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| **Science Unit Nine: The heart and the circulatory system (four week mini-project)**  **Carne Summer 2 2020 (repeated each year)** | | |
| **What should I already know?**     * Which things are living and which are not. * Classification of animals (e.g. amphibians, reptiles, birds, fish, mammals, invertebrates) * Animals that are carnivores, herbivores and omnivores. * Animals have offspring which grow into adults. * The basic needs of animals for survival (water, food, air) * The importance of exercise, hygiene and a balanced diet. * Animals get nutrition from what they eat. * Some animals have skeletons for support, protection and movement. * The basic parts of the digestive system. * The different types of teeth in humans. * The life cycle of a human and how we change as we grow | | DK Science: Circulatory System**Key Knowledge**  The circulatory system is made of the heart, lungs and blood vessels.  Arteries carry oxygenated blood from the heart to the rest of the body.  Veins carry deoxygenated blood from the body to the heart.  Nutrients, oxygen and carbon dioxide are exchanged via the capillaries.  The heart is composed of four chambers; the right atrium, the right ventricle, the left atrium and the left ventricle.  How often your heart pumps is called your pulse.    1. The right atrium collects the deoxygenated blood from the body, via the vena cava. It sends the blood to the right ventricle.  2. The right ventricle pumps the deoxygenated blood to the lungs. Here the blood picks up oxygen and disposes of carbon dioxide.  3. The lungs send oxygenated blood back to the left atrium which pumps it to the left ventricle.  4. The left ventricle pumps the blood to the rest of the body, via the aorta.  **Keeping Healthy**  Some choices such as smoking and drinking alcohol can be be harmful to our health.  Tobacco can cause short-term effects sich as shortness of breath, difficult sleeping and loss of taste and long term effects such as lung cancer.  Alcohol can cause short term effects such as addiction and loss of control and long term effects such as organ damage, cancer and death.  **Why is exercise so important?**  Exercise can:   * tone our muscles and reduce fat * increase fitness * make you feel physically and mentally healthier * strengthen your heart * How do we breathe? (Lungs and Pleura | Human lungs, Lung anatomy ...improve your lung function * improve your skin |
| **Key Vocabulary** | |
| aorta | the main artery through which blood leaves your heart before it flows through the rest of your body |
| arteries | a tube in your body that carries oxygenated blood from your heart to the rest of your body |
| atrium | one of the chambers in the heart |
| blood  vessels | the narrow tubes through which your blood flows. Arteries, veins and capillaries are blood vessels. |
| capillaries | tiny blood vessels in your body |
| carbon dioxide | a gas produced by animals and people breathing out |
| circulatory system | the system responsible for circulating blood through the body, that supplies nutrients and oxygen to the body and removes waste products such as carbon  dioxide. |
| deoxygenated | blood that does not contain oxygen |
| heart | the organ in your chest that pumps the blood around your body |
| lungs | two organs inside your chest which fill with air when you breathe in. They oxygenate the blood and remove carbon dioxide from it. |
| nutrients | substances that help plants and animals to grow |
| organ | a part of your body that has a particular purpose |
| oxygen | a colourless gas that plants and animals need to survive oxygenated blood that contains oxygen |
| pulse  . | the regular beating of blood through your body. How fast or slow your pulse is depends on the activity you are doing |
| respiration | process of respiring; breathing ; inhaling and exhaling air. In KS3 Science, this process is referred to as ventilation. |
| veins | a tube in your body that carries deoxygenated blood to your heart from the rest of your body |
| vena cava | a large vein through which deoxygenated blood reaches your heart from the body |
| ventilation | The exchange of air between the lungs and the atmosphere so that oxygen can be exchanged for carbon dioxide |
| ventricle | one of the chambers in the heart |
| **Key Experiences**  Dissect a heart (<https://www.youtube.com/watch?v=WBwPhWAP394>) | | |