|  |  |  |
| --- | --- | --- |
| **Year 5: Spring 1  Forces (Strand: Physics)** | | |
|  | | **Vocabulary**  Gravity  Friction  Air resistance  Up thrust  Weight  Newton’s  Push  Pull  Balance  Particles |
| **What I already know:** | | |
| Year 3   * Compare how things move on different surfaces. * Notice that some forces need contact between two objects, but magnetic forces can act at a distance. * Observe how magnets attract or repel each other and attract some materials and not others. * Compare and group together a variety of everyday materials based on whether they are attracted to a magnet and identify some magnetic materials. * Describe magnets as having two poles. * Predict whether two magnets will attract or repel each other, depending on which poles are facing. | | |
| **What I will learn now:** | | |
| **Year 5**   * Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. * Identify the effects of air resistance, water resistance and friction that act between moving surfaces. * Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. | **Key facts**   * Gravitational force is a pull towards the centre of an object such as the Earth. All objects have a gravitational force, but the size of the force depends on the mass of the object. * Friction is the force from two surfaces rubbing together. * When objects fall through the air, the air resistance is the force that acts in the opposite direction of gravity. * Up thrust in water is the force pushing up against an object. If this force balances the gravitational force pulling the object down, then it will float. * If you want to lift a heavy weight, there's only so much force your muscles can supply, even if you are the world's strongest man. But use a simple machine such as a pulley and you can multiply the force your body produces. | |
| **What I will learn next:** | | |
| KS3   * Forces as pushes or pulls, arising from the interaction between two objects. * Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. * Moment as the turning effect of a force. * Forces: associated with deforming objects; stretching and squashing –springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water. * Forces measured in Newtons, measurements of stretch or compression as force is changed. | | |

|  |  |
| --- | --- |
| **Year 5: Spring 1  Forces (Strand: Physics)** | |
| **Question 1: In what unit do we measure force?** | |
| **Pre** | **Post** |
| **Question 2: What is the name of the force that pulls things towards the centre of the Earth?** | |
| **Pre** | **Post** |
| **Question 3: Explain why astronauts move in a bouncy way on the moon** | |
| **Pre**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **Post** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Question 4: Label the force that is pushing against this swimmer in the water and parachute in the air.** | |
| **Pre** | **Post** |
| Question 5: Name these three mechanisms that make things easier to do as they lessen the force needed to be used. | |
| **Pre** | **Post** |