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| **Science: Key Stage 2- Year 3** |
| **Learning Challenges** |
| **How does Usain Bolt run so fast?** | **What is the Earth’s Magnetic Field?**  | **What do rocks tell us about the way the Earth was formed?** |
| **National Curriculum content** |
| Biology- Animals including humans | Physics – Forces and Magnets | Chemistry – Rocks  |
| *Identify that animals, including humans, need the right types and amounts of nutrition, and that they cannot make their won food: they get what they need from what they eat.**Identify that humans and animals have skeletons and muscles for support, protection and movement*  | *Compare how things move on different surfaces**Notice that forces need contact between objects but magnetic force can at from a distance* *Observe how magnets repel and attract**Compare and group materials on the basic of non/magnetic**Describe magnets as having 2 poles**Predict if magnets will repel or attract*  | *Compare and group together different kinds of rocks on the basis pf their appearance and simple physical properties* *Describe in simple terms how fossils are formed when things that have lived are trapped within rocks**Recognise that soils are made from rocks and organic matter*  |
| **Key Knowledge** |
| * Know about the importance of a nutritious, balanced diet
* Know how nutrients, water and oxygen are transported in humans and animals
* Know about the skeletal and muscular system of a human
 | * Know about and describe how objects move on different surfaces
* Know how a simple pulley works and use it to lift an object
* Know how some forces require contact and some do not, giving examples
* Know about and explain how magnets attract and repel, predict whether magnets will attract or repel and give a reason
 | * Compare and group rocks based on their physical appearance and properties, giving reasons
* Know how soil is made and how fossils are formed
* Know and explain the difference between sedimentary, metamorphic and igneous rock
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| **Learning Challenges** |
| **How far can you throw your shadow?** | **What makes plants and flowers grow and flourish?**  | **What makes a person a Genius?**  |
| **National Curriculum content** |
| Physics – Light | Biology- Plants  | Scientist and Inventors  |
| *Recognise that we need light to see things and dark is the absence of light**Notice that light is reflected from surfaces**Recognise that light from the sun can be dangerous and where are ways to protect their eyes**Recognise that shadows are formed when the light from a light source is blocked by a solid object**Find patterns in the way shadows change* | Identify and describe the function of different parts of a flowering plant*Explore the requirements of plants for life and growth and how they vary from plant to plant.**Investigate the way in which water is transported within plants**Explore the part that flowers play in the life cycle of a flowering plant, including pollination, see formation and dispersal* | Identify and describe the theory of electromagnetism and the production of the electric motor. Explore the scientific developments used to improve the Steam Engine. Investigate the force of steam. Research pioneering scientists.  |
| **Key Knowledge** |
| * Know that dark is the absence of light
* Know that light is needed in order to see and is reflected from a surface
* Know and demonstrate how a shadow is formed and explain how a shadow changes shape
* Know about the danger of direct sunlight and describe how to keep protected
 | * Know the function of different parts of flowering plants and trees
* Know how water is transported within plants
* Know the plant life cycle, especially the importance of flowers
 | Know how James Watt improved the steam Engine. Know and explain how steam can provide a force to move a vehicle. Know how Michael Faraday created the theory of electromagnetism and the electric motor. Know that electromagnets are magnets powered by electricity.  |