



Build Your Own Water Filter - Curriculum Connections

Suggested Grades: K-6

Curriculum Connections: Matter (Gr K, 2, 3, 4), Energy (4-6), Earth Systems (Gr K-4), Living Systems (Gr 1-3), Computer Science (K-1), Scientific Methods (Gr 1)

Specific Learning Outcomes:

Kindergarten

- *Matter* - Children examine properties of objects (compare clean and dirty water, gravel and sand).
- *Earth Systems* - Children examine and describe surrounding environments (talk about local water sources, the river valley).
- *Computer Science* - Children interpret instructions in various environments.

Grade 1

- *Earth Systems* - Students analyze environments and investigate interactions and changes (caring/respect for nature; how extracting oil changes water).
- *Living Systems* - Humans can help meet the needs of plants or animals by respecting environments (keeping water clean).
- *Computer Science* - Students follow instructions and relate them to outcomes (filter must be assembled in order, or it won't work as well).
- *Scientific Methods* - Students engage in and describe investigation (ask questions, make predictions and observations).

Grade 2

- *Earth Systems* - Students investigate Earth, its landforms, its bodies of water, and its relationship to the Sun (bodies of water).

Grade 3

- *Matter* - Students investigate and analyze how materials have the potential to be changed (how does using water to extract oil change the water? How does filtering change the water?).
- *Earth Systems* - Students analyze changes in Earth's surface and explain how its layers hold stories of the past (human activities change Earth's surface - connect to oil wells).



- *Living Systems* - Students analyze and describe how plants and animals interact with each other and within environments (minimizing disturbances to plants and animals - e.g., by keeping their water sources clean).

Grade 4

- *Matter* - Students investigate the management of waste and dangerous materials and describe environmental impacts (water can be recycled/cleaned).
- *Energy* - Students investigate how forces can act on objects without contact (filter uses gravity to draw water down).
- *Earth Systems* - Students investigate the systems of Earth and reflect on how their interconnections sustain life (caring for water sources, natural resources - connect to oil).

Grade 5

- *Energy* - Students investigate and analyze various energy resources (fossil fuels - oil).

Grade 6

- *Energy* - Students investigate energy resources and explain factors that influence their use (connect to oil).