

P4 Forces Core Questions

1	What is a force?	A push or a pull on an object
2	What do forces do?	They can change the shape, direction or speed of an object
3	How do we represent different forces on a diagram?	Arrows
4	How do we represent the size of a force on a diagram?	The length of the arrow represents the size of the force
5	What apparatus measures force?	A Newton meter
6	What is the unit and unit symbol for force?	Newton, N
7	What is a contact force? Give an example of a contact force	A force that acts between objects that are touching. Examples: friction, air resistance
8	What is a non-contact force? Give an example of a non-contact force	A force that acts between objects that are not touching. Example: weight, magnetic force, electrostatic force
9	What is an interaction pair?	A pair of equal and opposite forces of the same type acting between two objects
10	What are the sizes of the forces in an interaction pair?	The same size but in the opposite directions
11	Give an example of an interaction pair	Pushing down on a table, throwing a ball, gravitational attraction between 2 objects with mass
12	What is deformation?	Changing the shape of an object
13	What is compression?	Decreasing the length of an object
14	What is extension?	Increasing the length of an object
15	What is a reaction force?	A contact force from a solid surface
16	What is Hooke's law?	The extension of a spring is directly proportional to the force applied to the spring, up to the spring's elastic limit
17	What does it mean if two things are 'proportional'?	Doubling one also causes the other to double. E.g, for a spring, doubling the force also doubles the extension
18	Describe what is meant by a material's elastic limit	The point beyond which a spring will not return to its original length when the force is removed
19	Describe the shape of the graph for Hooke's law	Straight line graph that goes through (0,0)
20	What is friction?	Force opposing motion which is caused by the interaction of surfaces moving over one another
21	What causes friction?	Contact between moving surfaces
22	Give a use of friction	Brakes on a car, walking
23	Give an example of where friction causes problems	Slipping (if there is not enough), slowing objects down
24	How can friction be reduced?	Lubrication
25	What is a fluid?	A liquid or gas
26	What is a drag force?	The resistance force caused by the motion through a fluid.
27	Give an example of a drag force	Air resistance, water resistance
28	How do drag forces slow objects down?	Particles from the fluid collide with the moving object providing a resisting force
29	How can drag forces be reduced?	Making an object more streamlined
30	What is a resultant force?	Single force which can replace all the forces acting on an object and have the same effect.
31	Describe what happens if the forces acting on an object are balanced	The object will remain stationary or will continue to move at a constant speed