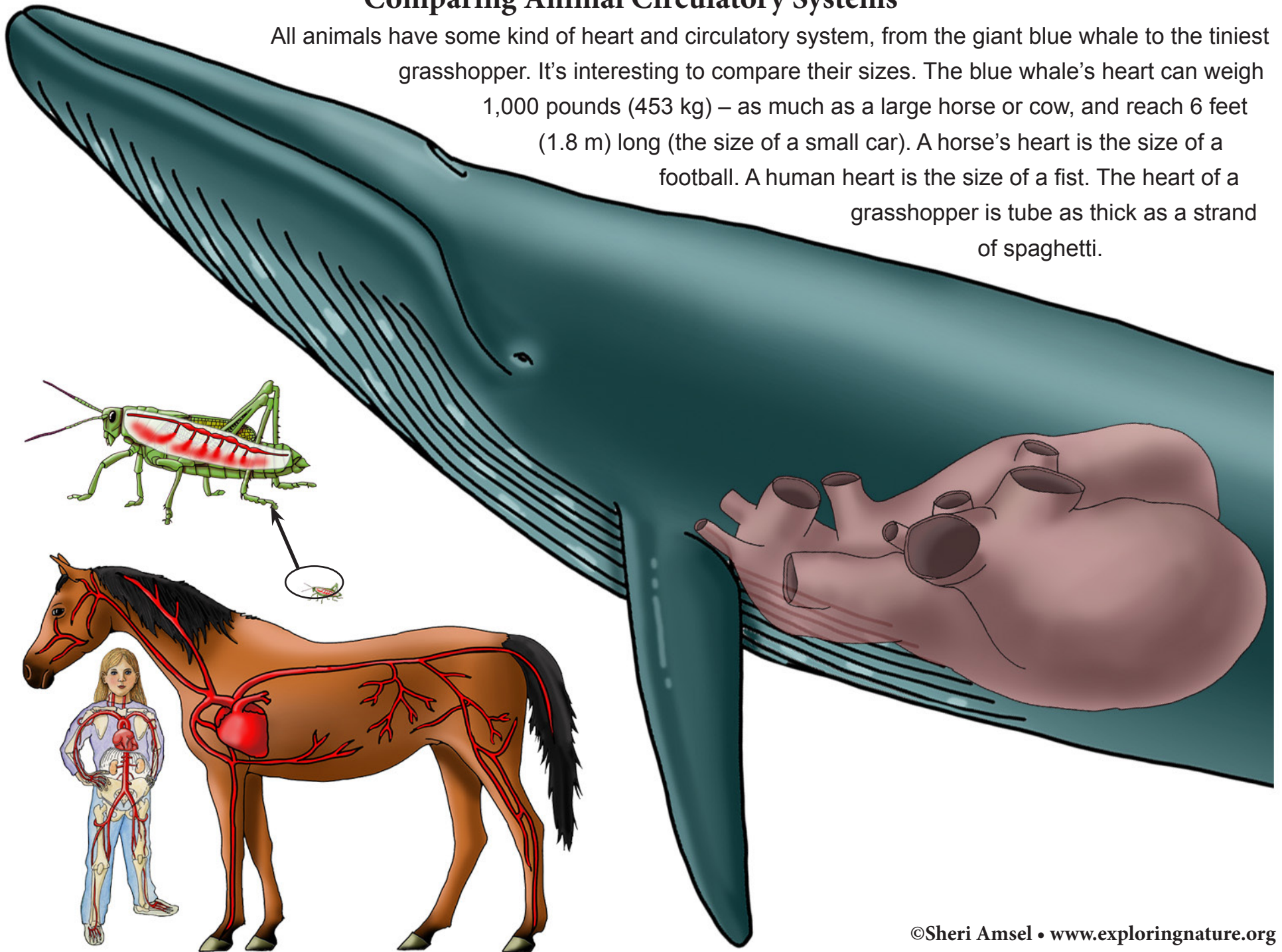# Comparing Animal Circulatory Systems

All animals have some kind of heart and circulatory system, from the giant blue whale to the tiniest grasshopper. It's interesting to compare their sizes. The blue whale's heart can weigh 1,000 pounds (453 kg) – as much as a large horse or cow, and reach 6 feet (1.8 m) long (the size of a small car). A horse's heart is the size of a football. A human heart is the size of a fist. The heart of a grasshopper is tube as thick as a strand of spaghetti.

Comparing Human and Animal Circulatory Systems

All animals have some kind of **circulatory system**. In mammals, all the blood stays inside the heart and blood vessels as it moves around the body. This is called a *closed system*. This helps the blood move **oxygen** and **nutrients** evenly around a mammal's large body using the muscular heart as a pump.
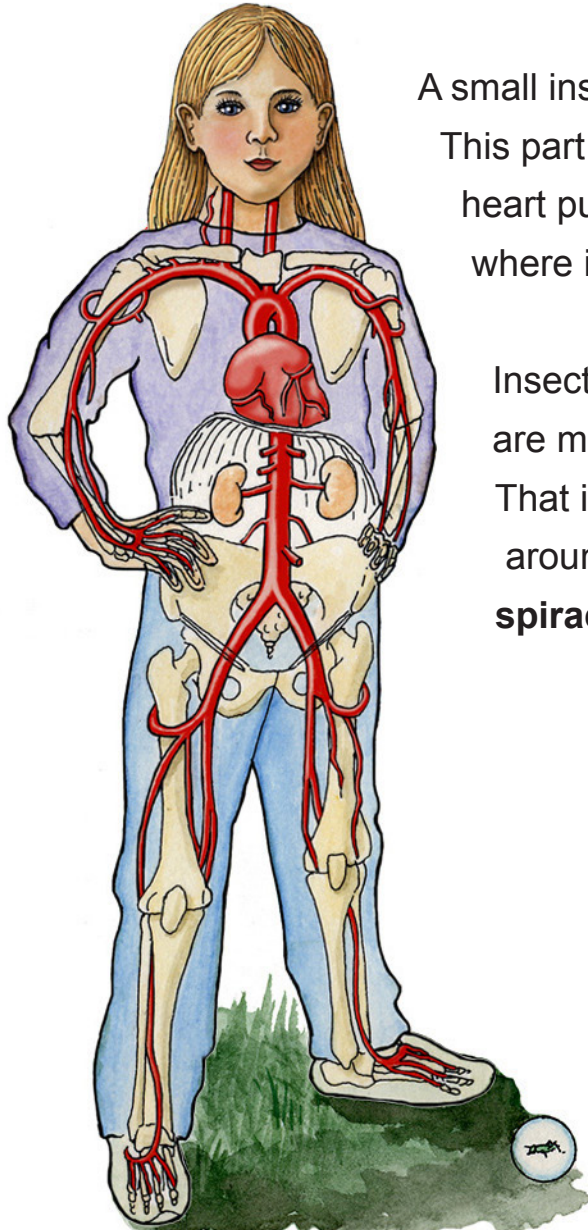
A small insect, like the grasshopper, has a tube-shaped heart that runs down its back. This part of their circulatory system is closed like a mammal's, but when a grasshopper's heart pumps its blood, it billows out into the whole body. Then it is an *open system* where it can easily flow around the grasshopper's small body cavity to reach all its cells.

Insects don't need a completely closed circulatory system, like we do, because they are much smaller. Also, their blood doesn't move oxygen the way it does in a mammal. That is because insects don't breath through lungs. They don't need oxygen moved around in their blood. They have small openings on the sides of the body, called **spiracles**, through which they breathe.

Grasshopper
Heart

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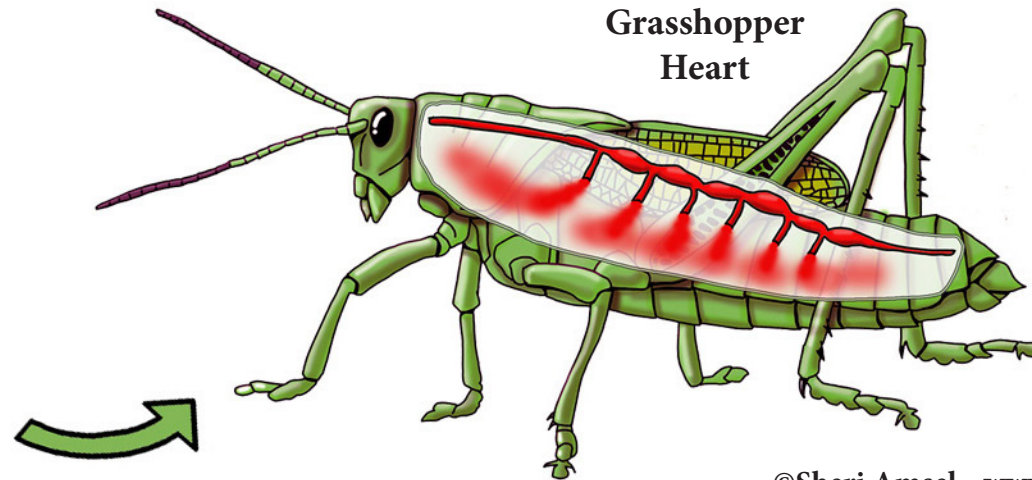
Animal Hearts - The Blue Whale

A blue whale can reach 100 feet (30.5m) long and has the largest heart in the world. The heart alone can weigh 1,000 pounds (453 kg) and reach six feet (1.8 m) long.
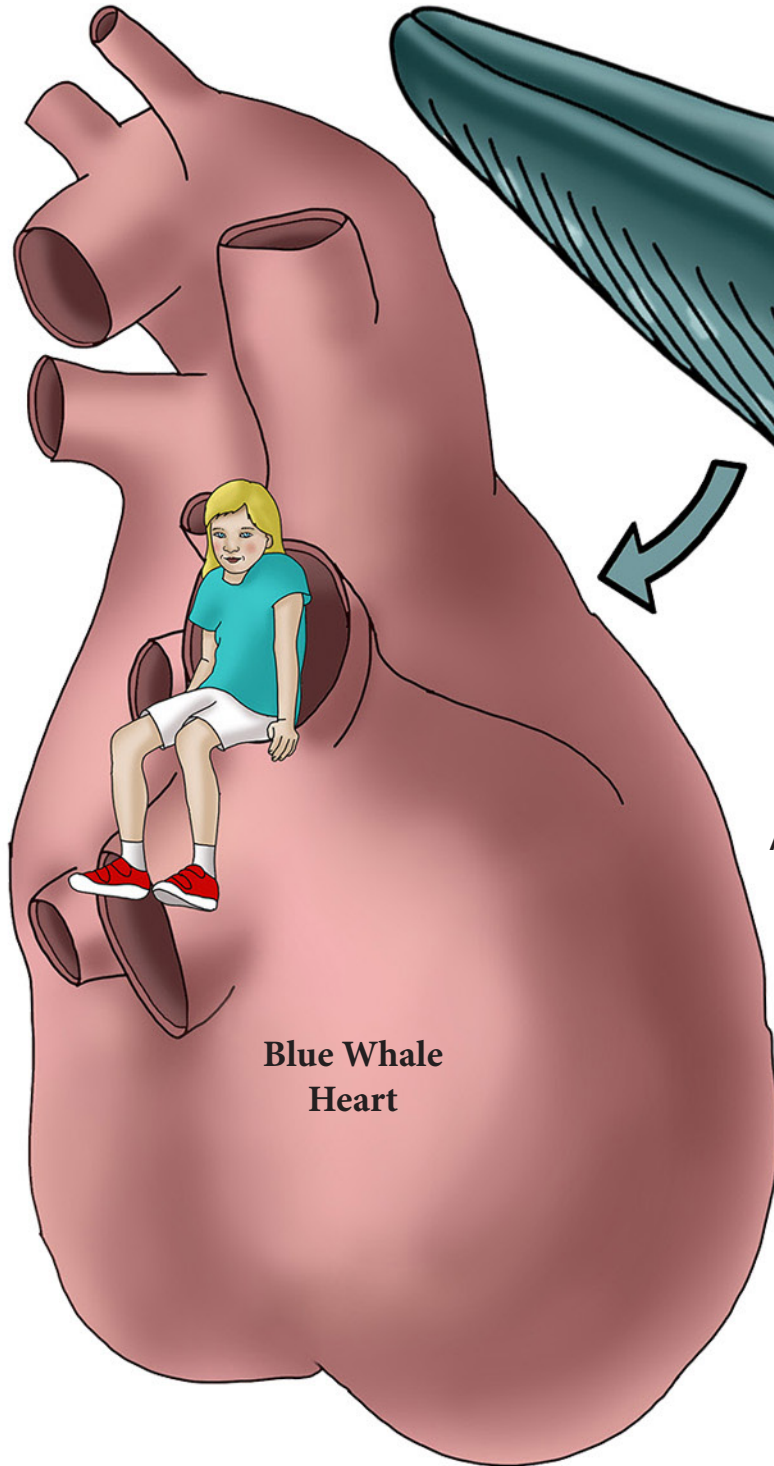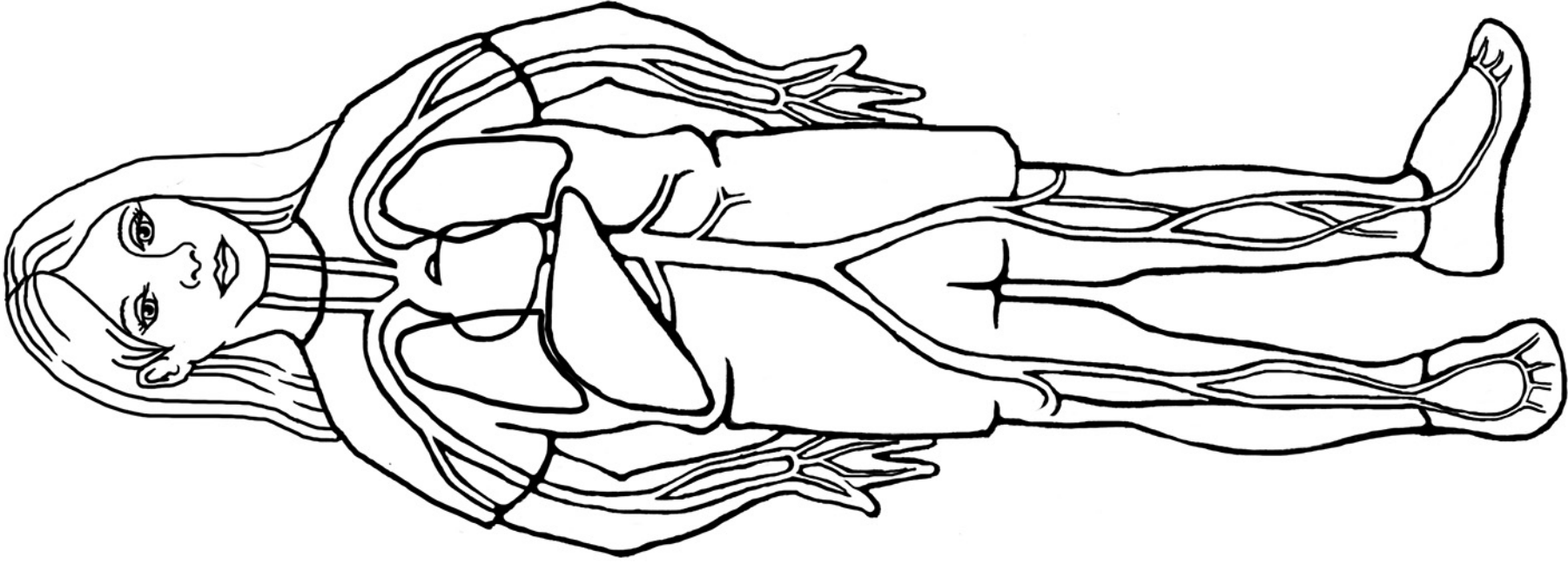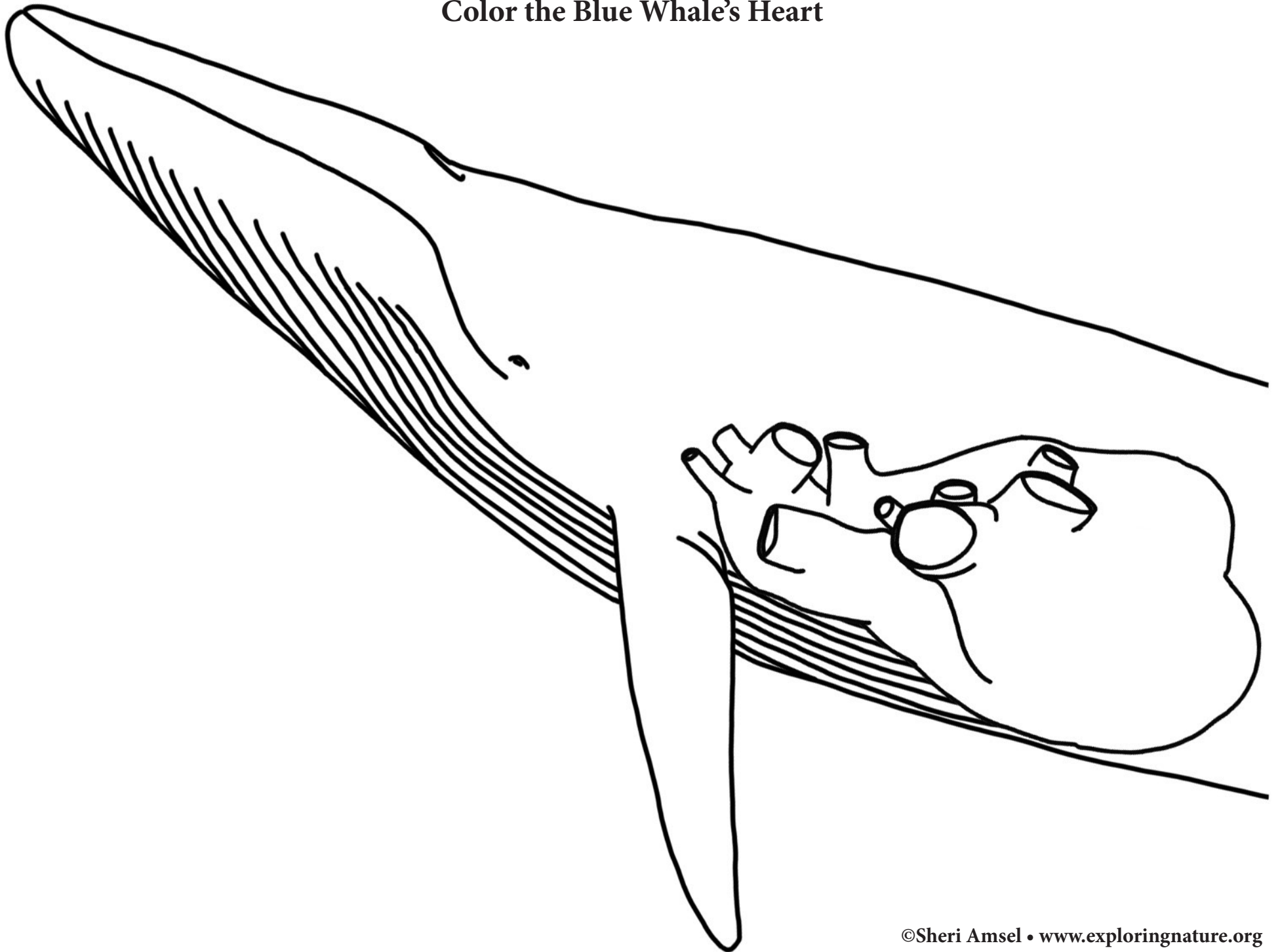
Blue Whale Heart

A blue whale's heart weighs as much as a large horse. The aorta is the largest blood vessel coming off its heart. It is big enough for a person to crawl through.
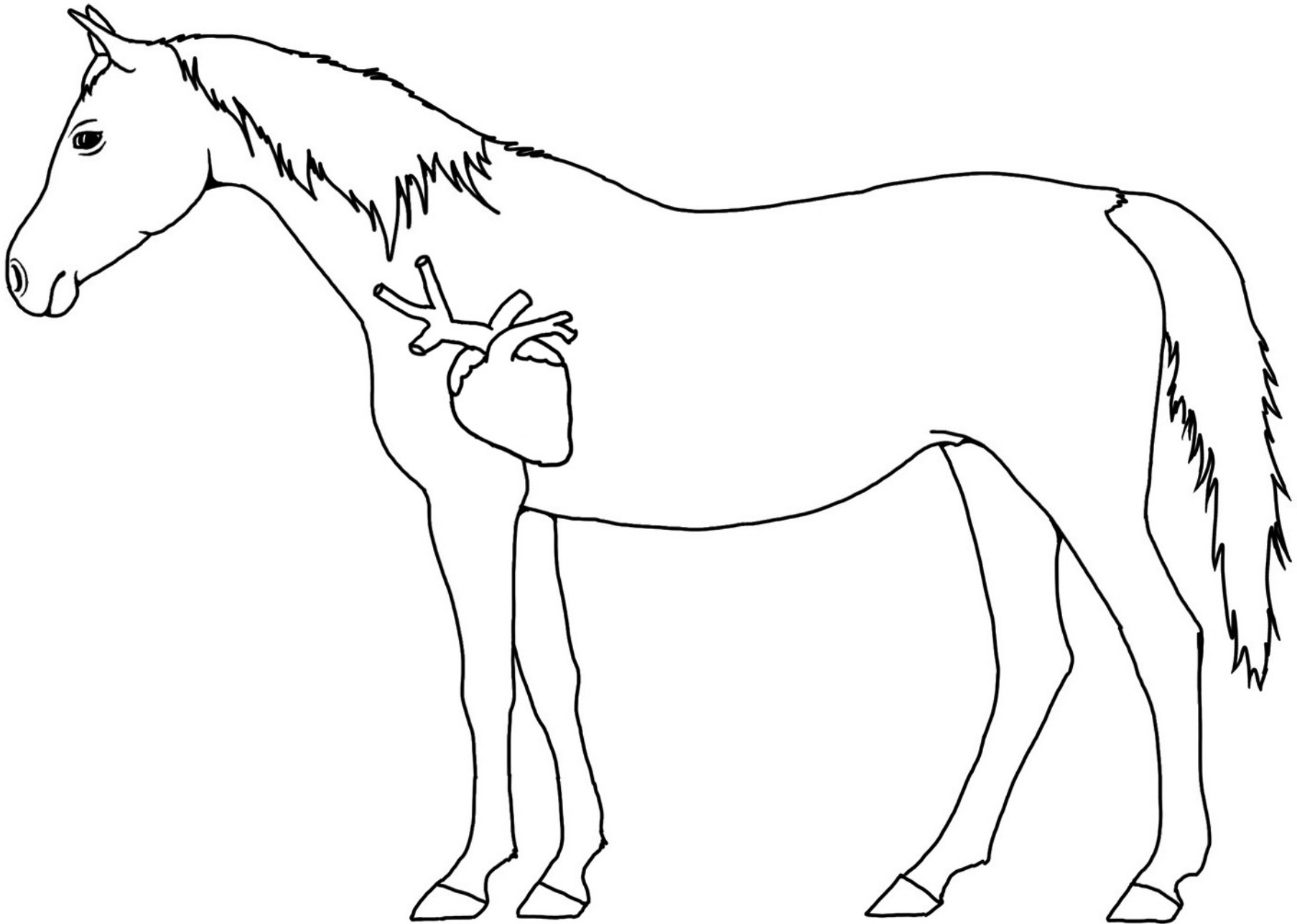
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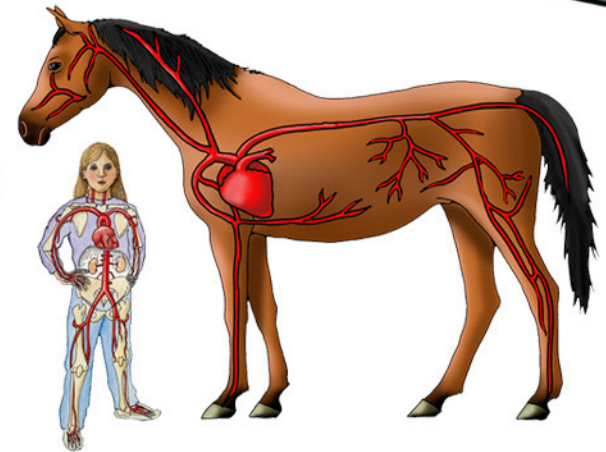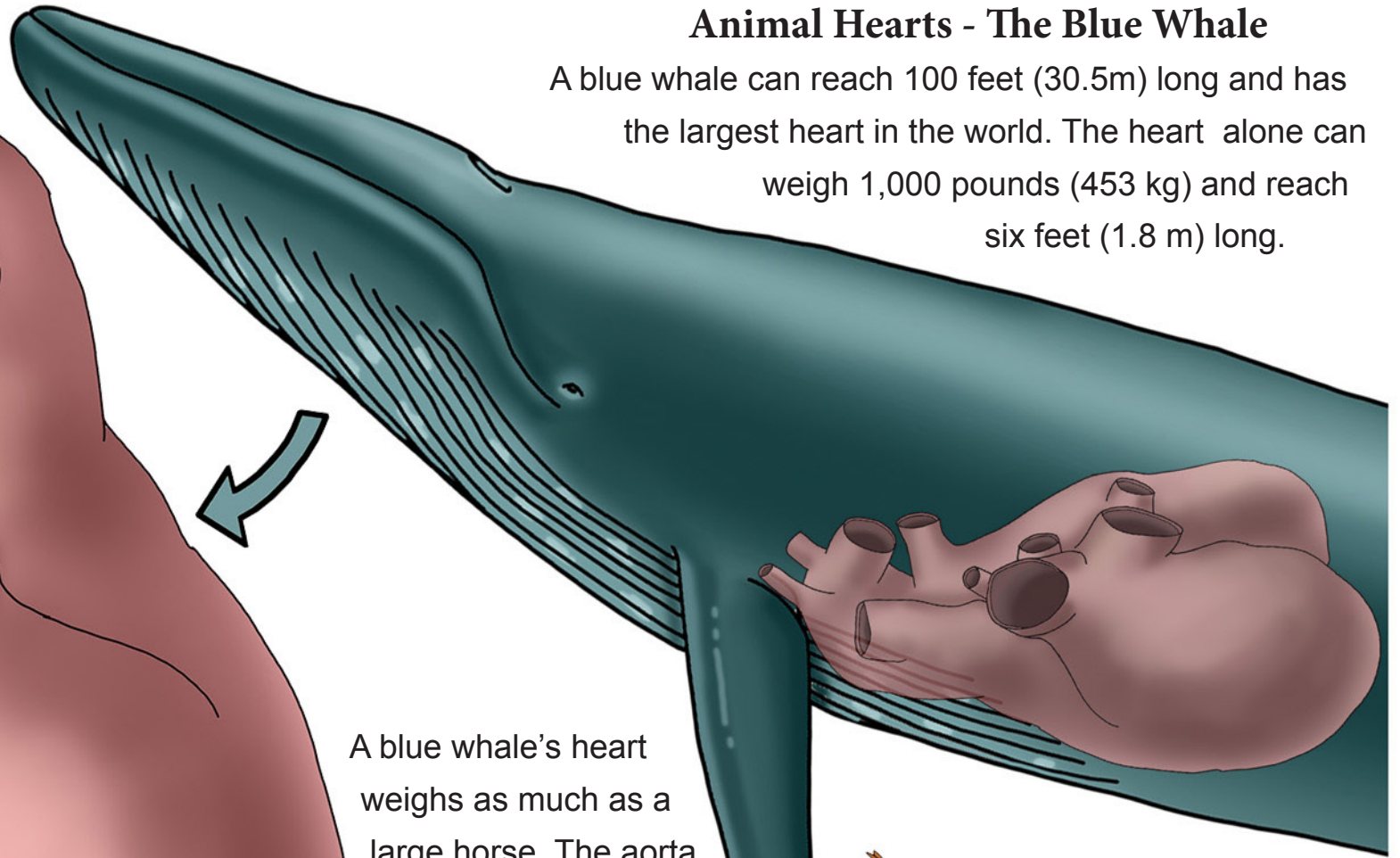
Color the Circulatory System

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Color the Blue Whale's Heart

Color the Horse's Heart

Color the Grahopper's Heart

Research Other Animal Circulatory Systems

We have looked at the human circulatory system and the heart of the blue whale, horse, and grasshopper. What do other animals' hearts and circulatory systems look like? How do they work?

As a performance task, ask your students to do some research online (or in books at the library). Ask them to find another animal whose circulatory system interests them and write a report. They can include their own drawings. Suggest a few animals, such as the ostrich, hummingbird, owl, cat, dog, llama, bumblebee, tarantula.

Internal Anatomy of the Bird

Dog Anatomy Internal Organs