



- What does biodiversity mean?
- Biodiversity is extremely high in the tropical rainforest - can you remember why?



Hot Deserts - Explaining the features of the ecosystem

Learning Intent - We are learning about the features of the hot desert ecosystem; what they are like and how they interact with one another

Success Criteria

To **identify** and **describe** the features of a hot desert

To **describe** and **explain** the levels of biodiversity within a hot desert

To **describe** and **explain** how different aspects of the hot desert ecosystem are linked to one another

At the beginning of this topic, we thought about the things which affect what an ecosystem is like and you completed a flow chart like this about deserts.

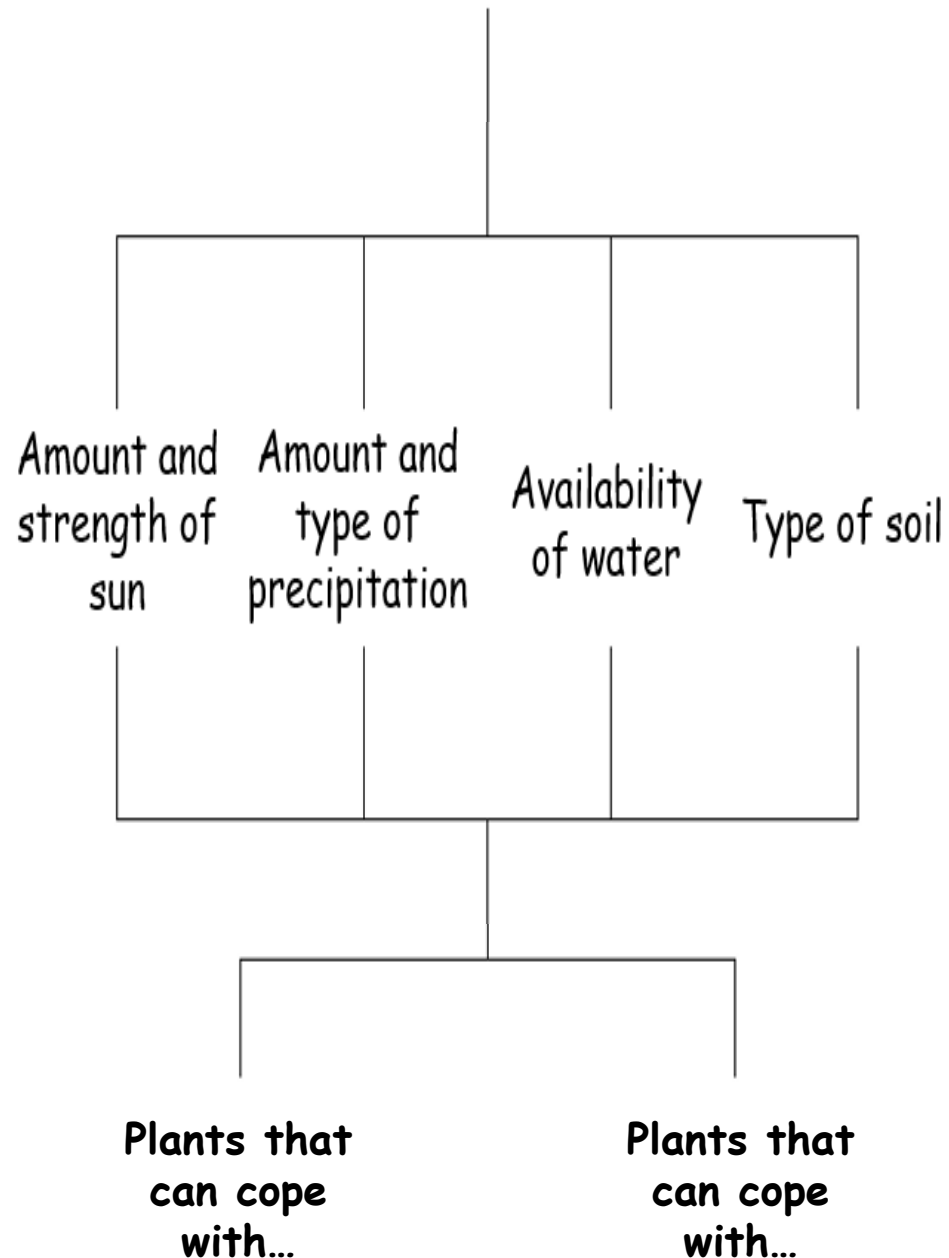
Can you remember what you included?

Task

Make a copy of the flow chart (on lined paper)

Keep 'Hot Deserts' at the top of it, but then replace the other pieces of writing with something specific to the desert e.g. instead of 'type of soil', you could put 'dry, sandy soil'

Hot Deserts



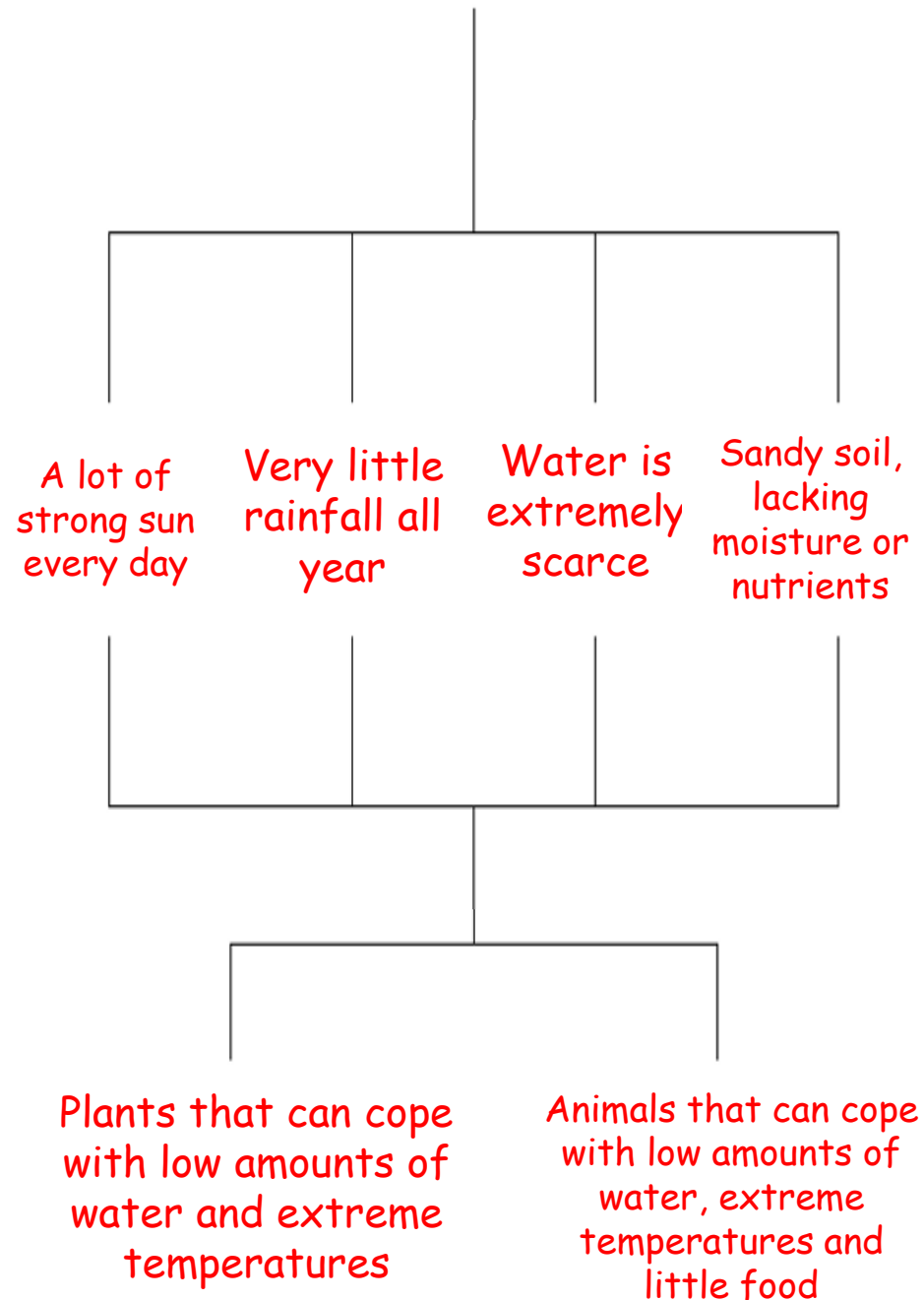
This flow chart shows us what the main features of the desert are

This lesson is going to make you think about how these features affect life in the desert, and how they're linked

Hot Deserts

- A lot of strong sun every day
- Very little rainfall all year
- Water is extremely scarce
- Sandy soil, lacking moisture or nutrients
- Plants that can cope with low amounts of water and extreme temperatures
- Animals that can cope with low amounts of water, extreme temperatures and little food

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- What does biodiversity mean?
- Biodiversity is extremely high in the tropical rainforest – can you remember why?

We started with this...

- Biodiversity is the variety of different plants and animals that live in an ecosystem. There are a huge number of different species in the rainforest so biodiversity is very high
- There are 2 main reasons for this:
 - The warm, wet climate in the rainforest means lots of plants can grow. The high number of plants means there is a lot of food available, so there are a lot of animals. Lots of plants and animals means high biodiversity
 - The high number of plants and animals makes the rainforest a very competitive environment. To survive, the plants and animals have to adapt. This creates many different species and high biodiversity

- What do you imagine biodiversity is like in the desert? (high/low?)
- Why do you think that? Try to give at least 3 possible reasons (think about the things that affected rainforest biodiversity)



Rainforest biodiversity is low... why?

Dry Soil

The soil is extremely dry. 10% of deserts are sand, the rest is gravel and rock. The hot, dry conditions mean lots of evaporation, so the soil has no moisture and can't support plants

Water

Very low amounts of water, precipitation is very low and because the soil is so sandy, any water that does fall, drains away quickly. This means there's not enough to support a lot of plant or animal life

Food

The dry soil and lack of water means that very few plants grow, so that means there simply isn't enough food available to support a lot of animal life

Lack of Litter

The poor soil and dry conditions all mean that there are very few plants. This means a lack of food for animals. No plants and no animals means no litter, so nothing is decomposed to put nutrients in the soil

Q – Explain one reason why biodiversity is low hot deserts

One reason for the low biodiversity in hot deserts is _____.
This means that biodiversity is low because...

Choose one of the boxes below, and include those words in your answer. Write it in your own words – don't copy one of the boxes from the previous slide.

Complete the task on the sheet included in the home learning

Dry soil

Words to include:

- Sand
- Evaporation
- Moisture
- Plants

The amount of water

Words to include:

- Low
- Precipitation
- Drains
- Plant or animal

The amount of food

Words to include:

- Dry Soil
- Water
- Plants
- Support

The lack of litter

Words to include:

- Poor Soil
- Dry
- Plants
- Decomposed

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Even though biodiversity is low; plants, animals and people all do live in hot deserts.

This means we need to get an idea of where life in the desert is found...



TRY TO WORK OUT THE WORDS BEING SHOWN BY THE PICTURES AND ADD THEM TO YOUR SHEET
READ THE WHOLE SENTENCE AND YOU'LL BE ABLE TO WORK IT OUT

The challenges of the desert mean that biodiversity is low. Most of the desert's



animals and



are found around water



such as ponds or rivers or

along the edges/



of the desert. This is because all living things need access to this

water in order to survive and also because the



desert are typically less extreme

around the fringe of a

The limited biodiversity already faces challenges because of the extreme climate, however life in the desert is likely to become even more difficult in future because of

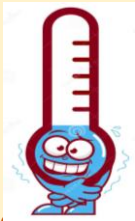


The desert environment is becoming



and drier This is making it

harder for plants to grow, and it is forcing some animals to move to look for



areas.

Unfortunately, in some cases, animals simply cannot find places with the conditions they need to

survive and this is leading to them becoming endangered or



Biodiversity in the desert

The challenges of the desert mean that biodiversity is low. Most of the desert's **plants**, animals and **humans** are found around water **sources** such as ponds or rivers or along the edges/**fringes** of the desert. This is because all living things need access to this water in order to survive and also because the **conditions** around the fringe of a desert are typically less extreme

The limited biodiversity already faces challenges because of the extreme climate, however life in the desert is likely to become even more difficult in future because of **climate change**. The desert environment is becoming **hotter** and drier This is making it harder for plants to grow, and it is forcing some animals to move to look for **cooler** areas. Unfortunately, in some cases, animals simply cannot find places with the conditions they need to survive and this is leading to them becoming endangered or **extinct**

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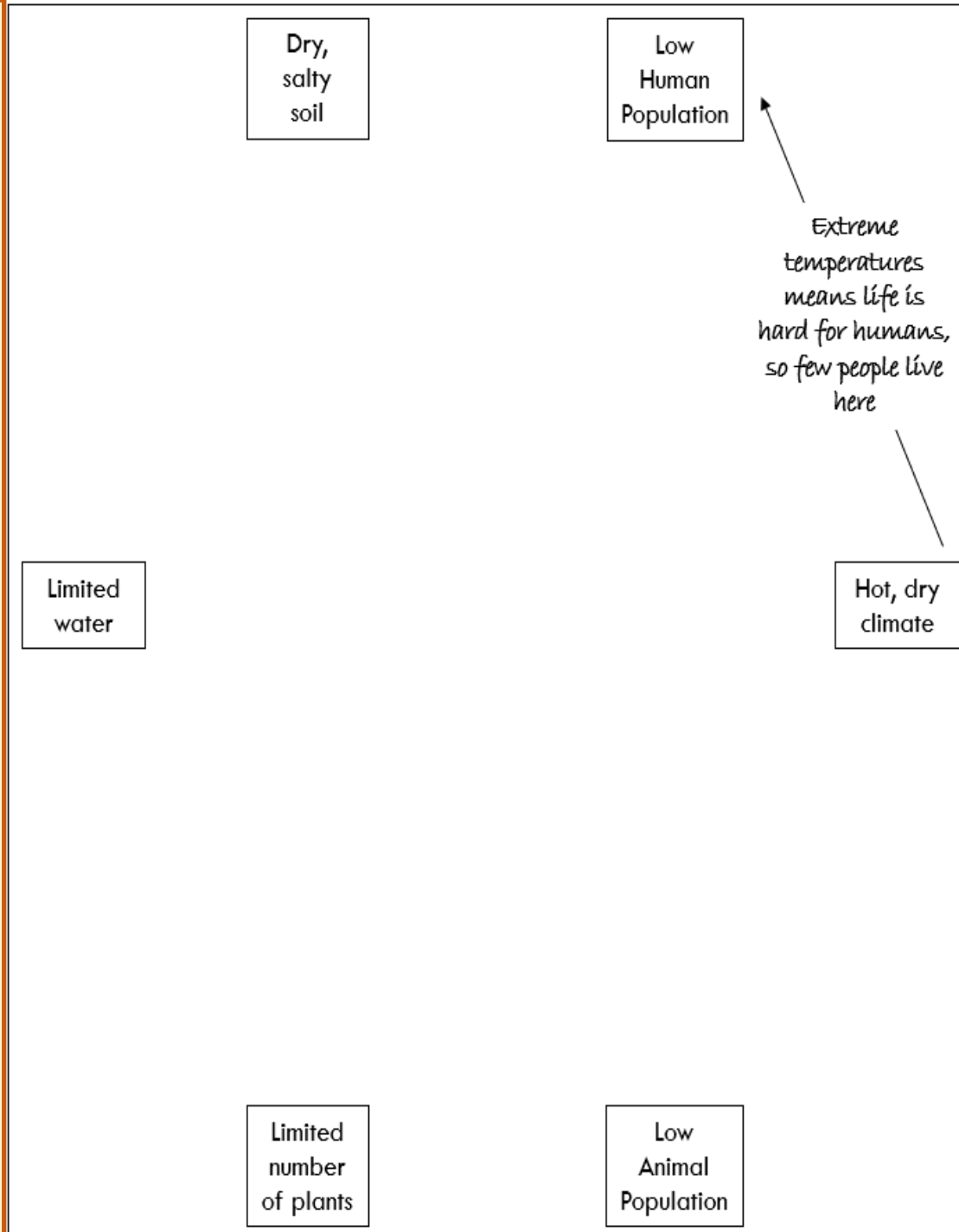
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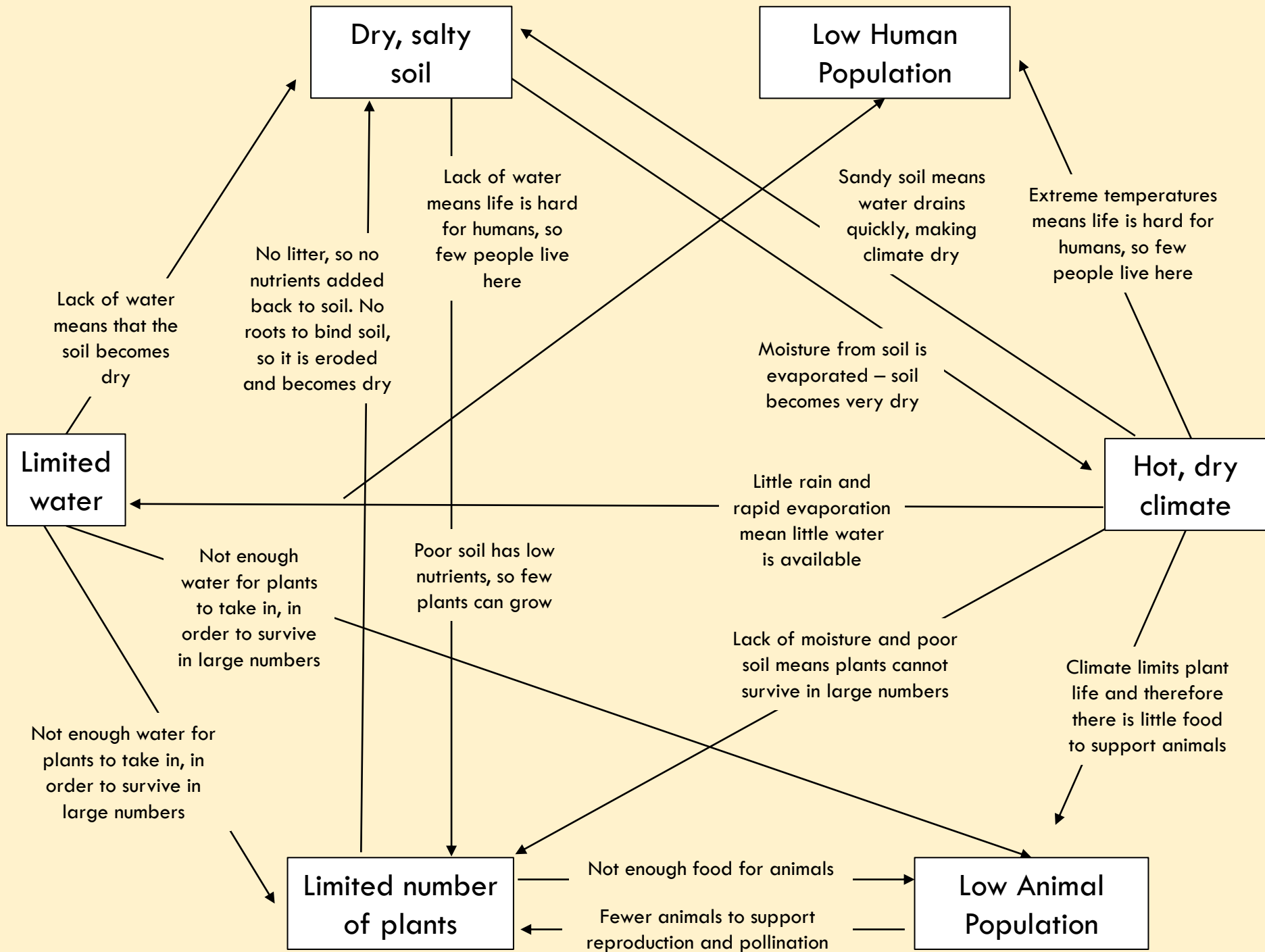
How the different components of the Desert are linked

The biotic components of hot deserts (plants, animals and people) and the abiotic components (climate, water and soils) are closely linked, and they are all a result of the conditions within the ecosystem. The way that the ecosystem works has an impact on the levels of interdependence within the ecosystem

In the box below

- Add as many arrow as you can to join the different parts of the hot desert ecosystem, to show that they are linked
- For each arrow, write a short explanation next to it explaining the link and the effect that this link has on these parts of the ecosystem (one has been done for you)
- Each arrow you draw basically means 'this leads to...'





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SILVER

In what 2 places is biodiversity higher in deserts? Why?



GOLD

Explain the following:

- Explain how the human population & the climate affect each other
- Explain how the low number of animals and the soil affect each other



REVIEW:
How well do you know deserts?

BRONZE

Give one reason why biodiversity is so low in deserts

