

Water Category Cards Activity

Objective: The objective of this lesson is to inform students that water has many functions in our everyday life. These functions can be divided into categories (industrial, municipal, power production, transportation, institutional, mining, recreation, commercial, domestic, agriculture, and wildlife). Students will be reading through a deck of water use cards and determining which category each card (water use) belongs to.

Materials: For each small group of students, provide a **Water Category Card Placemat** and one set of cut up **Water Category Cards**. After students complete the activity, provide students with a copy of the **key to the activity**. If possible, use different color paper for each set of cards so if they get misplaced they are easy to replace!

Lesson Directions:

Warm Up: Have students brainstorm a list of uses for water on a piece of scrap paper. Then have students go around the classroom and check their list with other students. Provide about 5 to 7 minutes for this activity. Call on students to share their uses. Most students will have listed water uses for things that they directly use water for. Explain that water is used for many other uses as well. Go over the categories for the activity. Use definitions from the key to help define water use categories that the students are not so familiar with.

Activity: Provide students with the materials listed above in bold print. Explain that they are going to take turns reading one Water Category Card at a time and then determine as a group what water use category the card best belongs in. They will then place the card on the Water Category Card Placemat, next to that category (don't cover up the category name). Once they have placed all the cards tell them to ask you for a key. Each group will need to check each card and see if they placed the card correctly. Explain to students that some of these uses overlap more than one category, but tell them to focus on the most major one. For example, people in the hospital and prisons brush their teeth, but they are considered institutional uses of water rather than domestic (home use). If groups finish before others, have them brainstorm their own two more items for each category!

Wrap Up: Discuss which water cards were easy and difficult to place. Ask them what other water uses they came up with. Ask students to determine what categories a zoo would belong to (recreational, wildlife, commercial or institutional depending if it is profit or nonprofit). If time is available for quick summary, hang a sign for each water category in a different area of the room. Give each student a water use card. Have them report to the water use category area in the room that represents their card. Have the students check each other when they arrive!

Extension: Have students look for news stories on the Internet about competing uses of water! Create a master list of water shortage problems. Emphasize to the students that water is a finite resource. Solving any of these problems will most likely require multiple approaches such as water conservation, water legislation, technology, and even lawsuits!

Water Category Activity / Key to Sorting Activity

INDUSTRY (Industry makes goods and products. Water is used in most industrial processes.)

CARD EXAMPLES: *Shoe Factory / Car assembly line / Cereal Plant / Paper Mill / TV Factory*

POWER PRODUCTION (Power production is for the production of electricity, gasoline, and natural gas. Water is used directly or indirectly in these processes.)

CARD EXAMPLES: *Hydroelectric Dams / Heating Steam to Turn Turbine / Coal Ash Dams / Oil Rig / Fracking for Natural Gas / Nuclear Power Plant / Oil Refinery*

MUNICIPAL FACILITIES (Municipal facilities are include public services for city government. They provide drinking water, and treat waste water from homes, storm drains and businesses.)

CARD EXAMPLES: *Fire Hydrant / Wastewater Treatment Plant / Drinking Water Facility / Storm Drains / Fire Department / City Pool*

TRANSPORTATION (Transportation is the means to move people, goods and services. All forms of transportation require water cooling systems to transport heat out of the engines.)

CARD EXAMPLES: *Trucks / Barges / Ships / Planes / Buses / Cars / Trains / Snow Mobile / Four Wheeler / Submarine / Cruise Ships*

INSTITUTIONAL (Institutions can be governmental or private. Governmental institutions include public schools, public colleges, prisons, and law enforcement agencies as well as the military. Some schools are private. All of them use water to meet the needs of people who attend them.)

CARD EXAMPLES: *Hospital / School / Prison / College / Police Station / City Hall / Fire Department / Military Base*

MINING (Mining is the extraction and processing of mineral ores and industrial stones for the purpose of producing industrial materials, goods and building structures including roads and bridges. Mining operations pump water out of the ground and use water for processing ore.) CARD EXAMPLES: *Coal / Aluminum / Copper / Gold / Gypsum / Tin / Diamonds / Lead / Tungsten / Oil drill / Fracking Gas*

RECREATIONAL (Recreation includes activities done for enjoyment. Many activities help maintain good health.)

CARD EXAMPLES: *Canoeing / Swimming / Ice Skating / Water Skiing / Snow Skiing / Amusement Park / Water Park / Camping / Cruise Ships / Ice Hockey / Scuba Diving / Surfing / Fishing / National Park / Sail Boat*

COMMERCIAL (Commercial refers to business that operate to meet a consumer demand while making a profit. All use either water directly to provide a service or at least for restrooms.)

CARD EXAMPLES: *Fish Hatcheries / Pet Store / Restaurant / Car Wash Business / Laundromat / Motel Shower / Movie Theater / Mall / Insurance Office / Law Office / Dry Cleaner / Sea World*

DOMESTIC (Domestic refers to activities related to personal homes.)

CARD EXAMPLES: *Garbage Disposal / Dishwasher / Shaving / Drinking Water / Personal Aquarium / Brushing Teeth / Washing Clothes / Watering Garden & Yard / Water Softener / Rain Barrel*

AGRICULTURAL (Agricultural refers to the production of food and fiber products.)

CARD EXAMPLES: *Dairy Cleaning Systems / Animal Feeding Operation / Irrigation system / Range cattle / Wheat field / Vineyard / Corn field / Aquaculture / Commercial Fishing Fleet*

WILDLIFE (Wildlife refers to the living things that live in a natural environment.)

CARD EXAMPLES: *Wetlands / Deer / Turkey / Fish / Beaver Dam / Wildflowers / Prairie / Forest / Bird Migration / Polar Bears*

Shoe Factory	Car Assembly Line	Cereal Plant
Paper Mill	TV Factory	Hydroelectric Dam
Steam to Turn Turbine	Coal Ash Ponds / Dams	Oil Rig
Fracking for Natural Gas	Nuclear Power Plant	Oil Refinery
Fire Hydrant	Waste Water Treatment Plant	Drinking Water Facility
Storm Drains	Fire Department	City Pool
Trucks	Barges	Ships
Planes	Buses	Trains
Snow Mobile	4 Wheelers	Submarine

Hospital	School	Prison
College	Police Station	City Hall
Fire Department	Military Base	Coal Mine
Aluminum Mine	Copper Mine	Tin Mine
Diamond Mine	Lead Mine	Tungsten Mill
Oil Drilling	Fracking Natural Gas	Canoeing
Swimming	Ice Skating	Water Skiing
Amusement Park	Water Park	Camping
Cruise Ships (2 locations)	Cruise Ships (2 Locations)	Ice Hockey

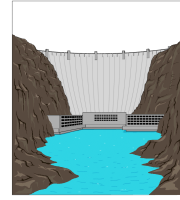
Scuba Diving	Fishing	National Park
Sail Boat	Fish Hatcheries	Pet Store
Restaurant	Car Wash Business	Laundromat
Motel Shower	Movie Theater	Mall
Insurance Office	Law Office	Dry Cleaner
Sea World	Garbage Disposal	Dishwasher
Shaving	Drinking Water	Personal Aquarium
Brushing Teeth	Washing Clothes	Watering Garden / Yard
Water Softener	Rain Barrel	Dairy Cleaning System

Animal Feeding Operation	Irrigation System	Range Cattle
Wheat Field	Vineyard	Corn Field
Aquaculture	Wetlands	Deer
Turkey	Fish	Beaver Dam
Wildflowers	Prairie	Forest
Bird Migration	Polar Bears	WILD CARD <u>Think of own use</u>

Industry



Power Production

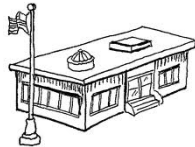


Municipal
Facilities

Transportation



Institutional



Mining



Recreational



Commercial



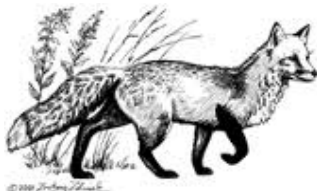
Domestic



Agricultural



Wildlife



Unused CARD Stack!