Simple Machines

Big Machines are made of “simple machines”.

**Lever:** a board or bar that rests on a turning point called a fulcrum. The closer the object to be lifted is to the fulcrum, the easier it is to move.

**Pulley:** made up of a wheel and a rope. The rope fits in the groove of the wheel. Pulleys make it easier to move loads up and down.

**Wheel and Axle:** a wheel with a rod (called an axle) through its center makes it easier to move a load.

*Find a machine that...*
- Makes the ground flat to build a road.
- Won’t get stuck in the mud.
- Can pick up dirt.
- Can carry a lot of dirt.
- Lifts things high into the air.
- Carries tools to help fix things.
Many “big machines” use hydraulics to move and lift heavy loads. Hydraulic systems pump oil through pipes to extend pistons called hydraulic cylinders.

Can you find a hydraulic cylinder on each of these machines? What else is similar on these machines?

**TELESCOPIC FORKLIFT**

**EXCAVATOR**

**DUMP TRUCK**

**WHEEL LOADER**

**Parent Tip:** While exploring The Science of Big Machines with young children, ask open-ended questions!