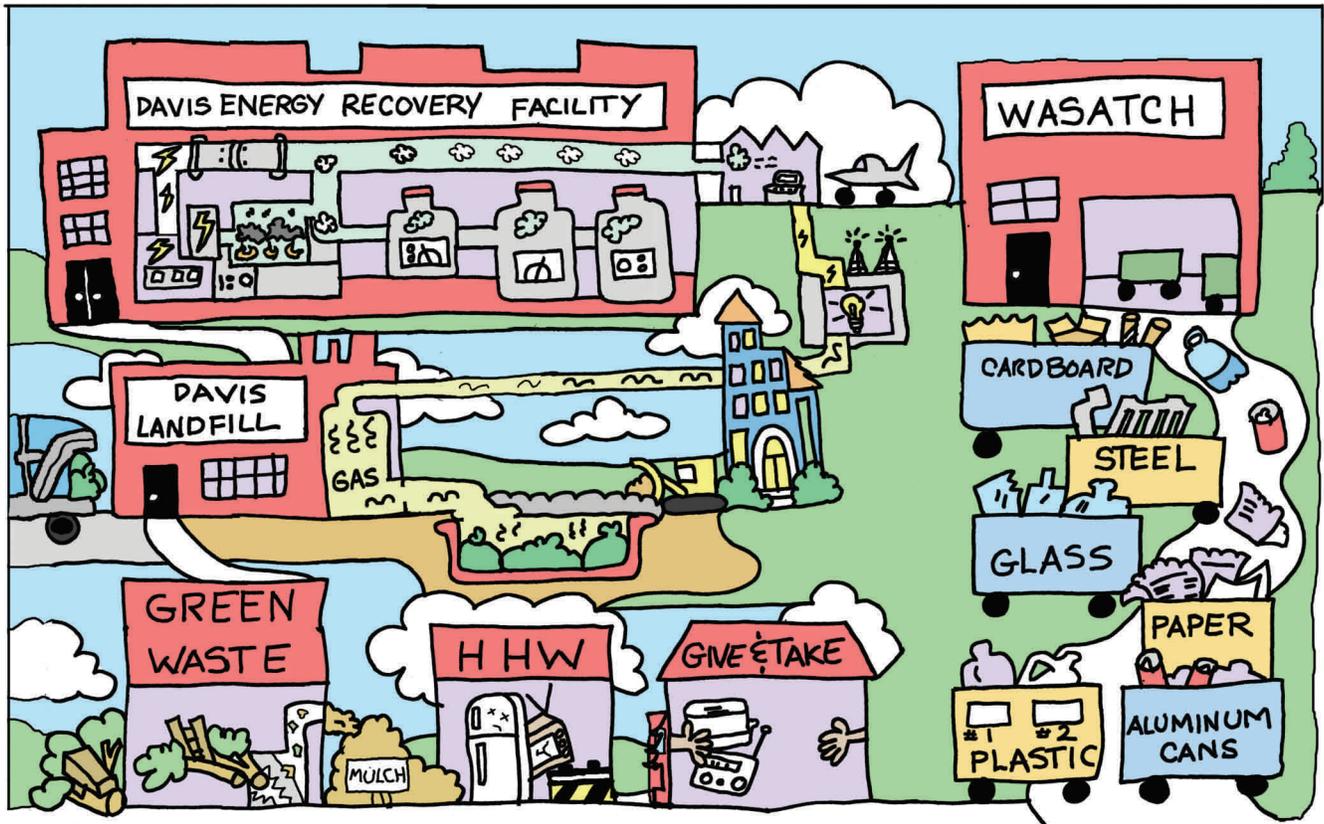


Where does our garbage go?

Wasatch Integrated Waste Management District, of course!



Do you know what happens to your garbage? The answer is simple for residents of Davis and Morgan Counties and 15 of the cities (excluding the City of Bountiful). Wasatch Integrated Waste Management District, which is a “special service district” under state law, handles most of the garbage generated through an integrated waste management system.

These are the programs operated by Wasatch to ensure materials and energy recovery and safe disposal of solid waste:

- **Recycling:** The District provides traditional recycling bins for cardboard, paper, #1 and #2 plastic containers, steel, aluminum, and glass containers in participating member communities. The recycling bins are serviced by the communities, but the recyclables are handled and processed by Wasatch. Currently, there are recycling bins in South Weber, Clinton, and Morgan. There are also recycling bins at the Davis Landfill, which is located in Layton.
- **Green Waste:** The Green Waste Recycling Facility, which is located at the Davis Landfill in Layton, accepts leaves, tree and shrub trimmings, wood pallets, and clean untreated lumber, as well as manure, sawdust, and chopped limbs. The green waste is turned into wood chips, mulch, or compost, which is then sold for \$5 (wood chips and mulch) or \$20 (compost).
- **Household Hazardous Waste:** The Household Hazardous Waste (HHW) Facility provides a place for residents of the District to properly dispose of potentially hazardous household items, such as household chemicals, lead-acid batteries, electronic waste (e-waste), and refrigerant-containing appliances. The HHW Facility is located at the Davis Landfill.
- **Give & Take:** The Give and Take area is home to usable products (household chemicals, small appliances, and similar household items) that are available at no charge. Instead of being combusted or landfilled, these items are reused. The Give and Take area is located at the Davis Landfill.

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waste management district

- Energy Recovery:** The Davis Energy Recovery Facility combusts municipal solid waste and uses the heat recovered to generate electricity and steam. The electricity is used to run the Davis Energy Recovery Facility. The steam is sold to Hill Air Force Base (HAFB) and is used for heating. Using steam made from garbage keeps HAFB from burning natural gas or fuel oil to heat buildings. The energy recovery facility provides a large greenhouse gas benefit by offsetting fossil fuels (natural gas or fuel oil) consumption through the use of primarily bio-fuels (mainly paper, cardboard, and wood). With the installation of state of the art pollution controls in 2001, the Davis Energy Recovery Facility is one of the cleanest sources of renewable energy and has extremely low emissions of pollutants, including dioxins. The energy recovery facility reduces the volume of garbage going to the landfill by 90%, leaving behind a relatively stable ash. Metals are also recovered from the incinerator ash for recycling. The Davis Energy Recovery Facility is located at 650 East Highway 193, Layton.
- Landfill:** The Davis Landfill is a permitted, modern sanitary landfill, known as a “Subtitle D Landfill,” which has a bottom liner and leachate collection system to protect groundwater and a landfill gas collection system to reduce emissions of the greenhouse gas methane. Ash from the energy recovery facility is used as daily cover at the landfill to lengthen the facility’s life and reduce the use of clean soil. Gas collected at the landfill is currently being shipped to HAFB where it is used to generate electricity in the first landfill-gas-to-energy project completed in the State of Utah. This project currently generates enough electricity to power about 700 homes and is scheduled to be enlarged within the year to handle about 1,400 homes. The Davis Landfill is located at 1997 East 3500 North, Layton.
- Customer Service:** The District has also recently completed improvements at the landfill which allow patrons to access available services, including waste drop-off, in one convenient area without leaving a paved surface.

As a result of this integrated approach, Wasatch currently diverts about half of the waste generated in Davis and Morgan Counties away from the landfill. Here are the program results for 2004-2007:

	2004	2005	2006	2007
Total Waste Generated	258,438 tons	258,799 tons	273,551 tons	289,968 tons
Waste Landfilled	125,256 tons	135,059 tons	137,723 tons	155,034 tons
Total Recycled	133,518 tons	124,678 tons	136,332 tons	138,095 tons
<i>Energy Recovery</i>	<i>124,100 tons</i>	<i>116,252 tons</i>	<i>127,415 tons</i>	<i>123,240 tons</i>
<i>Carpet Pads</i>	<i>43 tons</i>	<i>42 tons</i>	<i>62 tons</i>	<i>101 tons</i>
<i>Used Oil</i>	<i>14 tons</i>	<i>11 tons</i>	<i>14 tons</i>	<i>23 tons</i>
<i>Metals</i>	<i>834 tons</i>	<i>883 tons</i>	<i>1,222 tons</i>	<i>4,510 tons</i>
<i>Tires</i>	<i>152 tons</i>	<i>477 tons</i>	<i>97 tons</i>	<i>118 tons</i>
<i>Green Waste</i>	<i>8,158 tons</i>	<i>6,486 tons</i>	<i>7,056 tons</i>	<i>8,916 tons</i>
<i>Recycling Bins</i>	<i>216 tons</i>	<i>270 tons</i>	<i>466 tons</i>	<i>728 tons</i>
<i>Refrigerators</i>	<i>256 units</i>	<i>257 units</i>	<i>382 units</i>	<i>459 units</i>
Landfill Diversion Rate	52%	48%	50%	48%

Not only does this integrated approach result in a healthy diversion rate, it is also extremely cost effective. Typical curbside recycling programs cost about \$5 per month per household and collect, on average, about 50 pounds per month. The result is a cost of approximately \$200 per ton of recyclables diverted from the landfill. Curbside programs typically result in diversion rates in the range of 10 to 20 percent overall. Waste to energy costs substantially less per ton than curbside recycling, and approximately 50 percent of the waste picked up at Davis and Morgan County residences is recycled. In addition, we are reducing air emissions because fewer trucks come through your neighborhoods.

A-MAZE-ING

Color around the **first, second, and fourth** items with **red**.
Color around the **third, fifth, and seventh** items with **green**.
Color around the **sixth, eighth, and ninth** items with **orange**.
Color around the **tenth** item with any color you wish!



Did you know?

The items you colored **red** are dangerous.

The items you colored **green** keep you and your family safe.

The items you colored **orange** are safer substitutes to hazardous chemicals.

The tenth item is the place to properly dispose of your family's household hazardous waste (HHW). Your family should dispose of HHW at the Wasatch Integrated Waste Management District's HHW Facility, which is located at the Davis Landfill in Layton.

Grades 1-2

Theme: Safety with hazardous chemicals

Math: Standard 1, Objective 1

MAP MANIA

Instructions: We need to make sure that residents know where our facilities are located. Using the map grid provided, note the grid location next to each item listed below.

_____ **W1:** Clinton Recycle Bin

_____ **W2:** Davis Landfill & Related Facilities —
Also located at the Davis Landfill are the Green Waste Recycling Facility, the Household Hazardous Waste Facility, and the Layton Recycle Bin.

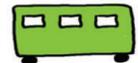


_____ **W3:** Davis Energy Recovery Facility



_____ **W4:** Morgan County Holding Facility Recycle Bin

_____ **W5:** South Weber Recycle Bin



Did you know?

Wasatch Integrated Waste Management District oversees handling and management of all trash for Davis and Morgan Counties, as well as 15 cities, with the exception of the City of Bountiful.

Grades 3-4
Social Studies: Standard 6

Theme: Integrated waste management facilities

Twist It & List It

Follow the directions on each line to find the answer that completes the sentence at the bottom.



Add "wasatch" to the beginning: _____ *integrated* _____

Remove all of the "a"s: _____

Add "all" after the second "t": _____

Move "d" from the end to the 2nd place: _____



Remove the "e" from the end: _____

Switch the "e" and "s": _____

Remove the 4th, 8th, and 12th letters: _____



Change the "i" to "y": _____

Add "chum" after the "y": _____

Switch the 2nd and 4th letters: _____



Remove the "a" and "g": _____

Remove "hum": _____

Change "d" to "r": _____



Reverse the first four letters: _____

Add "d" and make it the last letter: _____

Remove all the "t"s: _____



Change the "s" to "e": _____

Remove the second "r": _____

Remove the 4th and 5th letters: _____



When you shop,

remember to buy _____ content products!

Did you know?

Your family can recycle aluminum, metal cans, plastic bottles and jugs, cardboard boxes, magazines, newspaper, and phone books at the Recycle Bins in Clinton, South Weber, and the Morgan County Holding Facility. There is also a Recycle Bin, which accepts all of the materials listed, plus glass bottles and jars (no brown glass), in Layton just inside the gates of the Davis Landfill.

At the Davis Energy Recovery Facility, your family's remaining trash is combusted, creating energy and reducing the volume of the waste by 90%. Steel is removed from the ash, and then the ash is used to cover the waste buried each day at the Davis Landfill.

Grades 5-6

Language Arts: Standard 4, Objectives 2 & 4; Standard 7, Objective 2

Theme: Recycling

WHAT'S IN A NAME?

Match the words in the word bank with the descriptions below. Put the letter of the correct description next to the appropriate term.

Word Bank	
___ leachate collection	___ ash
___ combustion	___ solid waste
___ landfill cell	___ energy recovery
___ methane gas	___ transfer station
___ gas collection	___ sanitary landfill



- A. one of the major components of landfill gas, which forms as organic materials decompose in a landfill; a greenhouse gas
- B. trash or garbage
- C. area where waste is being dumped, compacted, and covered on a daily basis (usually a smaller section of a larger disposal facility)
- D. capturing energy (such as heat or fuel) from waste through a process such as combustion or decomposition
- E. mineral content remaining after combustion of solid waste
- F. facility where waste is transferred from smaller, neighborhood collection vehicles to larger trucks or rail cars for long-distance transport
- G. in-ground disposal facility for non-hazardous waste in which solid waste is compacted and buried; has a liner and leachate collection system to protect groundwater and a gas collection system to reduce air emissions
- H. system for gathering and treating the liquid waste from a landfill that forms when water and other liquids pass through the layers of waste
- I. controlled burning of solid waste, accompanied by release of energy in the form of heat
- J. system for collecting landfill gas so that it can be used as a fuel source

Did you know?

Wasatch Integrated Waste Management District operates the Davis Energy Recovery Facility, which combusts municipal solid waste and uses the heat recovered to generate electricity and steam. This facility reduces the volume of solid waste by 90%. The District also operates the Davis Landfill, a permitted sanitary landfill, which is home to the first landfill-gas-to-energy project completed in the State of Utah. This project generates electricity. These facilities are located in Layton.

Grades 7-8
Science: Standard 1

Theme: Waste to energy and landfill

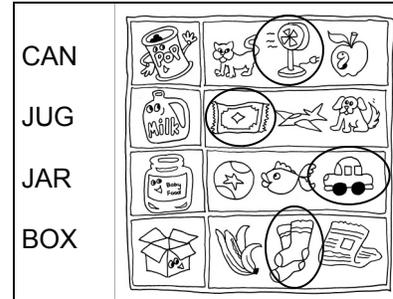
Curriculum Standards and Teacher Keys for Student Activities

Grades 1-2

“Ready for Recycling” →

Theme: Recyclables

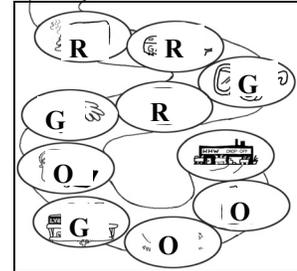
Subject: Language Arts, Standard 1, Objective 2
(Developing language through viewing media) and Standard 3, Objective 2 (Recognizing like and unlike word parts)



“A-Maze-Ing ” →

Theme: Safety with hazardous chemicals

Subject: Math, Standard 1, Objective 1 (Relating number words to numerals)



Grades 3-4

“Green Waste Fill-In” →

Theme: Green waste recycling

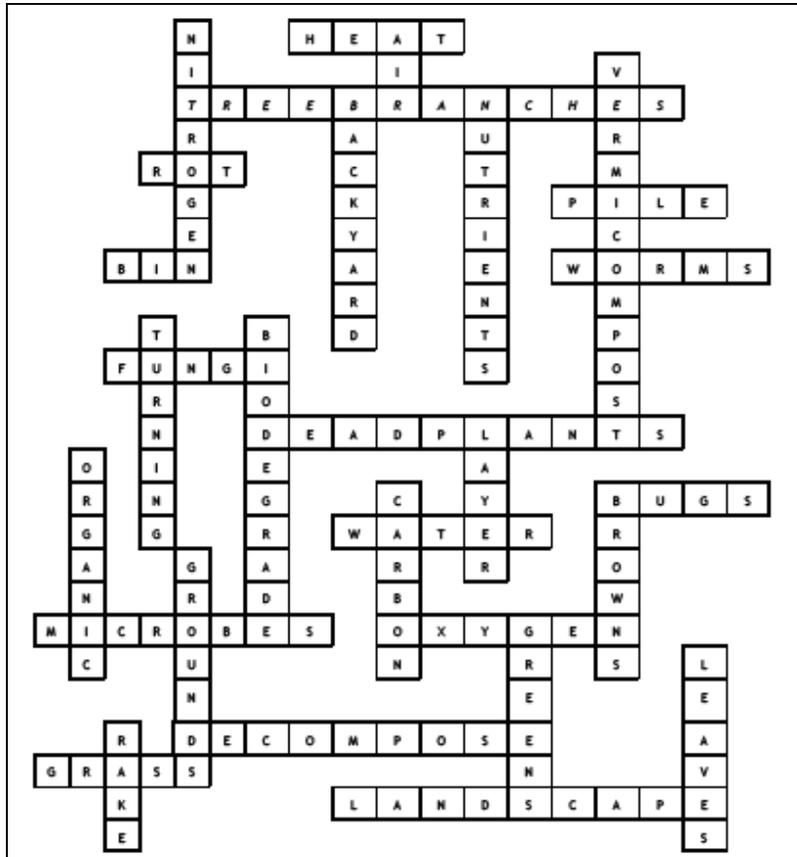
Subject: Science, 3rd Grade, Standard 2 (living/non-living things) and 4th Grade, Standard 3 (plants and soil)

“Map Mania”

Theme: Locations of integrated waste management facilities and areas served
Subject: Social Studies, Standard 6 (Using map skills and geographic tools)

Answers:

- W1: B,1
- W2: D,2
- W3: C,2
- W4: G,4
- W5: E,1



Grades 5-6

“Twist It & List It” →

Theme: Recycling

Subject: Language Arts, Standard 4, Objectives 2 and 4 (Decoding and spelling strategies) and Standard 7, Objective 2 (Using reading strategies to predict meaning and comprehend text)

↓ “I’m the Greatest”

Theme: Integrated solid waste hierarchy
Subject: Math, Standard 1, Objective 2 (Identifying relationships among numbers)

1.	greatest number	1.13	E
2.	smallest number	0.012	V
3.	greatest number	8.8	R
4.	greatest number	2.10	Y
5.	smallest number	0.132	D
6.	greatest number	1.87	L
7.	smallest number	0.003	U
8.	greatest number	6.032	C
9.	smallest number	7.007	N
10.	middle number	0.026	O
11.	middle number	0.010	G

R e d u c e , r e c y c l e ,
 3 1 5 7 8 1 3 1 8 4 8 6 1

r e c o v e r e n e r g y .
 3 1 8 10 2 1 3 1 9 1 3 1 1 4

Add “wasatch” to the beginning: *wasatchintegrated*
 Remove all of the “a”s: *wstchintegrted*
 Add “all” after the second “t”: *wstchintallegrted*
 Move “d” from the end to the 2nd place: *wdstchintallegrt*
 Remove the “e” from the end: *wdstchintallegrt*
 Switch the “e” and “s”: *wdetchintallsgrt*
 Remove the 4th, 8th, and 12th letters: *wdechitalsgrt*
 Change the “i” to “y”: *wdechytalsgrt*
 Add “chum” after the “y”: *wdechychumtalsgrt*
 Switch the 2nd and 4th letters: *wcedhychumtalsgrt*
 Remove the “a” and “g”: *wcedhychumtalsrt*
 Remove “hum”: *wcedhyctlsrt*
 Change “d” to “r”: *wcerhyctlsrt*
 Reverse the first four letters: *recwhyctlsrt*
 Add “d” and make it the last letter: *recwhyctlsrtd*
 Remove all the “t”s: *recwhyclsrtd*
 Change the “s” to “e”: *recwhyclerd*
 Remove the second “r”: *recwhyclerd*
 Remove the 4th and 5th letters: *recycled*

When you shop, remember to buy **RECYCLED** content products!

Grades 7-8

→ “What’s in a Name?”

Theme: Waste to energy and landfill facilities

Subject: Science, Standard 1 (Structure and nature of changes in matter)

<u>H</u> leachate collection	<u>E</u> ash
<u>I</u> combustion	<u>B</u> solid waste
<u>C</u> landfill cell	<u>D</u> energy recovery
<u>A</u> methane gas	<u>F</u> transfer station
<u>J</u> gas collection	<u>G</u> sanitary landfill

→ “Crossing to Safety”

Theme: Safe disposal of Household Hazardous Waste (HHW)

Subjects: Health, Standard 1, Objectives 1 and 4 (Relationship of individual behavior to personal and community safety) & Language Arts, Standard 1, Objectives 1 and 2 (Word analysis and vocabulary development, comprehension)

Americans	<u>Store</u>	Dig	Draft	Indoor	Run
Grade	<u>Aluminum</u>	Great	January	Trip	<u>Chemicals</u>
Playground	Generally	Invite	<u>In</u>	Inactive	Without
<u>Their</u>	On	Dude	Gravity	Children	Fan
Down	Keep	Into	Door	<u>Original</u>	Inner
Student	<u>Labeled</u>	Ten	Regional	Up	Teacher
Individual	<u>Recyclable</u>	<u>Containers</u>	Gift	Install	Awake

Store chemicals in their original, labeled containers!

WASATCH

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waste management district

Dear Teacher:

Thank you for bringing your students to visit our facilities. We understand it is essential that all of your instructional time be devoted to helping your students develop grade-appropriate skills. That is why we have designed all of our activities to support the Standards and Objectives outlined in the Utah State Core Curriculum. This allows us to help you do your job better, while we communicate an important message about integrated waste management.

In order to protect the environment which we all share, Wasatch Integrated Waste Management District is committed to reducing the amount of solid waste (trash) generated and managing the remainder in an environmentally and economically responsible manner. For more information about specific programs provided by Wasatch Integrated Waste Management District, read “Where Does Our Garbage Go?” and refer to the “Glossary.”

By the time children are in school, they are already consumers, both directly and as members of families. Our first goal is to help them make wise decisions in purchasing items and handling the resulting waste. Our second is to be sure that they understand what types of facilities handle our community’s waste.

When students get the chance to visit our facilities, they get to see recycling, composting, and energy recovery in action. We hope that students go home and share what they’ve seen with their parents and family members. Please help us do this by sending the accompanying parent letter home with your students.

If you have questions or would like additional information on this or other topics related to solid waste, source reduction, composting, recycling, waste to energy, landfilling, and related topics, please contact us at 801-614-5600 or info@wiwmd.org, or visit our website, www.wasatchintegrated.org.

P.O. Box 900
Layton, Utah 84041-0900

1997 East 3500 North
Layton, Utah 84040

801.614.5600
801.771.6438 fax

WASATCH

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waste management district

Dear Parent:

Today, your child toured the Wasatch Integrated Waste Management District's facilities in Layton. During the tour, your child and his or her classmates learned about integrated waste management. Integrated solid waste (trash) management is a combination of activities that help us reduce the amount of trash generated by source reduction and reuse, reclaim materials through recycling and composting, recover as much energy as possible from unneeded materials, and manage the remainder in an economically and environmentally sound manner.

Wasatch Integrated Waste Management District is a "special service district" responsible for disposal of all solid waste generated in Davis and Morgan Counties, with the exception of the City of Bountiful. The District operates an integrated solid waste management system which includes recycling, composting, waste to energy, and landfilling. The Davis Energy Recovery Facility recovers energy from the garbage in the form of heat which is used to generate steam and electricity. The steam is purchased by Hill Air Force Base, thus reducing consumption of natural gas. The District also operates the Davis Landfill and Green Waste Recycling Facility, as well as the Household Hazardous Waste Facility and the Give and Take area for reuse.

We always find that children have great ideas. Let your child be the teacher this evening—ask about your child's visit to our facilities and the activities that we did together.

Need help? Contact us at 801-614-5600 or info@wiwmd.org for advice or disposal instructions, or visit our website, www.wasatchintegrated.org.

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