**Pandas - Script**

Hey. Good morning everybody. Today, I want to talk to you about pandas. I think pandas are pretty interesting because, evolutionarily, I don’t think they should exist. I’m going to try and tell you why.

First of all though, let’s look at a little bit of the background of pandas. Ok? The word panda probably comes from the Nepali word, *ponyo*. Ponyo, it actually refers to the lesser panda. The red and white one. Which is not actually related to the bigger panda. But, the name kind of stuck. We in the West, I’m from England, didn’t know about pandas until 1869. We obviously don’t have them in England. In 1869, a French missionary travelled to China and he came back to France with stories of these big … er … pandas. And, since then, we’ve known about pandas in the West.

Now, pandas, as you probably know, are basically small bears. They grow up to … er … the highest bears grow up to about 1.9m in length, about 1.2m in height and they can get up to about 160kg. The biggest ones. They live for about 20 years in the wild, or about 30 years in captivity. They’re black and white, obviously. Do you know why? Well, it’s camouflage. The areas they live in get a lot of snow. And snow is obviously white. And the rocks, or the shadow between the trees or the bamboo plants, is dark brown or black. So, black and white gives them perfect camouflage for the snow, for the conditions, for the areas they live in.

They have six fingers on each hand. You and I we have five, well, four fingers and a thumb. A panda has five fingers and, down here, on the edge of their hand, of their palm, they have another finger. And that is almost like a thumb. It’s basically a small piece of bone that they can bend. And that bone is used to hold bamboo. If you look at a panda holding bamboo, it’s using four … five fingers on top and the little thumb round the side to grip the bamboo properly.

Now, why did I say that pandas shouldn’t be able to survive evolutionarily? Well, this is my opinion but, pandas are related to bears. And bears, as we all know, are carnivores. Now, we have three categories here. We have carnivores, herbivores, omnivores. Carnivores are animals like lions or bears. They eat meat. Herbivores are animals like rabbits or sheep, who eat grass or leaves. And then we have omnivores. You and I are omnivores. We can eat anything. Now pandas, being related to bears, are carnivores. That means they should eat meat. Do they? No. What do pandas eat? They eat bamboo. They have to eat up to 20kg of bamboo every single day. Why is that? It’s because carnivores and herbivores have different digestive systems. A carnivore’s digestive system, their intestines are much shorter than a herbivore. That’s because it takes much longer to absorb the nutrients from plants as it does from meat. Carnivores need shorter intestines because we get the nutrients out of food pretty quickly. Herbivores take much longer. Pandas, being carnivores, have short digestive tracts. However, eating bamboo, they need long digestive tracts. It takes a long time to get the nutrients out of the bamboo. Bamboo, incidentally, doesn’t actually have that many nutrients in it to start with. So, it’s a poor choice of food. So, now the pandas, because the food goes through them very very quickly, they only get 17% of the nutrients out of each piece of bamboo they’re eating. So, to compensate for that, they have to eat 20kg of bamboo a day. Plus, they excrete about forty times a day. Can you imagine going to the toilet forty times a day? Wow. Incredible.

Anyway, so, pandas have adapted to this diet. They’ve done a few things. Firstly, if you look at a panda, they have round faces. That is because their jaw muscles are enormous. Have you ever tried to chew bamboo? Have you ever tried to chew raw bamboo? It takes a lot of strength to chew up all that plant. So, they have very very large jaw muscles and very very round faces.

Now, because they don’t get much energy out of the food they eat, they have to spend almost all of the day looking for food and eating food. That means they cannot waste any energy. So, pandas actually have a small surface area related to their body size. What this does is it means they don’t release much heat. Heat loss is a waste of energy.

Another thing they do is they don’t move much. Have you seen pandas at the zoo? Have you seen wild pandas? They basically find a bamboo plant and they sit there. They don’t move. Because any movement is wasted energy. And pandas don’t have enough energy to waste. So, basically, pandas have become couch potatoes. They sit in one place, they eat and they sleep and they don’t waste any energy. Evolutionarily, they shouldn’t survive. But they do.

Now, as you probably know, pandas were an endangered species for quite a long time. They’re still at risk, but they’re not quite as endangered as other animals. Pandas have become the face of endangered animals. The World Wildlife Fund, WWF, uses a panda as its icon, its mascot. So, when we think of endangered animals, we automatically think of pandas. However, pandas are not so endangered anymore. But, pandas do receive a large percentage of monetary donations towards wildlife every year. Most of the money we are giving to help animals is being directed towards pandas. Pandas don’t need it anymore. We need to start looking towards some of the other animals that are endangered, and some of the other animals that are in danger of dying out.

Anyway, pandas are amazing animals, simply because I don’t think they should be able to exist. But they do. Thank you.

**Pandas - Questions**

1. Why isn’t the Nepali word “ponyo” a good name for pandas?

A: It only refers to big pandas.

B: It doesn’t translate very well into English.

C: It only came to the West in 1869.

D: It refers to the lesser panda.

2. What does camouflage mean?

A: Finding the shadows between bamboo plants.

B: Using skin or fur color to blend in with the surroundings.

C: Using the snow to hide.

D: Knowing where to find good bamboo.

3. What does a panda use its thumb for?

A: Gripping bamboo

B: Climbing

C: Turning over rocks

D: Fighting other pandas

4. What category of animal would be able to eat meat and vegetables?

A: Carnivore

B: Herbivore

C: Omnivore

D: Piscivore

5. Why does a panda need to excrete 40 times a day?

A: To mark their territory.

B: It helps them to get more nutrients from the bamboo.

C: Because they have a long digestive tract.

D: Because they need to eat so much bamboo.

6. Why is bamboo a poor choice of food?

A: It grows very tall.

B: It doesn’t have many nutrients.

C: It only grows on the mountains.

D: It is extremely hard to break.

7. Why don’t pandas move much?

A: They are coach potatoes.

B: They have a small surface area.

C: They don’t want to waste any energy.

D: They know where all of the food is.

8. What does WWF stand for?

A: Willd Animal Federation

B: World Wildlife Federation

C: World Wildlife Fund

D: Wild Animal Fund

9. Steven said, “We in the West”. What does he mean by “the West”?

10. Explain the difference between a lion and a rabbit’s digestive system.

11. Explain one adaptation pandas have to allow them to survive on bamboo.

12. Steven says, “pandas don’t need the money”. Do you agree with him? State your reasons.

13. Animals are going extinct at a faster rate than ever before in history. What can we do to stop this?

**Pandas - Answers**

1. D 2. B 3. A 4. C (a piscivore is an animal that eats fish) 5. D 6. B 7. C 8. C

9. Steven said, “We in the West”. What does he mean by “the West”?

“The West” basically refers to America and Europe. It is contrasted with “The East”, referring to Asia. The concept has been around for thousands of years and may have started when the Roman Empire split into East and West. We also say Occident (West) and Orient (East). These words come from Latin. Occident means “sunset” and orient means “sunrise”. Obviously, the sun rises in the east and sets in the west. Nowadays, the concept of West and East simply means America, Canada and Europe on one side and China, Japan and Korea on the other.

10. Explain the difference between a lion and a rabbit’s digestive system.

A lion is a carnivore, meaning they only eat meat, and a rabbit is a herbivore, meaning they only eat plants. A lion cannot survive on plants and a rabbit cannot survive on meat. Rabbits eat grass and plants which contain lots of fibers and cellulose. It is extremely difficult to digest these. A longer intestine will hold more bacteria that can break the fiber and cellulose down into glucose, which the rabbit can then use for energy. If the rabbit’s intestine were shorter (like the panda), it wouldn’t be able to extract all of the energy from the food and most of it would be excreted unused (like the panda). A carnivore has more acid in its stomach and breaks down a lot of the food there. It is then much easier and faster for it to break the remaining food down and convert it to energy, thus only needing a short intestine.

11. Explain one adaptation pandas have to allow them to survive on bamboo.

Pandas have developed a lot of muscle in their faces, around their jaws. The cute, round face that pandas are famous for, comes from these muscles. A panda eats almost entirely bamboo, which is an incredibly tough plant. To chew up the 20kg of bamboo they use a day requires a lot of jaw strength.

12. Steven says, “pandas don’t need the money”. Do you agree with him? State your reasons.

Although I can understand what he is trying to say, I disagree with Steven’s statement. In 2014, there were 1,864 pandas alive in the wild. This number has risen from as low as 900 in 1970. That means that the money we are donating is being used successfully. However, under 2,000 pandas is still a woefully low number. Their habitats are being destroyed, they are being forced to travel farther for food and they are still victims of mankind. Until they have returned to pre-human numbers, I don’t think any amount of money will ever be enough.

However, I understand that Steven is using an exaggeration to stress the fact that there are many other endangered animals that do not get any funding, and these animals can quite often slip below our radar. He is right that we need to pay more attention to these animals as well as pandas, but money for pandas can be money for all endangered animals. Just because the panda is the face of the WWF, doesn’t mean it is the sole recipient of the donated money. They are doing their best with the limited resources the have.

13. Animals are going extinct at a faster rate than ever before in history. What can we do to stop this?

Cynically speaking, nothing. It is estimated that between 200 and 10,000 species a year become extinct. It is impossible to say exactly, because nobody actually knows how many species there are on our planet. In our jungles and seas there are probably millions of species that we have not discovered yet. However, even if the number is on the lower end of that spectrum, it is still a terrible fact.

Animals have gone extinct ever since life developed on this planet. One species disappears and another takes its place. The difference now is the speed with which this is happening, and the species that takes its place is always us. Through deforestation, global warming, industrialization, pollution and a thousand other reasons, we are destroying the planet and the animals are taking the brunt of that. What can we do to stop this rate of extinction? Change our entire way of life. Give up our cities. Close our factories. Shut down our oil refineries. Drastically cut our population. Could we? Theoretically. Will we? Of course not. Don’t be silly.

So, what can we do? Management and reservations are the only considerable answer. Animals in zoos don’t fare well, although they tend to live longer than animals in the wild, but the wild is disappearing. We need international laws that set aside huge tracts of land for animals alone. And these areas cannot become tourist destinations. They must be left entirely alone. If we do that, some animals might survive. But, I have a horrible fear that the only way my children’s children will see “wild” animals will be on TV or in a zoo.