Catalyst 1

Activity Core

You are going to look at the African grasslands and choose an animal that lives there. You will explain how that animal is suited to its habitat, and then think about different habitats in the African grasslands.

1. Look at the Resource sheet and read about the African grasslands.
2. Discuss the location with your partner. Find three words to describe the conditions there (such as hot/cold/warm, dry/wet/moist, sunny/shaded/dark).
3. Choose a different animal each. Discuss together how it is adapted to its habitat. If you need ideas, ask your teacher for some hints.
4. Copy this table to record your ideas about your chosen animal.

<table>
<thead>
<tr>
<th>African grasslands location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions: ...................., .................... and ....................</td>
</tr>
<tr>
<td>Animal: .................................</td>
</tr>
<tr>
<td>This animal is adapted to its habitat because:</td>
</tr>
<tr>
<td>•</td>
</tr>
<tr>
<td>•</td>
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<tr>
<td>•</td>
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</tbody>
</table>

5. There are many habitats in the African grasslands. Look at the Resource sheet again and together pick out three different habitats. Discuss how the conditions would vary in each one (such as temperature, light level, amount of oxygen, amount of water).
6. Describe an animal or plant that is adapted to living in that habitat.
7. Copy this table to record your ideas about your three habitats.

<table>
<thead>
<tr>
<th>Location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat 1:</td>
</tr>
<tr>
<td>Conditions:</td>
</tr>
<tr>
<td>Animal:</td>
</tr>
</tbody>
</table>
You are going to look at the African grasslands and choose an animal that lives there. You will explain how that animal is suited to its habitat, and then think about different habitats in the African grasslands.

1 Look at the Resource sheet and read about the African grasslands.

2 Discuss the location with your partner. Complete this sentence by crossing out the wrong words. You should have a set of three correct words.

The African grasslands are cold, wet and shaded / hot, dry and sunny / cold, moist and dark.

3 Look closely at the lion. Discuss with your partner how it is suited to living in the African grassland. Use your ideas to complete the table below.

4 Now do the same for the zebra.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>This animal is suited to its habitat because:</td>
<td>This animal is suited to its habitat because:</td>
</tr>
<tr>
<td>● it is ....................... coloured so that it blends in with the sandy soil</td>
<td>● it has ....................... on its body so that it blends in with the grasses and bushes</td>
</tr>
<tr>
<td>● it has large ....................... and ....................... to catch and kill its food</td>
<td>● it has hooves and long ....................... so that it can run away from predators quickly</td>
</tr>
<tr>
<td>● it hunts at night, so during the day it can lie in the shade to keep .......................</td>
<td>● it has a long ....................... so that it can feed standing up, ready to run away from danger.</td>
</tr>
<tr>
<td>Draw a lion to show these adaptations:</td>
<td>Draw a zebra to show these adaptations:</td>
</tr>
</tbody>
</table>

5 Complete these sentences by choosing from the words opposite.

The lion and zebra both live on the African grasslands but they have slightly different habitats. The zebra need to feed nearly all the time, so they live in the ....................... where there is plenty of grass to eat and space to run away from danger. The lions eat zebra, so they stay in the ....................... until they have to come out to hunt.
Location:
Mean temperature January: 20–25 °C
Mean temperature July: 20–25 °C
Temperature variation over 24 h: about 11 °C
Annual rainfall: 750–1000 mm (wet summers, dry winters)
Latitude: 10°N
The greater the latitude north (N) or south (S), the bigger the difference in day length between winter and summer.

African grasslands

Organisms
1. wildebeest
2. zebra
3. impala
4. elephant
5. giraffe
6. ostrich
7. marabou stork
8. meerkat
9. lion
10. dung beetle
11. weaverbird
12. acacia tree
13. grasses

You would not see all these organisms at the same time.
Daily changes in a rock pool

In this activity you are going to discuss how a rock pool changes over a day, and how this affects the organisms living there.

1 Look at Resource sheet 1 showing a beach. The tide is out. You can see a rock pool in the drawing.

2 In your group, make a list of all the organisms you might see in a rock pool. Look at both Resource sheets 1 and 2 to help you.

3 Imagine a hot, sunny day. The tide is out. How will the rock pool change during the day, before the tide comes back in? Discuss:
   ● the temperature of the water
   ● the water level
   ● the saltiness of the water.
   Write down your ideas.

4 Imagine a rainy, cool day. The tide is out. How will the rock pool change during the day, before the tide comes back in? Discuss:
   ● the temperature of the water
   ● the water level
   ● the saltiness of the water.
   Write down your ideas.

5 Suggest two ways the rock pool may change when the tide comes back in. Write down your ideas.

6 Now choose one organism living in the rock pool. Discuss how it is adapted to survive the conditions in the rock pool habitat.

7 Prepare an A3 poster with the title ‘Adaptations to life in a rock pool’. Draw your chosen organism in the middle of the page.

8 Use what you learned from your discussion and the Resource sheets to write notes on your drawing. Label the special features your organism has, and by each label write a sentence to explain how this feature helps it to survive in a rock pool. For example, if you draw a barnacle you would label its plates which close to trap water when the tide goes out, preventing the barnacle drying out.
Daily changes in a rock pool

**Location:** Sea shore in south-east England

**Mean temperatures:**
- January: 5–10 °C
- July: 15–20 °C
- Temperature variation over 24 h: depends on tides
- Annual rainfall: 1000–1500 mm
- Latitude: 50°N

The greater the latitude north (N) or south (S), the bigger the difference in day length between winter and summer.

**Organisms:**

1. kittiwake
2. guillemot
3. lichen
4. puffin
5. sand eel
6. limpet
7. mussel
8. flat wrack
9. barnacle
10. sea anemone
11. shrimp
12. hermit crab
13. periwinkle
14. channelled wrack
15. back-headed gull
16. marram grass
17. oystercatcher
18. cockle
19. starfish
20. whelk
21. shore crab

You would not see all these organisms at the same time.
<table>
<thead>
<tr>
<th>Organism</th>
</tr>
</thead>
<tbody>
<tr>
<td>gut weed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A type of green algae (seaweed). Found in rock pools high up the beach. Green seaweeds absorb light that can only pass through shallow water. When the tide goes out the water in the rock pool is just the right depth for the seaweed to absorb light.</td>
</tr>
</tbody>
</table>

| sea anemone     |

<table>
<thead>
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<tbody>
<tr>
<td>A sea anemone grasps a rock with the suction pad at the bottom of its ‘foot’. It uses its tentacles to sting and paralyse animals, then pulls them in and eats them. If it is exposed to air it tucks its tentacles in to trap water and prevent it drying out.</td>
</tr>
</tbody>
</table>

| barnacle        |

<table>
<thead>
<tr>
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<tr>
<td>A barnacle is stuck to the rock by its head and has six bony plates arranged in a cone. When submerged, it puts out its feathery limbs to catch food. When the level of the water falls, the barnacle is exposed to the air. It closes its bony plates, trapping water inside so it does not dry out.</td>
</tr>
</tbody>
</table>

| limpet           |

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<tbody>
<tr>
<td>The limpet has a cone-shaped shell. When submerged, the limpet moves about on the rocks, feeding on algae. When the water level starts to fall the limpet goes back to its ‘home’ spot, where it has worn a perfectly shaped depression in the rock. It seals the edge of its shell to the rock, trapping water inside so that it can breathe and does not dry out.</td>
</tr>
</tbody>
</table>