

ES	TECHNOLOGY	Knowledge & understanding	Needs	Resources	Processes
	TECHNOLOGY	Skills in designing & making	Preparing	Carrying out	Reviewing
	SCIENCE	K & U - Energy and forces	Properties of energy	Conversion of energy	Forces <i>levers, gravity, friction</i>
	SCIENCE	K & U - Earth & space	Materials from Earth	Changing materials	
	SS&T	K & U - People in the past	Change and continuity		

The design brief here is to design a well-head that will lift a bucket of water from floor to table. We have called it a 'wishing' well, but it would fit just as well in topics about how people used to live (see above).

The crane relies on a cable being wound around a drum to lift a load. It is designed to lift a load to a height above ground level and the jib, with a pulley at the top, makes this possible.

A well-head lifts a load from below ground level. Our design is for lifting water from a well. So, what will it need?

STAGE ONE

To represent a well, ie. a hole in the ground, we could arrange two tables with a narrow gap between them.

We will need a frame to fit over the well, and a winder to operate the cable. Will it be good enough if the bucket just reaches ground level, or should it lift a little higher? What could we use as a bucket? It will need to hold a little water, could we use a card?

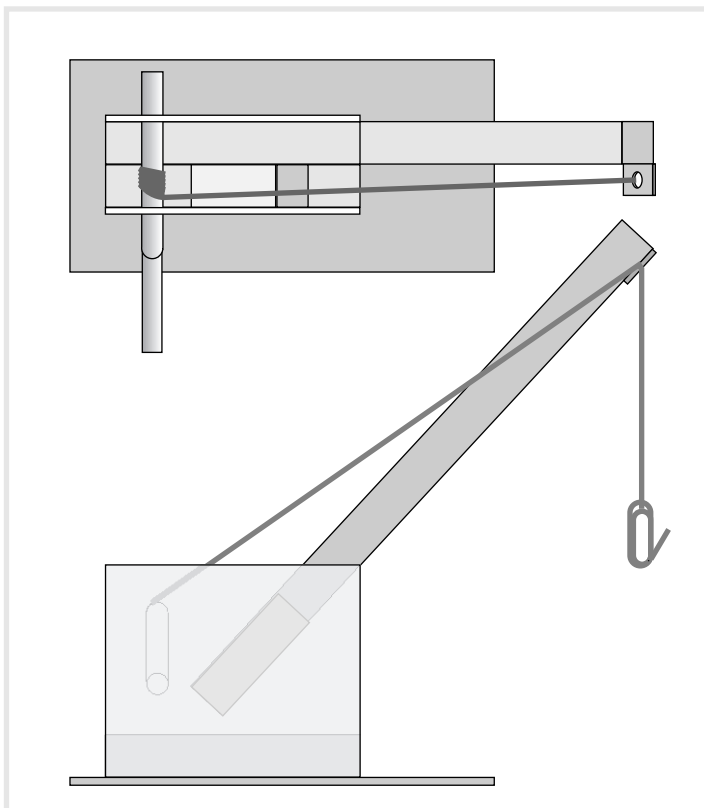
Should we worry about the possibility that someone might fall down the well? How could we prevent that happening? Supposing it rained some of the time. Should the people collecting water have some sort of shelter?

STAGE TWO

Decide on some answers to the questions asked above and build your well. If something doesn't work satisfactorily - perhaps the winding handle bumps on the ground - make any necessary changes.

STAGE THREE

Play with your little well. Place a bowl of water underneath the table. Try it out. Can you lift a little pail of water without spilling any? When you lower the bucket does it fill, or does it just float? If it floats what can you do?



This example shown here is to suggest a possible solution. It is not here to be copied, however . . . (WARNING This, as shown, has never been built!)