Hot Deserts: desert ecosystems

Use the PowerPoint presentation or the internet to help you with the following activities.

1. Figure 1 shows a typical hot desert ecosystem.

**Figure 1 The hot desert ecosystem**

A group of palm trees in a desert

Description automatically generated with medium confidence

1. Describe the characteristics of the soil.

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1. Describe the vegetation in the photo.

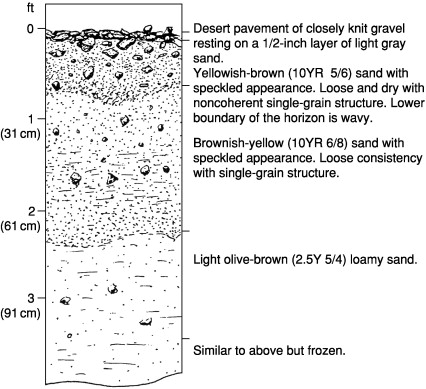
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1. Use the photo to identify the climatic challenges facing plants and animals.

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1. Figure 2 is a diagram called a soil profile. It is a ‘slice’ though the soil showing its different layers or **horizons**.

**Figure 2 Soil profile through a desert soil**



**Bedrock** – solid rock, such as sandstone, from which the soil has developed

**Top soil** – loose sandy soil, red/brown in colour with angular rock fragments on the surface. Some dead vegetation on the surface.

**Sub-soil** – brown/yellow sandy soil with some clay and rock fragments

1. Use a blue colour to draw arrows showing how water easily permeates through the sandy soil.
2. The surface layer of larger, angular fragments is called **desert pavement**. Locate and label this feature on Figure 2.
3. Suggest why plants need to have deep tap roots to find water in hot deserts.

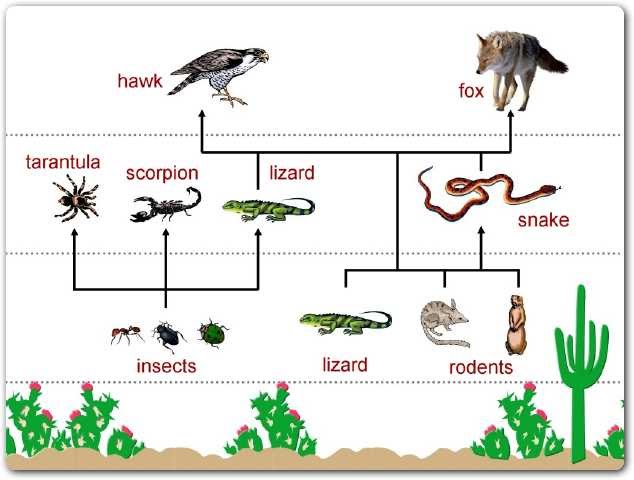
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1. Suggest why desert soils are infertile. (hint – most fertility in soils comes from decomposed dead vegetation).

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1. Figure 3 shows plants and animals found in the Sahara Desert.

**Figure 3 Plants and animals found in the Sahara Desert**



1. What name is given to this diagram? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Complete the blank boxes below to identify two **food chains**.

Insects

Plants

Fox

Plants

1. Suggest what will happen to the ecosystem if the insects were wiped out by chemicals.

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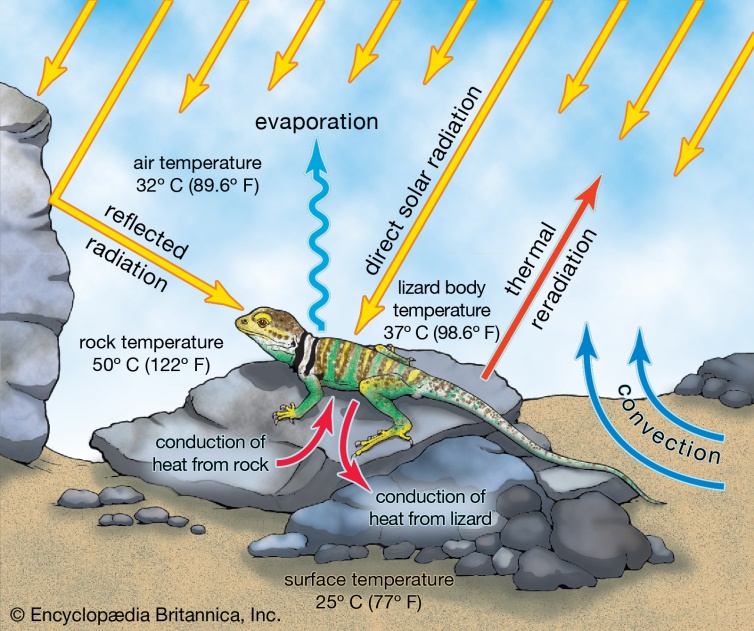
1. Figure 4 shows a desert monitor lizard.

**Figure 4 Desert monitor lizard**



Use Figure 5 below and the Powerpoint Slide 6 to annotate the photo to show how the monitor lizard is well adapted to living in hot deserts.

**Figure 5 How the desert monitor lizard regulates its temperature**



1. The camel (Figure 6) is extremely well adapted to hot desert environments.

**Figure 6 Camel in the Sahara Desert**

**A camel with a ball in its mouth

Description automatically generated with low confidence**

1. Many people wrongly think that camel’s store water in their hump! What do they store in their hump? \_\_\_\_\_\_\_\_\_\_\_
2. Use a labelled sketch (or import a photo from the internet) to describe why a camel’s hoof is well suited to a desert environment.
3. Camels have tough, leathery knees. Why is this feature a good adaptation for living in a desert?

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1. Annotate Figure 6 to identify ***three*** additional adaptations.
2. Figure 7 is a photo showing wild desert gourds, a plant species that is well-adapted to live in hot desert environments.

**Figure 7 Wild desert gourds**

A picture containing outdoor, sky, grass, field

Description automatically generated

1. Annotate Figure 7 to identify ***three*** adaptations that enable desert gourds to live successfully in hot deserts.
2. Desert gourds have deep tap roots. What is their purpose? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Figure 8 is a photo of the plant *calatropis procera*.
4. Suggest why its pale, waxy leaves are a good adaptation to desert conditions.

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1. Outline some of the ways that this plant is useful to people. Use the internet if you wish to identify other uses.

**Figure 8 Calatropis procera**

