

WATER POWER

The first textile mills in New Hampshire were powered by water. People built them next to rivers. But how did people use the power of the river to run the machines?

1 Find a powerful river and build a **dam**. The dam will slow the water down and turn that part of the river into a pond. This is called a **mill pond**.

MILL POND

DAM

HEAD RACE

2 Cut a **head race** to the mill. A head race is a narrow channel of water that flows quickly downhill to a mill. The water in the head race turns the **waterwheel** by pushing against big paddles.

WATERWHEEL

MAIN SHAFT

GEARS

POWER TRAIN

PULLEY

5 Each pulley is attached to a machine. As the pulley turns, it moves the parts of the machine. The machine now has power to make it run!

3 When the waterwheel turns, it turns the **gears**. The turning of the gears spins a thick pole called the **main shaft**. The main shaft goes up through all the floors of the building.

MAIN SHAFT

WATERWHEEL

GEARS

1. What is a power train? How does it relate to the main shaft?
2. What do you think would happen if there was a dry season and not as much water in the mill pond?
3. Which part of the process would be the biggest problem or hardest to fix if it broke?
4. Brainstorm all the ways you think water power changed people's lives.