**Topic Overview: Contact Forces and Pressure**

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|  | Ref | Outcome | Achieved | ☺ |
| Emerging | E8SpCo1.1 | Sketch the forces acting on an object, and label their size and direction |  |  |
| E8SpCo1.2 | Recall what pressure is |  |  |
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| E8SpCo2.1 | Recall the effects of friction  |  |  |
| E8SpCo2.2 | Describe the effects of low and high pressure in simple situations  |  |  |
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| Developing | D8SpCo3.1 | Identify situations in which friction is helpful or not helpful |  |  |
| D8SpCo3.2 | Explain what is meant by gas pressure and recall some of its effects |  |  |
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| D8SpCo4.1 | Describe factors which affect the size of frictional and drag forces |  |  |
| D8SpCo4.2 | Describe the cause of gas pressure using the particle theory |  |  |
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| Securing | S8SpCo5.1 | When the resultant force on an object is zero, it is in equilibrium and does not move, or remains at constant speed in a straight line |  |  |
| S8SpCo5.2 | Use the formula: fluid pressure, or stress on a surface = force (N) / area (m2 |  |  |
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| S8SpCo6.1 | Explain why objects either sink or float depending upon their weight and the upthrust acting on them |  |  |
| S8SpCo6.2 | Explain observations where the effects of forces are different because of differences in the area over which they apply. |  |  |
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| Mastering | M8SpCo7.1 | Different stresses on a solid object can be used to explain observations where objects scratch, sink into or break surfaces. |  |  |
| M8SpCo7.2 | Use diagrams to explain observations of fluids in terms of unequal pressure. |  |  |
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| M8SpCo8.1 | Describe what happens to the length of a spring when the force on it changes |  |  |
| M8SpCo8.2 | Use the idea of pressure changing with depth to explain underwater effects. |  |  |
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| M8SpCo9.1 | Use the idea of stress to deduce potential damage to one solid object by another. |  |  |
| M8SpCo9.2 | Given unfamiliar situations, use the formula to calculate fluid pressure or stress on a surface. |  |  |

**Keywords**

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| **Equilibrium:** State of an object when opposing forces are balanced. |
| **Deformation:** Changing shape due to a force. |
| **Linear relationship:** When two variables are graphed and show a straight line which goes through the origin, and they can be called proportional. |
| **Newton:** Unit for measuring forces (N). |
| **Resultant force:** Single force which can replace all the forces acting on an object and have the same effect. |
| **Friction:** Force opposing motion which is caused by the interaction of surfaces moving over one another. It is called 'drag' if one is a fluid. |
| **Tension:** Force extending or pulling apart. |
| **Compression:** Force squashing or pushing together. |
| **Contact force:** One that acts by direct contact. |
| **Fluid:** A substance with no fixed shape, a gas or a liquid. |
| **Pressure:** The ratio of force to surface area, in N/m2, and it causes stresses in solids. |
| **Upthrust:** The upward force that a liquid or gas exerts on a body floating in it. |
| **Atmospheric pressure:** The pressure caused by the weight of the air above a surface. |