

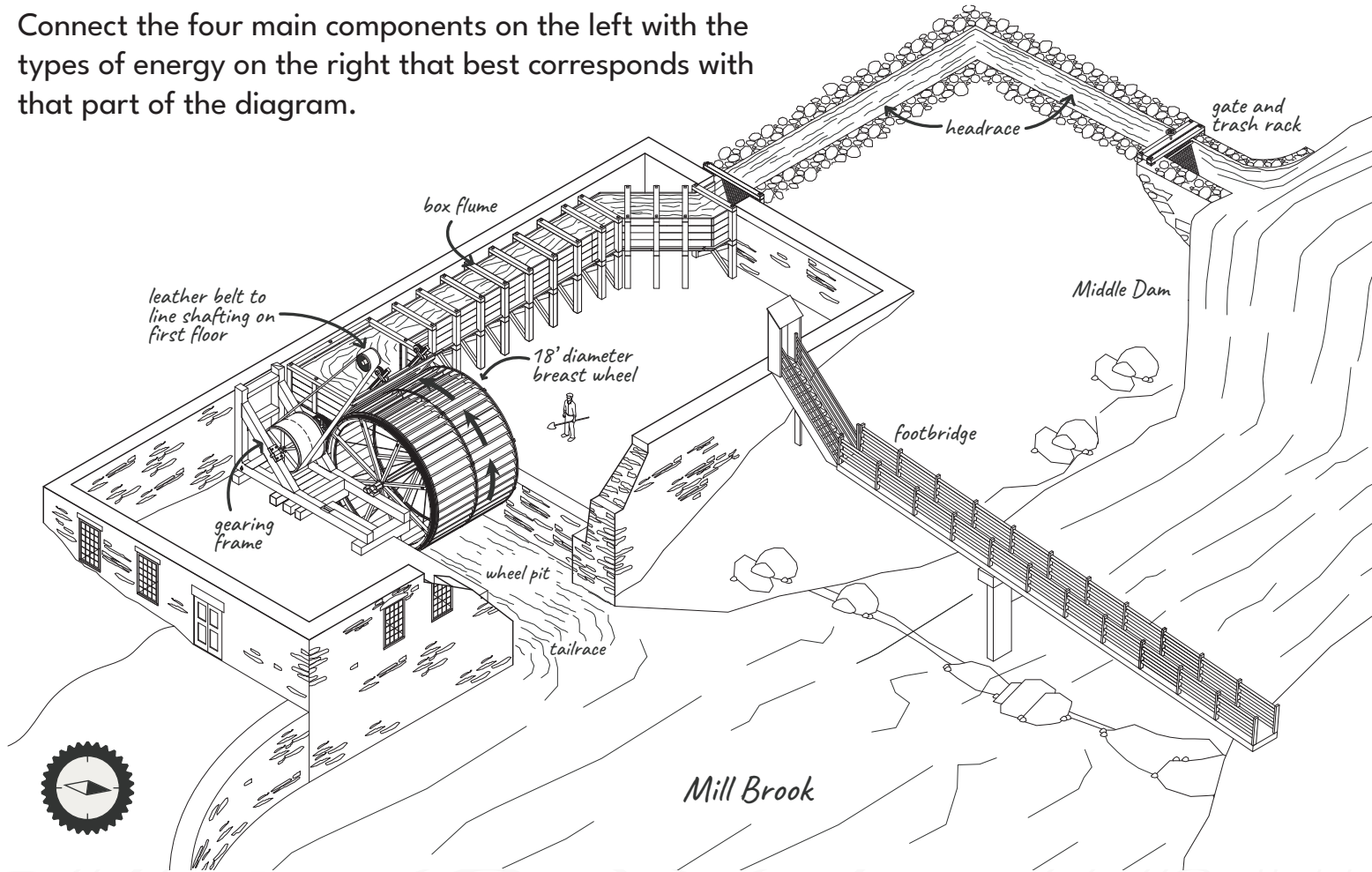
# Follow the Energy: Water Wheel Edition



The water wheel turns flowing water into machine power—but how does the energy change along the way?

On the diagram, identify and label (with 1, 2, 3, 4) the main components of the system listed below the diagram.

Connect the four main components on the left with the types of energy on the right that best corresponds with that part of the diagram.



## Main Components

1. Dam with Stored Water
2. Flowing Water in Flume Box
3. Water turns the Wheel
4. Gear System and Pulleys connect to machines on the main floors

## Types of Energy

- Rotational Mechanical Energy
- Gravitational Potential Energy
- Kinetic Energy
- Transferred Mechanical Energy

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## Reflection Questions

How is energy stored in this system?

What type of energy does the water have as it flows?

How does the wheel convert that energy?

Not all energy from the flowing water goes to powering the wheel. Can you think where energy is lost in the system?

How might we make the wheel spin faster?

## For Further Thought:

Three years after the Robbins & Lawrence Armory opened, a steam-turbine was installed that could also power the machinery. What might be some of the advantages and disadvantages of utilizing a steam turbine over the water wheel? What seasonal or environmental factors could create challenges for relying on water power?