

Simple Machines

GRADE 8 SCIENCE

OUTCOME

Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts.

Analyze a mechanical device, by:

- describing the overall function of the device
- describing the contribution of individual components or subsystems to the overall function of the device
- identifying components that operate as simple machines
- identify the source of energy for some familiar mechanical devices
- identify linkages and power transmissions in a mechanical device, and describe their general function (e.g., identify the purpose and general function of belt drives and gear systems within a mechanical device)

Simple Machines Project

Simple machines are used all throughout agriculture. Farmers use all different types of machines to bring food to the world. They're used for seeding, controlling pests, harvesting, baling, hauling, and more.

To help with the harvesting of crops, the first combine was built and patented in 1835. Since then, they have come a long way.



Simple Machines

Part 1:

In this project, we are going to be looking at a combine harvester.

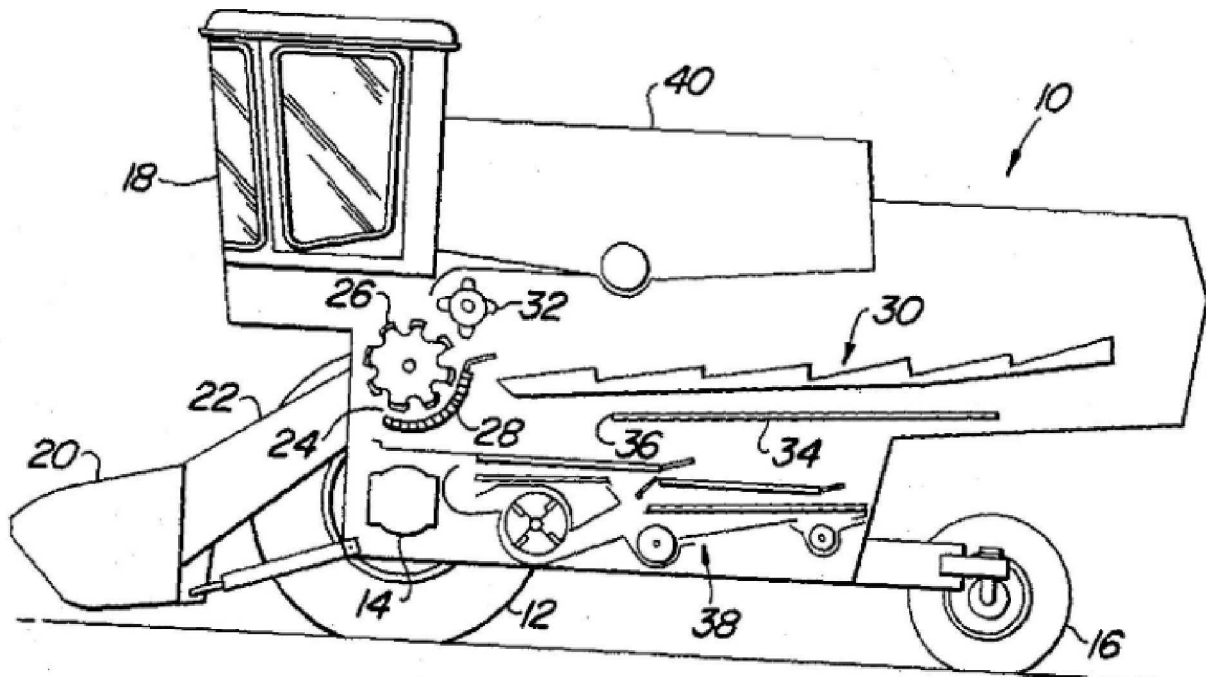
Please write a brief description of how you think each of these simple machines would work in a combine.

- Levers
- Screws
- Wheels and Axles (Gears)
- Incline/Plane/Ramps
- Pulley
- Wedge

Part 2:

Using the diagram below, can you label the combine with the simple machines listed in Part 1?

NOTE: You will use a simple machine more than once. For example you may use 'wheels' or 'gears' for more than one number.



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Part 3

Much of the agricultural equipment used today to bring food to the world incorporates several simple machines. Combining two or more simple machines together to make compound machines, makes the work more efficient (easier) for the farmer. This is actually how the “combine” got its name, as it combined the three different harvesting processes: reaping, threshing, and winnowing, which led to the invention of what we know as the “combine.”

Your task is to create a combine using more than one simple machine. You will need to sketch and design your machine first. Then create your machine using items you can find in your house.

Sketch your machine/combine design:



List the materials you will need and use:

Write the procedure that you will follow to build your machine:

Build your machine/combine.

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REFERENCES:

<https://www.plant-planet.co.uk/2021/08/04/a-brief-history-of-the-combine-harvester/#:~:text=In%201835%2C%20Hiram%20Moore%20built,measured%2017%20ft%20by%2015ft.>

https://commons.wikimedia.org/wiki/File:Combine_parts.jpg