6

Science Standard
6.6.b.

Visual Aids

California Education and the Environment Initiative

Energy and Material Resources: Renewable or Not?

California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

The Education and the Environment Initiative Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency

California Natural Resources Agency

California State Board of Education

California Department of Education

Department of Resources Recycling and Recovery (CalRecycle)

Key Partners:

Special thanks to **Heal the Bay,** sponsor of the EEI law, for their partnership and participation in reviewing portions of the EEI curriculum.

Valuable assistance with maps, photos, videos and design was provided by the **National Geographic Society** under a contract with the State of California.

Office of Education and the Environment

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None required for this lesson.

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VA #1 Lake by a Small Town

VA # 2 Biomass

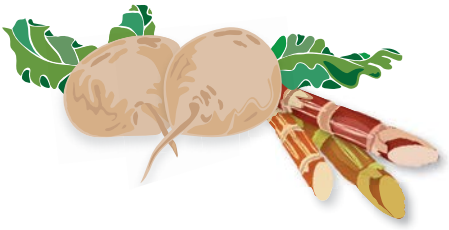
Types of Biomass

Plants
(wood and other plant parts)

Crops and Animals
(corn, rice, sugar cane, sugar beets, manure)

Energy Sources Created from Biomass

Biodiesel
(made from plant oils and animal fats)



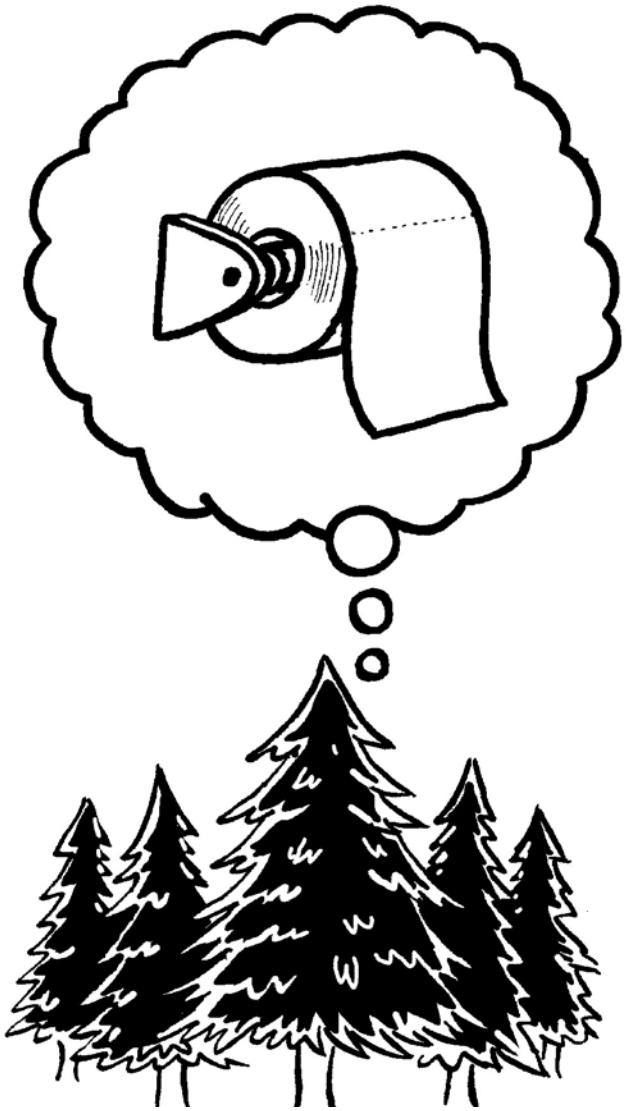
Alcohol Fuel
(Ethanol, made from crops)

Biomass:
1. The total mass of living matter in a given area.
2. Organic material made from plants and animals.
3. Organic material used for fuel.

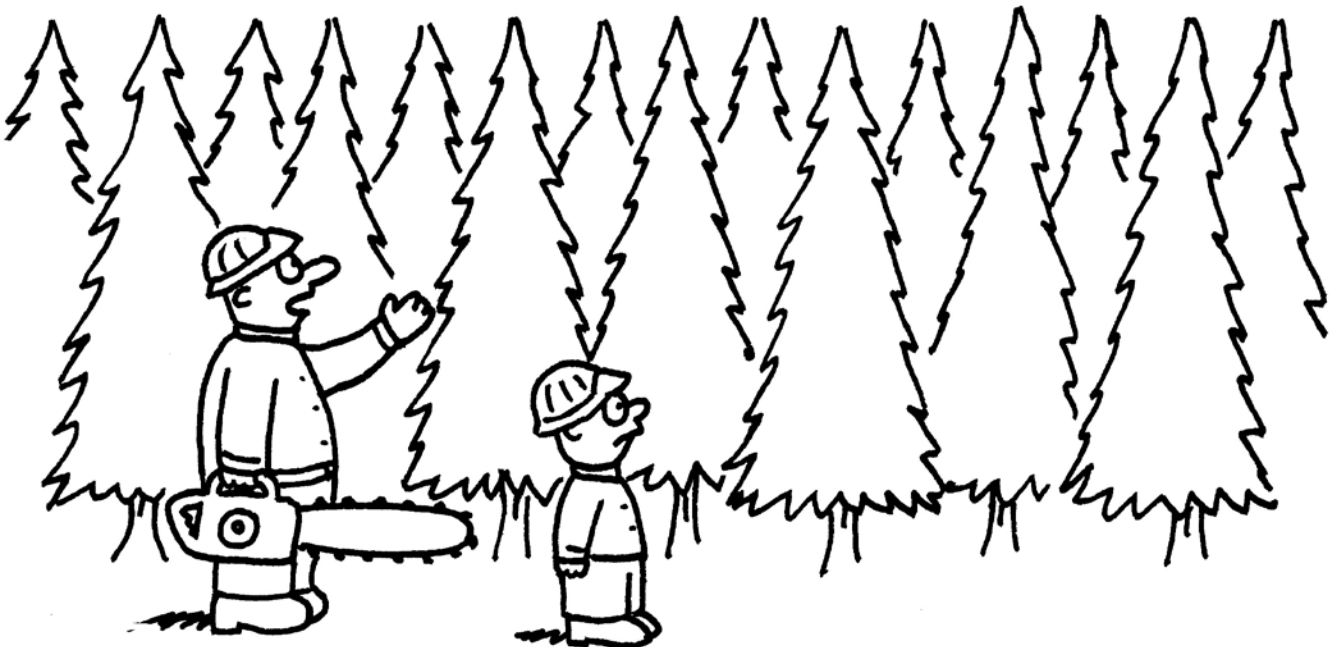
VA #3 Energy and Material Resources Table

Energy Resources	Material Resources

VA #4 Toilet Paper

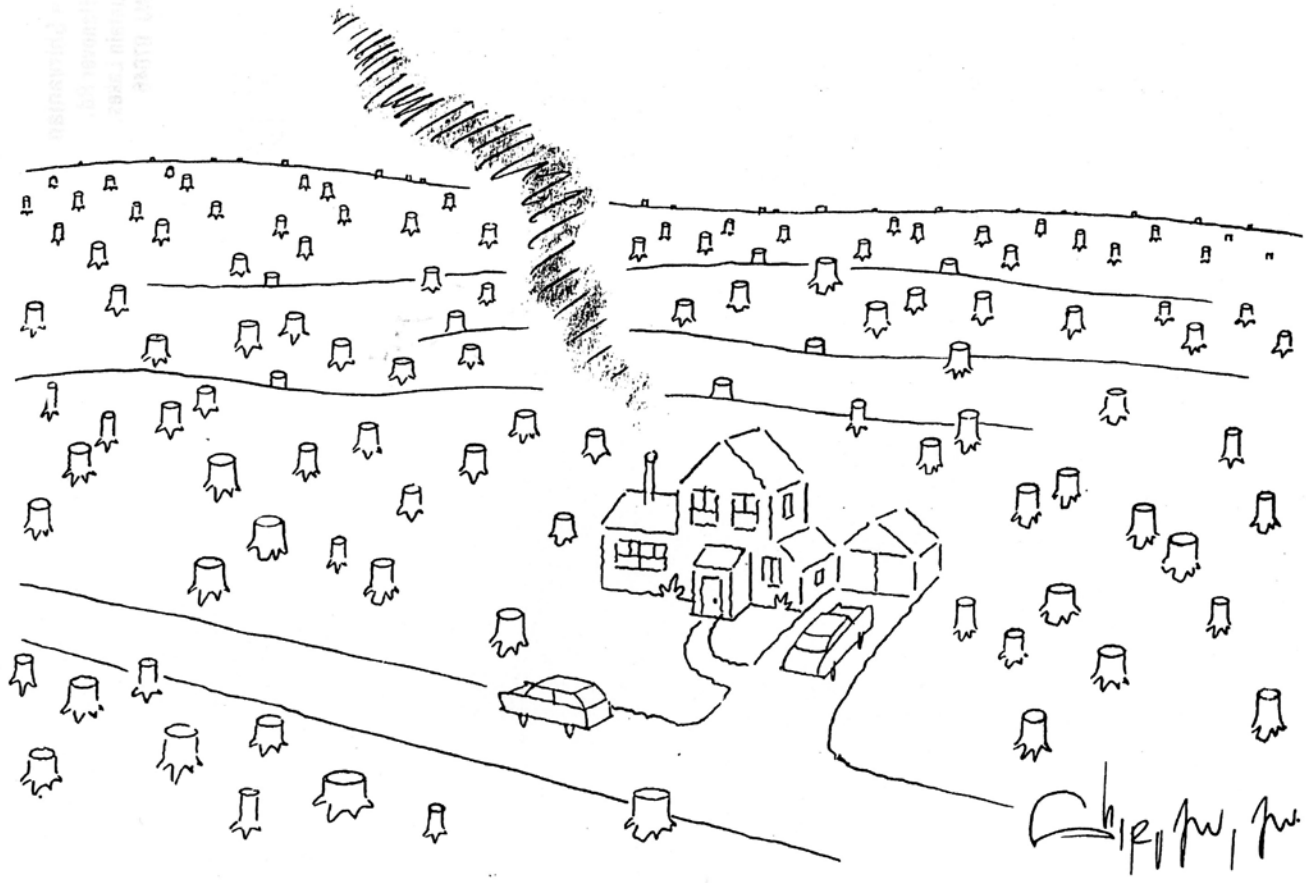


VA #5 Junk Mail



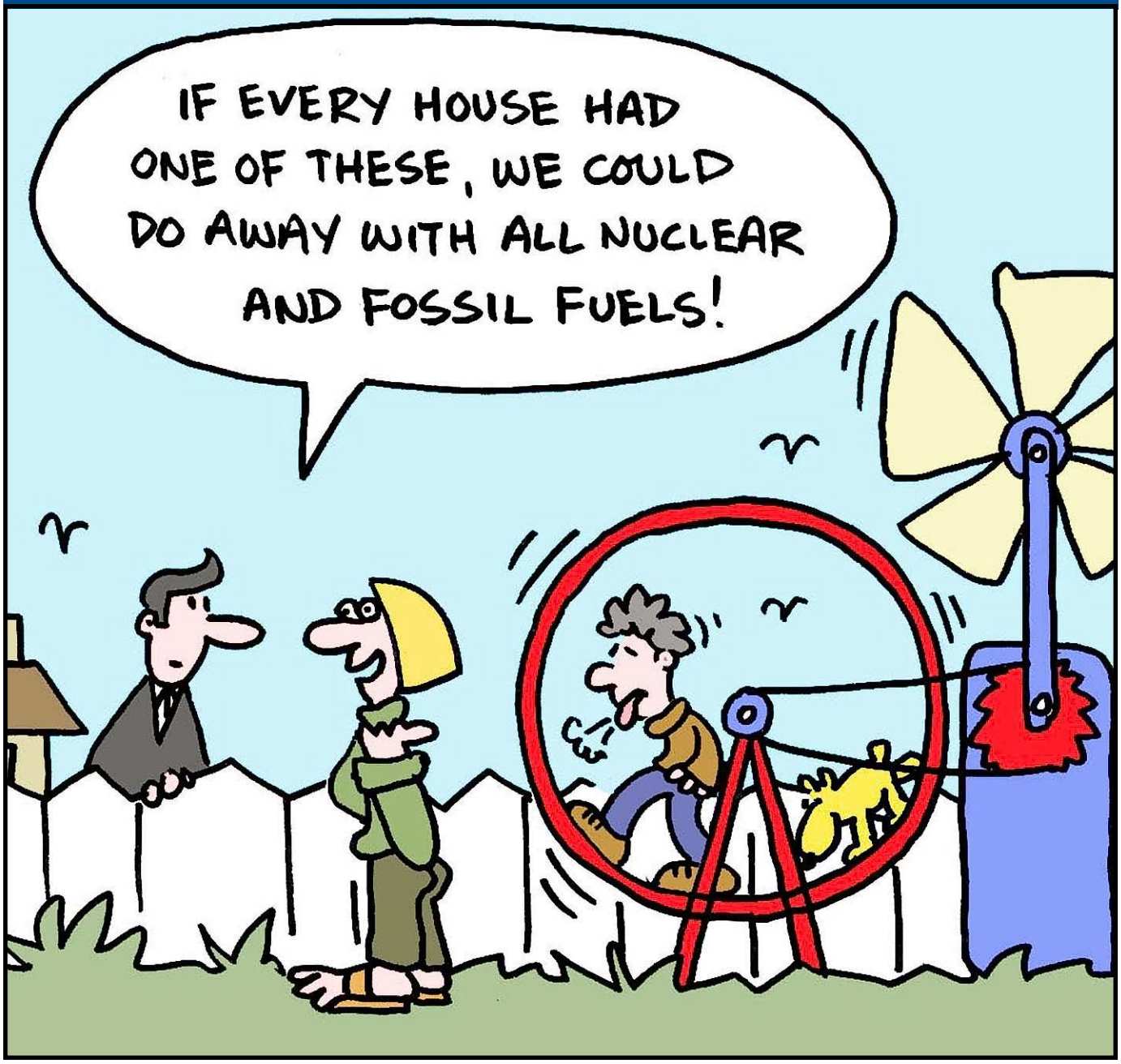
"One day son, all of this junk will be mail!"

VA #6 Wood-Burning Stove



"Can you believe it? Since we installed our wood-burning stove, we've spent next to nothing on heating oil"

VA #7 Boy- and Dog-Powered Fan



VA #8 Fossil Fuels

VA #9 Sunshine Going to Waste?

"When I think of all this sunshine going to waste…"

VA #10 Fans

VA #11 Fishing Scenarios

Scenario 1:
Imagine that everyone in the town fishes using a rod and reel. The people have a tradition–they never keep more than one fish to eat. One day, a newcomer brings a big net and starts scooping up hundreds of fish at a time. This person plans to sell the fish to a town far away.

Scenario 2:
Imagine that everyone in the town fishes using a rod and reel. The people start a new tradition–everyone in town decides to eat fish for every meal, every day. This means that they have to catch and keep many more fish than they used to.

Scenario 3:
Imagine that the fish population has dropped very low. Now there are not enough fish for everyone in the town to continue catching and eating. When people go to the lake with their rod and reel, they often come home empty-handed.

VA #12 Aquaculture

VA #13 Sample Decision Flowchart

Question:

Option 1 (Human Practices or Production):

Option 2 (Consumption):

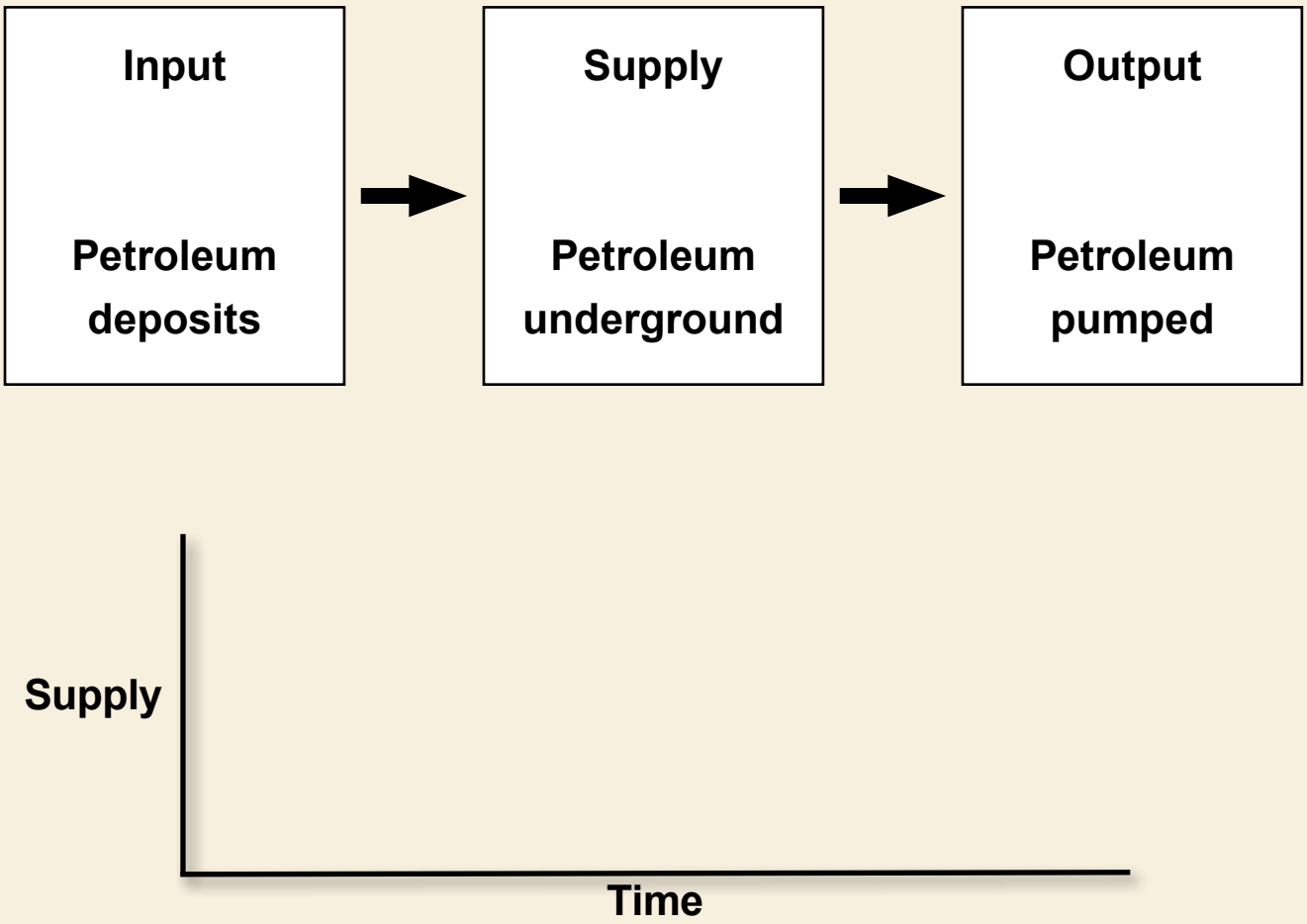
Pros	Cons	Pros	Cons

Decision

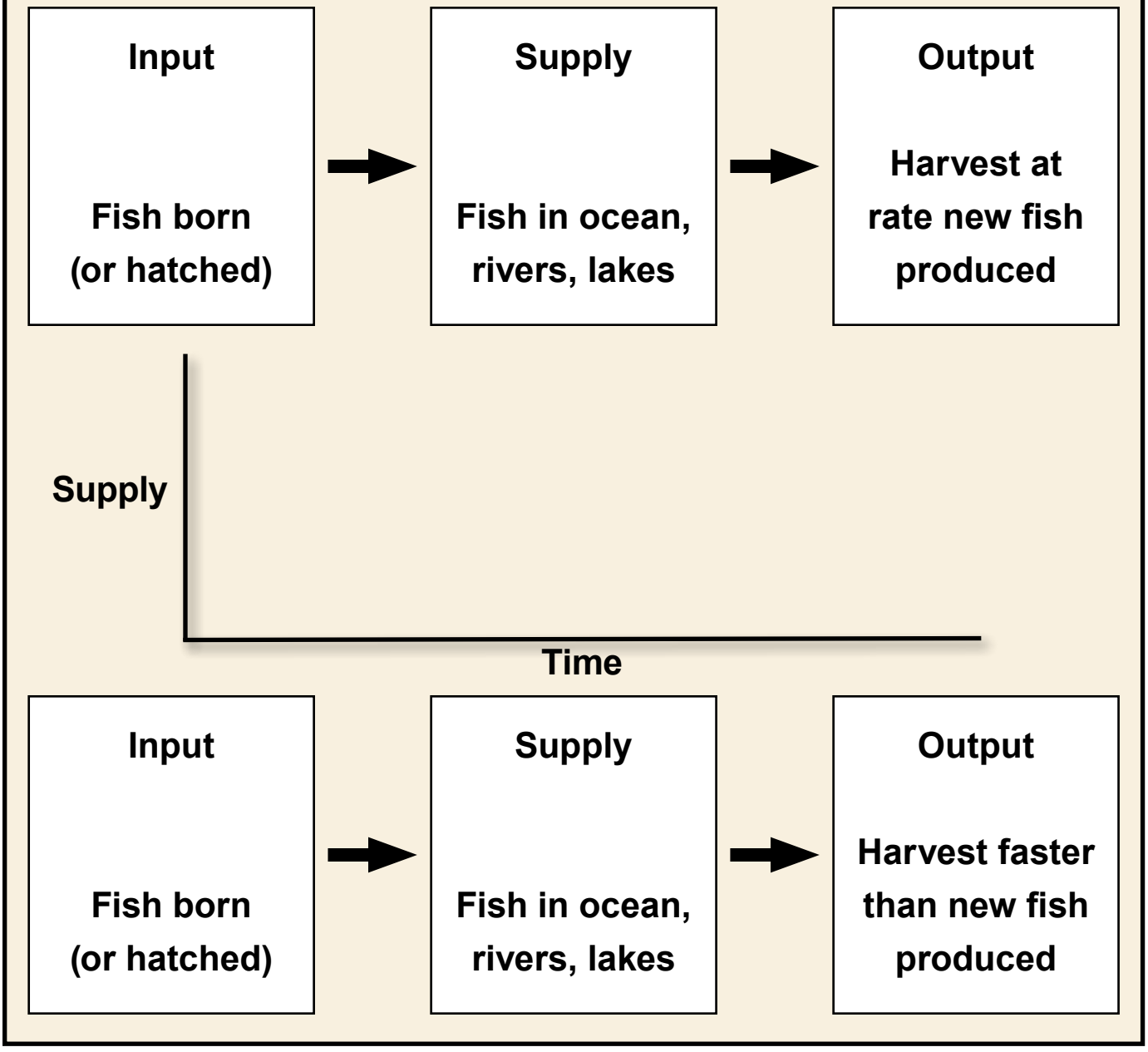
VA #14 Resources: Input, Supply, and Output

Input	Supply	Output
Rain or snowmelt	Water in a reservoir	Water from a faucet

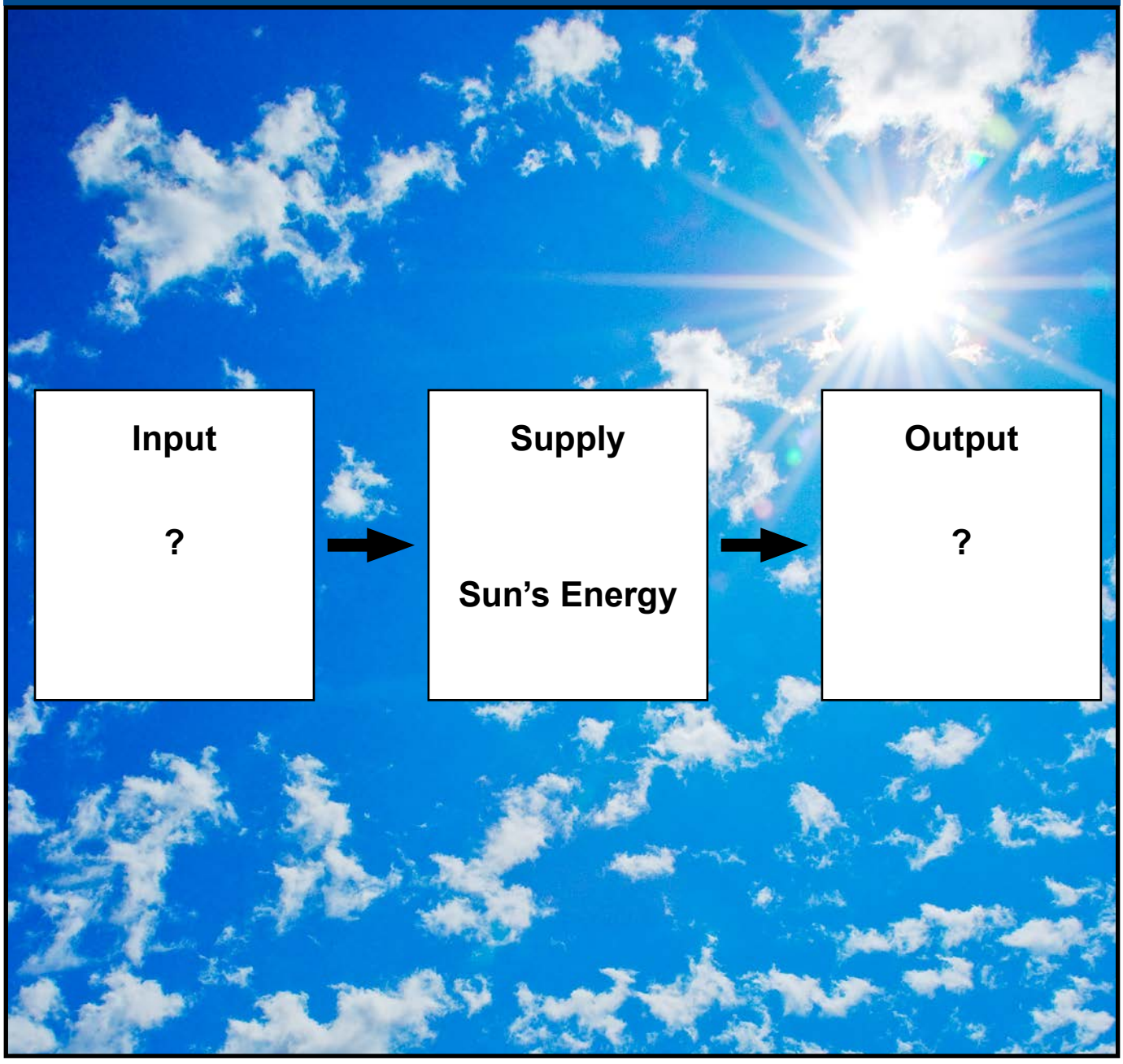
VA #15 Petroleum: What Type of Resource?



VA #16 Fish: What Type of Resource?



VA #17 Sun: What Type of Resource?



VA #18 Reclaimed Water

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