

# PULLEY EXAMINATION QUESTION - MECHANISMS

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On behalf of The World Association of Technology Teachers

## W.A.T.T.



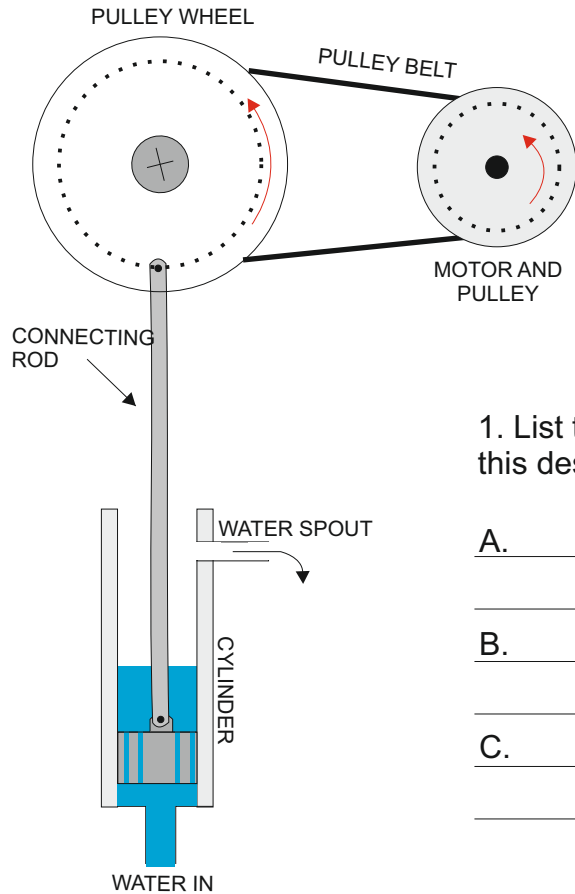
World Association of Technology Teachers

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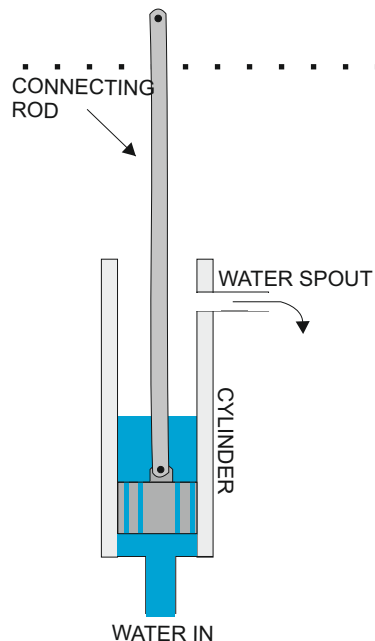
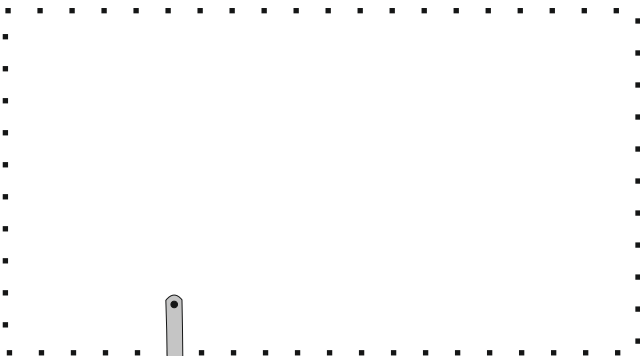
A small hillside village has discovered a fresh water spring and wish to pump the water up to the surface, into a bottling plant. A local engineer has developed a simple pump. As the motor spins, a pulley belt rotates a pulley wheel. A connecting rod then pushes a plunger downwards. Water rises through holes in the plunger and as the plunger rises water is lifted to the water spout, where it pours out. This cycle of events continues until the motor is turned off.



1. List three possible safety improvements that could be applied to this design of pump.

- A. \_\_\_\_\_
- \_\_\_\_\_
- B. \_\_\_\_\_
- \_\_\_\_\_
- C. \_\_\_\_\_
- \_\_\_\_\_

2. The motor has broken down and the pulley mechanism has been removed. Draw in the box an alternative mechanism, powered by hand, that could be used as a short term alternative to the motorised system.



3. List four advantages / disadvantages of your design.

- A. \_\_\_\_\_
- \_\_\_\_\_
- B. \_\_\_\_\_
- \_\_\_\_\_
- C. \_\_\_\_\_
- \_\_\_\_\_
- D. \_\_\_\_\_
- \_\_\_\_\_