



## APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: June 1, 2016.** Please include this application form with electronic entry.

### PROGRAM INFORMATION

County: Henrico County

Program Title: Trash Time Capsule

Program Category: Environmental

### CONTACT INFORMATION

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### SIGNATURE OF COUNTY ADMINISTRATOR OR CHIEF ADMINISTRATIVE OFFICER

Name: John A. Vithoukas

Title: County Manager

Signature: 

## **1. Short Overview of the Program**

In the summer of 2013, the Keep Henrico Beautiful (KHB) program developed an environmental initiative to utilize in the Henrico County Public School system. It involved educating second through fifth graders on the impact of the waste that they generate. The students learned about time capsules, how to make their own, and then learn how a landfill acts as one on a larger scale. During the program, the students get to play “detective” and answer questions about the people that created trash bags in front of them. The lesson gleaned is that our trash tells a story about us, so make sure to leave a legacy that you are proud of by generating the least amount of waste possible. In the programs held to date, everyone has enjoyed themselves while using their creative thinking and learning to be environmental stewards. To date, the program has successfully been facilitated to a total of 1,071 students and continues to grow.

## **2. Problem/Challenge/Situation**

Keep Henrico Beautiful is a program under the Henrico County Department of Public Utilities comprised of a volunteer citizen advisory committee and a full-time County employee who serves as Executive Coordinator. The KHB program is the County's initiative to prevent litter, promote recycling, and supply related environmental education to residents of all ages. Like other environmentally focused organizations, KHB constantly looks for new and innovative ways to reach all County residents with good news about environmental stewardship. KHB takes care to meet the needs of our younger citizens by focusing on and supporting programs directed at school age citizens. It is our belief that a strong foundation in environmental stewardship, if nurtured at an early age, will last a lifetime. KHB historically tailored programs towards the science Virginia public schools Standard of Learning (SOL) tests, so most educational programs

were requested for schools in the spring so they would happen concurrently with the appropriate standards of learning. This program is designed for use with the history SOL's, and therefore is to be executed in the fall. This is a time of year that was previously untapped for KHB, so the program helps expand the school education to a yearlong initiative as opposed to limiting us to the spring.

### **3. How the Program Was Carried Out**

The objective of the Trash Time Capsule is to expand school-based lessons into a different time of the school year. Not only was the Executive Coordinator looking to target the history-based SOL's, but she was also looking to debut a more tactile lesson for the older elementary aged children. This was a challenge because the subject matter of litter and recycling needed to be tweaked for a focus on history, whereas it more readily fits into the mold of science.

The Executive Coordinator worked over several weeks developing the program. The idea morphed through a few different versions before settling into the ultimate format. Concurrently, the Department of Human Resources received a large shipment of cardboard boxes that were different than the ones that they ordered. The company that incorrectly shipped them did not want to pay the shipping costs to have them returned, so they were instructed to dispose of the boxes. Not wanting the boxes to go to waste, they brought them to the KHB office to either be recycled or reused. Thus, the notion of creating a program based around the boxes was formed. The Executive Coordinator had the idea to put both problems together and solve them at the same time by using the extra boxes to create time capsules for a new program. Thus, the Trash Time Capsule program came to fruition.

The Executive Coordinator then set out to create the separate bags of trash for the students to sift through as detectives. The challenge was to have clean trash without generating any

unnecessary waste. Through donations from family and coworkers, the Executive Coordinator was able to put together the bags of trash at zero cost. To help keep everything organized, she made lists of the contents of each individual bag. After getting the bags together, the Executive Coordinator then created the sheets for the time capsule, and the small group questionnaire for the program.

To begin the visit, each student is given a card to put in the time capsule. The Executive Coordinator briefly discusses what a time capsule is and the purpose that it serves. Students then fill out their time capsule card with some of their favorite things (color, book, song, etc) that helps describe who they are as an individual. Once they are done filling out the card, they place it in the time capsule. Upon completion of this task, the Executive Coordinator (or other facilitator) inquires as to whether any students put on their card that trash/garbage would be a term that describes who they are. She then explains how each piece of trash that we throw into trash cans ends up in the landfill, and the landfill acts as a time capsule that preserves our trash. With limited access to sunlight and oxygen, trash decomposes at a slower rate, and therefore 10, 50, or even 100 years from now, someone could dig up a bag of our trash and be able to figure out details of our lives!

Then the skeptical group of students is split into smaller groups, given a small group questionnaire, and a bag of trash. They are asked to be detectives and look through the garbage in front of them and answer the questions to the best of their ability based on the contents of the bag. The questions may be found in the attached supplemental information. Once the students finish answering the questions, the groups take time presenting their answers and sharing how they came about their answers. The small group questionnaire is laminated to help reduce waste. Students are given dry erase markers to answer the questions

on the page and an eraser to remove any markings upon completion. This helps keep this program as low waste as possible.

The lesson is wrapped up by talking about how our trash tells a story about who we are. If we want to tell the best possible story to future generations, we should utilize the three R's (reduce, reuse, recycle) so that we create the least amount of trash possible. This will help our environment in the long run and help save landfill space for future generations.

As an optional give-a-way, students are given a Keep Henrico Beautiful seed pencil to keep. A seed pencil is created from fallen trees with no additives utilized in production. Instead of an eraser, there is a seed pod on the tip that holds a seed for either an herb or a flower. Students are encouraged to use their pencil until it is a tiny nub that would typically be thrown in the garbage. However, this pencil is designed so that when you get to that point, you plant the entire pencil in soil, then water, and watch a plant grow in its place. This is also a great lesson in that students are able to turn their trash into a treasure and leave the planet better than it was found. Instead of having a legacy of the trashed pencil, they are leaving behind a pretty flower, or an herb with which they may cook. Plus, the students will think about KHB and their lesson every time they use that pencil. While the pencil is not required for this program, it is a lesson in and of itself that compliments the Trash Time Capsule well.

The extra bonus of this program is that at the end of the school year, the teachers revisit the lesson when they open the time capsule. The Executive Coordinator sends reminder emails with a follow-up lesson for the teachers to utilize at the end of the year. They let the students look at their cards to see if there was a change in their preferences, and they again discuss how the trash in the landfills will still be there. The perk for teachers is that this is a lesson that may take place after the SOL tests have been completed before the end of the year. It is a fun activity as well as an opportunity for reinforced teaching.

#### 4. Financing and Staffing

The County of Henrico has been charged with changing the way we do business, and this program was designed with that motto in mind. To begin, the program was developed to be as low waste as possible. In making all of the supplies reusable, the materials only had a one-time cost associated with its development. Further, the program was developed so that a teacher would be able to conduct the program without the Executive Coordinator being on-site which has been utilized successfully. Overall, the program saves funding in both materials and personnel costs.

The Executive Coordinator made every effort to keep the costs of this program to a bare minimum. The “trash” for the bags was all donated free of cost. The instructions and small group questionnaires were laminated in house for ease of reusing. Card stock is the only material that needs to be purchased after the initial investment, as it is used for the kids’ time capsule cards. All program development and labor was done by the Executive Coordinator during regular work hours.

The costs for this program fall in the following areas and amounts (rounded to the nearest dollar):

Card Stock	\$16
<u>Dry Erase Markers/Erasers</u>	<u>\$12</u>
<b>Total Cost of Materials</b>	<b>\$28</b>
<b>Cost of optional Seed Pencils</b>	<b>\$1.49 per pencil</b>

The program was developed in such a way that it would be easy and cost effective for other jurisdictions to replicate.

## **5. Program Results**

The Trash Time Capsule has seen success with Henrico County Public Schools. So far the Executive Coordinator has facilitated the program in 33 classrooms to a total of 692 students. Further, 4 clubs received the program to reach 73 students. In addition, 15 teachers have led this program on their own for 306 students.

## **6. Brief Summary**

The Trash Time Capsule is a successful program that is tailored to a school time frame that typically has been neglected by KHB. It is the opinion of the KHB organization that the focus on educating school-aged children will have a lasting impact on the environment. Raising children to be environmentally aware is vital for our future generations. This program proved in a short period of time to be successful in instilling environmental values in the children taking the lesson. We have a plethora of lessons and activities for the science-based SOL's, and this program allows us to be in classrooms all year, as opposed to solely in the spring. Educating youth in a tangible way that adds personal experience will also add to the lasting effects of the lesson.

With the hands-on approach for the Trash Time Capsule, kids are more likely to internalize this program into a life lesson. The students are able to take the concept of our trash ultimately ending up in landfills and directly relate it to themselves, which will help reinforce the educational take-a-way. Further, the students will get to revisit the lesson at the end of the school year for a second chance to commit the message to memory. Utilizing the varied teaching techniques will reach a larger audience of students that will hopefully take the education along with them through life.

The Trash Time Capsule is unique in that it was executed at such a low cost. The focus on reusing compliments the activity itself, and shows that the three R's—reduce, reuse, and recycle—are successful. Having the lesson mirror the message is an added bonus to an already innovative program.



## Supplemental Information

## Lesson Plan

**Trash Time Capsule****Background:**

A time capsule is a container that holds historical records or objects that represent a culture. It is meant to help preserve the memories of those that create one. People put artifacts that are important to them or represent their hobbies and interests so that the person opening it later on will understand them better. Sometimes people make a time capsule so that they may look at it in the future to remember a specific time in their life, and sometimes they make it for future generations.

A landfill is where all of our trash goes once it is disposed. There it will stay as it decomposes into a liquid (leachate) and a gas (methane). Since the landfill is packed in with trash, it does not receive the sunlight or oxygen required to help the items break down very quickly, so trash lingers around for a very long time before it fully breaks down. Our landfills act as a time capsule for our future generations by being a “storage container” for all of our unwanted artifacts.

**Objectives:**

- The student will create a time capsule
- The student will classify and categorize items of trash, and draw conclusions about the people who used the items of trash in each wastebasket.
- The students will decide what they would like to leave behind for future generations.

**Standards of Learning:**

History 2.3, Civics 2.10; VS.1 a, b, d, e  
Science 3.1, 4.1, 5.1

**Time Required:**

30 minutes

**Materials:**

- 1 trash bag full of waste from a preschooler (examples: torn page from a Spiderman water color book, blue flat broken crayon, box of play dough, wrapper from a kid’s meal toy, freeze-pop wrapper, juice box, broken toy dump truck)
- 1 trash bag full of waste from a school age child (examples: full notebook, used eraser, pen with tooth marks, gummy fruit snack wrapper, pencil sharpened down to a tiny size, ziplock baggie with a half-eaten sandwich)
- 1 trash bag full of a child’s birthday party waste (examples: container that once held batteries, Barbie box, party hat, small plate, candles, hot pink table cloth with glitter, pizza box)

- 1 trash bag full of kitchen waste (examples: plastic utensils, cardboard paper towel holder, eggshells, old sponge, milk carton, chicken bones, bag of frozen vegetables)
- 1 trash bag full of waste from office worker (examples: coffee cup, business card, legal pad, paper clip, apple core, brochure for a ski resort get-a-way, loose staples)
- List of questions for wastebasket trash detectives to answer. (examples: Where was most of this trash produced? Who used these things? What did these people eat? What were their hobbies? What time of year was it when this trash was thrown away? What were these things used for? Approximately how old were the people creating the trash?)

**Activities:**

1. Talk with the group about Time Capsules (first paragraph of the Background).
2. Let's make our own! Give each child an index card. The card will read:

## Time Capsule

Name: \_\_\_\_\_

What is your favorite.....?

Color: \_\_\_\_\_ Book: \_\_\_\_\_

Sport: \_\_\_\_\_ TV Show: \_\_\_\_\_

Song: \_\_\_\_\_ Movie: \_\_\_\_\_

Game: \_\_\_\_\_ Food: \_\_\_\_\_

Today's Date: \_\_\_\_\_ What grade are you in this year? \_\_\_\_\_

What do you hope to learn about in school this year?

\_\_\_\_\_

\_\_\_\_\_

3. Collect them and put them into their very own "time capsule." At the end of the year, their teacher will open it and read all of the answers and to see if they learned what they wanted to learn.
4. Now ask if any of the children if any of their favorite items were pieces of trash!
5. Explain how a landfill acts as a time capsule and explain that in the future people may dig up our landfills to find artifacts to tell about our lives (second paragraph of the Background).
6. Divide class into 5 groups. Give each group a response sheet.
7. Tell them that they will be inspecting different bags of trash, trying to answer as many questions about each bag as possible. They should work together as a group and appoint a scribe.
8. Give each group a bag of trash. Allow 5-8 minutes for groups to examine their contents.
9. Have each group report back about the artifacts that they found in their bag of trash and how they came to their conclusions.

10. Talk about the 3 R's: Reduce, Reuse, and Recycle. These are three ways that the group may generate less trash so that they may be remembered for more than just their junk!
11. Trash is a great way to show your interests and values. What story do you want to tell for future generations?

Answers:

#### Group One- Preschooler Trash Bag

1. Where did this bag of trash come from (home, school work, etc.? In what room was the trash can? (bedroom, kitchen, office, etc) **Home, from either the kitchen or bedroom**
2. How old were the people that used the trash? **Preschool-aged**
3. Were they likely boys or girls? **Boys**
4. What did they eat? **Gummy Snacks, Gogurt, Mini muffins**
5. What did they do for fun? **Colored, played with toys, read**
6. What time of year was this trash thrown away (winter, spring, summer, fall)? **Spring (Easter coloring sheets)**

#### Group Two- School Aged Child Trash Bag

1. Where did this bag of trash come from (home, school work, etc.? In what room was the trash can? (bedroom, kitchen, office, etc) **School or home from the classroom or kitchen/bedroom**
2. How old were the people that used the trash? **Elementary Aged. Just graduated 3<sup>rd</sup> grade!**
3. Were they likely boys or girls? **Boys (name on report card)**
4. What did they eat? **Hot dogs, Un-crustables**
5. What did they do for fun? **Went to a birthday party, writing**
6. What time of year was this trash thrown away (winter, spring, summer, fall)? **Summer**

#### Group Three- Birthday Party Trash Bag

1. Where did this bag of trash come from (home, school work, etc.? In what room was the trash can? (bedroom, kitchen, office, etc) **Home from the kitchen**
2. How old were the people that used the trash? **Younger/elementary aged**
3. Were they likely boys or girls? **Girls**
4. What did they eat? **Pizza, and Cupcakes!**
5. What did they do for fun? **Had a birthday party, played dress up, played with dolls**
6. What time of year was this trash thrown away (winter, spring, summer, fall)? **Spring (found on invitation)**

#### Group Four- Kitchen Trash Bag

1. Where did this bag of trash come from (home, school work, etc.? In what room was the trash can? (bedroom, kitchen, office, etc) **Home from the kitchen**
2. How old were the people that used the trash? **All ages**

3. Were they likely boys or girls? Both girls and boys
4. What did they eat? Cereal, oranges, eggs, gummy snacks
5. What did they do for fun? Ate!
6. What time of year was this trash thrown away (winter, spring, summer, fall)? Fall (expiration date on the egg carton)

Group Five- Office Trash Bag

1. Where did this bag of trash come from (home, school work, etc.? In what room was the trash can? (bedroom, kitchen, office, etc) Work from an office
2. How old were the people that used the trash? Adults
3. Were they likely boys or girls? Boy (name on business card)
4. What did they eat? Oreos, Bananas, Bite-sized candy
5. What did they do for fun? Read the paper, went to a Halloween Hayride!
6. What time of year was this trash thrown away (winter, spring, summer, fall)? Fall (Halloween oreos, Halloween Hayride ticket, fall newspaper date).