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A student lifts a 10.0 kg box from the floor at a constant speed to a shelf that is 1.5 m above the floor.

- Construct a free-body force diagram that represents the forces acting on the box when it is 1.0 m above the floor. Be sure to label your diagram.
- Explain how you know that work is being done on the box, and how the work results in a change in the energy of the box.
- Calculate the amount of work done on the box and the change in potential energy of the box. Show your calculations and include units in your answer.