Formative Assessment Scores

Knowledge Quiz 4.1

Knowledge Quiz 4.2

Knowledge Quiz 4.3

Knowledge Quiz 4.4

Knowledge Quiz 4.5

Notes:
### Climate Zones and Biomes Knowledge Organiser

#### Vocabulary

<table>
<thead>
<tr>
<th></th>
<th>Vocabulary</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Climate</td>
<td>The weather conditions in an area over time</td>
</tr>
<tr>
<td>2</td>
<td>Biome</td>
<td>An area with similar plants and animals</td>
</tr>
<tr>
<td>3</td>
<td>Vegetation belt</td>
<td>Smaller regions indicating where vegetation grows</td>
</tr>
<tr>
<td>4</td>
<td>Polar and subpolar zone</td>
<td>Areas in the north and south of the globe</td>
</tr>
<tr>
<td>5</td>
<td>Temperate zone</td>
<td>Areas of mild temperature</td>
</tr>
<tr>
<td>6</td>
<td>Equatorial and Tropical zones</td>
<td>Area in the centre of the globe with a hot temperature</td>
</tr>
<tr>
<td>7</td>
<td>Arid zone</td>
<td>Areas north and south of the tropics</td>
</tr>
</tbody>
</table>

#### Biome Definition

<table>
<thead>
<tr>
<th></th>
<th>Biome</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Rainforest</td>
<td>A thick forest that has a lot of rain</td>
</tr>
<tr>
<td>9</td>
<td>Savannah</td>
<td>A grassy plain in tropical and subtropical regions with definition</td>
</tr>
<tr>
<td>10</td>
<td>Desert</td>
<td>A waterless area with little or no vegetation</td>
</tr>
<tr>
<td>11</td>
<td>Chaparral</td>
<td>An area that has mainly shrubs and thorny bushes</td>
</tr>
<tr>
<td>12</td>
<td>Grassland</td>
<td>A large open area covered with grass</td>
</tr>
<tr>
<td>13</td>
<td>Deciduous forest</td>
<td>A forest that has trees that lose their leaves each year</td>
</tr>
<tr>
<td>14</td>
<td>Boreal forest</td>
<td>A forest made up of coniferous plants in cold areas</td>
</tr>
<tr>
<td>15</td>
<td>Tundra</td>
<td>A flat, cold, treeless area</td>
</tr>
</tbody>
</table>

### Climate

- **Equatorial zone**
- **Tropical zone**
- **Arid zone**
- **Mediterranean zone**
- **Temperate zone**
- **Subpolar zone**
- **Polar zone**

### Biomes

- **Polar Desert**
- **Tundra**
- **Boreal forest**
- **Tropical Rainforest**
- **Deciduous forest**
- **Grassland**
- **Savannah**
- **Desert**
- **Chaparral**
## Challenges of a biome for humans

<table>
<thead>
<tr>
<th>Biome</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| **Rainforest:** | - It can rain more than 250cm a year  
- It is difficult to grow crops  
- Diseases spread easily |
| **Savannah:** | - It rarely rains  
- It is difficult to find water  
- It is difficult to grow crops |
| **Desert:** | - It is often dangerously hot or cold  
- It is difficult to find water  
- There are limited food sources |
| **Chapparal:** | - Fires can easily start  
- The winter is very wet  
- The summer is very dry |
| **Grassland:** | - Fires can easily start  
- Limited building materials  
- Droughts common |
| **Deciduous forest:** | - Limited open spaces  
- Weather limits when plants can grow  
- Transport is difficult |
| **Boreal forest:** | - Limited open spaces  
- Transport is difficult  
- Cold in winter |
| **Tundra:** | - Dangerously cold in winter  
- Poor nutrients in the soil  
- It rarely rains |

## Biomes in Europe

- Grassland
- Deciduous forest
- Boreal forest
- Tundra
- Chaparral

## Overcoming the challenges of a biome

**Deciduous forest: Lake District, United Kingdom**
In many parts of the UK, including the Lake District, deciduous forest has been cut down and cleared (on flat ground). This makes space for the growing of crops and the grazing of animals.

**Grassland: Southern Spain**
In Southern Spain, in the summer months when droughts are common, water is transported from lakes and reservoirs to keep the soil fertile and allow crops to grow.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does climate differ around the world?</td>
<td></td>
</tr>
<tr>
<td>What is a biome and where in the world are they?</td>
<td></td>
</tr>
<tr>
<td>What do the flora and fauna of each biome have in common?</td>
<td></td>
</tr>
<tr>
<td>How have flora and fauna adapted to the biomes of Europe?</td>
<td></td>
</tr>
<tr>
<td>What challenges do humans face in the biomes of Europe?</td>
<td></td>
</tr>
<tr>
<td>How have humans adapted the biomes of Europe?</td>
<td></td>
</tr>
</tbody>
</table>
Existing Knowledge

What do you know about climate zones and biomes?
Session 1:
How does climate differ around the world?

**Key Knowledge**

- Climate zones are areas around the world with a similar climate
- The word climate describes the usual pattern of weather
- The temperate and rainfall across the seasons make the climate
- The same climate zone can be found in different continents
- Places near the equator are hot and wet
- Places along the Tropics are dry all year
- Places get colder as you move further from the Tropics
- The coldest places are found nearest the Poles

**Key Vocabulary**

- Climate Zone
- Polar
- Sub Polar
- Temperate
- Mediterranean
- Arid
- Tropical
- Equatorial

**Task: (Talk Partners)**

What does this image show you?
Can you name and locate any continents and countries in the image?
Which places look the driest/wettest?
Which places look the coldest/hottest?
Paired Task:
Label the seven main world climate zones:

![World Climate Zones Map](image)

Independent Task:
Tick the boxes to show which climate zones are in which continent:

<table>
<thead>
<tr>
<th></th>
<th>Polar</th>
<th>Sub Polar</th>
<th>Temperate</th>
<th>Mediterranean</th>
<th>Arid</th>
<th>Tropical</th>
<th>Equatorial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oceania</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South America</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Paired Task:

Describe the typical climate of each climate zone:

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polar</td>
<td></td>
</tr>
<tr>
<td>Sub Polar</td>
<td></td>
</tr>
<tr>
<td>Temperate</td>
<td></td>
</tr>
<tr>
<td>Mediterranean</td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
</tr>
<tr>
<td>Tropical</td>
<td></td>
</tr>
<tr>
<td>Equatorial</td>
<td></td>
</tr>
</tbody>
</table>
Independent Task:
Which picture could be from which climate zone? Explain your thinking.
Session 2:
What is a biome and where in the world are they found?

Key Knowledge
- Biomes are located around the world
- Biomes are large regions of the world that because of a similar climate, have similar plants and animals
- The same biomes can be found in different continents
- There is a clear link between climate zones and biomes

Key Vocabulary
- Biome
- Tundra
- Boreal Forest
- Deciduous Forest
- Grassland
- Desert
- Chaparral
- Tropical Rainforest
- Savannah
- Flora
- Fauna

Knowledge Quiz 4.1

1. Which two form the climate of an area?
   - Rainfall
   - Animals
   - Plants
   - Temperature

2. Which climate zone is usually found along the equator?
   - Tropical
   - Equatorial
   - Polar
   - Dry

3. Which best describes the polar climate zone?
   - Very dry all year
   - Mild and quite wet all year
   - Very cold and dry
   - Wet winters, dry hot summers

4. Which best describes the Mediterranean climate zone?
   - Very dry all year
   - Mild and quite wet all year
   - Very cold and dry
   - Wet winters, dry hot summers

5. Which best describes the temperate climate zone?
   - Very dry all year
   - Mild and quite wet all year
   - Very cold and dry
   - Wet winters, dry hot summers
Task: (Talk Partners)

Do you think the same plants and animals can be found everywhere in the world?

How might the climate zone influence the plants and animals?

Independent Task:

Define the following words:

<table>
<thead>
<tr>
<th>Biome</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flora</td>
<td></td>
</tr>
<tr>
<td>Fauna</td>
<td></td>
</tr>
</tbody>
</table>
Paired Task:
Which biome is which colour on this map?
Which climate zone is that biome located in?

<table>
<thead>
<tr>
<th>Colour</th>
<th>Biome</th>
<th>Climate Zone(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Polar Desert</td>
<td>Polar</td>
</tr>
<tr>
<td></td>
<td>Grassland</td>
<td>Mediterranean, Temperate, Arid</td>
</tr>
</tbody>
</table>
Independent Task:
Which biomes can be found in each continent?

Europe:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

North America:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

South America:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Africa:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Asia:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Oceania:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
Paired Task:
Match each biome to the picture:

- Savannah
- Desert
- Chaparral
- Grassland
- Tropical Rainforest
- Boreal forest
- Deciduous forest
- Tundra
Independent Task:
What is the link between climate zones and biomes?
Session 3:
What characteristics do the flora and fauna of each biome have in common?

<table>
<thead>
<tr>
<th>Key Knowledge</th>
<th>Key Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Climate influences the living conditions in a biome</td>
<td>• Characteristics</td>
</tr>
<tr>
<td>• These conditions have an impact on soil, flora and fauna</td>
<td>• Flora</td>
</tr>
<tr>
<td>• Places within the same biome will have similar conditions even if they are in another part of the world</td>
<td>• Fauna</td>
</tr>
<tr>
<td>• The flora and fauna of those biomes share similar characteristics</td>
<td>• Weather Conditions</td>
</tr>
<tr>
<td>• There characteristics are shared because they help with survival</td>
<td>• Soil Conditions</td>
</tr>
<tr>
<td>• The flora and fauna will be similar in many ways but not identical</td>
<td>• Seasons</td>
</tr>
</tbody>
</table>

Knowledge Quiz 4.2

1. Which best describes the Mediterranean climate zone?
   - Very dry all year
   - Mild and quite wet all year
   - Very cold and dry
   - Wet winters, dry hot summers

2. Which best describes the temperate climate zone?
   - Very dry all year
   - Mild and quite wet all year
   - Very cold and dry
   - Wet winters, dry hot summers

3. Flora and fauna refer to:
   - Animals
   - Humans
   - Buildings
   - Plants

4. Which biome is not found in Africa?
   - Tropical Rainforest
   - Tundra
   - Desert
   - Savannah

5. Which biome has the driest land?
   - Tropical Rainforest
   - Boreal Forest
   - Desert
   - Savannah
Task: *(Talk Partners)*

In which biome are these flora and fauna found?

What would the conditions be like there?

What makes them suitable for life there?

Independent Task:

List the other 7 biomes we looked at in the previous session:

1. __________________________________
2. __________________________________
3. __________________________________
4. __________________________________
5. __________________________________
6. __________________________________
7. __________________________________
Task: (Talk Partners)
Examine the images below – which image belongs to which biome? What flora and fauna would you expect to see in each? Why?
Paired Task:

Describe the conditions in each biome and the characteristics of the flora and fauna:

<table>
<thead>
<tr>
<th></th>
<th>Conditions</th>
<th>Flora and Fauna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tundra</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boreal Forest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deciduous Forest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chaparral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Grassland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tropical Rainforest</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Independent Task:**

Why are different flora and fauna found in each biome?

<table>
<thead>
<tr>
<th>Desert</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Savannah</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Session 4:

How have flora and fauna adapted to the biomes of Europe?

<table>
<thead>
<tr>
<th>Key Knowledge</th>
<th>Key Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Not all biomes are found in Europe due to the position of the continent in</td>
<td>• Continent</td>
</tr>
<tr>
<td>the northern hemisphere</td>
<td>• Europe</td>
</tr>
<tr>
<td>• Different biomes span across different countries</td>
<td>• Northern Hemisphere</td>
</tr>
<tr>
<td>• Some countries have more than one biome</td>
<td>• Country</td>
</tr>
<tr>
<td>• Specific flora and fauna can be found in each European biome</td>
<td>• Adaptation</td>
</tr>
<tr>
<td>• Those flora and fauna have adapted in order to survive</td>
<td>• Survival</td>
</tr>
</tbody>
</table>

Knowledge Quiz 4.3

1. Flora and fauna refer to:

   - Animals
   - Humans
   - Buildings
   - Plants

2. Which biome is not found in Africa?

   - Tropical Rainforest
   - Tundra
   - Desert
   - Savannah

3. Which biome consists of flora with ‘drip tips’ to help them shed water from daily downpours?

   - Tropical Rainforest
   - Savannah
   - Boreal Forest
   - Deciduous Forest

4. Which biome consists of large grazing animals, scattered trees and shrubs?

   - Tundra
   - Deciduous Forest
   - Desert
   - Savannah

5. Which biome consists of many nocturnal animals who spend most of their lives underground where it is much cooler?

   - Deciduous Forest
   - Desert
   - Boreal Forest
   - Chapparal
Task: *(Talk Partners)*

Where is Europe on this map?

Which biomes are in Europe? What are the conditions like in those biomes?

---

Independent Task:

How many different biomes are found in Europe and which ones are they?

Which biomes are not found in Europe? Why do you think this is?
Paired Task:
Examine the two maps – which biome is linked to each country?

<table>
<thead>
<tr>
<th>Country</th>
<th>Biome(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td><strong>Deciduous Forest</strong></td>
</tr>
<tr>
<td>Italy</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
</tr>
<tr>
<td>Iceland</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td></td>
</tr>
</tbody>
</table>
Paired Task:
Place the flora and fauna in the correct European biome:

<table>
<thead>
<tr>
<th>Deciduous Forest</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Boreal Forest</td>
<td></td>
</tr>
<tr>
<td>Grasslands</td>
<td></td>
</tr>
<tr>
<td>Chapparal</td>
<td></td>
</tr>
<tr>
<td>Tundra</td>
<td></td>
</tr>
</tbody>
</table>
Independent Task:

How are these flora and fauna adapted to their biomes?

Deciduous trees and squirrels of the deciduous forest:

Siberian spruce trees and snowshoe hares of the boreal forest:
Session 5:
What challenges do humans face living in European biomes?

<table>
<thead>
<tr>
<th>Key Knowledge</th>
<th>Key Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Each biome in Europe presents different challenges for humans living there</td>
<td>• Challenges</td>
</tr>
<tr>
<td>• The different biomes will have positives for human life</td>
<td>• Human life</td>
</tr>
<tr>
<td>• The different biomes will also have negatives for human life</td>
<td>• Climate</td>
</tr>
<tr>
<td>• Some biomes will be easier to live in that others</td>
<td>• Seasons</td>
</tr>
<tr>
<td>• Climate, weather, seasons, soil quality and availability of resources are all things we can take into consideration</td>
<td>• Resources</td>
</tr>
<tr>
<td></td>
<td>• Soil Quality</td>
</tr>
</tbody>
</table>

Knowledge Quiz 4.4

1. Which biome consists of large grazing animals, scattered trees and shrubs?

- Tundra
- Deciduous Forest
- Desert
- Savannah

2. Which biome consists of many nocturnal animals who spend most of their lives underground where it is much cooler?

- Deciduous Forest
- Desert
- Boreal Forest
- Mediterranean Vegetation

3. Which biomes can be found in Europe?

- Deciduous Forest
- Chapparal
- Boreal Forest
- Grasslands

4. Which tundra animal has a brown summer coat and a white winter coat?

- Rabbit
- Grey Squirrel
- Snowshoe Hare
- Badger

5. Which of the below are adaptations of the Siberian spruce tree?

- Darker colour to absorb more light
- Cone shape to shed snow
- Loses leaves in winter when less sunlight
- Long roots to search for water
Task: *(Talk Partners)*

Which biome would you most like to live in and why?
Which biome would you least like to live in and why?

Paired Task:

What do you think would be the positives and negatives of living in each European biome?

<table>
<thead>
<tr>
<th></th>
<th>Positives</th>
<th>Negatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciduous Forest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boreal Forest</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Grasslands

Independent Task:
Which biome would you most like to live in and why?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Independent Task:
Which of the two biomes do you think is easier to live in? Explain your reasoning.
Session 6: How have humans adapted the biomes of Europe?

### Key Knowledge

- Humans have the ability to adapt and make changes to a biome to make living there easier for themselves
- UK Deforestation has been for farming, building and transport
- Further destruction of the deciduous forests is dangerous for both humans and animals
- Spanish grassland sees limited rain and dangers of fires
- It is difficult to grow crops at certain points of the year
- Humans transport water from rivers and lakes to irrigate crops

### Key Vocabulary

- Deforestation
- Farmland
- Graze
- Fuel
- Crops
- Irrigate
- Drought
- Requirements

### Knowledge Quiz 4.5

1. **Which tundra animal has a brown summer coat and a white winter coat?**
   - Rabbit
   - Grey Squirrel
   - Snowshoe Hare
   - Badger

2. **Which of the below are adaptations of the Siberian spruce tree?**
   - Darker colour to absorb more light
   - Cone shape to shed snow
   - Loses leaves in winter when less sunlight
   - Long roots to search for water

3. **Experiencing a balance of all four seasons is a positive of living in which biome?**
   - Boreal Forest
   - Tundra
   - Deciduous Forest
   - Grassland

4. **A high risk of natural fires is a negative of living in which biome?**
   - Chaparral
   - Deciduous Forest
   - Boreal Forest
   - Tundra

5. **Little water for farming is a negative of living in which biome?**
   - Deciduous Forest
   - Tundra
   - Grassland
   - Boreal Forest
Task: *(Talk Partners)*

How have the forests in the UK changed over time? Why do you think this has happened?

**3000 years ago**  
**Modern day**

Paired Task:

Reasons for deforestation in the UK:
- 
- 
- 
- 
- 

Reasons against deforestation in the UK:
- 
- 
- 
- 
- 

Independent Task:
Should the deciduous forests in the UK have been cut down?
**Task: (Talk Partners)**
Why would this be a difficult place to live?

![Image of grasslands](image)

**Independent Task:**
How has water been transported to the grasslands of Spain?
How does climate differ around the world?

What is a biome and where in the world are they?

What do the flora and fauna of each biome have in common?

How have flora and fauna adapted to the biomes of Europe?

What challenges do humans face in the biomes of Europe?

How have humans adapted the biomes of Europe?
Final essay:

What is a biome, how are they different from one another and how have living things adapted for survival within them?