



Primary Geography

Rivers

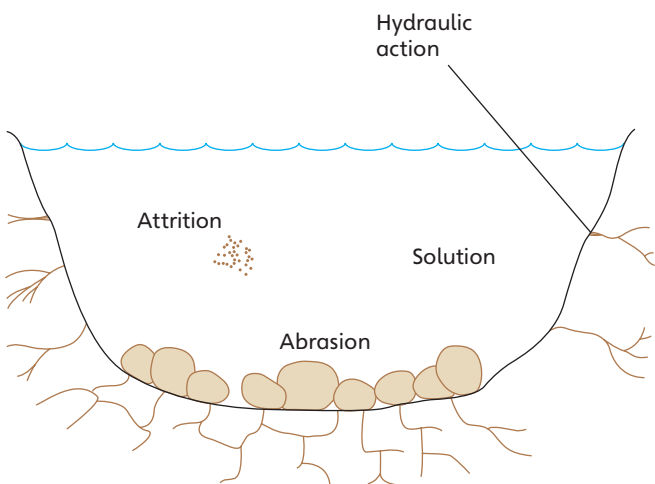
Name:

Class:

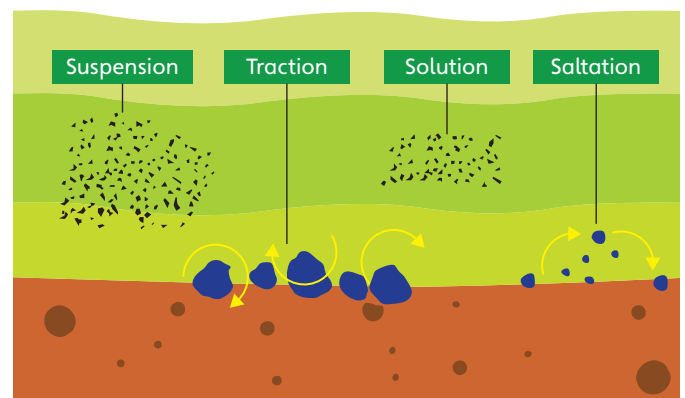
Knowledge organiser

Vocabulary	
channel	Where a river flows
delta	A triangle-shaped area of marshy land found at the mouth of a river
deposition	The process of material being dropped
erosion	The process of land being worn away
mouth	Where a river joins the sea or a lake
pollution	The process of harmful substances being released into the environment
sediment	Bits of soil and rock eroded, transported and deposited by a river
source	Where a river starts
transportation	The process of material being carried
waste water	Water that has been used by people, e.g. for washing clothes

Erosion



Transportation



Types of erosion

Attrition is when bits of rock crash together in the water and break up.

Abrasion is when bits of rock in the water rub against the riverbed and river banks.

Solution is when acids in the water dissolve rock.

Hydraulic action is when the power of the water breaks bits off the riverbed and banks.

Types of transportation

Traction is when large rocks are rolled along the riverbed.

Saltation is where bits of rock bounce and jump along the riverbed.

Suspension is when small particles of sediment are carried along in the flow of the river.

Solution is when the smallest bits of sediment are dissolved into the water and carried along.

Learning review

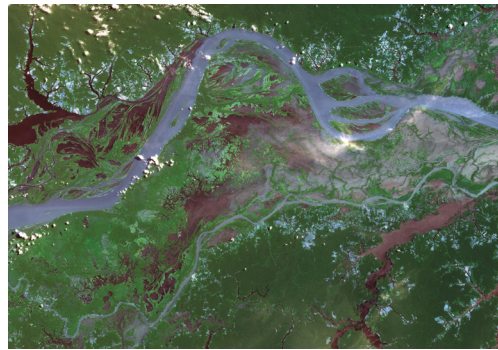
Lesson	Lesson question	You will learn...	Learning review
1	Where are the major rivers of the world?	<ul style="list-style-type: none"> • What a river is. • What the parts of a river are called. • Where the major rivers of the world are located. 	<hr/> <hr/> <hr/> <hr/>
2	What are erosion, transportation and deposition?	<ul style="list-style-type: none"> • What river erosion is. • What river transportation is. • What river deposition is. 	<hr/> <hr/> <hr/> <hr/>
3	Why is the Volga River important to people?	<ul style="list-style-type: none"> • Where the Volga River is located. • How people use the Volga River. • Why the Volga River is in danger. 	<hr/> <hr/> <hr/> <hr/>
4	Why are rivers important to people?	<ul style="list-style-type: none"> • Why rivers are important to people. • What the most important uses of rivers are. 	<hr/> <hr/> <hr/> <hr/>
5	How do rivers shape the land around them?	<ul style="list-style-type: none"> • How rivers form waterfalls. • How rivers form meanders and oxbow lakes. • What a delta is. 	<hr/> <hr/> <hr/> <hr/>
6	Assessment: Why should we protect rivers from pollution?		<hr/> <hr/> <hr/> <hr/>

Lesson 1

Where are the major rivers of the world?



The River Nile from space



The Amazon River from space



The Amazon River from a plane



The River Nile from the river bank

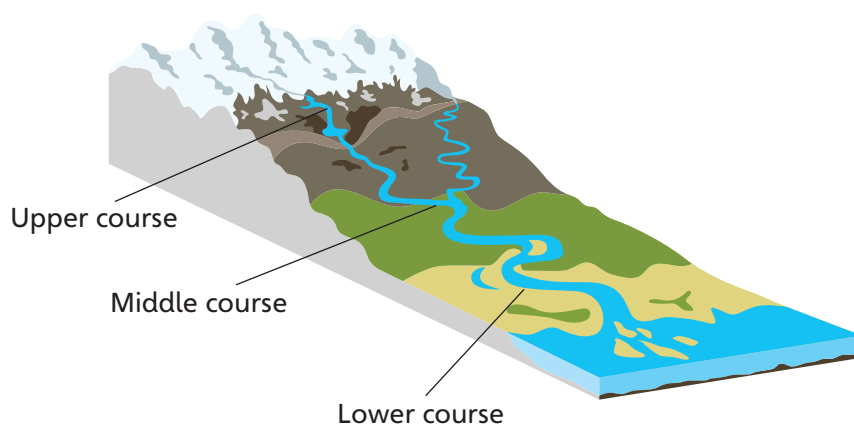
The longest rivers

A river is a flow of fresh water that runs across the land and into the sea or a lake.

These photos show the world's two longest rivers: the Nile, which is in north-east Africa, and the Amazon, which is in the northern half of South America. They are both well over 6,000 kilometres long! The Thames is 346 kilometres.

The parts of a river

Rivers come in different shapes and sizes, but all rivers have a **source** (where they start) and a **mouth** (where they end). The river runs along its **channel**.



The channel has **banks** either side of it. The bottom of the channel is called the **river bed**.

- The source of a river is high up, in hills or mountains. This is in the upper course. The river channel here is narrow and shallow.
- In the middle course, the river channel is wider and deeper. The river flows quickly and has lots of energy.
- In the lower course, the river has a very wide, deep channel. There is a lot of water in the river channel. The mouth is where the river reaches the sea. When it meets the sea, the flow of the river stops.



1. What is the start of a river called? Write your answer.



2. What is the end of a river called? Write your answer.



3. Where is a river usually narrow and shallow?
Tick the correct answer.

The upper course

The middle course

The lower course

River Nile fact file

Length of river:	6,650 km
Main tributaries:	Tributaries are smaller rivers that join the main river. The Nile's are the White Nile and the Blue Nile.
Source:	Lake Tana is the source of the Blue Nile. Lake Victoria and other lakes are the source of the White Nile.
Countries:	The White Nile flows through Tanzania, Uganda and South Sudan.
	The Blue Nile flows through Ethiopia and Sudan.
	The Nile flows through Sudan and Egypt.
Mouth:	The Nile flows into the Mediterranean Sea. A city called Alexandria is built by its mouth.



4. How long is the River Nile? Write your answer.

_____ kilometres



5. What are the names of the two lakes that are the sources of the Nile? Write your answers.

Lake _____

Lake _____

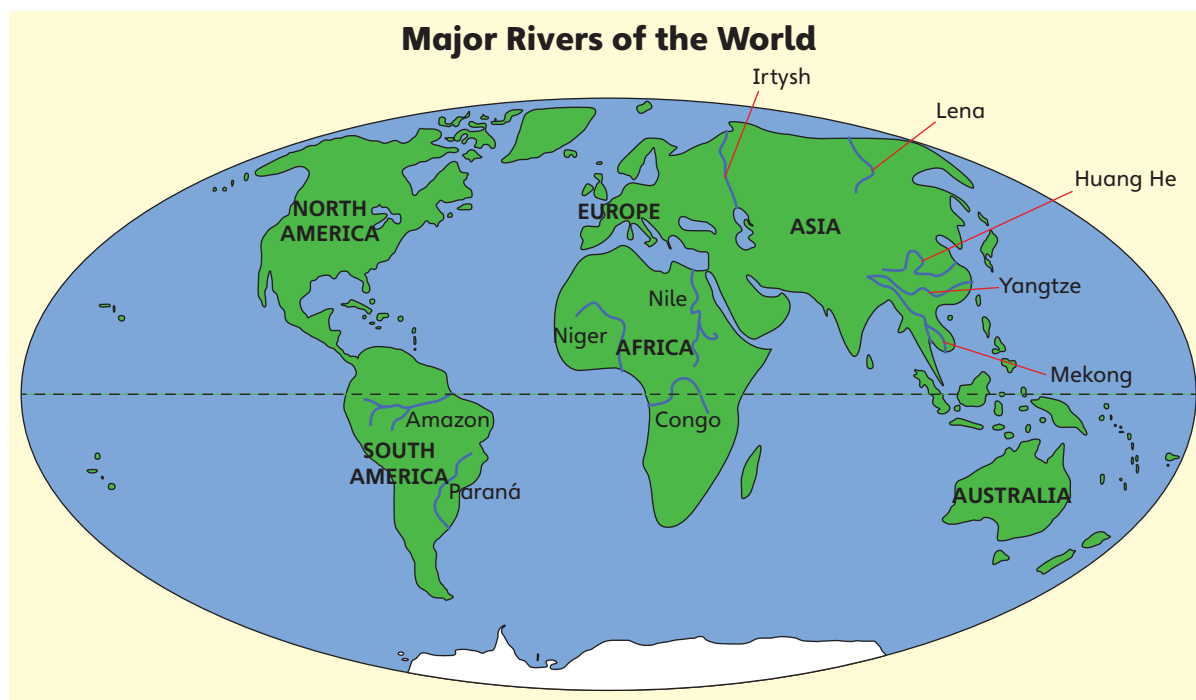


6. In which one of these countries is the mouth of the Nile located? Tick the correct answer.

Egypt

Ethiopia

Sudan



7. How many of the ten longest rivers are in the continent of Africa? Write your answer.



8. How many of the ten longest rivers are in the continent of North America? Write your answer.



9. Which continent is the Amazon River located in? Write your answer.



10. One continent contains five of the world's ten longest rivers. Which continent is that? Write your answer.

Lesson 2

What are erosion, transportation and deposition?

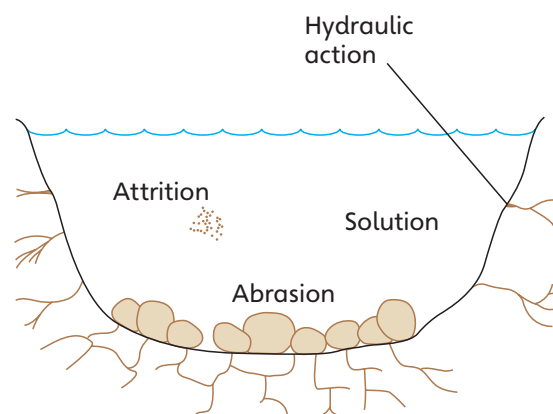
Quiz

1. What is the name for the start of a river? Tick the correct answer.
a. Start b. Source c. Mouth d. Tributary
2. Read the statements below. Tick 'True' or 'False' for each one.
 - a. The upper course is where the river is widest and deepest. True False
 - b. The middle course is where the source of the river is located. True False
 - c. The lower course is where the mouth of the river is located. True False
3. Name this river: it is 6,650 km long, its mouth is in Egypt and its sources are in Lake Tana and Lake Victoria. Write your answer.

4. Which one of these rivers is located in South America? Tick the correct answer.
a. Mekong b. Nile c. Amazon d. Congo
5. One continent contains five of the world's ten longest rivers. Which continent is that? Tick the correct answer.
a. North America b. Asia
c. South America d. Africa

Erosion

Rivers wear away the land as they flow over it. This process is called **erosion**. This diagram shows four ways in which rivers erode land.



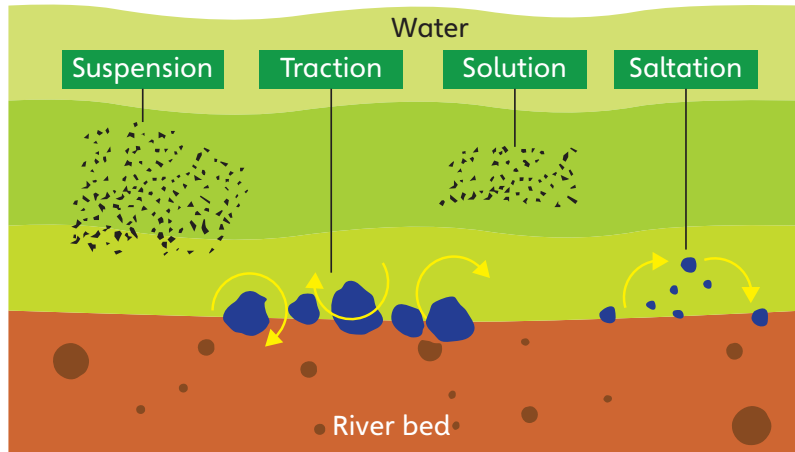
1. Here are the four ways a river erodes the land. Match each description to the best summary words. Draw a line between them. One is done for you.

Ways that a river erodes the land

Description	Summary words
Attrition is when bits of rock crash together in the water and break up.	Acid attack
Abrasion is when bits of rock in the water rub against the riverbed and river banks.	Water power
Solution is when acids in the water dissolve rock.	Crashing and smashing
Hydraulic action is when the power of the water breaks bits off the riverbed and river banks.	Sandpaper rubbing

Transportation

Rivers also carry **sediment**. This process is called **transportation**. This diagram shows four ways in which rivers carry sediment.

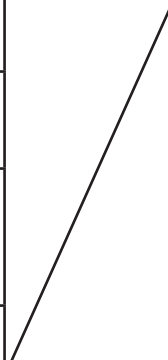


2. Here are the four ways a river transports sediment. Match each description to the best summary words. Draw a line between them. One is done for you.

Ways that a river transports sediment

Description
Traction is when large rocks are rolled along the riverbed.
Saltation is when bits of rock bounce and jump along the riverbed.
Suspension is when small particles of sediment are carried along in the flow of the river.
Solution is when the smallest bits of sediment are dissolved into the water and carried along.

Summary words
Invisible!
Carried along
Jumping beans
Tractor rolling



Deposition

Rivers deposit material when they don't have enough energy to carry it. This is called **deposition**.

Imagine running out of energy to carry a heavy suitcase. You might drop it and decide to leave it behind.



River processes

- Rivers can do more erosion when they have more energy. This is when they are travelling most quickly.
- Rivers deposit material when they are moving slowly. They have less energy when they are travelling slowly.
- On a river bend, the water moves more quickly on the outside of the bend.
- The water moves more slowly on the inside of the bend.



3. Cross out the incorrect words to complete these labels.



This is the inside of the river bend.
This is where the river is **slowest**
This is where most **deposition** occurs.

This is the outside of the river bend.
This is where the river is **fastest**
This is where most **erosion** occurs.

Lesson 3

Why is the Volga River important to people?



Quiz

1. Match each erosion key term with its description. Draw a line between them.

Key term
Attrition
Abrasion
Solution
Hydraulic action

Description
When acids in the water dissolve the rock.
When the power of the water breaks bits off the riverbed and river banks.
When bits of rock in the water rub against the riverbed and river banks.
When bits of rock crash together in the water and break up.

2. Match each transportation key term with its description. Draw a line between them.

Key term
Traction
Saltation
Suspension
Solution

Description
When bits of rock bounce and jump along the riverbed.
When the smallest bits of sediment are dissolved into the water and carried along.
When small particles of sediment are carried along in the flow of the river.
When large rocks are rolled along the riverbed.

About the Volga River

The Volga River is the longest river in Europe. It is 3,530 kilometres long. The Volga River is in one country: Russia.

The Volga River is often called 'Mother Volga' by Russians. Without the Volga, they say, there would be no Russia.

- Half of all Russia's farming takes place along the Volga.
- Nearly half of all the Russian people live near the Volga.



1. Which city is nearest the source of the Volga River? (It is the capital city of Russia.) Write your answer.



2. Which sea does the Volga River flow into? Write your answer.



3. Which city is nearest the mouth of the Volga River? Write your answer.

Uses of the Volga River

Floods and farming

A **flood** is when a river's water spills out over its banks and spreads out over the surrounding area. The river water deposits the sediment it was transporting. The sediment makes soil fertile which is good for farming. That is why 50 per cent of all Russia's farming takes place along the Volga.

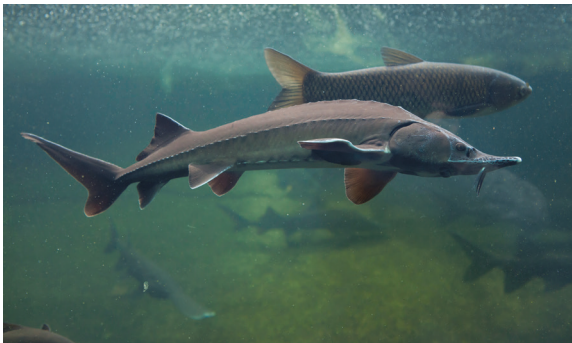
Floods can also be harmful. Sometimes, when there is a lot of rain, large floods happen. Houses can flood. Farm animals can drown. People can drown.

Dams and energy

Making a dam on a river helps to control flooding. The Volga has 10 dams and 8 huge reservoirs. Water flowing through dams can be used to make electricity. Cities get their drinking water from the reservoirs.

Fishing

Many fish live in the Volga River. There are over 120 species and the biggest is the sturgeon. Russians love to eat caviar, which is fish eggs (often from sturgeon).



Sturgeon



Caviar

Travel

The Volga is like a motorway for ships! Around 60 per cent of all Russia's freight is carried in ships along the Volga. Freight may include construction materials and timber. Tourists travel on cruise ships along the Volga.



These ships are ready to take tourists for a ride along the Volga River.

4. Are these sentences true or false? Tick 'True' or 'False' for each one.
- a. When a river floods, it is good because it makes the soil fertile for farming. True False
 - b. When a river floods, it is bad because houses flood and people may drown. True False

Volga River problems

The Volga River is very useful for people. But using the Volga has caused a lot of **pollution**.

Factories along the river dump waste into the water.

Ships leak fuel into the river.

Waste water from cities goes into the river.

Farming chemicals wash off the land into the river.



Pollution harms fish in the river. There are 60 per cent fewer sturgeon than there used to be

Because of farm chemicals, the water gets covered in green slime. Then the fish can't breathe and they die.

Pollution gets into the reservoirs. This can be dangerous for a population's water supply.



5. Which one of these is something that causes river pollution? Tick the correct answer.

- a. There are a lot of fish in the river.
- b. Factories dump waste into the river.
- c. There are dams along the river.



6. Which one of these is something that **happens because** of river pollution? Tick the correct answer.

- a. Fish can't breathe, and die.
- b. Ships leak fuel into the river.
- c. Cities put waste water into the river.

Unit progress check in

1. Which part of a river flows quickly, with lots of energy? The upper, middle or lower course?
Write your answer.

2. Read the statements below. Tick 'True' or 'False' for each one.
 - a. The Nile's tributaries are the White and Red Niles. True False
 - b. Lake Victoria is a source of the White Nile. True False
 - c. The Nile flows through Sudan and Egypt. True False
 - d. The Nile's mouth is near the city of Cairo in Egypt. True False
3. During which process does a river put down material? Tick the correct answer.
 - a. Suspension
 - b. Transportation
 - c. Deposition
 - d. Traction
4. What is the name of the type of erosion that involves bits of rock hitting each other in the water and breaking up? Tick the correct answer.
 - a. Attrition (crashing and smashing)
 - b. Abrasion (sandpaper rubbing)
 - c. Solution (acid attack)
 - d. Hydraulic action (water power)
5. What is the name of the big fish that lives in the Volga River? Write your answer.

6. Match each number with a Volga River fact. Draw a line between them.

Numbers	Volga River facts
10 and 8	The percentage of all Russian farmland that is by the Volga.
50 per cent	The length of the Volga River.
3,530 km	The number of dams and reservoirs along the Volga River.

Lesson 4

Why are rivers important to people?



Quiz

1. What country is the Volga River in? Write your answer.

2. The Volga River is the longest river in which continent? Tick the correct answer.

- a. North America
- b. Europe
- c. Africa
- d. Antarctica

3. Match each sentence start with the correct sentence end. Draw a line between them.

Water flowing through dams ...
Over 120 species of fish ...
Sediment from river flooding ...
Freight is carried ...

... live in the Volga River.
... makes soil fertile which is good for farming.
... can be used to make electricity.
... in ships along rivers.

4. Which one of these causes the most pollution in rivers? Tick the correct answer.

- a. People catching fish in a river
- b. People taking water from rivers to drink
- c. Factories dumping waste in a river

Rivers



1. Look at these photos. How are people using rivers? Write your answers underneath the photos.







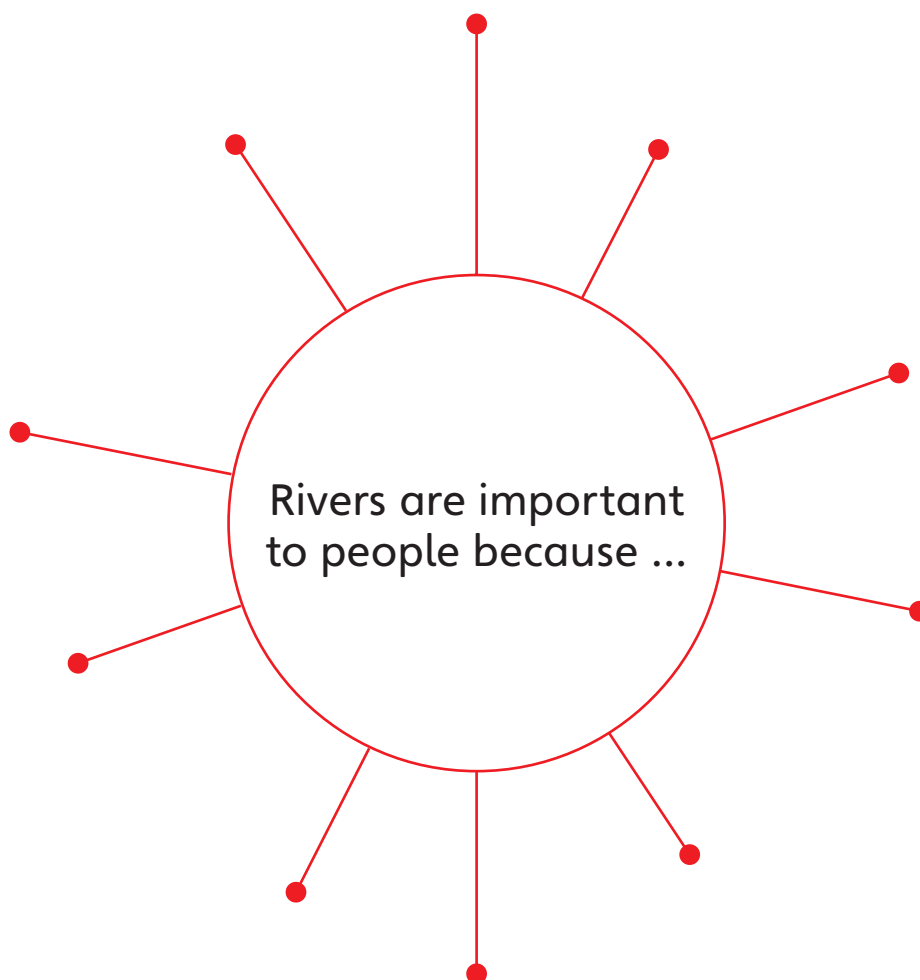









2. Why are rivers important to people? Create a concept map using your ideas. You could write your answers or draw them.





3. Put your ideas of how people use rivers in order. Write the most important use at the top and the least important at the bottom.

<p>Most important</p>  <p>Least important</p>	<hr/> <hr/>
	<hr/> <hr/>
	<hr/> <hr/>
	<hr/> <hr/>
	<hr/> <hr/>
	<hr/> <hr/>

Lesson 5

How do rivers shape the land around them?

Quiz

- Rivers can be used to make electricity. Which one of these is used to make electricity from rivers? Tick the correct answer.
a. Dams b. Fish c. Floods and sediment
- Look at the statement below. Tick 'True' or 'False'.
'Rivers make bad soil for farming when they flood.'
True False
- Look at the statement below. Tick 'True' or 'False'.
'It is not safe to drink water straight out of a river – it needs to be cleaned first.'
True False
- Ships transport freight up and down rivers. What is freight? Tick the correct answer.
a. Tourists who are travelling to see sights along the river
b. Things like timber that are carried by ships from port to port
c. Sediment that is deposited on fields to make them good for farming
- Some of the ways that people use rivers cause pollution. What is pollution? Tick the correct answer.
a. Something that harms the environment
b. When the land is worn away by rivers
c. Sediment that is dissolved in the river

Waterfalls

A waterfall is part of a river that takes a steep drop over a ledge or a cliff.



1. The photo below shows a waterfall. Tick the statements you believe are true.

Waterfalls are made by river erosion.

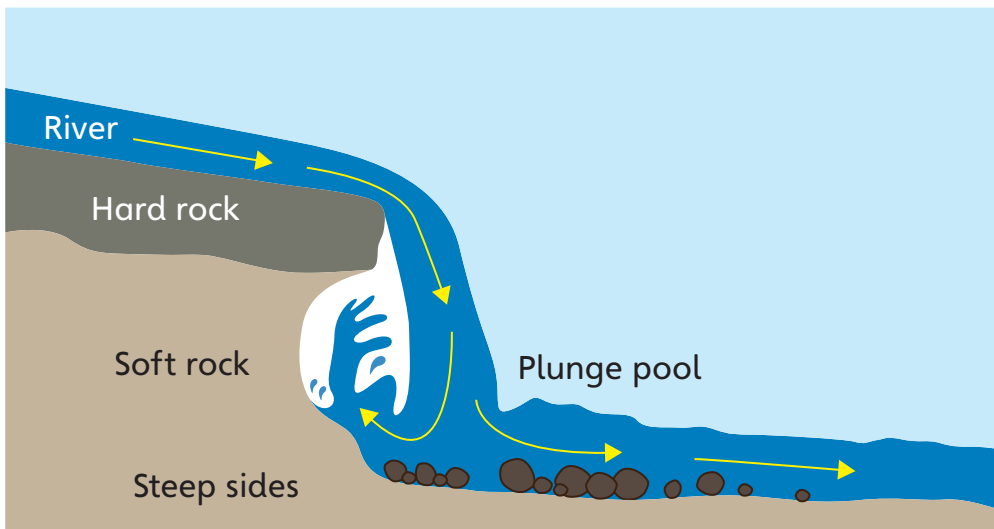
Waterfalls are made by river deposition.

Waterfalls are usually found in the upper course, where slopes are steep.

Waterfalls are usually found in the lower course, where the land is nearly flat.



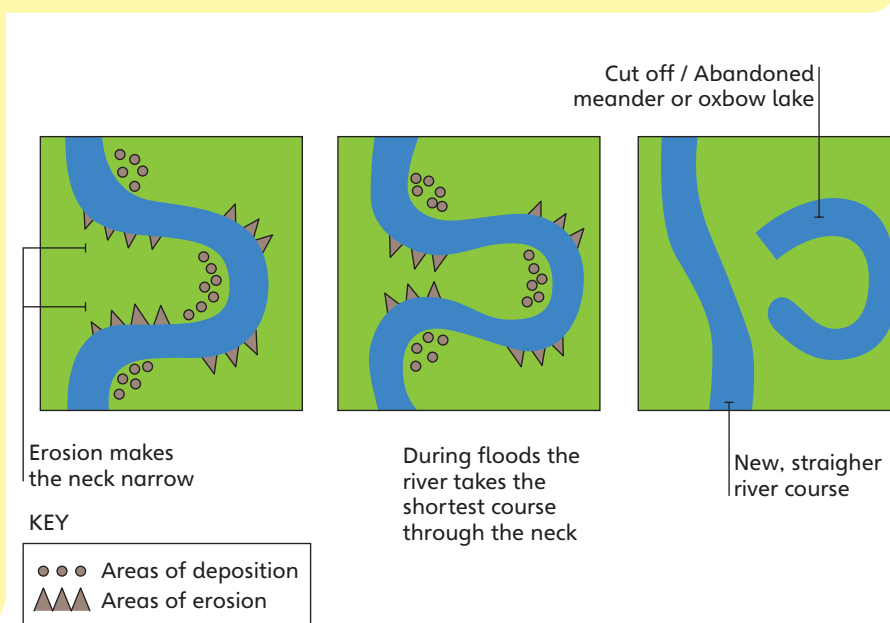
2. Look at the diagram below. It shows features of a waterfall. Add these same labels to the right places on the photograph. Use a ruler for straight lines.



Meanders and oxbow lakes

Rivers have bends in them called meanders.

- Erosion happens on the outside of the meander bend, where the river flow is fastest.
- Deposition happens on the inside of the meander bend, where the river flow slows down.
- This makes the meander change shape. The 'neck' of the loop gets narrower.
- When the river floods, it has lots of energy. It has enough energy to break through the 'neck'.
- A little lake gets left behind. The little lake is called an oxbow lake.



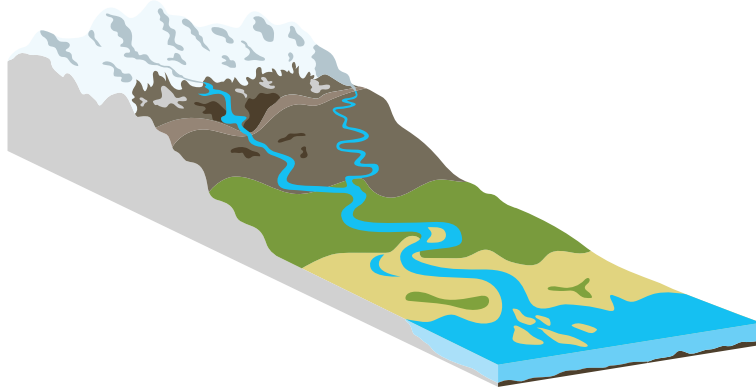
3. Look at the photo below.

- Label the photo where erosion is happening and where deposition is happening.
- What will happen to the neck of the meander when the river floods? Write your answer.





4. Look carefully at the drawing of the course of a river below.
- a. Label a meander.
 - b. Label an oxbow lake.



Deltas

A **delta** is a triangle-shaped area of marshy land, found where a river flows into the sea.



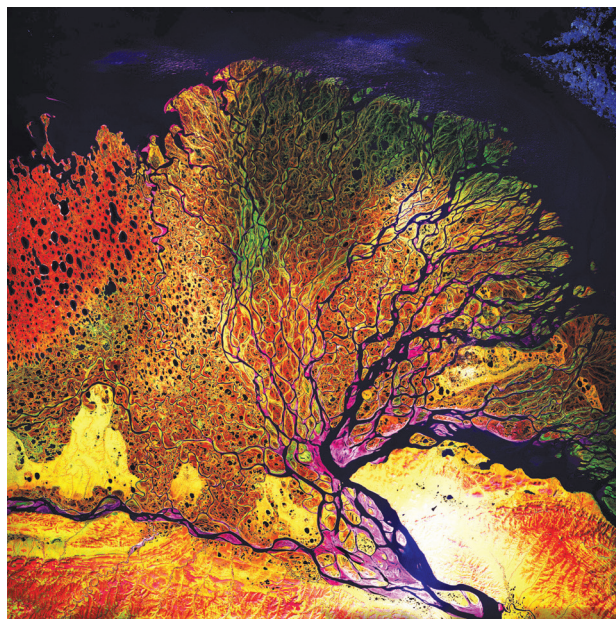
5. Where is the delta on the diagram above? Add a label to the diagram to show the delta.



6. How do you think a river makes a delta? Tick the correct answer.

By erosion

By deposition



This is a satellite photo of a delta. The satellite adds different colours to show different things on the land surface, like plants. The dark blue is the river and the sea.

Lesson 6

Unit check out

Why should we protect rivers from pollution? Give examples in your answer.

Key words		
chemicals	farming	Volga River
dams	floods	waste water
deposit	polluted	water supply
factories		

Title: Why should we protect rivers from pollution?	<hr/> <hr/>
Introduction <ul style="list-style-type: none">• Which river are you going to use for your example?	<hr/> <hr/>
Paragraph 1 <ul style="list-style-type: none">• How do people use rivers (in general)?• Think about food and drink, how people travel, having fun and also providing energy.	<hr/> <hr/> <hr/> <hr/>

<p>Paragraph 2</p> <ul style="list-style-type: none">• How do people use the Volga River?• Consider floods and farming, dams and energy, fishing and travel.	<hr/> <hr/> <hr/> <hr/>
<p>Paragraph 3</p> <ul style="list-style-type: none">• What causes pollution of the Volga River?• Think about factories and their waste, pollution from ships and from cities, and the chemicals used in farming.• Why is pollution bad for the Volga River?• Think about the effect of pollution on fish and also what can happen to a population's water supply.	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>Extension</p> <ul style="list-style-type: none">• What do other species (other animals and plants) need rivers for?	<hr/> <hr/>
<p>Conclusion</p> <ul style="list-style-type: none">• Why should we protect rivers from pollution?• Think about what humans and other species need rivers for.	<hr/> <hr/> <hr/> <hr/>

Acknowledgments

The publisher would like to thank the following individuals and organisations for their kind permission to reproduce their photographs:

Pikoso.kz/Shutterstock, Pikoso.kz/Shutterstock, Egyptian Studio/Shutterstock, Voran/Shutterstock, filipefrazao/I23RF, WitR/Shutterstock, Pikoso.kz/Shutterstock, Photoschmidt/Shutterstock, DavidTB/Shutterstock, Charmaine A Harvey/Shutterstock, Pikoso.kz/Shutterstock, Pearson Education Ltd, Vladimir Wrangel/Shutterstock, Nastya Sokolova/Shutterstock, Nastya Sokolova/Shutterstock, Iakov Filimonov/Shutterstock, BestPhotoStudio/Shutterstock, Pikoso.kz/Shutterstock, Wcpmedia/Shutterstock, Ammit Jack/Shutterstock, Charles Knowles/Shutterstock, Krumanop/Shutterstock, Toey Toey/Shutterstock, AVM Images/Shutterstock, Maykova Galina/Shutterstock, Pikoso.kz/Shutterstock, Ann in the uk/Shutterstock, Coral Brunner/Shutterstock, Elenall/Shutterstock, Pikoso.kz/Shutterstock.

Published by Pearson Education Limited, 80 Strand, London, WC2R 0RL.

www.pearsonschools.co.uk

Text and Illustration © Pearson Education Limited 2021

Produced by Oriel Square Limited

Typeset and illustrated by Jouve India

Written by Reach Academy Trust

This publication is protected by copyright, and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise. For information regarding permissions, request forms and the appropriate contacts, please visit <https://www.pearson.com/us/contact-us/permissions.html> Pearson Education Limited Rights and Permissions Department.

Unless otherwise indicated herein, any third party trademarks that may appear in this work are the property of their respective owners and any references to third party trademarks, logos or other trade dress are for demonstrative or descriptive purposes only. Such references are not intended to imply any sponsorship, endorsement, authorisation, or promotion of Pearson Education Limited products by the owners of such marks, or any relationship between the owner and Pearson Education Limited or its affiliates, authors, licensees or distributors.

First published 2021

Copyright notice

All rights reserved. No part of this publication may be reproduced in any form or by any means (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this publication) without the written permission of the copyright owner, except in accordance with the provisions of the Copyright, Designs and Patents Act 1988 or under the terms of a licence issued by the Copyright Licensing Agency, Barnards Inn, 86 Fetter Lane, London EC4A 1EN (www.cla.co.uk). Applications for the copyright owner's written permission should be addressed to the publisher.

Note from the publisher

Pearson has robust editorial processes, including answer and fact checks, to ensure the accuracy of the content in this publication, and every effort is made to ensure this publication is free of errors. We are, however, only human, and occasionally errors do occur. Pearson is not liable for any misunderstandings that arise as a result of errors in this publication, but it is our priority to ensure that the content is accurate. If you spot an error, please do contact us at resourcescorrections@pearson.com so we can make sure it is corrected.



Primary Geography

Rivers

Pearson Primary Geography is a proven, intelligently sequenced curriculum that helps every child learn, and remember more. These units will help you become a successful Geographer.

These workbooks provide a resource to support teaching and to evidence children's learning through the unit, by providing:

- Knowledge Organisers to support learning substantive knowledge across the unit
- Clear, levelled texts and images to follow teaching material
- Retrieval Practice 'Quizzes' every lesson to build retention
- Mid Unit check-ins - for formative assessment
- End of Unit summative tasks

For more about Pearson Primary Geography, and the Geography resources that sit alongside these, please visit:

[pearsonschoools.co.uk/PrimaryHistGeog](https://www.pearsonschoools.co.uk/PrimaryHistGeog)

www.pearsonschoools.co.uk
myorders@pearson.com