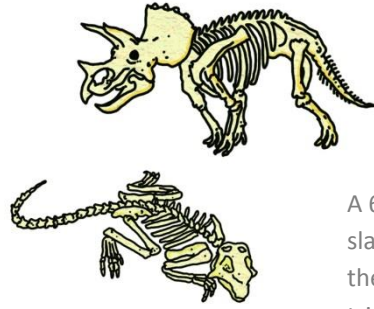


1 The Sixth Mass Extinction



A 6-mile-wide meteorite slams into the earth off the coast of Mexico, triggering an ecological catastrophe that kills off

Overview

Introductory Activity circa 1-2 periods

Main Activity circa 3 periods

Conclusion circa 1-2 periods (depending on whether pupils record their stories)

Activity covers English, ICT, History, Geography and PSHE

In this activity, pupils will look at extinctions in history and consider the possibility of future extinctions, before considering how far the fate of the natural world is interwoven with humanity and what the dangers and hopes are for the world as we know it. They will use their research as the stimulus for a newspaper article about a chosen extinction in the past.

Throughout the history of the world there have been numerous occasions where a vast percentage of plant and animal life have been wiped out. Drifting continents causing climatic change and volcanoes, which in some instances have erupted for over a million years, along with bombarding asteroids have caused environmental devastation.

Resource List

What on Earth? Wallbook of History

What on Earth? Wallbook Introductory Presentation

What on Earth Happened? (Optional) See Chapters 7, 8, 16 and 42

What on Earth Evolved? (Optional) See Index 'extinctions' for individual page references

PUPIL SHEET 1.1 MASS EXTINCTIONS

PUPIL SHEET 1.2 WHAT ON EARTH NEXT?

PUPIL SHEET 1.3 PLANNING GUIDE (Optional)

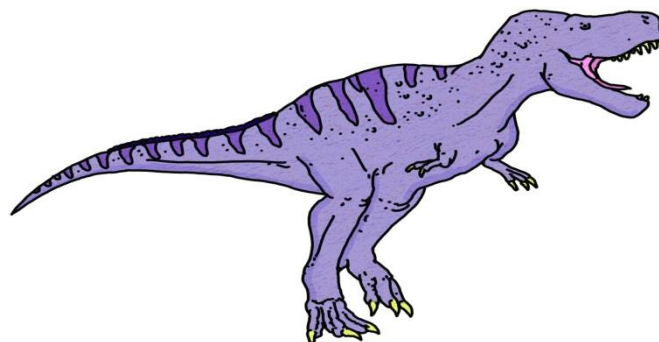
PUPIL SHEET 1.4 BEGINNINGS AND ENDINGS (Optional)

PUPIL SHEET 1.5 WRITING FOR IMPACT (Optional)

Learning Aims and Objectives

In this activity pupils will:

- develop an understanding of some of the processes that have given rise to key geographical and human changes in the world and how these can be interdependent
- gain historical perspective by investigating short- and long-term timescales
- use discussion in order to plan and tell stories
- be introduced to fiction based on visions of the future
- write engaging stories related to their research and reading of fiction.



Tyrannosaurus rex, the ultimate prehistoric predator

Introductory Activity

1. You might like to begin by watching the *What on Earth? Wallbook Introductory Presentation* as a class. This will establish the context for the activity. You can find this video at www.whatonearthbooks.com/wonderboxhistory
2. Still as a class, discuss what is meant by ‘extinction’ and how this might be different from ‘mass extinction’.

Extinction: Coming to an end or dying out, for example, *the extinction of a species*.
You could give the dodo as an example.

Mass Extinction: Where a large percentage of plant and animal life becomes extinct, as in the Fifth Mass Extinction when dinosaurs and many other life forms were wiped out.

3. With the Wallbook displayed, ask small groups of children to find all of the mass extinctions. They could list them on **PUPIL SHEET 1.1 MASS EXTINCTIONS**. There are five main ones, but also some minor ones (listed below for reference). They are indicated by a vertical wavy line. Ask more able, or older, pupils to try to describe the probable causes (impact event like an asteroid, climate change, rise in sea level, volcanoes, man-made) and effects of each extinction. Effects will include the percentage and species of animal and plant life wiped out along with significant environmental changes.

Mass Extinctions:

- First Mass Extinction of Life circa 460 million years ago where fossils indicate that about 60% of life forms became extinct
- Second Mass Extinction of Life circa 350 million years ago

- Permian or Third Mass Extinction of Life circa 252 million years ago – the worst of all time with up to 75% of land, and 96% of sea species dying out
- Fourth Mass Extinction of Life circa 200 million years ago
- Fifth Mass Extinction of Life circa 65.5 million years ago

In human history the same extinction lines are also used to represent:

- The Black Death killing 50 million people across Europe peaked in 1346-48
- The Holocaust during which time an estimated six million Jews were killed circa 1933-45
- The Sixth Mass Extinction – considered by many scientists as happening today as a result of human activities.



Late 1600s – Dodo becomes extinct

Useful websites describing these extinctions include:

http://www.bbc.co.uk/nature/extinction_events

http://en.wikipedia.org/wiki/Extinction_event

<http://science.nationalgeographic.co.uk/science/prehistoric-world/mass-extinction>

4. Having looked at the past, ask pupils to consider all the dangers to life as we know it now. List these on the board or a flip chart. As a class look at the final panel on the reverse of the Wallbook as it provides some ideas, as does ‘Top Ten Threats to Life on Earth’ (page 388 of *What on Earth?*); other examples include, global warming and the melting of the ice caps, increasing population and growing famine, war, disease, physical or biological accidents ... It may be worth, at this point, suggesting that awareness of the issues may help humanity to avoid the potential disasters! The **PUPIL SHEET 1.2 WHAT ON EARTH NEXT?** invites pupils to rank what they consider to be the most serious threats to the environment and, if appropriate add a comment.

Main Activity

5. Explain to pupils that they are to choose one extinction from history that has been discussed and write a newspaper article reporting events. They should consider the causes and the effects on the future of the planet.
6. Ask pupils to use the Wallbook and any other relevant materials to research their extinction. Consider what life forms were around before the extinction and what life forms appeared afterwards.
7. Once they have completed their research pupils should begin to write their newspaper article. Pupils should consider who their audience is, what kind of language they should use and which pieces of information they have found from their research is the most relevant to their report.

Conclusion

8. In pairs or small groups, ask pupils to read their articles to each other. After each reading they should discuss what they liked best and parts that could be improved. Improvements may be in the quality of the dramatic reading as much as the style or accuracy of the writing.
9. The writer at this point can make changes based on listening to other stories and the comments of other pupils.
10. Ask pupils to do one final round of editing of each other's work before submitting for assessment.
11. If there is time you could create a class recording of the best stories for the radio or an audio book.

Support Activities

Younger pupils, or those who need more support, could use **PUPIL SHEET 1.4 BEGINNINGS AND ENDINGS**. This provides the beginning of an article and asks questions to help pupils think about how they might continue their newspaper report.



Chinese monks accidentally synthesise gunpowder as their laboratory burns down

Extension Activities

Older pupils, or those who respond well to additional challenge, could be given the list of criteria on **PUPIL SHEET 1.5 WRITING FOR IMPACT**. This asks the pupils to focus more on the language they use to engage the reader and create an impact.



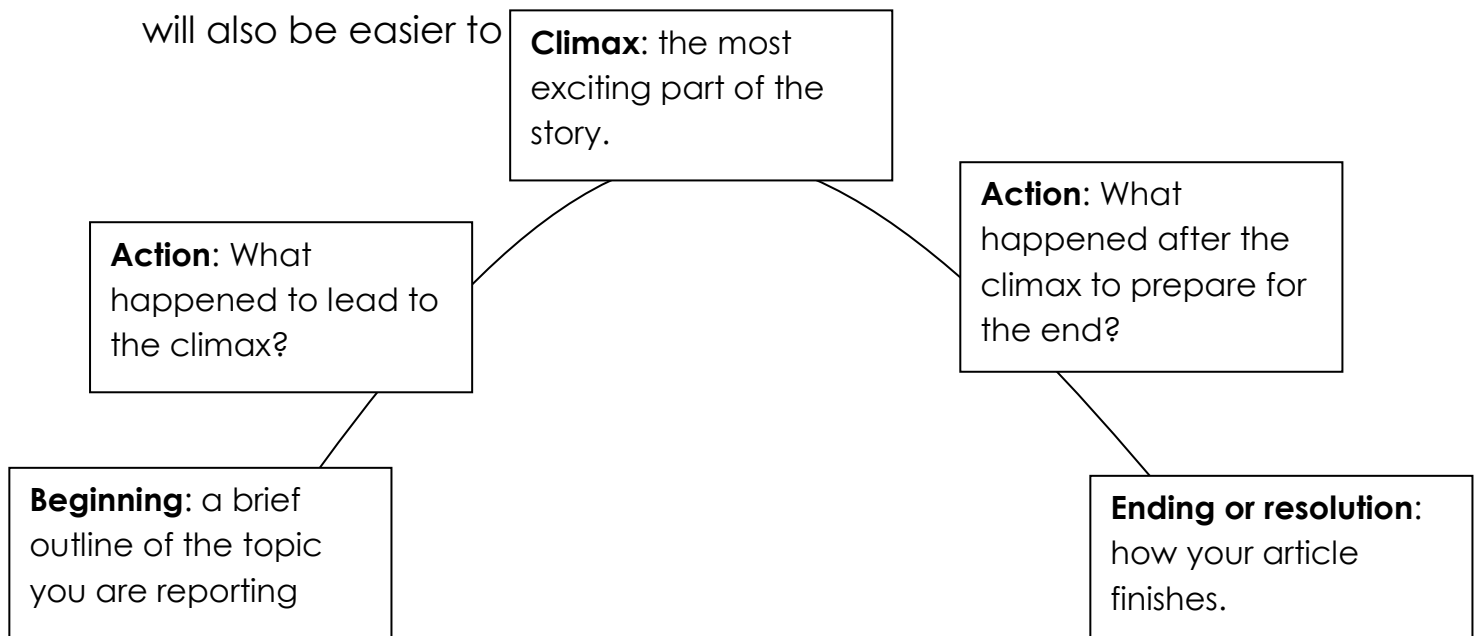
What on Earth Next?

Look at the following statements. Rank them to say whether you think they are likely to happen (5) or unlikely to happen (1). Add a comment explaining why you think this.

Prediction The world we know will end due to	5	4	3	2	1	Comment
nuclear or chemical attack as part of a war between people who hold different values						
global epidemic of a new illness that cannot be treated by modern medicine						
famine too little food for a rapidly growing population						
environmental disaster (flood/tsunami, volcano, earthquake) triggered by global warming						
an environmental accident (nuclear meltdown, oil spill, chemical leak)						
an impact with an object from space						

Planning Guide

Think of your article or story like a journey over a mountain. A well planned story will impress your reader and hold their attention. It will also be easier to

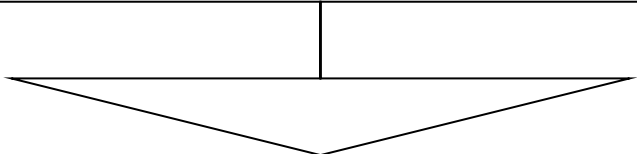
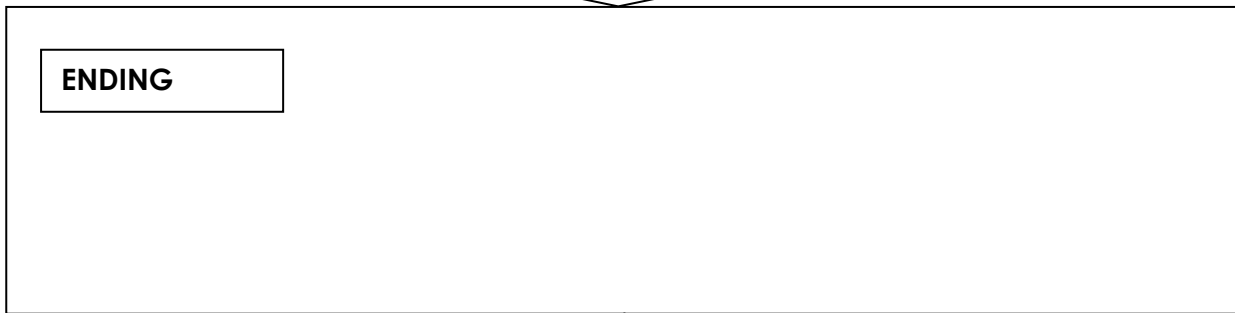
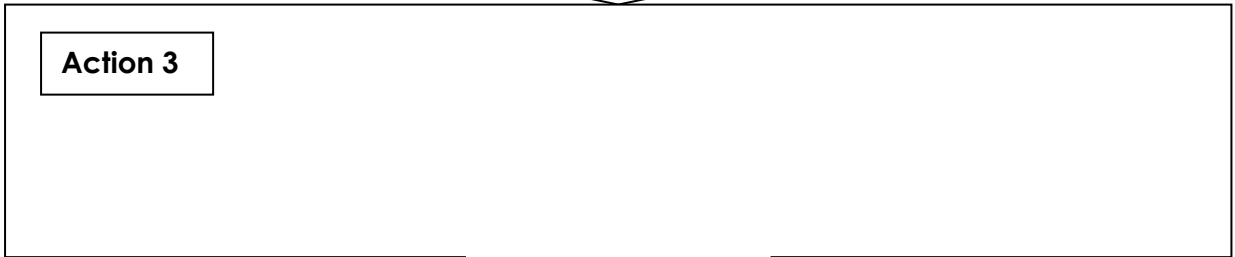
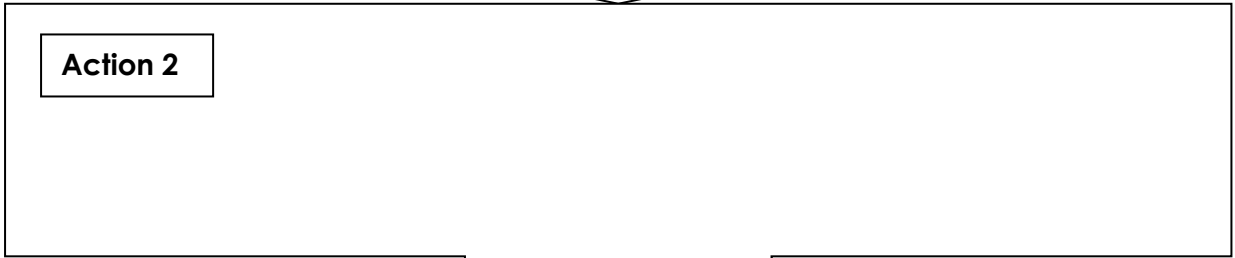
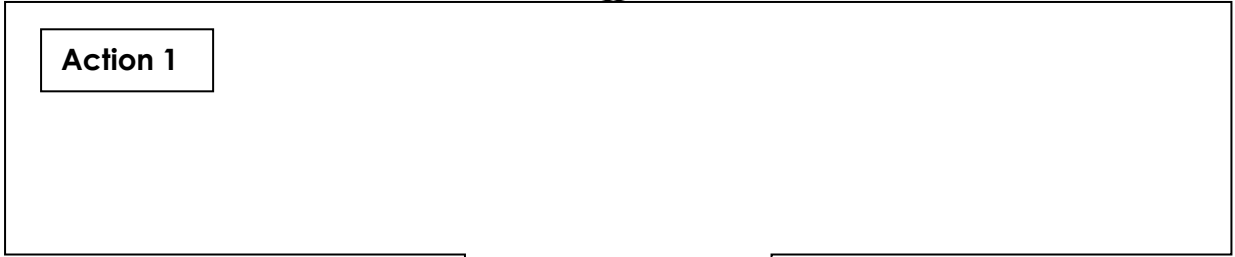


How will your **article start**? What is the action or problem that sets the whole story going? Here are some ideas if you get stuck:

- Your favourite music programme is interrupted to say that a huge wave is about to hit the coast.
- Your best friend doesn't come to school and over the following week more children disappear and you hear that they are mortally sick.
- There is no more electricity and/or water is rationed.
- Your village is attacked by animals and you don't know why.
- A fuel shortage, means all transport needing fuel is banned.

What happens in the **middle** of your story? Think about three paragraphs where three things happen as a result of the event at the start. What is the most exciting or dramatic point?

How does your article **end**? Is it happy or sad? Who or what is left alive? How has the action or problem at the start been sorted out?



Beginnings and Endings

Below are some ideas for the beginnings of articles about a mass extinction. Talk with a partner about what you think could happen after these beginnings.

Choose just one and finish the newspaper article. The questions will help you. You can either write or narrate your article.

- If you are going to narrate your article, work with a group of friends. Tell your story to the group then record it for others to hear.
- If you are going to write the article, you can copy out the beginning section from the sheet and change it as much as you like to fit in with your ideas for the rest of the article.

The government has declared a 'state of emergency' and announced that from next week gas and electricity supplies will be turned off. All schools and businesses will have to close and use of cars and buses will be made illegal with immediate effect.

- Why are cars taken away? Why is there no more gas or electricity?
- How will life change?
- What might happen?

The environmental agency has reported that all wildlife in the country's lakes, rivers and seas has died. Hundreds of species of fish were spotted beginning to float on the surface of the water and 24 hours later all species had ceased to exist. The government now faces a mass clear up of all the dead animals and have a race against time to remove the carcasses before they rot and cause health problems for other species, including people.

- What might have caused all life in the rivers and seas to die?
- What effect will the deaths have on the lives of the people in England?
- What might happen?

Yesterday at 2.45pm there was a huge explosion over the United Kingdom and the sun went out. Thick, dark, dusty air tore viciously through the streets sucking up water, tearing at plants and wrecking everything in its path. Buildings were ruined in a matter of minutes and cars were thrown around like tissue paper. Dark clouds smothered the sky. Everything has stopped working. Those who have survived are without phone, computer, television or radio. Nothing works.

- What do you think has happened to cause such destruction?
- Without transport or communication what might the survivors do?
- How might this reporter get his story to the public?
- What happens next?

Writing for Impact



Criteria

Check that your story includes the following. Use the list to help you plan and use it again when you are editing your work.

Plan		Edit
<input type="checkbox"/>	A dramatic opening paragraph with good descriptions that help create a strong sense of atmosphere. Try to include one or two good: <ul style="list-style-type: none"> <input type="checkbox"/> similes <input type="checkbox"/> metaphors <input type="checkbox"/> personification <input type="checkbox"/> adjectives <input type="checkbox"/> adverbs. 	<input type="checkbox"/>
<input type="checkbox"/>	In creating atmosphere, think about your sensations. What can you: <ul style="list-style-type: none"> <input type="checkbox"/> see? <input type="checkbox"/> hear? <input type="checkbox"/> feel? <input type="checkbox"/> smell? <input type="checkbox"/> taste? 	<input type="checkbox"/>
<input type="checkbox"/>	A solid plot line with a: <ul style="list-style-type: none"> <input type="checkbox"/> clear start <input type="checkbox"/> logical steps to the climax <input type="checkbox"/> a memorable ending. 	<input type="checkbox"/>

When re-reading your work, highlight words or phrases that you think could be improved and then use a thesaurus to find better, more accurate descriptions. List what you think are the best words or phrases in your writing:

Finally, try reading your work out loud to check that it makes sense. Be as dramatic as possible. This will help decide where punctuation should go.

- Do you have commas or full-stops where you pause?
- Do you use exclamation marks at exciting points? A word of warning, don't overuse these!
- Where you change your voice to show a character speaking, have you used speech marks to indicate the words they actually say?

When you, or a partner read through your work, make a list of the three things you like best and suggest one thing that can be improved.

★ Best bits in my story:

1

.....

2

.....

3

.....

The one thing I need to change is:

.....

.....

.....