**Topic Overview: Work**

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|  | Ref | Outcome | Achieved | ☺ |
| Emerging | E9SpW1.1 | Give examples of uses of levers |  |  |
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| E9SpW2.1 | Identify the pivot and load on a lever |  |  |
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| Developing | D9SpW3.1 | Machines make work easier by reducing the force needed |  |  |
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| D9SpW4.1 | Draw a diagram to explain how a lever makes a job easier |  |  |
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| Securing | S9SpW5.1 | Explain how a crane works and what the counterbalance is for |  |  |
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| S9SpW6.1 | Explain how wheels reduce friction |  |  |
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| Mastering | M9SpW7.1 | Compare and contrast the advantages of different levers in terms of the forces needed and distance moved.  |  |  |
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| M9SpW8.1 | Use the formula: work done (J) = force (N) x distance moved (m) to compare energy transferred for objects moving horizontally |  |  |
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| M9SpW9.1 | Suggest what a world without friction would be like  |  |  |

**Keywords**

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| **Work:** The transfer of energy when a force moves an object, in joules. |
| **Lever:** A type of machine which is a rigid bar that pivots about a point. |
| **Input force:** The force you apply to a machine. |
| **Output force:** The force that is applied to the object moved by the machine. |
| **Displacement:** The distance an object moves from its original position. |
| **Deformation:** When an elastic object is stretched or squashed, which requires work. |