



SIMPLE MACHINES | ANSWER SHEET

Gardens & Grounds:

- Bird Spigot and Fire Hydrant - screws
- Sun House Stairs - inclined plane
- Wheelbarrow (Demonstration Video One) - not a simple machine!

This was a trick question! A wheelbarrow is both a wheel and axle and a lever (your body and the handle create a lever), so it is technically a compound machine, meaning it is a combination of two simple machines.

- Lawn Roller (Video Demonstration Two) - wheel and axle

Kitchen:

- French Fry Cutter, Servant Bell Pull, Meat Pulverizer (pantry shelf) - levers
- Roasting Jack - wheel and axle
- Furnace Grate and Mixer (lower right corner) - wheels*
- Glass Orange Juicer (top right pantry shelf) - wedge

Musice Room:

- Piano Keys - levers
- Piano Stool - screw

- Music Box - wheel*

Bedroom:

- Rotary Phone Number-Dial - wheel*
- Window Mechanism - pulley
- Scissors - not a simple machine!

This was a trick question! The scissor blades are a wedge and the handles are a lever, making a pair of scissors a compound machine, meaning that they are a combination of two simple machines!

Workshop:

Ice Tongs - lever

Block & Tackle - pulley

Vice - screw

*Some wheels are actually levers in the round, with a wheel turning on a fulcrum instead of an axle. If you are pushing a handle around to the turn a wheel, it's probably a lever in the round (the mixer has a turning handle, on the phone and furnace grate your finger serves as the turning handle, in the music box the winder is the turning handle. For the purposes of this activity, we have simplified this idea and are calling levers in the round just "wheels." On your tally sheet, you may choose to call them levers or wheel and axles.

Primary Source Activity:

Here is the transcription of the diary entry:

"Built "Cornice" Road on North Bank of Vaughan Stream at Homestead 700 ft long & 3 stone arches; Cedar rail with bark on, on lower side. Stone 320 tons "grout" from Granite Co. @90 cents a ton delivered - also 300 tons more or less, of field stone, from bed of rivulet running under largest arch; thrown there by Swanton and later Bodwell in clearing lands. Cost of mason and labor \$450 - cost of all the rest of road \$800. Built small farm derrick for my own use @ \$70. Very useful in hoisting stone."

William Warren Vaughan built a derrick, which is similar to a crane. A derrick uses a pulley system for lifting and moving heavy stones. Depending on its design, the mast and boom of the derrick may also be a lever. It cost him \$70 to build. In the picture we see Memorial Bridge (b. 1915), which may be seen across Cascade Pond in Vaughan Woods, under construction. Can you see the derrick in the background?

