**Graphical user interface

Description automatically generated with medium confidenceForces and their Interactions** (Phys)

RAG your understanding.

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|  | **Start of Topic** | **End of Topic** | **Revised** |
| P.5.1.1.a. - I can define the terms vectors and scalar, giving examples of each. |  |  |  |
| P.5.1.1.b. - I can use arrows to represent the magnitude and direction of vector quantities. |  |  |  |
| P.5.1.2.a. - I can define a force as a push or pull that acts on an object due to the interaction with another object and give examples of contact and non-contact forces. |  |  |  |
| P.5.1.2.b. - I can describe the interaction between pairs of objects which produce a force on each object and illustrate with vector diagrams. |  |  |  |
| P.5.1.3.a. - I can define weight as the force acting on an object due to gravity. I can describe how an objects weight can be measured using a newton meter. |  |  |  |
| P.5.1.3.b. - I can calculate the weight of an object by recalling and applying the equation: W = mg |  |  |  |
| P.5.2.1.a. - I can describe energy transfers involved when work is done, and calculate the work done by recalling and using the equation: [ W = Fs ] |  |  |  |
| P.5.2.1.b. - I can state that one joule of work is done when a force of one newton causes a displacement of one metre, stating that the Nm is an equivalent unit to the joule |  |  |  |
| P.5.2.1.c. - I can explain why work done against the frictional forces acting on an object causes a rise in the temperature of the object |  |  |  |
| P.5.1.4.a. - I can calculate the resultant of two forces that act in a straight line |  |  |  |
| ***P.5.1.4.b (HT) - I can use free body diagrams to qualitatively describe examples where several forces act on an object, and explain how that leads to a single resultant force or no force*** |  |  |  |
| ***P.5.1.4.c (HT) - I can use free body diagrams, and accurate vector diagrams to scale, to resolve multiple forces and show magnitude and direction of the resultant, or represent one force as two component forces at right angles*** |  |  |  |
| P.5.3.a. - I can explain why more than one force is needed to change the shape of a stationary object, giving examples of the forces involved. |  |  |  |
| P.5.3.b. - I can describe the difference between elastic deformation and inelastic deformation caused by stretching forces. |  |  |  |
| P.5.3.c. - I can state that the extension of an elastic object, such as a spring, is directly proportional to the force applied, provided that the limit of proportionality is not exceeded (Hooke’s law). This also applies the compression of an elastic object. |  |  |  |
| P.5.3.d. - I can recall and apply the equation: F=ke |  |  |  |
| P.5.3.e. I can explain that the work done on an elastic object (such as a spring) is equal to the elastic potential energy stored by it. I can apply the equation: |  |  |  |
| **Required practical.** I know how to investigate the relationship between force and extension for a spring (Hooke’s law). I can interpret data from this investigation and can calculate the spring constant of the spring. |  |  |  |