



## Pulleys and Gears Project Ideas

1. Create a collage of items that use pulleys or gears. Display it for your class.
2. Set up a pulley by using a spool with a nail through the center fastened into a piece of wood. Set the block of wood on the table so the pulley extends just beyond the edge. Attach string to large washers. Experiment with the force needed to raise the washers while using a pulley (the spool). Try raising the washers when the pulley is not used and the string must slide over the nail. Use a spring scale attached to the end of the string to see the difference.
3. Arrange a table with a number of items that contain pulleys and gears. Include several other things among them. See if students can name the similar attributes of the objects.
4. Create or have students draw small pictures (not larger than 3 cm X 3 cm) of different types of simple machines. You will need about 25 different pictures. Collect and duplicate a copy of the set of pictures for each student. Have students make a four by four bingo card by folding a sheet of newsprint into 16 rectangles, marking a Free space in one of the spaces, and then choosing which of the simple machine pictures they wish to use and gluing them in the spaces. Have fun with a bingo game while learning about simple machines!
5. Do some research on one of the following: fan belts, elevators, steam shovels, flagpoles, clothesline pulleys, derricks, cranes, old fashioned wells, block and tackle assemblies, winches, wire stretchers or venetian blinds. Can you find some information that you think no one knows about your item?
6. Suspend a broom handle across the backs of two chairs. From it, using stiff wire, suspend a spool with a large nail through its center but still loose enough to allow it to turn. Twist the wire securely onto the two ends of the nail. (An alternate would be to untwist the wire on a coat hanger, put on a spool, and retwist to secure it. It may then be hung up to use as a pulley.) Allow children to lift buckets of objects by using heavy cord attached to the bucket handle. Discuss the direction of the force used to lift objects in the bucket upward. How does this do work?
7. Take a walk around the school. Make a list of where you observe a pulley or gear being used. Record your findings.
8. As you walk or ride to school, find instances where pulleys and gears are being used in your community. Share your findings with your class.
9. Create a simple toy that uses a pulley or gear. Demonstrate your creation.
10. Find an old wind up alarm clock that is no longer working. Carefully disassemble the clock and display all of the gears that you are able to find inside. You could do the same with an old watch that is no longer used.

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