



A how-to guide to help your school...

reduce cafeteria packaging waste

reduce student food waste

reduce food waste to landfill

become a FoodWISE school!



# Get FoodWISE!



Food Waste In Schools Elimination Handbook

A publication of  
Eagle Bluff  
Environmental  
Learning Center



reduce cafeteria  
wastereduce student  
food wastereduce food  
waste to landfillbecome a  
FoodWISE school!

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### Editorial Note:

We know each school is faced with a myriad of challenging issues from financial to instructional to behavioral. As a result, environmental programs like FoodWISE often seem to take a back seat. A FoodWISE program however can have positive financial, instructional, behavioral AND environmental benefits to your school. The benefits:

- **Environmental:** prevent waste from going into landfills.
- **Ecological:** the energy cycle is not interrupted by food resources sitting in a landfill, food is more than just the food it is a product of all the resources that go into it- e.g. wasting food is also wasting gas, fertilizer, and sunlight.
- **Nutritional:** students learn about portion control and caloric intake.
- **Instructional:** many facets of the program are interdisciplinary and implement hands-on learning techniques and applied subject matter.
- **Behavioral:** students practice responsibility and goal setting through leadership roles within the program.
- **Financial:** less food waste to the landfill means less money for waste removal.

The goal of this handbook is to provide schools with a comprehensive approach to food waste reduction. It contains practical information that will make school food waste reduction achievable. The guide is presented in four parts or goals:

1. **Reduce Cafeteria Packaging Waste:** approaches for your cafeteria to produce less packaging and other waste associated with food service.
2. **Reduce Student Food Waste:** tactics for encouraging students to waste less food in the cafeteria.
3. **Reduce Food Waste to the Landfill:** suggestions and techniques for schools that produce waste but do not want it sent to the landfill.
4. **Become a FoodWISE School:** incentives from Eagle Bluff for implementing a food waste reduction program in your school!

What we hope to provide you with are practical examples of how a little bit of planning can go a long way. Implement one technique or try them all! We wish you much luck and success on your way to becoming a FoodWISE school!

- Eagle Bluff Environmental Learning Center  
Lanesboro, Minnesota



**Food WISE Tip**

When implementing a beverage dispensing station, we recommend placing it in the middle of the cafeteria to avoid congestion at one end of the room.

## Goal One: Reduce Cafeteria Packaging Waste

Begin your waste reduction efforts by looking at the way in which food is presented in your cafeteria. Individual packaging and disposable dinnerware are major contributors to the waste stream. Ways to decrease your waste stream include:

1. Eliminating Served Lunch Disposables
2. Eliminating Bag-Lunch Disposables

### 1. Eliminating Served Lunch Disposables

Many schools serve food items in disposable packaging or on disposable trays. Aside from food waste, products such as foam trays, plastic silverware, and milk cartons account for 30% of the waste that is produced in a cafeteria. Simply by reducing your use of disposable materials you will begin making an impact.

#### Methods:

- Use reusable trays, glasses and silverware instead of disposables.
- Use a beverage dispenser in conjunction with reusable glasses instead of milk cartons or juice boxes.
- Replace individual condiment packages with condiment dispensers.
- Replace foil or plastic wrapped food with bulk served items or ones that are packaged in recyclable materials.
- Encourage taking one paper napkin at a time or use cloth napkins.



## 2. Eliminating Bag-Lunch Disposables

Many students bring their lunch to school and along with these lunches comes a high level of waste. A reduction in packaging is even more effective when you eliminate “cold” lunch waste in conjunction with served lunch.

### Methods:

- Encourage students and staff to bring their lunch in reusable storage containers or in recyclables instead of disposables.
- Send a flyer home with parents letting them and students know of your waste reduction goals and how they can help when making lunches.
- Provide a recycling area in the cafeteria for cans and bottles.



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## Goal Two: Reduce Student Food Waste

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Once you have begun eliminating cafeteria packaging waste, now students can be involved in reducing the food waste they produce. Educating and motivating students about food waste in the cafeteria are effective ways of reducing the amount of food waste produced. Recommended ways of approaching student food waste reduction include:

1. **Educating Students about the Effects of Food Waste**
2. **Allowing Students Choices**
3. **Hold Students Accountable for Waste**
4. **Creating Incentives for Waste Reduction**

\*Note: Sections with complementary materials are noted in **BOLD** and can be found in **Appendix A**.

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### 1. Educating Students about the Effects of Food Waste

Students who do not understand the reasons behind food waste reduction are generally less likely to commit to a food waste reduction program. Provide ways to communicate the environmental, ecological, or nutritional messages you are trying to send through a FoodWISE program.

#### Methods:

- Hold a school-wide assembly near the beginning of the school year to introduce your students to the program and the reasons you are implementing it. **(A1)**
- As an alternative, hold the same presentation within each classroom.
- Use waste-related individual classroom activities or lessons. **(A2)**

### 2. Allowing Students Choices

In a school cafeteria setting children are often given minimal choice in what and how much to eat. When students are given the opportunity to control their own menu and portions, they are more willing and able to eat what is on their tray. By educating students on nutritional requirements and portion control, we can achieve healthier eating and minimize waste.

#### Methods:

- **Provide Menu Options** - No one is motivated to eat food that they do not like, but chicken nuggets and pizza cannot be served everyday. Below are a few suggestions on how to mitigate food waste while encouraging exploration of new foods and providing a healthy, kid-tasty menu.
  - ⇒ Offer multiple entrée options.
  - ⇒ Offer a salad bar as an alternative to the served entrée.
  - ⇒ Be like the grocery store! Offer sampler cups or platters for student to try new food items.

- **Allow Students to Take Self-Appropriate Portions** - People often take or are given larger portions than their activity level or body type requires. By learning about and being able to take a portion that is appropriate for themselves, students can avoid overeating or going hungry to avoid food waste.
  - ⇒ Allow students to determine their own entrée portion size.
  - ⇒ Offer a salad bar that meets nutritional requirements while allowing students to determine their own portions.
  - ⇒ Allow “seconds” for students who did not initially take a large enough portion.
  - ⇒ Post a “portion motto” in the cafeteria i.e. “Take only what you will eat and eat what you take.”
  - ⇒ Focus individual classroom activities or lessons on portion size and/or nutrition. **(A3)**

**3. Hold Students Accountable for Waste** - After students understand the impact of food waste and portion control, the best way to encourage consistent food waste reduction is to hold students accountable for their waste. We recommend collecting, weighing and recording meal scraps to tangibly demonstrate waste. Since not all parts of the food at a meal can be eaten, students should only be held accountable for what they *could* have eaten therefore cafeteria waste should be separated into the following categories: *edible*, *non-edible*, and *liquid waste*.

#### Methods:

- **Collecting Waste** Create a food collection area where food waste can be sorted into *edible*, *non-edible*, and *liquid* wastes.
  - ⇒ **Edible Waste:** Food that could have been eaten but was not e.g. whole apple, pizza crust, hamburgers, veggies, condiments, etc.
  - ⇒ **Non-edible Waste:** Apple cores, banana peels, napkins, ice cream sticks, chicken bones, etc.
  - ⇒ **Liquid Waste:** cereal milk, soup, beverages, etc.



#### Food WISE Tip



Any fruit, like an apple, that is less than 50% eaten can be considered *Edible Waste*.



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**Food WISE Tip** 

Be consistent. Determine the procedure for items too small to register on the scale. It is still waste but how will you record it?

**Food WISE Tip** 

Assign students to the waste station on a rotating schedule.

Make it an honorable responsibility rather than a punishment.



Taring the Scale



Weighing the Waste

• **Weighing Food Waste**

Again, since not all parts of the food at a meal can be eaten, students should only be held accountable for what they *could* have eaten so only the *edible* and *liquid* wastes should be weighed.

When weighing *edible* and *liquid* food wastes, determine the weight units the students will best comprehend whether *grams* or *ounces/pounds*. Scales that have a detachable or separate display are easier to read when a large tub or bucket is on them. Also, using tare weights that are the same weight as the collection buckets make determining the amount of waste easier and faster.

**Suggested equipment for a collection and weigh station:**

- ⇒ Collection Buckets
- ⇒ Spatulas
- ⇒ Scale
- ⇒ Tare Weights

When planning for collecting and weighing we recommend dividing the entire school into separate collection teams whether by grade level, classroom, learning group, or lunch period. When working in smaller teams with whom they identify, students will often feel more control, ownership, and pride in their efforts.

However you separate the entire school, each group should be responsible for monitoring their own waste station. Monitoring a station can include making sure students are encouraging their peers to take appropriate portions, maintaining a tidy station, and helping to sort food in to appropriate waste containers.



Recording

• **Recording and Posting Food Waste -**

Recording and posting waste weights give students a tangible way to see the results of their efforts. It can also illustrate trends in meal preference which can be helpful to food service staff. Waste weights should be recorded by teams you have separated the school into i.e. 4<sup>th</sup> graders, 2<sup>nd</sup> lunch period students, House A, etc.

**Suggested equipment to record food waste:**

- ⇒ Wall or Floor Space in Lunch Room
- ⇒ Whiteboard/Chalkboard/Bulletin Board

#### Step 4. Creating Incentives and Rewards for Waste Reduction

Even with the knowledge of the environmental, ecological, and nutritional benefits of conserving food resources, students often need additional motivation. We recommend implementing an incentive program. Incentives can come in any form or fashion.

##### Methods:

- Compare waste weights from each lunch period and challenge each group to be the group to waste the least.
- Challenge each group to meet or come in under a per-meal waste cap. We suggest a cap of 5-10% of the groups size. *Ex. A lunch period of 100 students has a per meal cap goal of 5-10 pounds.*
- Display the goal as a reminder on the record board.
- Provide awards for groups that meet or exceed their goals e.g. classroom treats, a special movie day, track and field day, field trip, special presentation, extra computer lab time, etc.
- Register with Eagle Bluff as a FoodWISE school and earn complimentary educational programs. (See *the Goal 4: Become a FoodWISE School.*)



##### Food WISE Tip



Display group success! Eagle Bluff record the groups who produce zero waste on an award we call the "Golden Clean-Plate" which hangs in the cafeteria.

Cleveland Junior High posts their efforts on a bulletin board.



## Goal Three: Reduce Food Waste to Landfill

Some waste is inevitable; even the most motivated of schools and students produce waste. Sometimes we misjudge what we can eat, sometimes we don't know what we do not like, AND we just cannot eat things like banana peels. When waste is produced, you can reduce landfill waste through these options:

1. Recycling Food Off-Site
2. Composting Food at School

\*Note: Sections with complementary materials are noted in **BOLD** and can be found in **Appendix B**.

### Option 1. Recycle Your Food Off-Site

Many communities are beginning to recognize the impact food waste is having on them and are responding by offering services to deal with the waste.

#### Method:

- **Hog Farms** - Specially permitted hog farms are often able to take pre-consumer (before served) and post-consumer (after served/eaten) food waste. They also often offer special services like daily pick-up, collection containers, and technical support. Usually, participation in such a service is fee-based, much like garbage pick-up. However costs are usually lower and you can feel good about the environmental impact you are making. Sending your food waste to a hog farm is probably the easiest way to dispose of food waste in a school setting. There are eight specialty hog farms that take cafeteria waste in the state of Minnesota. **(B1)**

Note: If you decide to send your food to a hog farm and you establish a student incentive program in your cafeteria, you may have to restructure the way you sort food. Most successful incentive programs separate food into *edible food waste* and *non-edible*, whereas pigs can eat food items that humans cannot/will not i.e. peels and rinds. You may have to have a system when dealing with *non-edibles* to separate things like peels that can go to pigs from napkins that can't.

- **Municipal Composting Facilities** - Some communities currently collect and compost food waste. These communities may provide containers or bags for collection and pick-up service. The food waste is taken to a large-scale composting facility and the compost is often distributed back to the community. Contact your local government office to see if your community composts food products. Below are a few community examples:

 City of Duluth	<a href="http://www.wlssd.com/compost_foodwaste.php">www.wlssd.com/compost_foodwaste.php</a>
 City of Hutchinson	<a href="http://www.ci.hutchinson.mn.us/composting.htm">www.ci.hutchinson.mn.us/composting.htm</a>
 Hennepin County	<a href="http://www.co.hennepin.mn.us">www.co.hennepin.mn.us</a>
 Carver County	<a href="http://www.co.carver.mn.us/departments/LWS/env-svc/index.asp">www.co.carver.mn.us/departments/LWS/env-svc/index.asp</a>



#### Food WISE Tip

If sending waste to a farm, your *non-edible food waste* should be further divided into two categories: *pig waste* and *landfill waste*. *Pig waste* gets rinds, peels, cores, etc. *Landfill waste* gets napkins, wrappers, etc.

Now all your *edible waste* goes to pigs and some of your *non-edible waste* does too!

### Option 2. Composting Food On-Site

The rewards of composting at your school can be educational as well as environmental. Many schools have successfully incorporated traditional composting and/or worm composting into their curriculum. Composting does not have to be overly laborious and smelly; this manual provides composting options with the goal of mitigating both smell and work. The 3 techniques for composting on-site include:

#### Methods:

- **Vermicomposting (worm composting)** requires consistent room temperatures and about 20 square feet of space. Ideal for 1 pound to 25 pounds of food waste per day. Cannot compost meat, dairy, or citrus fruits. **Average investment:** \$1,500—2,000



- **Tumbler Composting** can be done outdoors if temperatures remain above freezing. Ideal for 1 pound to 25 pounds of food waste per day. Moderate labor and smell. Can compost minimal amounts of meat and dairy. **Average investment:** \$2,000 - 5,000



- **System Composting** must be done outdoors and requires machinery or moderate labor and space. Composts up to 100 pounds per day. What can be composted varies between systems. **Average investment:** \$10,000



#### Food WISE Tip



Cafeteria food scrap sorting will differ based on the on-site composting equipment you choose.

See detailed composting information in the appendix for tips on how to sort for each composting technique.

## Determining the Feasibility of Your Food Recycling

In order for either off-site recycling or on-site composting to be successful and sustainable, the first step you and/or your school needs to take is to determine what level of support you have. Use the questionnaire below to assist you in determining what your level of support, priorities, and resources are. Once you have determined your level of support, priorities, and resources then you can decide which technique is right for your school situation.

### Resource Survey: **Support**

1. Do I have/can I get the support of my administration?.....**YES** | **NO**
2. Do I have/can I get the support of my peer teachers?.....**YES** | **NO**
3. Do I have/can I get the support of the maintenance staff?.....**YES** | **NO**
4. Do I have/can I get the support of the food service staff?.....**YES** | **NO**
5. Do I have/can I get the support of the students? *(Although student buy-in is necessary for success, if there is support and enthusiasm by the school staff as a result students will be supportive.)*

If you answered **NO** to any of these questions, recycling or composting your food waste will be difficult to begin or sustain. If you are committed to eliminating land-filled food waste, we recommend gathering all groups together to promote discussion and present supporting materials for those that may want further information. If you determine that there is not enough support for a school-wide food recycling or composting program you can set up a small scale version in an individual classroom(s).

### Classroom Composting

Below are a few suggested websites for build-your-own worm bin, ready-made worm kits and tumbler systems. These resources are aimed at classroom use and often come with worms, lesson plans, and other materials that are readily integrated into the classroom setting.



#### Build-Your-Own Worm Bin

[www.urbanext.uiuc.edu/worms](http://www.urbanext.uiuc.edu/worms)  
[www.css.cornell.edu/compost/worms/basics.html](http://www.css.cornell.edu/compost/worms/basics.html)  
[www.p2pays.org/ref/03/02452.htm](http://www.p2pays.org/ref/03/02452.htm)  
[www.resourcefulschools.org/2004/learnwithworm.html](http://www.resourcefulschools.org/2004/learnwithworm.html)  
[www.ciwmb.ca.gov/Schools/Curriculum/Worms](http://www.ciwmb.ca.gov/Schools/Curriculum/Worms)

*University of Illinois Extension  
 Cornell University  
 UC Cooperative Extension Office  
 Resourceful Schools  
 CA Integrated Waste Management*



#### Pre-Made Worm Bins

[www.vermitechnology.com/worm\\_bins\\_food.html](http://www.vermitechnology.com/worm_bins_food.html)  
[www.wormwoman.com/acatalog/index.html](http://www.wormwoman.com/acatalog/index.html)  
[http://www.composters.com/main\\_verm.html](http://www.composters.com/main_verm.html)

*VermiTechnology Unlimited, Florida  
 Flowerfield Enterprises, Michigan  
 Green Culture Inc., California*



#### Tumbler Composters

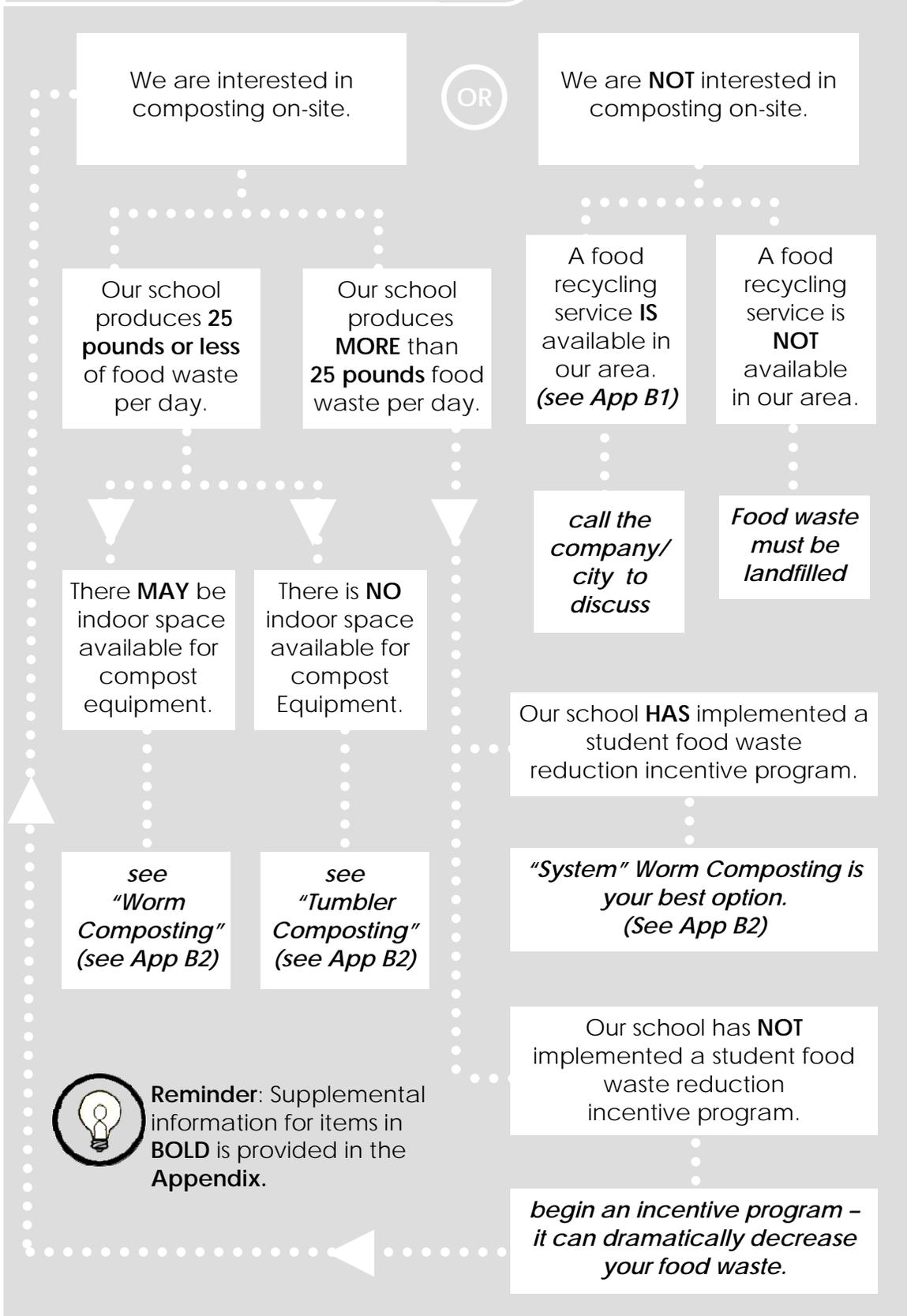
<http://www.rolypigusa.com>

*Roly Pig Tumbler Composter*

### Cafeteria Composting

If you have determined positive support for a school-wide program, use the survey below to determine the technique most appropriate for your school.

#### Resource Survey: **Technique Preferences**



## Goal Four: Become an Official FoodWISE School!

This handbook has laid out ways in which your staff and students can make a significant difference in the amount of food waste produced. When FoodWISE techniques are implemented in conjunction with a paper, can, and bottle recycling program, your school can eliminate 80% of the waste that would otherwise head to the landfill. Eagle Bluff would like to provide your entire school with incentives to implement and sustain your own FoodWISE program through these steps:

- 1: Review FoodWISE Guidelines
- 2: Establish your Schools FoodWISE Goals
- 3: Register and Report FoodWISE Goals
- 4: Earn FoodWISE Rewards

\*Note: Sections with complementary materials are noted in **BOLD** and can be found in **Appendix C**.

### Step 1. Review FoodWISE Guidelines (C1)

Look over the FoodWISE guidelines as laid out on the informational sheet in the Appendix. Foremost, as a FoodWISE school you will be asked to implement one or more of the following:

- **Cafeteria Waste Reduction** (Handbook Goal 1)
- **Student Food Waste Reduction** (Handbook Goal 2)
- **Landfill Waste Reduction** (Handbook Goal 3)

### Step 2. Establishing your Schools FoodWISE Goals.

After reviewing the FoodWISE guidelines, get together with your FoodWISE team to determine the methods your school would like to implement and the goals you would like to accomplish.

### Step 3. Register and Report FoodWISE Goals (C2)

Become an official FoodWISE school by registering your goals with Eagle Bluff. Get added to the growing list of participating schools that have joined us in the overall goal of reducing school food waste. Upon successful registration an acceptance packet will be sent to you which will include:

- Your name and picture on our website as a FoodWISE school with a short bio and a description stating what your waste goals are.
- A certificate and decal as an active FoodWISE school.
- Support Services from Eagle Bluff

You will be asked to report on the progress of your school's FoodWISE program at the end of the academic year. *Registration is voluntary and there is no cost to register for this program.*

### Step 4. Earn FoodWISE Rewards (C1)

By registering with Eagle Bluff, not only will you be environmentally and financially rewarded for your efforts, Eagle Bluff would also like to reward you. By meeting or surpassing the goals you establish as part of registering with Eagle Bluff you may be able to earn recognition, educational programs, and/or equipment.

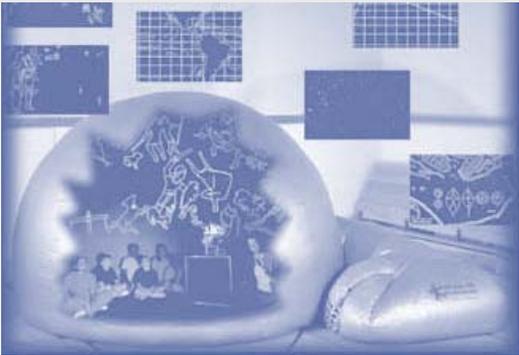
## FoodWISE School Rewards



Team Building Classes



Challenge Classes



Outreach Programs



Environmental Impact

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