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Going Green- an Environmental Studies
Curriculum for Deaf Learners

A Thesis submitted in partial satisfaction of the requirements
for the degree Master of Arts

in

Master of Arts in Teaching and Learning: Bilingual Education (ASL-English)

by

Megan McCarthy Hicks

Committee in charge:

Tom L. Humphries, Chair
Bobbie Marie Allen
Cheryl Forbes

2014

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The Thesis of Megan McCarthy Hicks is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

Chair

University of California, San Diego

2014

DEDICATION

In recognition of my family, Mama and Pops Hicks, CP, and Auntie Doe, I dedicate this thesis to you. Thank you for all the words of encouragement and support, not only in the last two years, but for last 33 years – I would not be where I am today if it were not for all of you.

I also want to dedicate this to the person who has wiped away the tears of frustration and struggle, listened to my endless complaining about how much work I have to do, and who has helped pack my lunch and iron my clothes to get me as prepared I as I could be when student teaching. Thank you Chas Newbre. No more Grumps!

I also want to recognize Wimpy, my Jamaican pup, for forcing me to go outside and get some exercise and go for walks even when I didn't want to! And always looking at me and telling me with her eyes, "Everything's gonna be alright."

Lastly I want to dedicate this thesis in loving memory of Debra Sue Huff. You have always been there for me and encouraged me in every endeavour since I was a young child- and now I know that you are still with me, cheering me along the way.

EPIGRAPH

“Deaf people can do anything- but hear.”

I. King Jordan

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ABSTRACT OF THE THESIS

Going Green- an Environmental Studies
Curriculum for Deaf Learners

by

Megan McCarthy Hicks

Master of Arts in Teaching and Learning: Bilingual Education (ASL-English)

University of California, San Diego, 2014

Tom L. Humphries, Chair

Deaf/Hard-of-Hearing students require a unique approach when it comes to their education. Research shows that the most effective way in educating Deaf/Hard-of-Hearing children is by using the bilingual approach – utilizing both American Sign Language and English in all aspects of the classroom. Based on this research and on

other learning theories, such as Vygotsky's Zone of Proximal Development (1978), scaffolding (Wood et al 1976), intrinsic motivation (Deci 2001) and comprehensible input (Krashen 1982), I wrote and implemented a curriculum to teach students about "Going Green." This Environmental Education curriculum included several goals encouraging students to think critically about their energy use and therefore make environmentally aware decisions. It also focused on developing student's academic language in both ASL and English. The curriculum included three units focusing on various kinds of pollution and the "Three R's" (Reduce, Reuse, Recycle). It was taught to the advanced proficiency ASL group, students ranging from 1st grade to 5th grade. Based on various forms of evidence collected, the curriculum goals were met and students showed an increase in their use of academic language in ASL and English as well as able to make environmentally aware decisions.

I. Introduction

For my project I created and implemented an Environmental Studies curriculum designed for students at Washington School for the Deaf. This curriculum includes several lessons where students engaged in various activities which gave them a better understanding of what it means to “go green.” This thesis addresses a combination of both Science and Language Arts. Students were engaged in hands-on activities where they learned about various environmental issues and ways to address these issues using critical thinking and problem solving skills. Based on the evidence, extensive teacher field notes, artifacts and a pre and post assessment, the students learned about the environment surrounding them and how to appreciate the outdoors and nature while learning how to preserve it. Upon completing the curriculum, students gained an understanding of how to take personal responsibility for improving the environment. It is innovative because lessons will contribute to the development of both English and ASL. The content of this project is science, its’ primary focus on the protection of the environment but it is unique because students will report in both English and ASL. The goals of the curriculum include the following:

- Enhanced and expanded student’s use of academic language in both ASL and English related to protecting and improving the environment
- Encouraged students to think critically about their own energy use and to make environmentally aware decisions.
- Inspired students to discuss environmental issues with classmates, friends and family to educate them in how they can individually make a difference to have a greener planet.

- Created and published “Going Green” posters to display on campus, teaching other students and faculty about how to make environmentally aware decisions.

To achieve these goals, my approach included such learning theories as Zone of Proximal Development (ZPD) (Vygotsky 1978) and scaffolding (Wood et al 1976). I also applied the learning rational of intrinsic motivation (Deci 2001) as well as comprehensible input (Krashen 1982). In an effort to achieve these goals, I will first discuss my approach to Deaf education.

II. Approach to Education of Deaf Children

Although historically, the education of Deaf students has been English driven, denying any use of ASL, I strongly believe in using a bilingual approach, where “instruction is planned and given in at least two languages” (Hamers 1998 p. 65). My reasoning is based on three rationales. These are based on research, pedagogy and socio-cultural evidence. Grosjean defines bilingualism as “the regular use of two (or more) languages, and bilinguals are those people who need and use two (or more) languages in their everyday lives” (1992 p. 51). Studies show that there are several advantages to bilingualism (Hamers 1998). Not only do bilinguals score higher on intelligence tests, but they also are able to acquire literacy faster (Hamers 1998). In a bilingual Deaf/HH classroom, the goal is to promote full proficiency in both ASL and English.

While in the classroom, I used Cummins (1986) language transfer theory to help guide my teaching. This theory states that if academic skills are learned in a child’s first language, those skills can be transferred to a second language. This is especially important for Deaf/HH students because many of them arrive to school with language and communication skills that are underdeveloped (Humphries 2013), and need to be exposed to an appropriate visual language in order for a higher chance of acquiring that language first. As Cummins suggests, once a student crosses the threshold of that first language, ASL, he/she will have a better chance of acquiring competency in the second language, English (2013). Grosjean believes this bilingual approach is critical because “a visual language is a pathway to language for deaf children who might otherwise not be able to access language presented to them aurally” (Humphries 2013 p. 13).

I implemented this theory by having all instruction done in ASL, my students' first and most accessible language, and then used various supports to make connections to English. An example of this technique can be seen with a "Writer's Workshop" activity. Students can engage in a lesson activity and then will communicate their experiences in ASL while recording themselves. Afterwards, they watch themselves and transcribe ASL into English. This kind of language transfer is helpful when teaching students two languages, in this case ASL and English.

However, this theory was not strictly applied, as I promoted both languages simultaneously in an effort to capitalize on the relationship between the two (Strong & Prinz 2000). Based on Cummins's theory of Common Underlying Proficiency (CUP), when students gain competencies in both ASL and English, the languages will enrich each other (Chamberlain and Mayberry 2000). When a student is exposed to either ASL or English, it will "lead to increased competence underlying both languages" (p. 240). For this reason, creating a classroom environment rich with ASL and English is imperative. Students' learning in one language will increase learning in the other, and vice versa.

When students increase their ASL competency, research shows that their reading fluency is also increased. A study conducted by Strong and Prinz (2000) found that "ASL skill is significantly related to English literacy" (p. 137). Chamberlain and Mayberry support the argument that ASL knowledge is linked to reading ability (2000). The earlier students are exposed to ASL and increase their ASL skills, the better they will do when it comes to reading.

Research showed that Deaf children of Deaf families “tended to be successful readers and writers and were more socially and culturally knowledgeable than deaf children of hearing families” (Humphries 2013 p. 12). This suggests that the techniques and strategies the Deaf family uses to ensure a balanced bilingual Deaf child should be emulated in the classroom. Also, research shows that Deaf teachers make frequent connections between ASL and English in comparison to hearing teachers (Humphries 2013). They are also able to regulate children’s attention with the use of eye gaze. Research further shows that a child’s “skill in fingerspelling interacts with reading achievement” (Padden and Ramsey 2000 p. 186). While it is still unknown whether a student’s skill in fingerspelling helps with their literacy development or if a student’s literacy development helps with their fingerspelling, we do know there is a correlation and that we should use fingerspelling more often in the classroom. Using a bilingual approach to teaching my students gave them this much needed exposure to ASL, which helped improve literacy and, in turn, academic success.

Because there is such a strong correlation between ASL skill and English literacy (Strong & Prinz 2000), I also implemented the pedagogical theory of comprehensible input by Stephen Krashen (1982). This theory promotes second language acquisition by making the input (what the students are learning) comprehensible and in a language they can understand. This language is ASL, my students’ most accessible language, which helped decrease students’ anxiety. When learning in ASL, it is more meaningful to students, which made it more comprehensive. Using the student’s primary language kept their self-esteem high, thus improving their motivation to learn.

Another pedagogical technique promoted interaction between English and ASL. These activities include the aforementioned “Writer’s Workshop”, as well as a Language Experience Approach (LEA) where students go outside to look for different kinds of pollution. They take pictures of the pollution they see around the school and then bring these photos into the classroom. Then, as a group, the photographs are examined while the students use ASL to explain their experiences. Using the overhead projector, the teacher writes in English what the students sign. This will create a clear connection between the two languages, allowing students to interact with both simultaneously. The next teaching tool will be to create a class book containing these photos and illustrating in English what they have used ASL to describe. This will reinforce the connections between the student’s experiences in ASL and the written English.

“Chaining” is another tool to link ASL and English. When exposing students to English words, I used the ASL sign as well as fingerspelled the word and pointed to the written word. Students were able to see the correlation between the English print, fingerspelling and the ASL sign. I also implemented the use of vocabulary cards naming the object in English, a picture of the ASL sign and where applicable a picture of the actual object. This kind of interaction allows students to make connections between the two languages and continue to develop skills in both.

Another teaching strategy supporting the bilingual approach is tapping into student’s background knowledge. Using ASL to communicate their previous experiences and prior knowledge allows students to explain their thoughts clearly and fluidly. Through use of ASL, the student’s primary language, they are able to transfer these ideas and concepts more readily into English. When students can personally relate to the

subject at hand, they will be more motivated to understand the ASL/ English connection and use it for better communication.

Another platform to bilingual education is based on a Swedish model (Mahshie 1995). This model demonstrates that a Deaf child's bilingual status is to "be the best insurance for success in school and in society" (p. 14). This bilingualism is achieved by providing an education in two fully accessible languages. In an article written for Gallaudet University, Mahshie (1995) states:

Practice in education of Deaf children increasingly reflects the premise that linguistic, cognitive, and social competence are best achieved in environments that provide unencumbered communicative access to curricular content and expanded opportunities for socialization (p. 14).

This suggests that an environment where students are exposed to both ASL and English, their competence will increase both academically and socially. The Swedish model incorporates Swedish Sign Language as an academic subject and provides information regarding the "history, accomplishments, and culture of Deaf people" (p. 16). Teaching students explicitly about the grammar and syntax of ASL, as well as public presentation skills in ASL, will not only allow students to become more aware and knowledgeable of their language (1995), but will help develop a positive Deaf identity.

The bilingual approach includes a socio-cultural rationale. This includes the development of student's positive Deaf identity. In order to promote a more positive Deaf identity, it is imperative to valorize both of the student's languages (Hamers 1998). When students learn more about their languages, they can begin to appreciate what they have to offer and can be proud to be part of a community that uses a visual language.

In my own experience as a Peace Corps volunteer working at a residential school for the Deaf in Jamaica, many of the teachers did not agree with using a bilingual approach and instead used mostly spoken English with a few signs and gestures. I noticed how this affected students' self-esteem and confidence. Not only were they lost during instruction, but while out in public they were too ashamed and embarrassed to communicate in Sign Language. While the Jamaican Association for the Deaf is making great efforts to educate their teachers about the benefits of bilingual education, some teachers still resist using sign in the classroom. Students are highly susceptible to picking up these kinds of negative attitudes (Hass 1992). When a student sees that his/her own teacher is not fluent or refuses to use sign, then the student's perception of Sign Language is diminished.

This experience has helped me realize the importance of a bilingual approach in educating my Deaf students. It is imperative for children to be proud of their skills in ASL and be proud of who they are as a Deaf person. Including a Deaf culture curriculum will help students develop a confident cultural and linguistic identity. This positive self-identity will help empower the students as well.

Minority empowerment is another socio-cultural based strategy which promotes bilingual education. "Students who are empowered by their school experiences develop the ability, confidence, and motivation to succeed academically" (Cummins 1986 p. 23). For students to be empowered, their own cultural and linguistic traits must be incorporated into all aspects of the classroom. When Deaf culture and ASL are seen with an additive perspective, rather than a subtractive, the students' empowerment will lead to academic success.

Another rationale to using the bilingual approach in educating Deaf/HH students is the fact that Deaf children grow up in both communities, that of Deaf ASL users as well as hearing English speakers. Therefore they need to be exposed to both. Most Deaf/HH children are born to hearing parents, where English (or any spoken language) is used at home. But when they come to school, there are other Deaf students, Deaf teachers and faculty who use ASL. Children are exposed to both English and ASL as they grow up, therefore creating a need for education in both those languages in the classroom. When they are taught both languages, students are then empowered to make a decision of when to use what language. They will learn that in some situations it is better to communicate using written English, and others it is better to use ASL. In some situations it is possible to use both. It is important to view students as holistic bilinguals (Grosjean 1992) who are capable of being fluent in both ASL and English. I believe that my project will fill the need for an Environmental Education component which focuses on developing students' use of ASL and English in this content area.

III. Assessment of Need

There is a need for this project because more often than not, Deaf/HH students may not have direct access to information regarding protection of the environment. This may be due to the fact that most Deaf/HH children are born to hearing parents who may not know how to sign, thus creating a lack of communication at home, as well Deaf/HH children's lack of access to various mediums, such as television and radio. Through my own personal observations working in a variety of Deaf/HH classrooms, students were aware that the classroom had two bins- a brown one for trash, and a blue one for recycling. However, upon further investigation, when I asked students what the blue bin is for, they were able to sign "RECYCLING" but were not able to explain what that really means. Most of the students know that paper scraps go in the recycling bin, but they are not sure exactly why.

Another indication of student's lack of environmental education was the shock I felt upon seeing 5th grade students toss their garbage on the ground while hiking on a field trip. It seemed clear to me that these students did not experience any environmental studies education during their previous years in elementary school. This evidence shows a need for explicit instruction on what it means to "go green." Not only is it imperative to teach students environmental issues, but as a teacher I want to empower my students to believe that they have a say in what happens to our planet; in fact, they need to know that they are the primary influence on how our world is maintained. Children are naturally suited for this kind of challenge, as "they come into life with a sense that the world is good and beautiful" (Petrash 1992 p. 11). My curriculum fostered and encouraged this

kind of positive attitude and helped students make environmentally aware decisions and in turn be able to educate others.

In today's society, children spend much time on the couch playing video games or watching TV, rather than exploring the outdoors. Because of this "nature deficit in children's lives" (Charles & Louv 2009), children learn only through books and screens, rather than hands-on, outdoor activities. "Environmental Education is an important way to reconnect kids to nature and the benefits it has to offer" (Dean 2013 para. 1). According to a study conducted at the University of Illinois at Urbana-Champaign, "children with attention deficit hyperactivity disorder who spent time outdoors enjoyed significant reduction in symptoms" (para. 4).

A report by the Environmental Protection Agency (EPA) supports environmental education with its claim "that such education does indeed increase citizen awareness of issues facing the environment and provides the literacy that children need to make informed decisions later in life in regard to environmental issues" (Dean 2013 para. 5). Environmental education is imperative in all classrooms in order for students to study the ways in which they can personally reverse these negative effects and make positive changes to preserve the environment. Next, I will discuss existing curricula and materials.

IV. Review of Existing Materials and Curricula

When researching environmental education for elementary school students, it is clear there is an abundance of information available. This ranges from the well-known curriculum “Project Learning Tree,” to books for “How Kids Can Save the Earth,” as well as scholarly journals evaluating the effectiveness of these curriculums. When looking for similar thesis or dissertations in the “Roger. The UC San Diego Library Catalog,” I was not able to find anything relevant.

I first looked at “Project Learning Tree” (PLT) which is an environmental education program designed for teachers and other educators, parents, and community leaders working with youth from preschool through grade twelve. When researching their website (“Project Learning Tree” 2010). I quickly learned that this curriculum requires attendance at a “Project Learning Tree” workshop. This can be funded via one’s school, grants or out of pocket. The website does not explicitly provide the price of the workshop or the committed time necessary. The website also features several curriculum materials that are not available except through attending a workshop. However, researching on Amazon.com, I was able to find and order “Project Learning Tree: Pre K-8 Environmental Education Activity Guide” (2008).

This guide begins with a history of PLT, which began in the 1970’s and has been revised and more thoroughly developed throughout the years. Its’ most recent revision in 2006 allowed the authors to include techniques for differentiated instruction, reading connections, and assessment strategies (Project Learning Tree 2008) as well as an overview of the guide, its goals, and teaching methods used. The curriculum is designed to develop student’s higher order thinking skills by not telling them “what to think” but

rather “how to think” (p. 2). It claims to appeal “the broadest range of learners, including students with diverse learning styles and cultural backgrounds” (p. 2). The guide also includes the teaching methods and strategies used when creating the activities, including constructivist learning theory, whole language teaching strategies, and service-learning models (p. 5). The rest of the guide includes in-depth lesson plans, lists of materials needed, related activities and assessment opportunities. I find this curriculum to highlight many of the effective teaching strategies I want to use in my curriculum, and I like how it is geared to educators, rather than just “tips” for kids to save the earth.

When looking for research regarding the effectiveness of PLT, the articles were written in the 70’s, 80’s and 90’s and mostly address the teacher’s response to the curriculum. One article concluded, “Overall, teacher response to the materials was positive” (Conry 1982) while another stated “PLT workshop had a positive effect on pre-service teachers’ attitudes toward teaching environmental education” (Kunz 1990).

When looking for more information for how the curriculum affected students views of the environment, I found the article “Project Learning Tree: Independent Study and Evaluation” (1977). This article explained that the results of its evaluation, “indicated that PLT materials had the greatest impact on intermediate students, especially in the transmission of specific information” (1977) and continues to say that “a number of puzzling results at the elementary grade level are reported.” Unfortunately, the ERIC database could not provide me access to the full article therefore I am unsure about what these “puzzling results” entail.

Project Learning Tree differs from my project in that it does not take a bilingual approach to the activities. The curriculum provides activities and assessments that are all

done in English. My project will emphasize language development in both ASL and English. All activities and assessments will be done either in ASL, English, or both.

Other materials I looked at are books by Sheri Amsel. Amsel has published more than twenty books on nature and environmental topics and she has degrees in botany, zoology, anatomy and biomedical illustration. The two books I reviewed, “The Everything Kids’ Environment Book” (2011) and “365 Ways to Live Green for Kids” (2009) are written for children and parents, rather than being geared for educators. Both books have effective ideas on “going green” and provide several facts and activities regarding protection of the environment. “365 Ways to Live Green for Kids” provides just that, a fact or story about the environment or games and activities that “will help make our planet a cleaner, better place” (Amsel 2009 p. xiii) for each day of the year. Children are encouraged to take what they learn from this book and share it with others.

“The Everything Kids’ Environmental Book” is written in a “kid friendly” way that encourages parents and children to “discover lots of fun ways to get involved and protect the environment” (Amsel 2011 p. ix). Each chapter includes “words to know” teaching children important vocabulary as well as various activities under the “try this” headline. This text is more in depth, providing an introduction to the earth’s habitats and ways children can preserve these habitats. I will include a few facts and activities from these books in my own curriculum.

During my research for relating materials and curricula, I also discovered the “Kids for Saving Earth” (KSE) nonprofit organization. Established in 1989 by a teacher and mother who lost her environmentally aware eleven year old son to cancer, KSE provides educational materials that are informative in helping teachers and students learn

to take care of the earth (Hill 2009). One book in particular that I will use, “The Everything Green Classroom Book” (2009) is similar to the text written by Amsel. It provides facts and activity ideas but it is geared more toward the classroom rather than activities a student would do at home. It provides ideas for different field trips as well as “E tools” for websites where students can learn more. I will take bits and pieces from this text to incorporate into my curriculum.

Lastly, I looked at the Environmental Protective Agency (EPA) website ("EPA," n.d.). The EPA website provides a link for “students” to access information regarding the environment.

I found this website to be informative, but too complex for elementary school students. It is not laid out in a “kid friendly” way and its information contains jargon that most students would not understand. There is however, a link to games and quizzes for elementary aged students which are much more “kid friendly”. I will use this resource to get accurate information about the issues facing the environment, but I do not foresee having my students use this website itself. In the following section, a description of the relevant research is presented and several key learning theories are identified that are the foundation of my curriculum.

V. Relevant Research and Learning Theories

The following learning theories were identified and used as a foundation for my curriculum. The theories that I selected included Zone of Proximal Development (ZPD) (Vygotsky 1978), scaffolding (Wood et al 1976), intrinsic motivation (Deci et al 2001), comprehensible input (Krashen 1982) and funds of Knowledge (Moll, 1992). Vygotsky defined ZPD as “the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86). ZPD, later coined “scaffolding” by Wood et al described scaffolding as “Those elements of the task that are initially beyond the learner’s capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence” (p. 90).

The identified theories are important for my curriculum because they allowed students to develop skills to complete a task where they would not be able to complete without the scaffolds or working within their ZPD. For example, my lessons included “scaffolded instruction” throughout by including sentence frames which allows all students to participate in discussion or writing about the activities. I also provided vocabulary cards that included the English word, a picture of the ASL sign, and if applicable, a picture of the object. I also used graphic organizers to help students organize their thoughts. Another scaffold I implemented was modeling. Using the “I do, we do, you do” strategy (Wood, D., Bruner, J., & Ross, G. 1976) will allow students full participation without much anxiety as they will have an opportunity to see the activity

first and time to practice themselves. Providing guidance initially will help students work independently. This scaffolded support allows students to achieve success in the lesson activities and remain in their zone of proximal development, encouraging more understanding and learning to take place.

The theory of intrinsic motivation by Deci et al (2001) claims that when teachers use rewards in the classroom, the rewards will have an undermining effect on intrinsic motivation. Students who are given tangible rewards for doing a task are then extrinsically motivated in doing that task, and will not complete the task without the promise of another reward. My curriculum is of high interest, allowing students to be motivated intrinsically. I did not provide any kind of reward system for students when engaging or completing assignments, other than the occasional high-five or thumbs-up. In order to help intrinsically motivate, I showed students pictures of things like air pollution, landfills, oil spills etc. in hopes they will want to help eliminate such horrendous problems.

Also in an effort to intrinsically motivate, I helped students make personal connections by relating pollution to their own lives. This was done by helping them realize that air pollution may mean they cannot play outside, or water pollution means they cannot go swimming in the ocean. This helped them stay motivated to learn about “going green” and preventing such problems.

Many of my lesson activities were designed to apply the theory of comprehensible input by Stephen Krashen (1982). I did this in several ways as suggested by Krashen. First, during instruction I used ASL, a visual and accessible language for my students,

one in which is most reproducible (Humphries 2013). Also, during the entire lesson I constantly checked for comprehension by monitoring student's verbal and non-verbal responses. I also provided several non-linguistic supports such as pictures, charts, or objects to ensure the students understanding.

I encouraged student's academic language acquisition in both ASL and English, I labeled pictures with the English word as well as the ASL sign to help students make connections between the object and the two languages. Another strategy to promote connections between ASL and English is by using "chaining." As mentioned previously, "chaining" is done by allowing students to see the explicit connection between English print and fingerspelling. I pointed to a word, fingerspelled the word and pointed to it again. This ultimately supported bilingual development.

Krashen also supports "funds of knowledge" (Moll 1992) whereby teachers use the student's background knowledge and/or experiences in teaching a new concept. For my curriculum, I introduced the lessons by asking students about their familiarity with concepts such as recycling or air pollution, which allowed my instruction to build on their knowledge and/or experiences and teach new ideas and concepts; i.e. starting with the known and then teaching the unknown. By including these strategies for comprehensible input and funds of knowledge, students were supported in acquiring language (in both ASL and English).

VI. Curriculum Description

The environment is an extremely intricate and complex entity, and finding ways to teach about the environment proves to be just as complex. Unlike teaching other content areas, such as math or other content, the environment is not linear but rather every aspect of it is tied together in one way or another. This kind of “web” makes it difficult to know where to start when teaching environmental education. Not only is finding an approach to teaching about such a complex topic difficult, but deciding which concepts to discuss has proven to be a challenge. There are so many concepts and topics that can be part of Environmental Education. To help me decide where to begin, I looked at other environmental materials as well as thought deeply about my students’ prior knowledge and/or experiences in order to find a starting place.

My curriculum consisted of three units, with three lessons in each unit, making nine lessons in all. Unit 1 is about pollution. This was a good starting place as I did lessons which helped students discover pollution that exists in their own lives. This also allowed for discussion of what the problem is and then segue into what can be done about it in further units.

The second unit will be all about the “3 R’s”- Reduce, Reuse, Recycle. This unit focused on ways students can reduce waste by reducing, reusing and recycling. I had students create a “Daily Waste Log” which helped them to understand how much waste we produce as individuals and what that means for the population of the school, the city, state and country, as well as the world. The last lesson was about what recycling means. We made our own recycled paper to have a concrete example of creating something out of “trash.”

The last unit “Living Green” focused on the ways in which people can make environmentally aware decisions. Some of these things were already discussed in the previous unit, however this will have a different focus. For example, the first lesson was related to conservation and how students can personally save water and electricity. The second lesson was about food and what it means to buy locally, what organic means, and about creating their own gardens. The last lesson was related to global issues through a discussion of wind and solar power and how it will impact the globe.

My curriculum has a curriculum guide explaining the “how to’s” such as, a KWL chart to begin the Unit, and general guidelines to help teachers in the implementation of the curriculum.

VII. Evaluation

The purpose of my evaluation plan was to evaluate the effectiveness of my curriculum. I gathered several types of evidence to prove whether my curriculum was successful or not. One type of evidence was extensive teacher field notes where I took thick notes of what I observed during the implementation of my whole curriculum. Another type of evidence I collected included artifacts. For several lessons, students were asked to complete graphic organizers, write in their science journals, or make posters which I collected to use as evidence of whether the students understood the lesson or not and if they met the curriculum goals. Not only did I collect student work, I also implemented rating scales, including a rubric and an objective completion checklist that I used while observing the students during the lessons. I also conducted a KWL chart, assessing students' knowledge of "Protecting the Earth" before and after the curriculum was taught, as well as addressing what the students wanted to learn.

Finally, I collected was a pre-curriculum and post-curriculum assessment. This assessment included a vocabulary worksheet, testing their knowledge of Environmental Education terms in ASL and English, as well as a "Pollution Search" worksheet which helped me assess their knowledge of different types of pollution. Thus, these types of evidence supported each other in evaluating how the curriculum goals were met or not.

VIII. Implementation

The school I implemented my curriculum is a public elementary school, catering to 316 students from preschool through 6th grade. While it is a general education school for hearing students, they house special day classes for deaf/hard-of-hearing students from the greater San Diego area. There are six deaf/HH classes for students from preschool through 6th grade. The deaf/HH students spend the majority of their day with their deaf/HH classmates with instruction given in ASL. The teachers provide a bilingual approach to teaching, using both ASL and English in all lessons. Some students for specific content areas are mainstreamed into the hearing classes with an interpreter. In some situations, reverse mainstreaming occurs and the hearing students enter the deaf/HH students classroom for instruction in math or science and an interpreter is used. Four days a week, for 40 minutes, all deaf/ HH students have ASL- Development class (during ELD time for hearing children) to develop their ASL skills as well as reading and writing in English. The students are grouped by ASL ability level.

I taught my curriculum to the advanced proficiency ASL group twice a week. This group consists of seven students, ranging from 2nd grade to 5th grade. Three students are in 2nd grade, three in 3rd grade, and one in 5th grade. Of all the deaf/HH students at this elementary school, these students are the most advanced in their ASL skills. Several of them have Deaf parents and all are able to communicate clearly and efficiently using ASL. Three students have Deaf parents and have been learning ASL since birth. One student's adoptive mother is an ASL interpreter allowing communication while at home. Two student's parents speak Spanish and know a little ASL and another student's mom speaks Vietnamese at home. These students come from

five different classrooms, each with different routines and schedules but Monday, Tuesday, Thursday and Friday the students come to my classroom for ASL Development time. On Mondays and Fridays, I team taught ASL with an ASL specialist to these students, and on Tuesdays and Thursdays, I focused on teaching the “Going Green” curriculum.

The classroom where the curriculum was taught is a large, colorful room which is home to a TK/K/1st grade class. There was a promethean board that is used for several activities including reading books, watching movies, writing, as well as showing visuals for students to see real life examples. When students were talking about something, I often looked it up on Google images and put it on the board so everyone can have a visual access to what is being discussed. This is essential for deaf/HH students. Other resources include ASL dictionaries which help create the ASL wall as well as English and ASL sentence frames. One limitation is the lack of space on the walls to hang things. Because this is a classroom for another group of students, we do not have much space to hang things. To remedy this, we used pocket charts and found a little wall space to create the ASL Wall.

There have been a few changes that have occurred since when I was first writing my curriculum. I wrote my curriculum for a 4th grade level. My placement has since changed and I am ended up teaching a class of four students, two of them in transitional kindergarten, one in kindergarten and one in first grade. One of my other responsibilities was to teach the advanced proficiency ASL group, twice a week for 40 minutes each day. After discussing with my CT, we decided it would be best to teach my curriculum to this specific group of students rather than the very young students where I would have to

change almost every aspect of each lesson. Teaching my curriculum to the advanced proficiency ASL group, I was able to continue to use my same lessons, assessments and graphic organizers that I already created. I found an ELA anchor standard (Common Core) for each lesson, which spans across each grade level.

I began implementing my curriculum on April 17th by starting with giving my students pre-assessments as well as creating a KWL chart for “Saving the Earth.” The pre-assessment consisted of two forms, one testing the student’s vocabulary in ASL and English with words related to Environmental Education. This proved to be a challenge for the students who kept signing how “hard” it was. One student ended up in tears because she did not know the answers. The other form was a “pollution search” where students had a picture of people on the street with different pollutants and their assignment was to circle what they thought was pollution. The KWL chart was a challenge because the students did not have much to contribute to what they already “Know”, which makes it difficult to decide what they “Want” to know.

I then implemented my lessons every Tuesday and Thursday when I was with the advanced ASL proficiency group. Each lesson took about a week, which means I did not have enough time to finish the whole curriculum. In order to make sure I was teaching what I considered the most important lessons, I decided to eliminate a few lessons. Also, now that I was at the school, I saw that some lessons were not appropriate and had to modify for my group of students and our location. Because of the San Diego fires and school being closed on a day usually teach my curriculum, everything got pushed back one day. Also I had a Professional Learning Community meeting and had a substitute on another day I was supposed to teach my curriculum. Because teaching my curriculum is

so crucial, I did not feel comfortable having a substitute teach one of the lessons, but just had the students re-tell a book we've read to each other.

I expected to teach $\frac{3}{4}$ of my curriculum, which made me concerned about gathering evidence to prove its effectiveness or not. My biggest issue was a lack of time. If I taught this group of students all day long, I could have incorporated the lesson activities throughout the day, but because my time with them was limited, as well as several end of year activities happening, I did not have enough time to teach everything I wanted to. The Science Journals were intended to be done in class as a group, but because of time constraints, they became homework and some students forgot to bring them back to school.

My students were engaged and interested in learning about caring for the environment. They seemed to have had a firm understanding of what pollution is (air, land and water). I gathered evidence of this when I was showing pictures of different kinds of pollution and one student signed, "WRONG, MUST PROTECT EARTH" indicating his understanding of how pollution has negative effects. With each lesson the students learned more about how they can help protect the environment. Each day they were able to make connections between pollution seen in "The Lorax", pictures we looked at as well as other books we read. The students were often excited to stand up in front of the class and show the connections they had made between books. Also, during the lesson where each student was able to take a turn and pour a substance into the "river", several students were excited to share they knew that was called "POLLUTION". They were able to use the ASL sign but when I asked for the spelling, they knew it started with a "P" but had to look at the vocabulary cards for assistance.

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Other changes that had to be made was to eliminate a few lessons. Due to time constraints, I eliminated three lessons, one from each unit. This was necessary if I wanted to teach the most important lessons to the students. If I were teaching this curriculum to a class that I taught to full-time, I would have been able to find time to teach these other lessons and even teach more in depth about environmental issues. I also had to change my expectations for their Science Journals. I had planned on doing these activities as a group, to provide the support needed, but again because of time, these became homework assignments that students were not doing. I ended up only having two writings in their journals because students were just not writing in them and bringing them back to class. This will affect my curriculum because it will lessen the body of evidence I will have collected to justify if my curriculum was successful or not. Also, when initially planning my curriculum I had intended to include various activities to help

strengthen the student's language such as a "Writers Workshop" as well as doing a LEA (Learning Experience Approach). However, due to the lack of time I had with the students I was unable to do so.

The evaluation included several graphic organizers, "Science Journals", a pre and post assessment, and thick field notes. The graphic organizers, such as the "Cause and Effect" and "Venn Diagram" were created with the deaf students' visual keenness in mind. I created the "Cause and Effect" handout with arrows and pictures to help students understand this concept. The "Venn Diagram" handout was also created to be visually helpful in understanding the concept of comparing and contrasting. These graphic organizers included both English and pictures of ASL signs which helped the students develop their academic language in both languages as well as help them learn about these concepts. The "Cause and Effect" worksheet was done together as a group to ensure understanding. This allowed for successful completion of the worksheet, as we worked together to come up with ideas of causes and effects in "The Lorax." I used the document camera to display the worksheet and asked to think about examples of causes and effects from the story. As a group, we brainstormed causes and effects and I wrote them on the worksheet for the students to see and copy. While this was effective in that the students were able to complete the worksheets, it did not properly assess their understanding of "cause and effect" or show if they truly understood this concept. If I were to do this again, I would first model then do a few examples as a group, then have the students come up with some examples on their own. This would allow me to see if they understood the concept. I attempted doing this "I do, we do, you do" when we worked on the Venn diagram worksheet.

After reading the book “The Lorax” we watched the movie as a group and learned the concepts about comparing and contrasting. I introduced the lesson by showing English vocabulary cards with the words “COMPARE” and “SAME” and “DIFFERENT” and we discussed what this meant. I was initially concerned with the logistics of this lesson. What was successful was that I watched the movie beforehand and wrote down the time in the movie of the most significant similarities and differences so I could fast forward to the places which I thought would really help the students see the similarities and differences. We did not have time to watch the whole movie so I decided to start it and fast forward through some parts and asked the students to tell me when to stop so we could discuss any similarities or differences they noticed. This worked out well and the students enjoyed watching the movie and comparing between the movie and the book. They were enthusiastic and getting me to stop the movie for discussion and writing on the Venn diagram.

I used the document camera to display the Venn diagram and I would switch over from the movie to the document camera to discuss as a group where on the diagram we would write our observations. The students told me where to write on the diagram for the first few examples and I modeled how to do it. Then, I allowed the students to take turns coming up and writing on the Venn diagram, and lastly, I handed out the diagram to each student and put them in pairs. I asked that they watch the movie and discuss with their partner when they noticed a similarity or difference. This worked for some pairs but not for others. I think this had to do with the age difference in the students. I paired up the oldest student with the youngest one thinking that the older one could support and help the younger one, but this was not successful. The older student did not want to help her

and would even turn her page over so the younger one could not see what she had written. I had to encourage the older student to help her and that they were supposed to work together. She did allow her to see her paper but there was still little discussion between the two. I would try to encourage more discussion between the pairs, rather than just copying each other's papers. If we had more time, we could have had more discussion. The other struggle I encountered that I was not expecting was that the students did not know how to spell many of the words they needed to write. I had to circulate through the room and help the students spell the words. While I encouraged them to try their best and guess, the younger one's needed more support. As seen in the student work samples, all but one student was able to write at least two examples for similarities and differences. However, three students wrote the differences in the wrong section. It is possible that the ASL sign for "BOOK" and "MOVIE" was too small and the students were confused on where to write their observations. Next time I would make it more explicit and clear for how the sections were different.

The "Science Journals" were not as effective as I would have hoped. This mostly had to do with the fact that I only saw these students a few times a week and we did not have time to discuss in depth what was to be expected of them in regards to their journals. I decided to write the prompts in each student's journals to save time. I gave the students one week to complete the first prompt, however only one student turned it in to me. Eventually, all the students returned their journals with very minimal effort put into the first assignment. Being that I was not the student's full-time teacher, encouraging them to do their work was difficult as I did not see them every day. In an effort to have the students complete the journal assignments, I emailed their teachers, and told them about

the journals and asked if the students had any free time to do work, to encourage them to work on their science journals. However this proved to not help. The second assignment encouraged students to think about “The Lorax” the book and movie after we compared the two as a group and write about which one they preferred. This assignment co-insided with the other teachers ASL lesson of using the signs “LIKE” and “PREFER.” To make the assignment as straight forward as possible, I wrote a sentence frame in each journal to help the students have access to the topic. Four out of seven students actually turned the journal back to me, and one did not understand the sentence frame. Realizing that the journals were not effective I did not continue using them. If I had more time with the class, I think they would have been more effective as we would have time to discuss each assignment and what was expected of them.

In general, what was successful was using a variety of tools and mediums to keep the students engaged. This included using a number of books for read-alouds, watching videos on “Youtube”, looking at pictures from Google images as well as using several graphic organizers and hands-on activities. The lessons that included the students getting up and moving around and being actively engaged seemed to be the most successful as the students were very motivated and involved.

The most interactive, hands-on activity was “Unit 2- Lesson 2, Who Polluted the River?” This lesson involved an interactive story of learning how, as human populations have increased and land uses have changed, many of our rivers have become polluted. The students watched as I signed a story about a nearby river and they took turns coming to the front and pouring in different “pollutants” in the “river.” While this lesson took the most prep, it was worth it as the students loved watching the water become more and

more polluted and seeing how different things that humans do contribute to the pollution. They appeared to understand that everyone contributes and is responsible. When I asked “Who polluted the river?” they signed their own contribution but realized that everyone had contributed to making the water dirty. I explained that everyone is responsible and then asked how they can prevent that pollution. This was a tougher question in which all they could answer was “PICK UP TRASH.” While this answer is correct, I had to provide support in explaining that we can do things like ride our bikes or walk instead of drive and not use chemicals to feed our plants.

Using props was also helpful in allowing the students to see and understand the concepts being taught. This included using a puppet frog and showing it “swimming” and seeing a six-pack plastic ring and thinking it was food and then getting it caught around his neck. This happened in one of the books we read and the students were able to read about it, see a picture of it, as well as see the props re-inacting this tragedy which helped them fully understand how important it is to cut the plastic six-pack rings. We then all took turns cutting the six-pack rings so that the students were able to experience for themselves and then teach others how to do it.

I also used several props when teaching “Unit 3- The 3 R’s”. We read the book “Where does the Garbage Go?” which explained that each person creates four pounds of trash each day. To help students really understand how much trash that is, I put a five pound hand-weight in a garbage bin with some trash covering it. I had the students take turns picking it up and seeing how heavy and how much trash this really was. This was effective in some ways in that most of how light it was and not that much trash. Next

time, I would actually gather for pounds of trash and bring a scale into the classroom and also lay the trash out to help visually see the amount.

I did bring in a bag of clean trash that I collected for our lesson on analyzing what is in our garbage. I wanted to make this lesson more interactive as the previous lesson was a read-aloud and watching videos and the students were not as engaged as I hoped. For this reason, I decided to collect hula hoops and place six of them on the floor. Each hula hoop was for the different types of trash in our garbage. We first discussed the vocabulary which included the different kinds of trash, glass, plastic, metal, paper, food and “other” by looking at English vocabulary cards and ASL signs that were placed on the ASL Wall. We each took turns picking out trash in the bag and placing it in the correct category. I was surprised that many of the students struggled with doing this correctly. I assumed when they found a cardboard egg carton they would know to place it in the “paper” hula hoop but they did not know. I had each student feel it and describe what it was like, “light” “not hard” at which point they realized it was a paper product. The students were very engaged in separating the trash. When we finished, I asked the students if they thought all that trash needed to go to a landfill or incinerator or if something else could be done. This question was tricky because the sign that we were using for “LANDFILL” has the sign for “TRASH” in it. When I was signing “TRASH NEEDS TO BE PILED INTO TRASH” it seemed like an obvious “yes” answer. This is where my language barrier got in the way and especially when I was wishing I had another teacher in the room that was a native signer. The bell rang at this point and I knew I would need to clarify during our next lesson.

The next lesson we began with the “Let’s Talk Trash Assessment” that we completed as a group to review the previous lesson. This assessment asked about the different items we found in the garbage as well as the categories we placed them in. This was a little confusing at first as the students were signing the different categories when I asked what items were found. This was a fair mistake and needed a few examples to clarify. The students were able to help me fill out this form without complications. The third question asked “Do all the items that were in the garbage bag belong there? Why/why not? What could we do with the items that do not belong in the garbage bag?” To support the students understanding, I used the classrooms garbage bin and recycle bin. I asked them if all the trash we found should go in the brown trash bin or can some of it be recycled? They all agreed that some could be recycled. I then took a few of the items and asked them what we could do with them. Looking at a towel and a water bottle, the students explained it did not need to be thrown away but that it could be reused. This is evidence that the students were beginning to understand that not everything needs to be thrown away and go to a landfill but can be recycled or used again. This was a great introduction to the next lesson on the “3 R’s”.

In teaching about reducing, reusing and recycling I used several props. I explained that reducing means to reduce the amount of trash we create every day. I brought the trash bin and recycle bin to the front of the classroom. I showed them a small paper cup and pretended to drink water from it. Then I threw it away. I picked up a new cup and pretended to drink water from it and then throw it away. I did this showing each cup I used every day, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday and how I kept throwing them away. One student immediately signed “NO!

USE- AGAIN!” I explained that yes, I could save my cup and use it again the next day, OR I could use a metal water bottle. I then asked the students “Which makes more trash, the cups or the metal water bottle?” They all agreed the cups did. I had a team teacher that day who helped me relate this idea to the pocket-chart of the 3 R’s by asking the students which one it was. Some said “REDUCE” and some signed “REUSE” which really both are right.

I did this same activity but with using plastic bags, throwing one after another away. Many of the students knew that they should not be thrown away after one use. One student said her mom keeps the bags and uses them later, and one said her mom uses them to “pick up dog poop.” I liked that the students were able to make home connections and how their own families reuse the bags. I then showed them a canvas bag and explained that when I went to the store I did not even need to get a plastic bag in the first place because I brought my own canvas bag from home.

I then discussed how we can reduce our water and electricity usage. This was tougher concept to explain so I asked my team, who is Deaf and a native signer for support on this. She explained that when you take a shower, you cannot just sit in the shower for a long time while the water is running because it is a waste of water. She signed that in the future, if we waste water like that, then the lakes where we get our water will get smaller and smaller and dry up. I then chimed in saying it is the same thing when you brush your teeth, you must turn off the water! We then explained that electricity needed to be conserved as well, explaining that when you leave the room, you do not just leave the light on, but to be sure to turn it off! My team explained that if we

leave lights on, it can be expensive. While I'm not sure the students completely understood the idea of why to conserve water and electricity, I think at least being exposed to it at this time is acceptable. If we had more time we could get more deeply involved in discussing this.

We then moved on to discuss Reusing. This concept was a little easier to understand and more straight forward. I explained that you do not throw something away, but you reuse it! I again showed the reusable canvas shopping bag as well as the water bottle. I also showed the students that they can draw and color on both sides of the paper. I then showed an empty egg carton and asked the students if they had seen these at home. I showed them one and then I showed them the one I decorated and put my different colored buttons in. We explained this was great for storing and organizing little items like rings or jewelry. I showed them a shoe box and a tissue box and said these can be decorated and made to hold things as well. The students were very engaged in these props and the ideas of how to reuse things. I then discussed clothes; about how if I grow out of something do I throw it away? And one student signed "GIVE IT TO SOMEONE ELSE" and I had her repeat this with everyone watching. I said you can give it to someone you know, brother, sister, cousin, or donate it to a store. I then talked about having a bike that was too small for me, so I was just going to throw it away. They got all excited and were signing/yelling "NOOOOOOO! GIVE TO SOMEONE ELSE" showing me they understood this idea. During this discussion, my team helped the students relate the things I was talking about and showing to the pocket chart with the 3 R's and asking them "WHICH R?" which they were able to communicate the right one! I

also showed them a paper lunch bag with a bunch of plastic baggies and how that could be someone's lunch, but then showed them my reusable lunch bag along with my reusable snack baggies and sandwich bag to show how things can be reused again and again and again, thus reducing the trash. We then said another way to reduce our trash and lesson trash that goes to landfills is by recycling. To help understand recycling, I used "Youtube" videos.

Using visual supports such as "Youtube" videos and Google images was extremely successful in helping my students understand certain ideas and concepts. One lesson I had planned to teach "Pollution Search" had the students walk around and collect any pollution they found or take a picture of it. When I realized our campus is extremely clean, I knew this would not be a very successful lesson, so I changed it and used Google images to find pictures of different kinds of pollution, air, water and land and had the students decide what kind of pollution they thought it was. The students were engaged and motivated to do this activity and look at the pictures of the pollutants. One particular picture the students related to was a McDonalds cup on the side of the street, with a car driving by. The students recognized the McDonald's logo which helped make a home connection and how they could see someone they know throwing a cup outside the car. Upon seeing this picture, one student signed "MUST SAVE EARTH" at which point I asked him "How?" and he signed not to throw trash out the car window. Not only did I use Google images, but I used photos I took myself. In an effort to make a home connection between the book "All the Way to the Ocean" and the students own experiences, I showed them pictures I took near my home of drains that have signs

reading “Drains to Bay” and asked students if they had seen these before. This was successful in that many of the students could remember seeing those same signs not only near their homes but also on campus. We found two drains near the playground that had a similar message. This allowed students to make connections between the book, the school as well as their home.

I also used “Youtube” to watch videos of landfills, incinerators as well as recycling plants. It would have been most effective if we could have actually visited one of these places, but due to time a video was next best. If I were to teach this curriculum again, I would be sure to include some field trips for the students to experience what these places are like in person.

Another successful activity was beginning each lesson with a review of the vocabulary cards. I would show the cards in English and the students signed in ASL what the word was. This is when we utilized the ASL Wall the most. Students would take turns pointing to the ASL on the wall when I showed them the English. The student’s vocabulary development was evident in their pre and post assessments.

The greatest challenges I faced was time constraints and the variety of the student’s ability levels. The lessons took much longer than I had anticipated and due to several circumstances that were beyond my control I was not able to teach several of the lessons. I was with the particular group of students only twice a week for 40 minutes each day. There were several days where I had professional development meetings and was not in the classroom. I did not feel comfortable having a substitute teach my curriculum lessons. On another day, school was canceled due to fires in the surrounding areas. All of these circumstances led to less and less time with the students to teach the

lessons. I felt very rushed and eager to teach the last unit as I felt the last unit was the most important in that it taught them what they can do to help protect the environment. The first two units taught the students about the different environmental issues we face today and the last unit taught the students what they can do to prevent or minimize these issues. For this reason, I wanted to be sure I taught at least the first two lessons in the third unit. This meant I often had to just move on and not discuss in depth the concepts we were learning. I did not have time to assess the student's knowledge and what they learned after each lesson. Doing more formative and summative assessments would have led to greater success in achieving the lesson and curriculum goals.

Other challenges included the student's consistent absences as well as attempting to teach a curriculum at the end of the year. Students were often gone and missing out on the lessons and trying to catch them up was difficult. Teaching at the end of the year also meant many activities where students miss class as well as student's lack of motivation for academics but rather having an eagerness for summer time. I would try to teach this curriculum at a different time of year.

Daily Reflections-

April 17th

After much discussion and deliberation, I have decided to teach my curriculum to the Advanced ASL Group on Tuesdays and Thursdays. This group consists of 7 students who will greatly benefit from learning about what it means to "Go Green." Today I implemented the pre-assessment. This assessment consisted of 2 worksheets- one focusing on vocabulary, matching English vocabulary with ASL vocabulary for words such as- Cherish, earth, recycle, trash, landfill, incinerator, reduce, reuse, pollution. The

students really struggled with this and were able to find a few signs with the English words. Some were even upset at the fact that they didn't know the answers. I had to explain that it's OK they don't need to know the answers now but that I would teach them and then they would know.

The other worksheet "Pollution Scene" showed a drawing of several different types of pollution and the students needed to circle what they thought was pollution. To help provide some background knowledge, I wrote the word "Pollution" on the board and explained a little about what it meant- trash on the ground, exhaust from cars. They were able to circle the obvious pollutants (trash and exhaust)

April 24th

I conducted a KWL chart with the students to see what they already knew about protecting the environment. I was a little surprised that the students were not familiar with what a KWL chart even was. So I had to explain what it meant and what it was for. The top of the chart has the English words – Cherish the Environment with the ASL signs CHERISH and EARTH with also a picture of the earth to provide additional support. When I asked the students if they knew anything about protecting the environment they all gave me blank stares. I used several different ASL signs to convey the concept of protecting the environment including PROTECT, SAVE, CHERISH, KEEP CLEAN, ENVIRONMENT, EARTH, WORLD, OUTSIDE but the students still did not seem to have any previous knowledge about what this meant or would entail. I was a little surprised by this and realized that I have my work cut out for me. I tried to give hints to help the students understand what I was asking by reminding them that today is April

22nd which is Earth Day! They were not familiar with Earth Day; except one student in 5th grade said her class would be planting a tree for Earth Day later in the week. Because the students saw the word Earth and the picture of the earth, the only thing they could think of was their recent science lesson where they learned about the moon, earth and stars, so these are the signs they were giving me and wanting me to write down for the K column. Since this was off topic and they didn't have much to put down in this column, it was extremely difficult to write ideas for what they Want to know (W column) because if you don't know anything about a topic, you can't ask questions or inquire about it. Because this was such a struggle, I asked my cooperating teacher if the next day when she was visiting my class, if she could help get some more ideas from the students to write in the W column. As a lead teacher, she is more experienced in what to ask Deaf/HH students to help get their brains thinking about the topic. With her help, we were able to come up with more questions. She explained more about what it meant to "protect the environment" and by starting with what the word Environment meant in general. Then explained about how to protect it and why we would want to protect it.

After that, we continued reading *The Lorax*. We will finish reading the *Lorax* and I will teach the concepts of "cause and effect." The graphic organizer I have is too complicated, so instead I will create a simplified version, by finding 3-4 cause and effects from the book and discuss each one as a group. First I will explain the concept of cause and effect by providing examples the students can relate to (i.e. the pencil breaks (cause) so now I can't write with it (effect) or someone being pushed (cause) and falling and being hurt (effect). Then we will discuss the causes and effects from the book as a group and write them down. Then we need to move on to watching parts of the movie and

using a Venn diagram to document what is similar and different about the book and movie.

Mrs. Burrows and I started making a space for the ASL wall! Will introduce ASL signs to put up for each Unit!

April 30th

We are almost finished reading the Lorax as a group. The students are familiar with the story so we don't need to spend a lot of time discussing each page. Students are very enthusiastic and want to make lots of comments about each page!

I was impressed with my students when we looked at one page, where the trees are being chopped down by a car/machine and they noticed something I didn't even notice- there's smoke/smog coming out of the car and they pointed to it and signed "pollution"! So that means they are understanding what pollution looks like. Next lessons will emphasize the different types of pollution.

I was also very impressed with the students as when we were lining up outside, one student noticed there was trash on the ground and made a point to show me and everyone else and sign "pollution." We then discussed what they could do about it? Some said they could pick it up and throw it away which I applauded, but another student explained that her mom told her to never pick up trash! SO we will need to discuss when it's OK to pick up trash you see and when it's not. We will do that when we go on our "pollution search."

I have a great graphic organizer for "cause" and "effect" and will introduce it by showing the signs (REASON, EFFECT, HAPPEN) and give some real life examples they can relate to. Then discuss the book.

I also have awesome science journals for the students to start writing in! We will start that tomorrow as well- they will write about what they think the Once-ler looks like. Hoping I have time. That's my biggest concern right now is having enough time to do everything! Next week is watch the movie and then move on to Unit 2.

May 1st

Teaching the lessons takes much longer than expected! The "Sign – Aloud" most students are familiar with the story from seeing the movie. I will introduce the concept of "cause and effect" first using other examples such as when someone gets pushed (the cause) he/she will fall and get hurt (effect). Another example is if you break the rules (cause) then parents are upset and you can't play a game (effect). A third example is if you write hard with a pencil, then the pencil will break. These are concrete examples the students can all relate to. Then we will do the graphic organizer as a group.

While working on the graphic organizer- Ragde raised his hand and signed "TREES CHOPPED-DOWN" so I wrote that as the cause, and then I asked what the effect was. Some students signed "CROCHET (or KNIT)" as in to make the clothes. I then prompted them signing "TREES CUT-DOWN" "EFFECT-HAPPEN"? I used my body and role shift to show the cause but that we were looking for the effect! One student signed "BEARS SICK"! Which I documented as the effect on the graphic organizer. I then took the other student's comment about making clothes and put it in the "cause" column and asked for the effect, where one student signed "CUT DOWN TREES". It seems they are gaining a better understanding of "cause and effect".

May 7th Unit 1- Lesson 2

I first introduced the lesson by explaining we were going to watch the movie and I introduced the academic language of “COMPARE” and “SAME” “DIFFERENT” by showing the English word, fingerspelling the word and showing the sign, as well as showing a picture of the sign.

The students seemed to understand this concept quickly. We watched parts of the movie- stopped it to discuss, look at the book and compare. While I thought this lesson was going to be difficult, logistically, because we were watching just parts of the movie and then switching to the document cameral to write on the Venn diagram, but it worked out beautifully without any problems! Also, I was able to just fast forward the movie which worked out so far but I need to skip several scenes to ensure we get to the end of the movie.

We were planning to finish Lesson 2- comparing the movie and book today and filling out the Venn diagram which the students were very engaged in and loved watching parts of the movie! I would fast forward it and they would tell me when to “STOP” or “HOLD” when they saw something that was the same or different. They were able to tell me the similarities or differences and where on the Venn diagram I should write it. Then I had a few students come to the front and write on the diagram themselves. Next I will have them each get their own graphic organizer and continue watching the movie and they will work in pairs to write down (independently, not as a whole group) what they see.

I could not get the DVD player to work for one day so I was thankful I had a book I wanted to read with them available. However, I was not fully prepared for this and had

only read it over once and did not have any props ready to help explain the story (example a plastic bag or 6 pack- ring) but I did have them handy in the classroom but the lesson took longer because we had so many INTERRUPTIONS and distractions. Several service providers came into my room looking for one of my students to assess him for an upcoming IEP, and also two 6th grade students came into my room asking to take two of my students for an “extra recess” which left me with only 5 students. With so many distractions we will have to review the book for sure!

May 11th

“Science Journals” – Prompt #1

Due to time constraints, I was not able to fully explain and model the student’s assignment for their journals. The initial plan was to do the assignments together after the lesson, to incorporate more writing in each lesson. Because we ran out of time, I gave the journals out and told them it was homework. I wrote the question prompt in each one- rather than just writing it on the board where they might forget what the question was. The first day back no one remembered their journals. I reminded them and the second day only one student brought hers. I was very disappointed in this and expressed this to the students. The assignment was to write or draw what they thought the Once-ler looks like- to use their imagination! But they all complained it was too hard.

I thought that since I’m asking them to do this outside of my time with them, it might be helpful to email their teachers and let know about the journals and that if there is any time during the day when they have extra time for writing they can work on this.

(Hoping the teachers did not find it annoying that I'm giving their students more work but the prompts are simple!) So the following day I was happy to see all the students lined up with journals in hand- proudly signing "FINISHED" with big grins on their faces.

Some had interesting perspectives of what the Once-ler looks like. For example one student had the Once-ler playing a Wii or him cutting something, but it was not clear. One student drew him in the car cutting down the trees like from the book! The prompt asked students to write and draw but only two students actually attempted to write a sentence. However, when they all complained about it being too difficult, I told them they just had to draw something and that I would not hold them accountable for not writing too.

Prompts #2

Initially the next journal prompts was "How would you feel if you were one of the animals who got sick in the story?" But I realized this kind of open ended question would be very difficult for most students without having any more support or scaffolding (which I would give if I had more time!) So I changed the prompts and provided the sentence frame "I like The Lorax the (book/movie), but I prefer the (book/movie) because..._____." This relates perfectly to the ASL lessons Laura Kim has been teaching this week on the signs "LIKE" and "PREFER" as well as it emphasizes the lesson's language goal of comparing the book and the movie. While I wrote the journal prompts for most of my lessons, I am seeing how I have to be flexible and willing to change those prompts due to student's abilities and time constraints!

I am learning more and more how visual my students are and by observing other teachers I see how they utilize Google images to show real-life examples to help students understand. For this reason, Unit 2- Lesson 1 “Pollution Search” is now being modified. I don’t think we’ll find much “pollution” on campus, just maybe some litter. So instead we will start with a read aloud of “All the Way to the Ocean” and see how on campus we have the same drains with signs that say “no dumping.” Then we will look pictures and decide to vote (first working in pairs) which category it belongs (air pollution, water pollution, or land pollution) and what it’s from and how it can harm us and animals and plants. Using a flip chart, we will move the pictures into the correct category!

Incorporating more technology! Then I will explain that these pictures are severe and we might not see something so obvious here in San Diego- then we can go over the “pollution search” scene and discuss what they think are pollutants and what causes them (example, How did the littler get on the ground?”) How to explain noise pollution? Or should I even get into this?!

May 13th – Unit 1- Lesson 2 cont... Venn diagram comparing book and movie

We continued where we left of in the movie and watched a scene when the Lorax shows up after the first tree is cut down. We discussed that there were both similarities and differences because some students said it was the same while others said it was different. We looked at the book and saw that both the book and the movie had the Lorax showing up. I had a student come and help write on the Venn diagram in the right place. We briefly discussed that *how* he showed up was different (movie- flying in and falling and rolling. Book- pops up from the tree).

I then gave each student their own Venn diagram and told them they would be working in partners to fill out the form. Because there was not an even number of students, one group had to have 3 students but several students had attitude about having to pair up. The group of 3 had one of the more advanced students with 2 other younger students, which I thought she could help them, but this group did not discuss or help each other until I told them they needed to! We watched a few more scenes - too many similarities and differences so only wanted to stop at the most significant ones.

Challenge- while the students seemed to understand “SAME” and “DIFFERENT”, while watching the movie and being prompt to write, they wanted to write about things we already discussed and not the scene we most recently watched. I had to make sure they knew new info only! Another challenge- one older student (“D”) is too old for this group and it’s clear she is too mature so she has a hard time working with this group.

Again, the biggest challenge is not having enough time to wrap- up and discuss the lessons more fully.

Gave students Science Journals and showed them the prompt, “I like _____, but prefer _____ because _____.” We’ll see how much they actually write. I’m sure they can fill in the sentence frames but will they answer the “Why?” question?

I introduced the ASL wall. I hope to have more time to discuss and match ASL signs to English words! Another challenge- because I did things differently than I initially planned, my assessment checklist needs to be changed. Instead of 3 each, I need to change it to 2.

*Because I will be out of the classroom (for a PLC) on a day I planned to continue the lesson “Who Polluted the River?” I will start the lesson a day earlier and push back my “pollution search lesson” the following class. (I don’t want a sub to teach the curriculum.)

May 16th

School was closed yesterday due to all the fires and bad air quality. So I did not get to start the “Who Polluted the River?” lesson but on Friday the ASL Specialist and I decided to teach about the three types of pollution- TEACHABLE MOMENT! Poor air quality and school being closed the day before and air pollution!

We discussed air quality and what that means and then talked about the three kinds of pollution- air, land, water. We looked at a flip chart with several pictures of pollution and students had to decide what category the picture belonged, whether it was air, land, or water. One student looked at one picture of a McDonald’s cup on the ground and I described that perhaps someone was driving and finished their soda and just threw the cup out of the window! This student then signed “MUST SAVE EARTH” indicating that throwing a cup out of the window was not doing that! YAY! Shows understanding of the topic and able to make a connection and put it all together.

After we did the flip chart activity (which everyone was very engaged!) the ASL Specialist did a read- aloud of “All the Way to the Ocean.” I feel the students have a firm understanding of how trash can cause land and water pollution and that factories and cars cause air pollution, so now we need to discuss what we can do to prevent that pollution!

May 19th

Looking at the title of the book on the doc cam -“All the Way to the Ocean” – one student signs in English word order “ALL THE WAY TO THE OCEAN” and signs “THAT ENGLISH” then she said “ASL... ARRIVE OCEAN” comparing the differences between English and ASL. This was great she was able to read the title in English but not just decode the words, but understand their meaning and that ASL is different than English! This book also made a strong home connection because the book shows the drain that says “Drains to Bay” and I was able to show pictures of this same sign near drains next to my house. So they saw real – life examples of pictures that I took but also in person by looking at these drains at school. One student said she saw another one on campus while running.

May 20th

“Who Polluted the River?” (Unit 2- Lesson 2) I have been excited to teach this lesson! It takes a lot of prep but totally worth it. My aide helped me find all the materials for each item and put them in little cups. At the beginning of the lesson, I showed them the cards and we discussed what they meant. When I showed the “factory” card- all students signed “POLLUTION!” and when I showed the “trees” card, several of them signed “GOOD!” “BETTER” and one signed “BETTER – BREATH” indicating it helps keep air clean and easier to breath. When I showed the “car” card, they excitedly said “POLLTUION” and I asked them to spell it for me. They all attempted this but struggled. They knew it started with P but had to look at the vocabulary pocket-chart for how to spell it! Students were very engaged in this lesson and watched intently as I told the story about how the river

changed through the years, and looking for when it was their turn to come up and pour their pollutant in the water.

May 27th

I had a PLC on Thursday so had a sub and didn't want her to continue teaching this lesson, so I had the students re-tell the story "All the Way to the Ocean" to the sub. So today I was able to finish the "Who Polluted the River?" lesson. The students were so engaged and seemed to really understand that "pollution" is caused by everyone. When I asked them how to prevent the pollution, the only answer I could get was "pick up trash." I had to really help them with alternatives such as riding bikes or walking instead of driving. We reviewed the English vocabulary with the ASL wall- this was a challenge and they could not remember many of them. I will be sure to review these vocabulary cards everyday!

May 29th

I started the lesson off by reviewing the vocabulary- protect, environment, pollution, earth, cherish. They remembered all of these but struggled with the signs environment and cherish, we will keep reviewing.

Now we are moving into the third unit- "The 3 R's"! The first lesson is about learning "Where does the Garbage Go?" The idea is that first we will learn about garbage, landfills, incinerators, and then how to prevent so much garbage by recycling and doing the 3 R's. We began the lesson by looking at YouTube videos – "Trash Disposal Journey into a Landfill" to show how trash goes from your trash can to a

landfill. Then the video “Garbage Incinerator” to show that some trash goes to a machine called an incinerator” and then a video “Oprah Earth Day: Do you know where your garbage goes?” which was a little graphic and sad but showed how much of our trash ends up in the Pacific Ocean. This was a great visual after reading “All the Way to the Ocean.”

Watching the videos really helped the students visually see what these things look like in real life which helped them transition that knowledge to when reading the book “Where Does the Garbage Go?” We then did a read aloud of this book and discussed what happens to garbage. The incinerator was a little difficult for them to understand because the concept that burning the trash makes it smaller is tough for them to grasp. But then I saw a student sign “BURN- LESS” indicating when the trash is burned it takes up less space.

Students demonstrated understanding that the garbage truck comes once a week. One student pointed to the truck and signed “ONCE-A-WEEK” and then another student used the classifier to describe the truck picking up the trash and putting it in the truck.

Students had a difficult time focusing and paying attention during the read-aloud. This makes me think this was not engaging enough and that my next lessons need to be more involved and engaging! Next lesson will finish reading the book (maybe show was 4lbs looks like?) and we will analyze a bag of trash learning how to separate for recycling!

June 2nd

Students are not turning in their journals! This is a challenge because I am not their full time teacher! Today I saw one of my students pick up trash in the grass. I asked her why she was doing that and she signed “POLLUTION.” I then asked, “But why pick up/clean pollution?” at which time she signed “BECAUSE PROTECT EARTH.”

June 3rd

Unit 3- Lesson 1 “Trash Talk”

Today we had a PLC but since I had a sub that does not know ASL, I asked the principal if I could leave the meeting for ASL- D block so I could teach my lesson which she approved. This was important because the days are winding down and I need to get at least a few more lessons in before school ends.

I started the lesson by showing the picture in the book “Where Does Garbage Go?” of what 4 pounds looks like and how each person everyday creates that much trash and it keeps piling and piling up! To help students realize how much that is, I took a 5 pound weight (I don’t have a 4 pound! So close enough!) and put it in a garbage can and covered it with trash. I had each student take turns picking it up and feeling how heavy it was. Some students thought it felt very heavy while others were trying to be macho saying it was not heavy at all. I probably should have put it in a bigger trash can or showed what it looks like on a scale to help them better understand!

I then explained we would be analyzing and digging through a bag of trash to see what we find! First, I introduced the vocabulary cards! ASL signs for PLASTIC, PAPER, GLASS, METAL, FOOD, and OTHER and showed pictures along with English print. To

make the lesson more interactive, I put 6 hula-hoops on the floor with each having a sign for the type of trash. I then took the bag of trash and modeled what to do. I grabbed a handful of paper and asked them “Where does it go?” They all signed “PAPER!” enthusiastically! Then I grabbed an egg carton made out of light cardboard. This was a little tricky as the students weren’t sure which category it belonged. I had them feel it, and describe it- “FEEL LIGHT, NOT HEAVY” one student signed so I asked which category, and they replied “PAPER” but one student yelled “PLASTIC.” Students took turns taking items out of the trash and placing in the right category. They were a little stumped with a few items such as an old cell phone and towel. One student saw the cell phone in the “OTHER” pile and signed “RECYCLE!” which he’s totally right!

After distributing the trash, I asked them if the thought all the trash needed to go to a landfill. This question was confusing because the signs for landfill has “trash” in it, so when asking if the “trash needs to be piled and piled into trash (landfill)” it seems like an obvious answer that yes, it does! This is where my language barriers get in the way! I was using English word order and not being clear. Then the bell rang and I mentioned that some can be recycled! I will begin the next lesson by asking again and being clearer. I will use props – the recycle bin and the trash bin and ask if they think all that stuff that was on the floor in the hula-hoops belongs in the trash bin or some recycled.

The students were very engaged in this lesson and eager to participate. The sub teacher sat and watched me and afterwards told me I was a “rock star” and how she was amazed that I was able to keep their attention for so long and keep them engaged. Nice compliment to hear!

I'm a little stressed because time is running out! One of the DHH teachers suggested that we cancel ASL next week as it is the last week of school. I still have another lesson and need to assess students. I'm hoping to have just a few more days to finish. I won't get to do the last lesson but I really want the students to understand what it means to reduce, reuse and recycle! I would also like to give the students certificates for finishing (well almost finishing) the curriculum as well as each getting a reusable canvas bag to share with their families.

June 5th and 6th

At the beginning of each lesson I will flash the English vocabulary cards on the promethean board and have students sign! If they can't remember, I remind them to refer to ASL wall for help. We then reviewed the previous lesson by looking at the graphic organizer "Let's Talk Trash Assessment". I used the document camera to display this worksheet and we filled it out as a group. They struggled with the first question when describing *what* was found in the trash. Most of the students signed "PLASTIC" or "PAPER" but had a hard time saying what the trash really was. When I gave them an example of newspaper that was in the paper section, they gained a better understanding of what I was looking for. So when a student signed "PLASTIC" I had to ask, "WHAT was plastic?" and finally a student signed "SODA"! Then they got a better idea of describing what was in the trash and not just telling me the categories. They were able to come up with "soda bottle", "pizza", "apple" (for food), "phone" and "towel". The next question was to describe the categories which they were able to quickly come up with "GLASS" "PLASTIC" "OTHER" "FOOD" "METAL" and "PAPER". Then I asked them the third

question, “Do all the items that were in the garbage belong there?” Which many students said “CAN BE RECYCLED”. To help jog their memory, I showed them a few items that were in the trash bag. When I showed them the paper they said that the paper can be recycled and when I showed them the towel they said it can be reused and the water bottle can be reused. I then asked them to tell me “where does garbage go”, many of them signed “RECYCLED!!” so I clarified which two places where garbage went and using visual supports, the students were able to tell me “LANDFILL” and then sign “FIRE” but could not remember the exact word for “INCINERATOR”. After we completed the form, we moved on to today’s lesson about the 3 R’s.

The students have shown they know the signs for reduce, reuse and recycle. But this lesson helped them really understand what those mean. I was able to use several props to make it clear what it means to reduce and reuse. I explained that reducing means to reduce the amount of trash we create every day. I brought the trash bin and recycle bin to the front of the classroom. I showed them a small paper cup and pretended to drink water from it. Then I threw it away. I picked up a new cup and pretended to drink water from it and then throw it away. I did this showing each cup I used every day, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.... And how I kept throwing them away! One student immediately signed “NO! USE- AGAIN!” I explained that yes, I could save my cup and use it again the next day, OR I could use a metal water bottle. I then asked the students “Which makes more trash, the cups or the metal water bottle?” They all agreed the cups did. The ASL Specialist helped me relate this idea to the

pocket-chart of the 3 R's by asking the students which one it was. Some said "REDUCE" and some signed "REUSE" which really both are right.

I did this same activity but with using plastic bags, throwing one after another away. Many of the students knew that they should not be thrown away after one use. One student said her mom keeps the bags and uses them later, and one said her mom uses them to "pick up after their dog." I liked that the students were able to relate what was being discussed to at home and how their own families reuse the bags. I then showed them a canvas bag- and said that I didn't even need to get a plastic bag in the first place because I brought my own canvas bag from home.

I then discussed how we can reduce our water and electricity usage. This was tougher concept to explain so I asked for the ASL Specialist's support on this. She explained that when you take a shower, you can't just sit in the shower for a long time while the water is running because it is a waste of water. She signed that in the future, if we waste water like that, then the lakes where we get our water will get smaller and smaller and dry up. I then chimed in saying it's the same thing when you brush your teeth, you must turn off the water. We then explained that electricity needed to be conserved as well, explaining that when you leave the room, you do not just leave the light on, but to be sure to turn it off! The specialist explained that if we leave lights on, it can be expensive! While I'm not sure the students completely the idea of why to conserve water and electricity, I think they know they should and have been exposed to this idea. If we had more time, we could get more deeply involved in discussing this.

We then moved on to discuss Reusing. This concept was a little easier to understand and more straight forward. I explained that you don't throw something away, but you reuse it. I again showed the reusable canvas shopping bag as well as the water bottle. I also showed the students that they can draw and color on both sides of the paper! I then showed an empty egg carton and asked the students if they had seen these at home. I showed them one and then I showed them the one I decorated and put my different colored buttons in. We explained this was great for storing and organizing little items like rings or jewelry. I showed them a shoe box and a tissue box and said these can be decorated and made to hold things as well. The students were very engaged in these props and the ideas of how to reuse things. I then discussed clothes; about how if I grow out of something do I throw it away? And one student signed "GIVE IT TO SOMEONE ELSE" and I had her repeat this with everyone watching! I said you can give it to someone you know, brother, sister, cousin, or donate it to a store. I then talked about having a bike that was too small for me, so I was just going to throw it away! They got all excited and were signing/yelling "NOOOOOOO! GIVE TO SOMEONE ELSE" showing me they understood this idea. During this discussion, the ASL specialist helped the students relate the things I was talking about and showing to the pocket chart with the 3 R's and asking them "WHICH R?" which they were able to communicate the right one. I also showed them a paper lunch bag with a bunch of plastic baggies and how that could be someone's lunch, but then showed them my reusable lunch bag along with my reusable snack baggies and sandwich bag to show how things can be reused again and again and again, thus reducing the trash.

We then said another way to reduce our trash and lesson trash that goes to landfills is by recycling. The bell rang! I will show a video on recycling on Monday, as it's a difficult concept to understand and definitely needs visual support.

The students were very engaged in this lesson and they showed a strong understanding of the 3 R's. This will be assessed next week.

June 9th

Today the students were very distracted and uninterested in the lesson. This could be for several reasons. One, today we unveiled the amazing mural that was created and dedicated in honor of a deaf student who passed away during the summer. This created much excitement on campus as well as some emotional discussions about this student's passing. While walking to ASL-D, one student kept signed "(Student's name, DIED), and then the other students were discussing what happened. Another student asked me if her heart stopped and if that's why she died. This discussion could very much be the reason why the students were not as engaged in learning about recycling. Also, 3 students were missing (leaving only 4) so that makes it more difficult. So after reviewing the 3 R's, we watched a video on recycling (Reading Rainbow) but again because there were so few students, not everyone will benefit from watching this great video. After that I showed them the worksheet of filling out all the ways we can reduce, reuse and recycle. We only had a few minutes left so this was a challenge and I know the students were struggling to remember what they learned about on Friday. I showed them some of the prompts and they somewhat remembered but I had to help them with exactly what we discussed. This is a challenge as well because many of the categories overlap so it's

impossible to write in just one category. One more student brought her journal today. That means 4 have completed the assignment and turned it in and 3 have not. This is very disappointing.

I went to Target today and purchased 7 reusable bags to give to my students as a way to help them educate others about the 3 R's and share with their families, as well as hopefully the parents will use them. I gave the bags to the students the second to last day of school and was unable to ask them if they shared them with their parents.

June 10th

Today was my last day with the students. I started the class with reviewing the essential vocabulary. The students were eager and excited to read the words on the document camera and sign them, even racing who could sign it first. While they were all engaged, this made it difficult to really assess which students knew the words and which ones were just copying their peers. I then pulled out the KWL chart and reminded them of what it meant and that we were going to need to fill out the last column. In hindsight, I should have referred to this more often just so they had a better understanding of its purpose. If I had the class full time, they would have seen KWL charts in the past and this wouldn't be such a new concept for them. I asked them what they learned and many replied that they learned about pollution. They struggled to tell me about the 3 R's- which was somewhat surprising considering we just learned about them, but at the same time, it's the last week of school and they aren't thinking too much about what they just learned. Also, we did not have time to review this concept of the 3 R's like we did with pollution so it was harder for them to recall. I then gave them the assessment papers and

asked if they remembered doing the same paper a few months ago. Several of them remembered very well. Due to time constraints, I did not require the students to write the words in, but rather they could just draw lines matching the English with the ASL. Those who worked faster (must keep in mind I have a 5th grader and a 1st grader in this same class so there is some discrepancy) could write out the words. One student greatly struggled with this and could not remember most of the words. I was not surprised by this as her reading skills are the lowest. After the vocabulary assessment, I gave them copies of the pollution search handout. Need to look to see how they did. When completed, I gave them each certificates that read “Kids Save Earth” a commitment to protecting their environment. I read the certificate promise and signed it in ASL to ensure they all understood and agreed. They then each signed their certificate and I gave them canvas bags to help do their part. One girl signed that she was going to put dolls in her bag, where I clarified that the bags were to help reduce trash and pollution by using them over and over again, perhaps by bringing them to the store. One student was not here today so I will try to see if I can have him take the assessment before the end of the week.

June 12th

Today I was able to get the last student to fill out the assessment form which he completed in no time. He did switch “LANDFILL” and “TRASH” which is totally appropriate because they have the same sign in them. He then got his certificate and canvas bag. He seemed proud to be getting the bag. I asked him what the bag was for and he looked at me and signed “SAVE EARTH”?? with a question- in which I said “YES, SAVE EARTH, BUT HOW? WHAT TO DO WITH BAG? And he signed “REUSE”

IX. Evaluation

My first goal “To enhance and expand student’s use of academic language in both ASL and English in regards to Science and Language Arts” was met. When looking at the pre and post assessments (see Appendix B), it is clear the students developed their vocabulary in both ASL and English. The vocabulary “Matching Skill” assessment included ten signs and English words and required students to match them appropriately. For the pre assessment, the student’s average score was 23%. The post assessment shows that student’s increased their scores to 77%. All seven students increased their score by 30% and six out of seven students increased their score by 50%. These assessment scores are evidence of their improvement in vocabulary in ASL and English.

Another example of how this goal was met is indicated in my field notes. During each lesson, the students would review the essential vocabulary. This was done in several ways, either by me showing the English word and they would sign it, or I would show the word and students would take turns pointing to the sign on the “ASL Wall,” or I would point to a sign on the “ASL Wall” and they would have to find the English equivalent. Throughout the curriculum, the students used these terms in the context of classroom discussion as well as small group work. This is a clear example of academic language being used appropriately and within the context of the conversation, not only knowing vocabulary.

As seen in Appendix B, the student’s worksheets on “Cause and Effect” was done together as a group. These worksheets indicate the students were able to understand this concept while discussing “The Lorax.”

When looking at the student's Venn diagram work samples, it is clear that they understood the concept of comparing and finding similarities and differences. While several students wrote on the wrong side of the Venn, I feel this is because it was not clear to them the differences between the two sides as they both had the same sign on the top of "DIFFERENT" and it was not clear if it meant the book or the movie. The challenge with this assessment is that student's greatly struggled to write in English what they noticed. This particular group of students was fluent in ASL but struggle when it comes to English. This was evident when working on anything where they had to write independently.

The students demonstrated an understanding of cause and effect as well as comparing and finding similarities and differences which indicates a growth in academic language.

My second goal, "To encourage students to think critically about their own energy use and make environmentally aware decisions" was met. During several observations, the students were making more environmentally aware decisions, which means they were thinking critically. This was seen while walking on campus and seeing several students pick up trash and signing to me and others, "POLLUTION." This was also seen when I observed a student picking up trash off the grass. I asked her why she was doing that and she signed "POLLUTION." I then asked, "But why pick up/clean pollution?" at which time she signed "BECAUSE PROTECT EARTH." This is a clear example of critical thinking and understanding the content and being environmentally aware.

While teaching a lesson on the “3 R’s” I brought the trash bin and recycle bin to the front of the classroom. I showed the students a small paper cup and pretended to drink water from it. Then I threw it away. I picked up a new cup and pretended to drink water from it and then throw it away. I did this showing each cup I used every day, Monday through Sunday and how every day I kept throwing them away. One student immediately signed “NO! USE- AGAIN!” indicating his understanding of how to reduce trash. I explained that yes, I could save my cup and use it again the next day or that I could use a metal water bottle. I then asked the students “Which makes more trash, the cups or the metal water bottle?” They all agreed the cups did.

Another observation occurred during a lesson while analyzing a bag of trash. We were looking at clothes and a towel in the trash. Several of the students understood that the towel should not be thrown away, but washed and donated or used again. For the clothes, I asked them that if I grow out of something, should I throw it away? One student signed “GIVE IT TO SOMEONE ELSE!” and I followed up by explaining that you can give it to someone you know, your brother, your sister, a cousin, or donate it to a store. When seeing a cell phone in the trash, a student indicated that it should not be in the trash but that it could be recycled.

At the end of the lesson on the “3 R’s” I informally assessed students by asking them, “Which is better for the environment, the plastic bag or the canvas bag? The paper cup or the water bottle? The paper lunch bag and plastic lunch baggies or the reusable lunch box and sandwich container?” All students responded with the more earth friendly solution. At the end of the curriculum, I gave each student a canvas bag to share with their families and use when going shopping. On the last day of school I saw several of

the students using the canvas bags to carry home their belongings. One student was absent this day so I gave him his canvas bag the following day. He seemed proud to be getting the bag. I asked him what the bag was for and he looked at me and signed “SAVE EARTH?” with a question in his tone. I assured him he was correct and said “YES, SAVE EARTH, BUT HOW? WHAT TO DO WITH BAG?” at which time he responded signed “TO REUSE.” These are all strong example of the student’s demonstrating their ability to think critically and make environmentally aware decisions.

This is also evident in the KWL chart. The “Know” column of this chart indicated that the students knew very little about protecting the environment, if anything at all. However, the “Learn” column indicates how much knowledge they acquired. As seen in Appendix B, what the students contributed to the “Learn” column included, “Recycle factory, air pollution makes people sick, turtle thinks trash looks like food and will eat it and get sick, don’t throw away trash in the drain because it will arrive in the ocean, the Once-ler cuts down trees then animals become sick (no fruit), separate trash for recycle, the 3R’s- Reduce, Reuse, Recycle.” This wealth of topics and information indicates the students understanding of environmental issues as well as how to make more environmentally aware decisions and to think critically.

Whether the third goal which reads, “To inspire students to discuss environmental issues with classmates, friends, and family to educate them in how they can individually make a difference to have a greener planet.” was met. This was observed both inside and outside the classroom when the students would share with each other about where they noticed pollution, whether it be pictures in a book or trash on the ground. During a

lesson on “Reusing” there was a lively discussion about when and how to reuse specific items. While analyzing trash and looking at the harm plastic bags can cause when thrown away, one student shared her own experiences of how her family reuses plastic bags.

The final goal, “Students will contribute to the school by making “Going Green” posters to display on campus, teaching other students and faculty about how to make environmentally aware decisions” was partially met. While we did not have time to create posters, the students were able to teach other students and faculty about how to make environmentally aware decisions. This evidence can be seen in the goals number 2 and 3.

X. Conclusion

Writing and implementing a curriculum for Deaf learners has been challenging yet gratifying. Looking back on the whole process, I have learned that the most arduous tasks can be the most rewarding. Researching and being able to use learning theories to create a curriculum and then having the opportunity to implement that curriculum is not something to be taken for granted. Teaching students about something I am passionate about, Environmental Education, made the whole experience that much more enjoyable. Of course there were challenges that were out of my control, one being time constraints. I would have liked to teach the curriculum at the beginning of the year allowing ample time for all lessons. I would have also preferred to teach the curriculum to my full-time class which would allow me to incorporate Environmental Education in several classroom activities.

This project contributed to my overall development as a bilingual teacher in Deaf and Hard of Hearing classrooms in that I learned flexibility is key. As a teacher, I must be able to be flexible and willing to change and modify lessons as I go. Using formative assessments allowed me to modify my lessons to match my student's needs. I learned that using technology is an important tool in allowing my students visual needs to be met. This project also contributed to my development as a bilingual teacher in that it allowed me to create and refer to an "ASL Wall." The "ASL Wall" allowed the students to practice and learn essential vocabulary and academic language in ASL. This helped valorize the student's natural language and allowed them to make connections to the English. I am grateful for my experience in writing a curriculum and having the opportunity to teach it to Deaf students.

Appendix A – Curriculum and Materials

Name _____

Matching Skill

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

_____		recycle		_____
_____		pollution	reduce	_____
_____		reuse		_____
_____		environment	earth	_____
_____		landfill		_____
_____		incinerator	trash	_____
_____		cherish		_____

Figure 1: Pre and Post Vocabulary Assessment

Pollution Scene

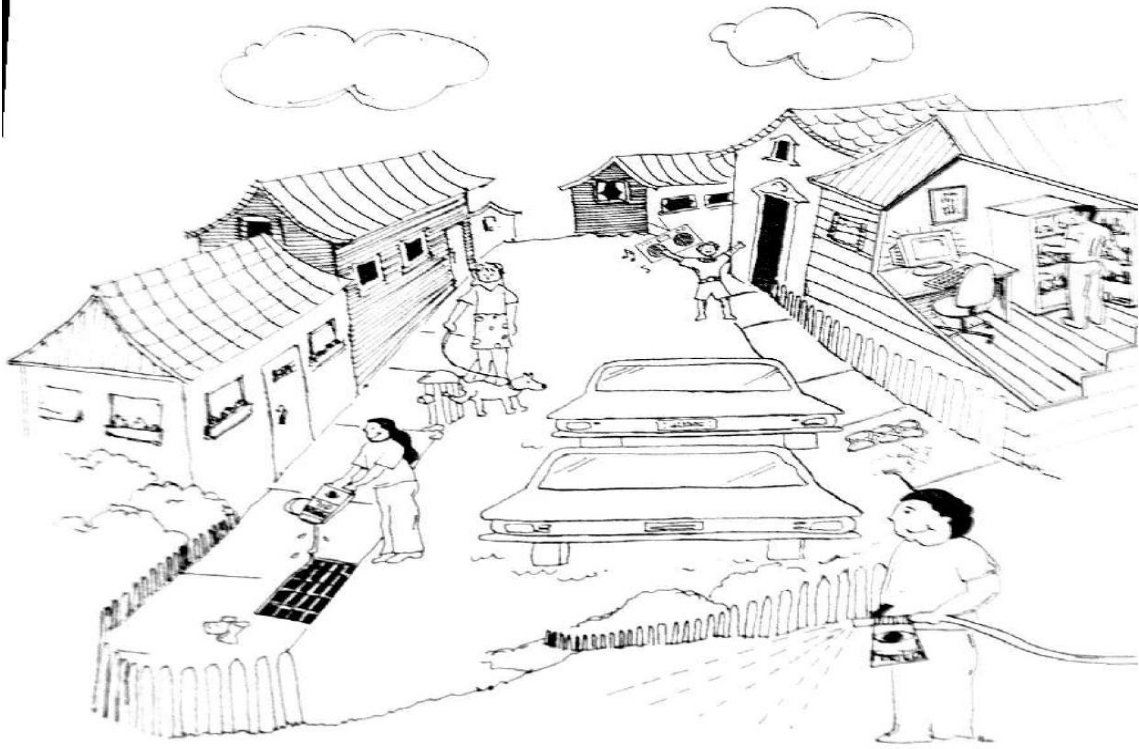


Figure 2: Pre and Post Assessment- Pollution Search

Project Learning Tree (2009)



Figure 3: Curriculum ASL and English Vocabulary



Figure 4: ASL Wall



Figure 4: ASL Wall, cont.

Unit 1- Lesson 1 Lesson Plan

Unit # 1 Lesson # 1**Lesson Title: “The Lorax” Sign-Aloud**

Description: Teacher will sign a “read-aloud” of The Lorax” followed by a group discussion.

Content Standards:**Common Core Standards- Language Arts****Anchor Standards- Reading**

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

Anchor Standards- Writing

3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

Anchor Standards- Speaking and Listening

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.

ELA Common Core- Kindergarten

RL K 10. Actively engage in group reading activities with purpose and understanding.

Curriculum Goals Addressed:

- To enhance and expand student's use of academic language in both ASL and English in regards to Science and Language Arts.
- To inspire students to discuss environmental issues with classmates, friends, and family to educate them in how they can individually make a difference to have a greener planet.

Lesson Objective: As a group, students will read “The Lorax” and engage in discussion about the book and when done, complete the “cause / effect” student worksheet.

Language Objective: Given vocabulary and teacher support, students will learn the signs “REASON” and “EFFECT” and “HAPPEN” to represent cause and effect to describe parts of the story and will write in English the effects of specific causes in the book as measured by student worksheet.

Materials/Preparation:

- “The Lorax” by Dr. Seuss
- Cause and Effect graphic organizer
- Science Journal
- Pencils and crayons
- ASL vocab cards “REASON” , “EFFECT” and “HAPPEN”
- Word Bank with words and pictures- Once-ler, thneeds, The Lorax, Truffula tuft, Swomee-Swans, Brown Bar-ba-loots, Humming-Fish, Gluppity-Gupp and Shcloppity-Scholpp (pollution)

Step by Step Guide

Introduction:

1. To engage the students, show students the book and ask if anyone has read this book or seen the movie before. If they have, ask what they remember. Do a picture walk of the book to build students curiosity.

Procedure:

2. Explain that the book has several examples of “Cause and Effect” and model what this looks like. Tell the students to look out for Cause/Effect situations during the read aloud.

2. Begin reading The Lorax with the class. Discuss with students about non-sense words and ask them to guess what they think they mean. As a group, come up with signs for these words. ie.

Once-ler, thneeds, The Lorax, Truffula tuft, Swomee-Swans, Brown Bar-ba-loots, Humming-Fish, Gluppity-Gupp and Shcloppity-Scholpp (pollution)- put in Word Bank.

3. While reading, stop along the way and ask students for their predictions about what might happen next, emphasizing cause/effect situation. During reading, possible questions to ask:

- Why did the Once-ler need to make so many thneeds?

(The Once-ler had a lot of demand for his thneeds- everyone wanted one, and he was making a lot of money.)

- What was the Lorax trying to tell the Once-ler? Did they agree or disagree?
(The Lorax, who speaks for the tress, was trying to warn the Once-ler that in his rush to make thneeds, he wasn't taking care of the environment or the animals that lived there. He asked the Once-ler to please think about the harm he was causing by making his thneeds.
They disagreed because the Once-ler wanted to make more thneeds and wasn't going to let the Lorax stop him.)
- Why did so many more Once-lers move to the area?
(Because the business got too big for just the original Once-ler to handle on his own, so he called his family for help.)
- How were the animals and birds affected when more Truffula trees were cut down?
(The trees were homes and food sources for the birds and animals in the forest. When the Truffula trees were cut down, their habitat was lost. They were no longer there to provide shade and fruit. The pollution from the factories also hurt the animals and as a result they left to find another place to call home.)
- How did the rapid population increase of the whole Once-ler family affect the environment?
(The Once-lers all needed places to live, roads to drive their cars, and a bigger factory to make thneeds. The Once-lers didn't care enough about the environment while they were developing the area, and because all of the rapid changes happened faster than the environment could renew itself, it became very dirty and polluted.
- What could the other Once-lers who moved there have done to keep it a nice place to live?
(Answers will vary- but may include: cleaning up after themselves and recycling their trash; they could have been mindful about their resource use and development, etc. If they had kept it a nice place to live, then the animals and birds wouldn't have had to leave their homes.
- Is it possible that the Once-ler could have kept producing thneeds and

making a profit without hurting the environment? What could he have done? (Answers will vary- but may include: the Once-ler could have replanted the Truffula trees as he cut them down; cut down the Truffula trees at a sustainable rate; build a factory that didn't create smog, etc.

- What did the Lorax mean when he left the message “Unless” for the Once-ler?
(The Lorax meant that unless someone cares about the situation, nothing will improve. The Once-ler didn't care about harming the land, birds, water and animals while cutting down the Truffula trees. And as a result, he cut them all down and destroyed the environment.
- In the beginning of the book, the Once-ler claimed that thneeds were something everyone needed. Do you think that they were really something that everyone needed? Why or why not? Did the Once-ler change his mind about the thneed being the thing that everyone needs at the end of the book? (A thneed was something that everyone wanted, even though they probably didn't really need it. At the end of the book, the Once-ler tells the boy that the Truffula trees are really the things that everyone needs, and that they are the most important thing.
- Think about the imaginary land in “The Lorax” as it was before the Once-ler arrived. Did it remind you of any real place you have seen? Now think about how it looked after the population explosion changed the environment. Did it remind you of any real place you have seen?

4. After reading the book, pass out the “Cause/Effect” student worksheet. Model the first situation on the worksheet by finding it in the book and discussing the effect in ASL. Write down the effect in English on worksheet. Allow students to work together (or work as a whole group) in finding the other cause/effect situations. Explain to the students what cause and effect means and how it is similar to the “If/Then” conditional that they learned about in Unit 1, Lesson 2 (“The Cat in the Hat Comes Back”).

Closure:

5. Bring students back on rug together for discussion. Ask students about:

- What the land in The Lorax would have looked like if the Once-ler never came or only made one thneed.

- What would have happened if the last Truffula tree was not cut down?
- What might have happened if the Once-ler did not give the boy the last Truffula Tree seed?

6. Explain to students that they will now do an activity in their “Science Journals”.

Science Journal Prompt: Throughout this story, Dr. Seuss only lets us see parts of the Once-ler (his eyes and hands). Imagine what you think the Once-ler looks like, and draw or describe what you imagine him to look like. If desired, can write why you imagined him to look this way.

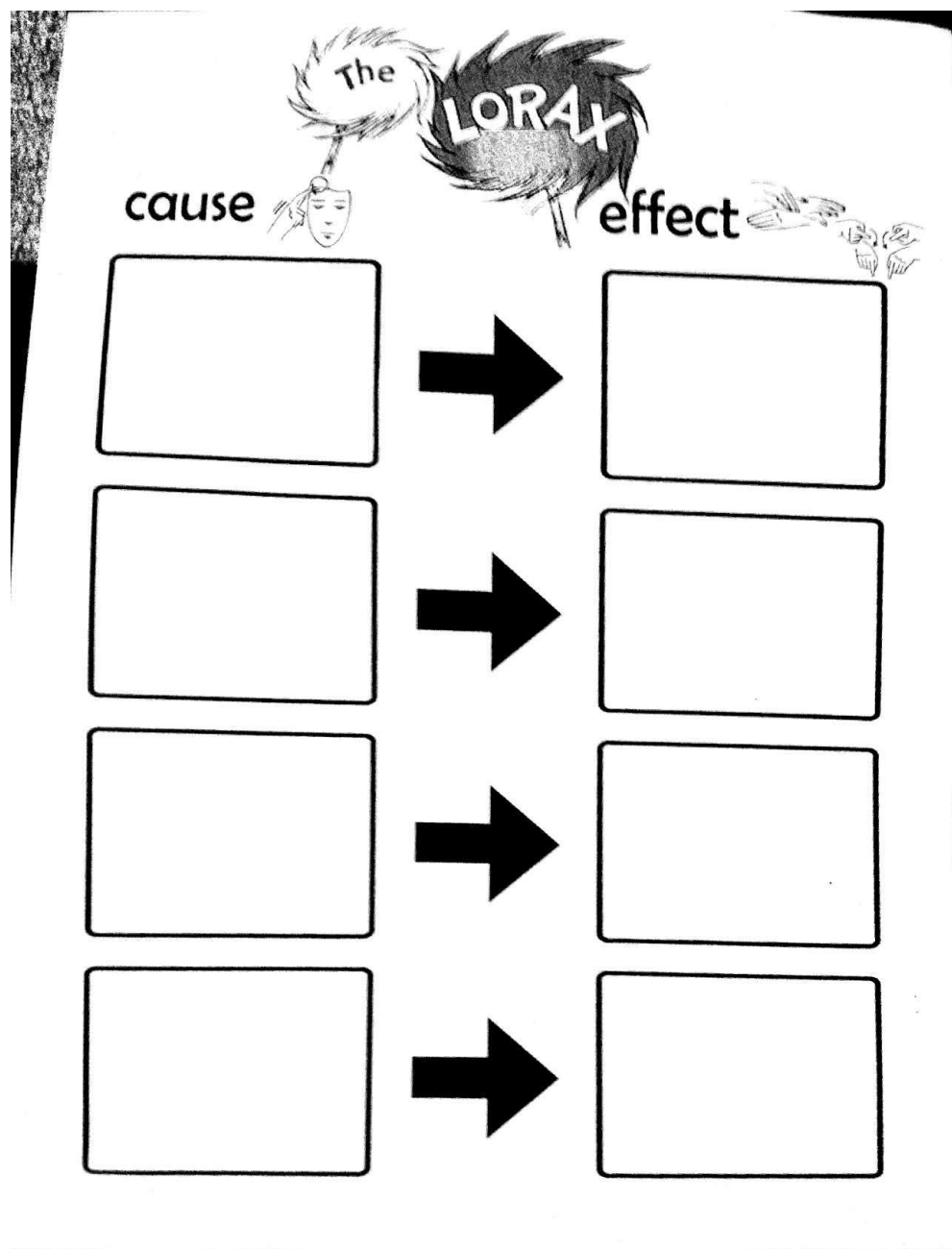


Figure 5: Cause and Effect Graphic Organizer

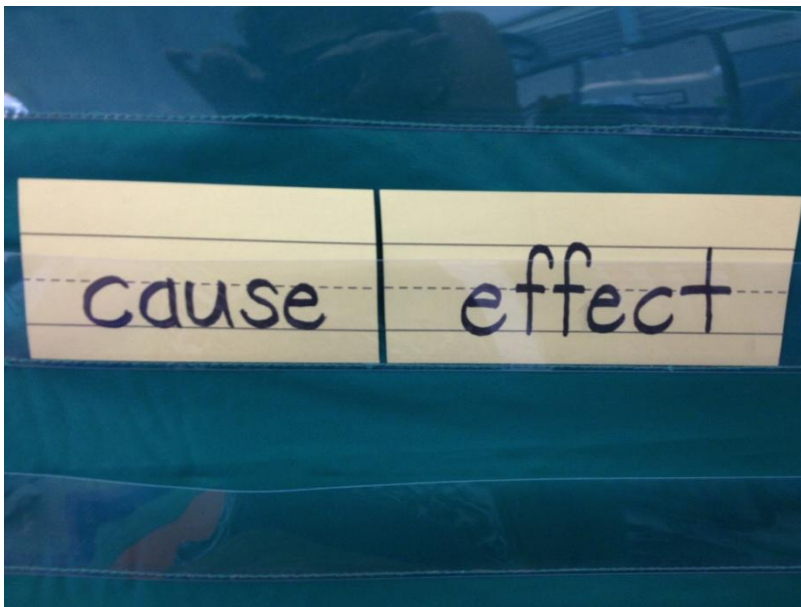


Figure 6: ASL and English Vocabulary

Unit 1- Lesson 2 Lesson Plan

Unit # 1 Lesson #2**Lesson Title: “The Lorax” the movie****Description: Students will watch movie and compare and contrast with the book.****Content Standards:**

Common Core Anchor Standards- Reading

7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

9. Analyze how two or more texts address similar themes or topics in order to build knowledge to compare the approaches the authors take.

Anchor Standards- Listening and Speaking

2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

L.S.K. 1 Participates in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and large groups.

Curriculum Goals Addressed:

- To enhance and expand student's use of academic language in both ASL and English in regards to Science and Language Arts.
- To encourage students to think critically about their own energy use and how it effects the environment.

Lesson Objective: Students will watch the movie and engage in a discussion about the similarities and differences between the movie and the book as measured by teacher observation and completed Venn diagram work samples.**Language Objective:** Given the ASL signs “SAME” and “DIFFERENT”, students will discuss and then write words or sentences about the book and movie as measured by teacher observation and work samples.**Materials/Preparation:**

- “The Lorax” the movie (with closed captions)
- Venn diagram graphic organizer student worksheet
- Pencils

- ASL vocab cards for “COMPARE” , “SAME” and “DIFFERENT”
- Vocabulary cards from Unit 1, Lesson 1- Read Aloud

Step by Step Guide

Introduction:

1. To engage the students, ask the students to tell you what they remember from the book or use the questions you developed from the previous lessons to quickly review the book “The Lorax” and explain that now we will be watching the movie. Explain to students that they must pay close attention and see if they notice any differences or similarities to the book.

2. Introduce the Venn diagram and model how students will use it while watching the movie.

Procedure:

3. Watch the movie, pausing occasionally for discussion and check for understanding. Pause the movie and discuss any similarities or differences from the book and model writing it on the Venn diagram. Continue to watch movie and pause when appropriate and have students provide examples of when they notice something similar or different from the book.

Closure:

4. Discuss with students about the similarities and differences between the book and movie. Ask students which do they prefer and why?

5. Complete Venn diagram as a group.

6. Pass out Science Journals and explain they will be writing in their journals about their own feelings. Write prompt on board-

Science Journal Prompt: How would you feel if you were one of the animals or trees in the story and what you would want to be done?

Assessments:

Use “Assessment Checklist” to evaluate student involvement.

Name	Student engaged	Student Wrote 3 Similarities	Student wrote 3
------	-----------------	------------------------------	-----------------

differences	in discussion	on Venn diagram	on Venn
diagram			
Student A			
Student B			
Student C			
Student D			

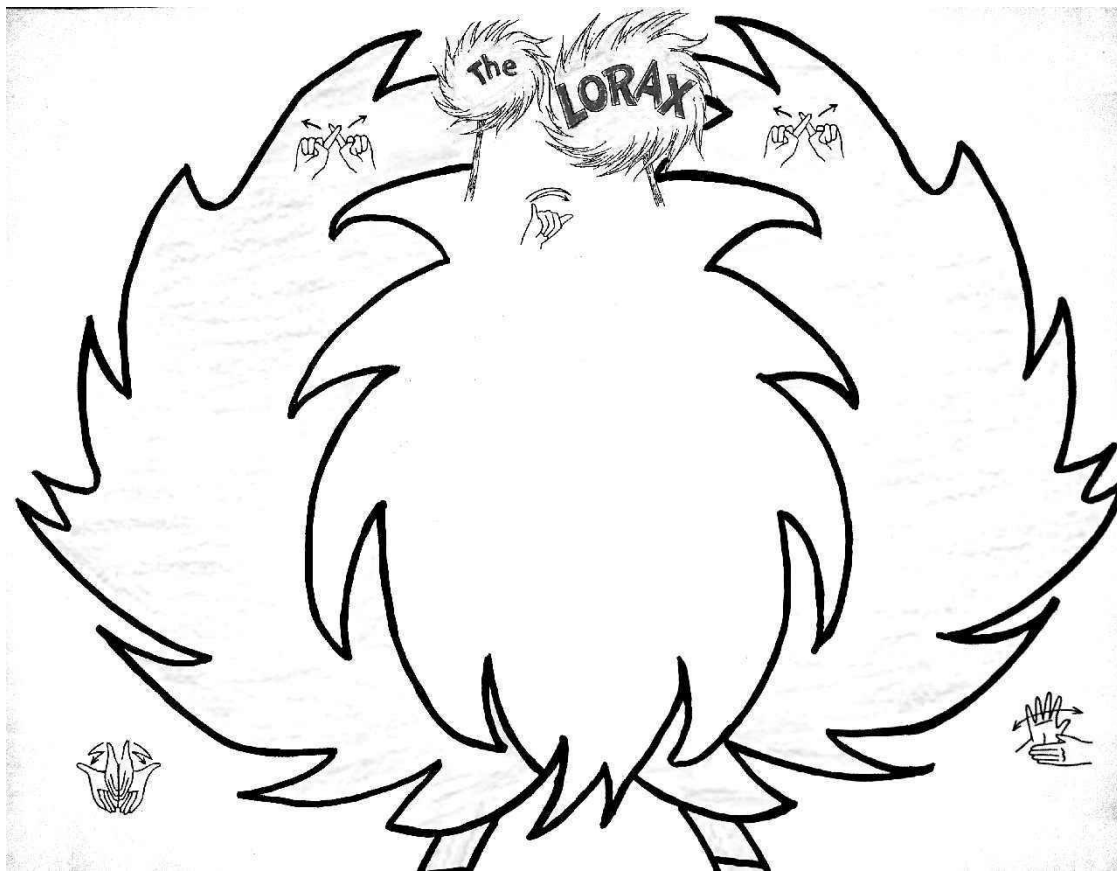


Figure 7: Venn Diagram, Compare and Contrast



Figure 8: Compare and Contrast book with movie- ASL and English Vocabulary Cards



Figure 9: ASL and English Vocabulary Cards for Units 1 and 2

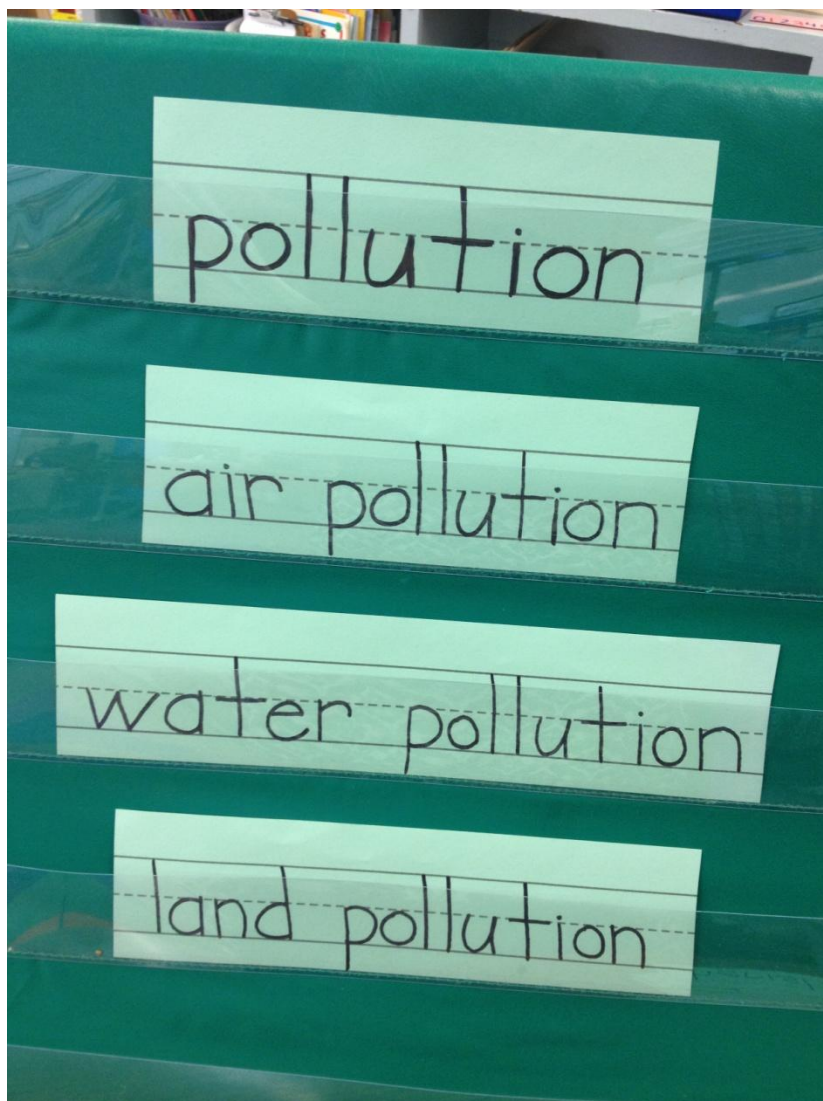


Figure 9: ASL and English Vocabulary Cards for Units 1 and 2, cont.



Figure 10: Unit 1- "The Lorax" ASL and English Vocabulary for Younger Students

Unit 1 – Lesson 3 Lesson Plan

Unit # 1 Lesson # 3 Lesson Title: Student Performance of “The Lorax” Description: Students will act out the story of “The Lorax” in ASL.
Content Standards: CCSS.ELA-Literacy RL.4.7 Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.
Curriculum Goals Addressed: To inspire students to discuss environmental issues with classmates, friends, and family to educate them in how they can individually make a difference to have a greener planet.
Lesson Objective: Students will act out the story of “The Lorax” in ASL which will be recorded for viewing. Students will analyze ASL sign choice and make any necessary changes and have an opportunity to perform again in front of a live audience as measured by teacher observation and video work sample. Language Objective: Given ASL vocabulary for words in the book “The Lorax,” students will perform the story while being recorded and in front of a live audience.
Materials/Preparation: • Paper and pencils • Video camera and TV or computer to watch video on • Paper-made costumes of characters including the Lorax, the Once-ler, the Brown Bar-ba-loots, Swomee-Swans, Humming-Fish, the boy and the Truffula Trees
Step by Step Guide Introduction: 1. To engage students, ask them what they remember from the book and/or movie. Explain to them that today they will be able to be actors and perform the

story while being recorded and then in front of a live audience. (Students can perform in front of other classes.)

Procedure:

2. Have students audition for who will be what characters (the Lorax, the Once-ler, the Brown Bar-ba-loots, Swomee-Swans, Humming-Fish, the boy, the Truffula Trees and a narrator)

3. Show the students the script and discuss as a group if there are any changes the students would like to make. Make changes if desired, and have students practice acting it out.

4. Using the paper costumes, have students act out the story while recording.

5. Have students sit down and watch the video and analyze what they liked and didn't like and what they would do differently. Allow students to have discussion about sign choices and if they would like to change anything.

6. Make any changes and then have students perform again in front of live audience.

Closure: Ask students what their favorite part of the performance was and why. Ask students if they felt they helped their fellow students learn about pollution and if so, what did they learn.

Unit 2- Lesson 1 Lesson Plan

Unit # 2 Lesson #1 Part #1**Lesson Title: Pollution Search**

Description: Students will take a closer look at pollution by going on a “pollution search” and discover what pollution is, what its sources are, and what people can do to reduce it.

*Alternative- if no pollution in the area, students can look through newspapers or magazines to find pollution or teacher can bookmark pictures on the internet that show various types of pollution and have students categorize the pictures according to the type of pollution.

Content Standards:

Common Core – Anchor Standards – Speaking and Listening

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.

Common Core – Kindergarten- Writing

W.K. 2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

W. K. 8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

Curriculum Goals Addressed:

- To motivate students to make environmentally aware decisions
- To enhance and expand student’s use of academic language in both ASL and English in regards to Science and Language Arts.
- To inspire students to discuss environmental issues with classmates, friends and family to educate them in how they can individually make a difference to have a greener planet.

Lesson Objective: Students will identify forms of pollution and describe the effects that various pollutants can have on people, wildlife and plants as measured by teacher observation and student works samples.

Language Objective: Given vocabulary in ASL, students will describe different types of pollutants using ASL as measured by teacher observation.

Materials/Preparation:

- Plan to take students around campus to look for pollution- explore area first to ensure it is safe to bring children.
- Poster board or chart paper
- Scissors
- Pencil and paper
- Post-its
- Magazines and newspapers
- Vocabulary cards with ASL, English (and if applicable picture of object)

Step by Step Guide

Introduction:

1. To engage students, show a movie about pollution, or show pictures of two scenes, one with lots of pollution and one that is very clean without any pollution. Ask students what they notice in the pictures.

2. Ask students to describe (in ASL) what life would be like without clean air or clean water.

3. Ask students to list as many things as they can that might contaminate, or make unsafe, the air we breathe or the water we drink. List their ideas where everyone can see. Ask students if they know a word or words people use to describe the types of things they've listed. ("pollutants" or "pollution") Discuss what "pollution" means.

4. Have students take out a piece of paper and create a data chart with the three columns (Land, Air, Water).

Procedure:

5. Take students on a walk to look for and record pollution on their data charts. During your walk, have students identify pollution on land (litter, animal wastes), in the air (car exhaust, smoke from chimneys), and in water (pollutants that could wash into storm drains).

As students spot different examples-

- Have them explain how each one could pollute and what kinds of plants or

animals (including people) could be affected by each one?

- Ask students what might have caused each form of pollution. For example, how did the piece of litter get on the ground? How did oil get on the pavement?

6. Bring students back inside classroom and have students go over their data and check to see that they have at least one example for each category (Land, Air, Water). If need be, students can continue their search by looking through magazines of other examples of pollution.

7. Have students draw pictures of the pollution they identified on the walk (draw on post-its, making it easier to stick on chart and move around if need be). Have students take turns placing the pictures they drew on the chart in the correct pollution category. Write what the pollutant is below the picture (help with English development).

Closure:

7. As a group, review and discuss the finished chart. Questions that can be asked-

- Do any of the same items appear in different categories? If so, do you agree with where those items are placed? Can something pollute two different things, such as air and water? Or land and water? How?
- Can people always see, hear or smell pollution?

Which examples on the chart might affect people's health? Which ones might affect plants or animals? In what ways?

- Point to each example on the chart and ask students how that pollution might be prevented. (ex. To prevent litter, people could dispose of their trash properly, to prevent oil leaks, they could keep cars in good running order, etc.)

9. Explain to students that they will have a "Science Journal" where they will write in after each lesson. Pass out journals and write the prompt on the board. Using your own "Teacher Science Journal" model to the students how to do the activity correctly.

Science Journal Prompt: Find examples of pollution in magazines, newspapers or even current events (or draw a picture) and cut and glue these pictures into a page in your journal. Then write a sentence or two about the pollution represented in their pictures.

*Depending on student level- teacher can provide sentence frames to scaffold instruction. This may include-

“This scene/picture/drawing shows air/land/water pollution. This kind of pollution affects animals/plants/ humans. We can prevent this kind of pollution by _____.”

Assessments:

- Pass out “Pollution Scene” handout. Have students circle items in picture that are potential sources of pollution. On the back, students should explain how each item they circles might cause pollution what can be done to prevent this form or pollution.
- Use rubric and record students’ performance in record book.

Rubric Example-

Points

- | | |
|---|--|
| 5 | Student circled minimum of 4 sources of pollution and wrote about how to prevent min. of 4 pollutants. |
| 4 | Student circled minimum of 4 sources of pollution and wrote about how to prevent min. of 3 pollutants. |
| 3 | Student circled min. of 3 sources of pollution and wrote about how to prevent 2 pollutants. |
| 2 | Student circled 2 sources and wrote about 1 way to prevent pollutants. |
| 1 | Student circled 1 source of pollution and did not write about a way to prevent pollutants. |
| 0 | Student did not circle any pollutants or write about any ways to prevent pollutants. |

Unit 2- Lesson 1, Part 2

Unit # 2 Lesson # 1 Part # 2 Lesson Title: “The Cat in the Hat Comes Back” by Dr. Seuss
Content Standards: Common Core Standards- Language Arts Anchor Standards- Reading 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. Anchor Standards- Writing 2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
Curriculum Goals Addressed: • To enhance and expand student's use of academic language in both ASL and English in regards to Science and Language Arts. • To inspire students to discuss environmental issues with classmates, friends, and family to educate them in how they can individually make a difference to have a greener planet.
Lesson Objective: After reading the book as a group, students will discuss the causes and effects of pollution and the ways in which they can personally lesson it or clean it up as measured by teacher observation and student work samples. Language Objective: English- Given a graphic organizer, students will give an example of at least one cause and effect of pollution as measured by student work samples. ASL- Given a model and explanation of what an ASL conditional sentence looks like, students will practice signing the sentence they used on their graphic organizer as measured by teacher observation.
Materials/Preparation: • Book, “The Cat in the Hat Comes Back” by Dr. Seuss • Graphic organizer handout “If _____ then _____.”
Step by Step Guide

Introduction:

1. Tell students that after learning about pollution, we will read a book about pollution.

Procedure:

2. Read the book aloud to students. (If not a Native Signer, it can be helpful to ask a Native Signer to show you how to sign some parts of the book as they can be difficult for someone who's second language is ASL.)

3. Tell students that besides being funny, the story can teach us something about people's attitude toward pollution. Questions to ask students-

- What represented pollution in the story? (the pink stuff)
- Where did the pollution come from? (the cat)
- How did the cat deal with the pollution first? (moved it from one place to another)
- Did this solve the problem? (no)
- Who did the "big cat" call on to help him solve the problem? (little cats)
- What did the little cats do? (broke the pink stuff into little pieces and spread it around)
- Did this help? (no)
- Who finally cleaned up the mess? (little cat "Z")
- Could we see him? (no)
- What did he use to clean it up? (a "voom")
- Could we see it? (no)
- Do we know how it works? (no, just that it "cleans up anything")
- Ask the students if they can compare this story to any real life situation.

LORAX ACTIVITY

Discuss how this story can teach us something about people's attitude toward pollution. Ask students to describe the causes and effects of pollution on the planet. Write on the board an example of "If (specific type of pollution), then (humans, plants, animals will.....)."

Explain to students what a conditional sentence looks like in ASL, "If... then" emphasizing the facial grammar involved- "IF (eye brows up), THEN"

Closure:

4. Close by asking students what they can do today to make their world a cleaner,

safer, and healthier place instead of waiting for someone else to clean up their messes. Encourage them to learn more about what causes different types of pollution and what they can do to lessen it or clean it up.

5. Pass out Graphic organizer “If _____ then _____.” And have students fill out at least one cause and effect of pollution. If student finishes one, give students another handout and have them write about another pollutant. Have students take turns signing in ASL the conditional sentence they used in the graphic organizer.

Unit 2- Lesson 2 Lesson Plan

Unit # 2 Lesson # 2**Lesson Title: “Who Polluted the River?”**

Description: Students will participate in an interactive story and learn how, as human populations have increased and land uses have changed, many of our rivers have become polluted. This example demonstrates that just as we each contribute to the problem, we can also each be part of the solution.

Content Standards:

Common Core- Speaking and Listening

L.S. 1 Participates in collaborative conversations with diverse partners and texts with peers and adults in small and larger groups.

L.S. 2. Confirm understanding of a text “read” (signed) aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.

Curriculum Goals Addressed:

To encourage students to think critically about their own energy use and how it effects the environment.

Lesson Objective: Students will be able to list three ways to prevent and clean up water pollution as measured by teacher observation and student work samples.

Language Objective: Given sentence frames, students will identify at least three ways to prevent and clean up water pollution as measured by student work samples in Science Journal.

Materials:

- Sentence frames
- Science journals
- A clear gallon jar of water
- A plastic film canister for each student, with label taped to it (canisters are often available for free at film processing stores)
- One cut-out image of character in story from those provided for each student
- Plastic fish toy (optional)
- Large strainer or colander

- Canister ingredients (all are safe for students to handle):

Dry Elements

- Trees: dry, crumbled leaves
- Building site: $\frac{1}{2}$ tsp. dry clay soil (not sand)
- Farmer: $\frac{1}{4}$ tsp. baking soda
- Family picnic: Assorted litter (small shreds of paper, pieces of plastic grocery bags, etc.)
- People fishing: Tangle of fishing line (or dental floss)

Wet Elements

- Barnyard: $\frac{1}{2}$ tsp. brown liquid, a few crystals of instant coffee mixed with water or food color mix
- Factory: $\frac{1}{4}$ tsp. of diluted red food coloring
- Cars/Drivers; $\frac{1}{4}$ tsp. of vegetable oil
- Washing the car: $\frac{1}{2}$ canister of soapy water
- Motorboat: $\frac{1}{4}$ tsp. vegetable oil

Preparation:

- Prepare and label the film canisters as described in the materials section, enough for each student to have at least one canister.
- Fill a clear, wide-mouthed gallon container with water nearly to the top. Place it near where you will be reading the story. (If using a fish toy, put it in the water now. As one of the questions that appear throughout the story, point to the fish and ask “How do you think the fish feels?”)
- Set up the labeled canisters within easy reach of where you’ll be facilitating the activity, lined up in the order in which they are to go into the water.

Step by Step Guide

Introduction:

1. To engage students, explain that you will sign a story about the river, (insert the name of a river in your area, if you wish) and that each of the students will play a part in the story.

2. Distribute one cut-out image to each student (i.e. “Factories” “Motorboats” etc.). Show the label of the image and the ASL sign of the image.

[* Every student should get an image and, later, a canister. Unless your class is

very small, this will mean you need multiples of some canisters. Just don't have more than one barnyard canister (coffee), as two doses of it will make the water too dark to notice the progression of pollution. If your class is less than 10 students, some students will get two images and two canisters.]

3. Explain to students that they must watch the story closely, and that when they see the name of the item pictured on the cut-out you've given them, they should come up to you and get the matching canister, open it, and empty its contents into the water, which represents the river. Model what this would look like.

Procedure:

4. Read the "Interactive Story: Who Polluted the River?" (see below) Pause after each question in the story, allowing students time to think and respond. During the interactive story, students will take turns coming to the front and emptying the canisters of the label they each represent.

5. After reading the entire story, refer to the discussion questions below.

Closure:

6. Discussion questions-

- Who polluted the river?
(everyone)
- Ask the students to think about the pollution contained in your canister and what each of us could do to keep the river clean by making sure these kinds of pollution don't get into it in the first place?
(Possible Answers- biking or walking instead of driving, using water carefully, picking up litter so it doesn't end up in our fresh water supply)
- Ask- How could we clean up the water in the jar- after all, everything has to go somewhere?
(Possible answers- solids can be strained out or filters like cotton can be helpful in removing the solids)
- Ask- is it easier to prevent pollution, or to clean it up later?
(have students explain their ideas)

Science Journal Activity-

Pass out Science Journals and have students write 3 ways to prevent and/or clean

up water pollution. If necessary, provide sentence frame-

One way to prevent water pollution is _____.

Water pollution can be cleaned up by _____.

Another way to prevent water pollution is _____.

Assessments: Evidence of Performance – checklist

participated in activity participated in discussion wrote in
Science Journal

Student A -

Student B-

Student C-

Interactive Story: Who Polluted the River?

There was a time many years ago when our land was very wild. This was a time before roads and cars. Only a small number of people lived here then. These native people depended on nature for many of the things they needed to survive, but they lived simply and didn't change the natural surroundings too much. The people hunted in the forests, found food in the swamps, and caught fish in the river. *[Insert the name of a local river.]*

The beautiful and sparkling river was home to fish and other wildlife.

Question: Imagine that the container of water in front of you was taken from the river a long, long time ago. Describe how it looks to you. Would you drink this water? Eat fish that came from it? Swim in it?

Eventually, more people traveled to this land from across the ocean. They found rich soil for farming, forests full of wildlife, and a river that provided plenty of food and water. It was a perfect place to live.

Question: How do you think the new people used the river?

(Possible answers: for water to drink, cook with, bathe and wash clothes in; to catch fish from; to go boating on; to move supplies from place to place)

Question: Do we use the river the same way today? *(Answers will vary)*

The river has changed a lot since that time long ago.
This is the story of those changes.

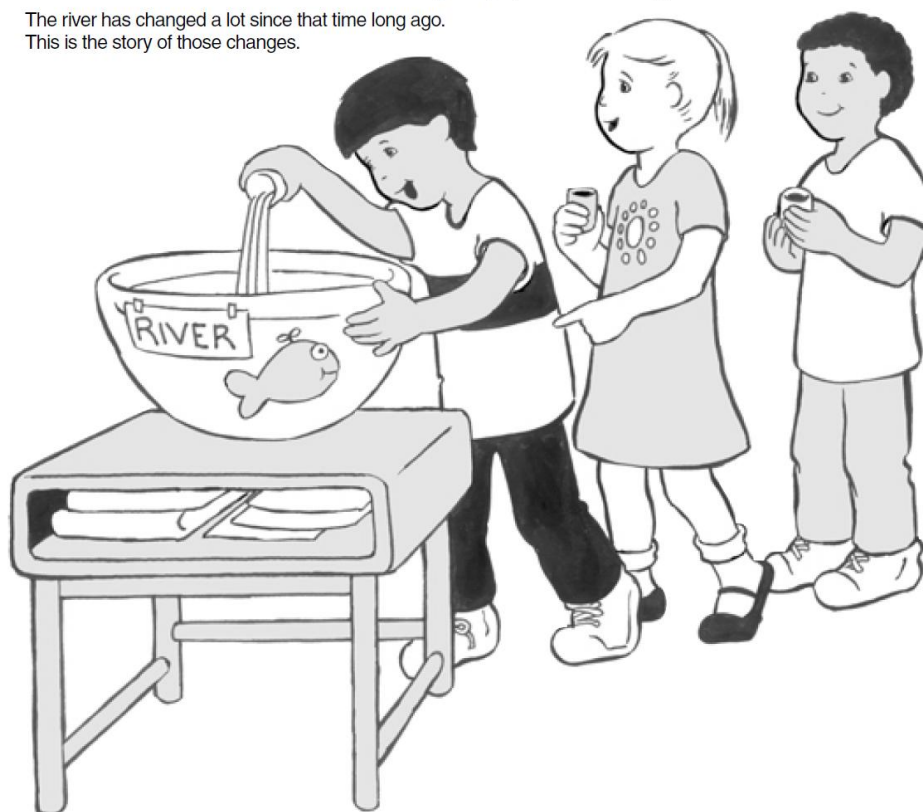


Figure 11: “Who Polluted the River?” Interactive Story and Labels
Population Connection (2013)

Listen for the name of what's pictured on your slip of paper. When you hear your picture named, walk up to the teacher, get the matching container, and dump what's inside into the river.

[NOTE: Be sure to stand to the side, so the whole class can see the bowl.]

Years went by, and once in a while there were big storms. Strong winds whipped through the **TREES** and blew leaves into the water.

More and more people moved to the area. Gradually, a city grew up around the river. People drained swamps and cut down forests to build houses, schools, churches, stores, roads, hospitals and many other buildings. Rains washed loose soil from these **BUILDING SITES** into the river.

Questions: Is this water safe to drink? [If the response is "no," ask if the river had leaves or soil in it when people long ago drank from it.] Would you swim in it? Is it safe for animals to drink and fish to swim in?

At first, the city was small. Upstream, **FARMERS** planted crops to feed all the people as the city grew. They used chemicals called fertilizers to make their crops grow faster. Some farmers kept pigs and other animals in **BARNYARDS**. As rainwater drained out of the fields and barnyard, it carried some of the fertilizers and manure into a little creek behind the farm. The creek flows into the river.

Question: Would you drink this water now? Would you swim in it? Go boating on it? Is it safe for fish and animals?

Now, the city along the river has grown to be one of the largest cities in the country. Many people live and work in and around the city. Many businesses provide services for the people. Several **FACTORIES** make things

that people want, like cars and furniture, but the factories leak paint and other chemicals into the river. These pollutants cause the fish to become sick.

As people move about in their busy days, they often drive from place to place. Traffic jams are a big problem for **DRIVERS** who take their cars to and from work. If a car is not taken good care of it might also leak oil or other fluids, which will be washed off the roads and into the river with the next rain.

A boy in the city is out **WASHING THE FAMILY CAR**. The soapy water rushes down the driveway into the storm drain by the curb; the storm drain empties into the river. The grease and grime on a car contains tar from the roads, very tiny bits of rubber from the wearing of the tires, and rust. If the boy had gone to a local car wash instead, the water would have been cleaned before it went back into the river or was recycled.

On nice days, many people head down to the river. Some zoom up and down the river in **MOTORBOATS** and don't notice that a little engine oil leaks into the water. The oil will not mix with the river water, but will float on the surface. It will coat the feathers of ducks or



other birds that paddle around on the water looking for food, making it harder for them to stay afloat or fly. Lots of people are having **FAMILY PICNICS** in the parks along the river, too. Some of these people have left trash on the shore. With the next storm, that trash will wash into the river. On the shore a **PERSON FISHING** snags a hook on a log. Instead of untangling it, the person fishing simply breaks off the snagged piece of the nylon fishing line and lets it fall into the river.

The land is no longer wild, and the river has changed a lot over the years.

This activity was originally developed by Hard Bargain Farm Environmental Center, Accokeek, MD.

Figure 11: "Who Polluted the River?" Interactive Story and Labels, cont.
Population Connection (2013)

Canister Labels

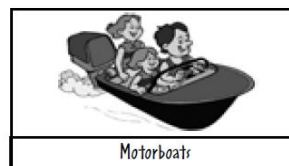
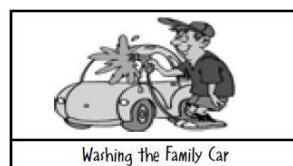
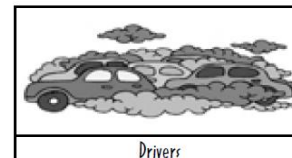
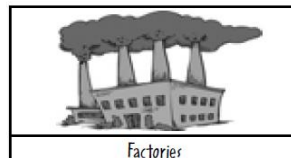
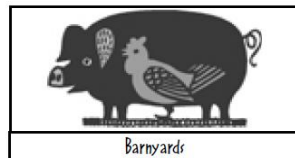
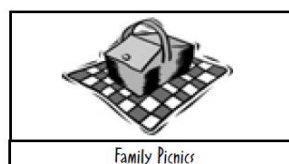
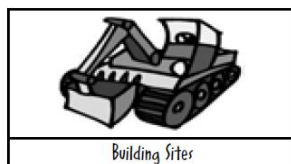
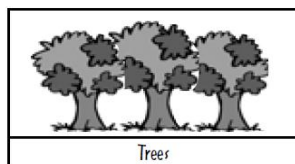


Figure 11: “Who Polluted the River?” Interactive Story and Labels, cont.
Population Connection (2013)

Character Nametags

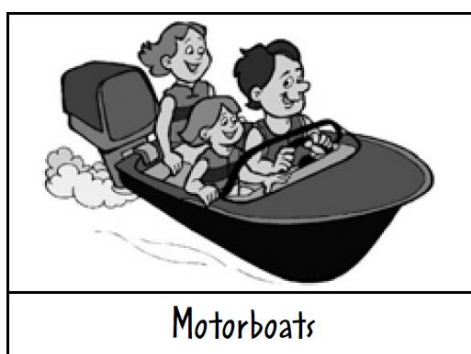
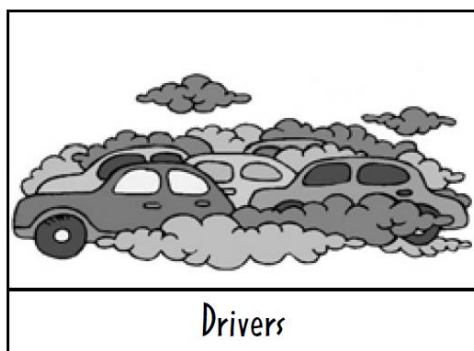
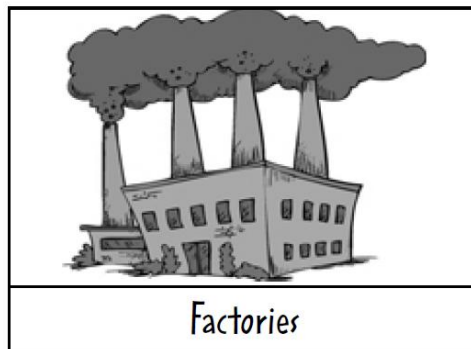
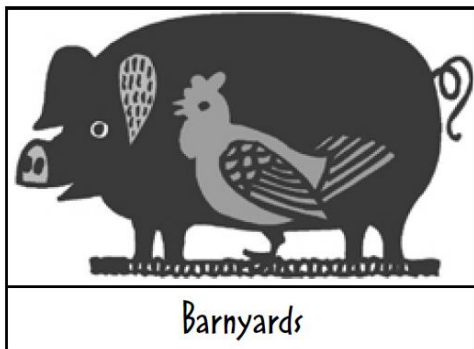


Figure 11: “Who Polluted the River?” Interactive Story and Labels, cont.
Population Connection (2013)

Character Nametags

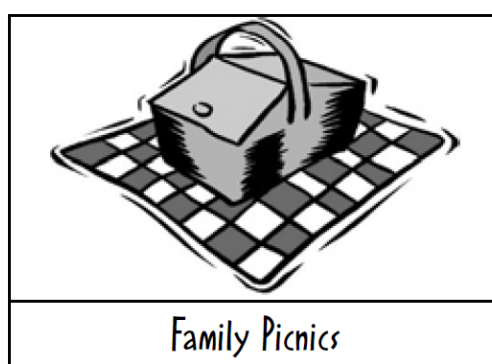
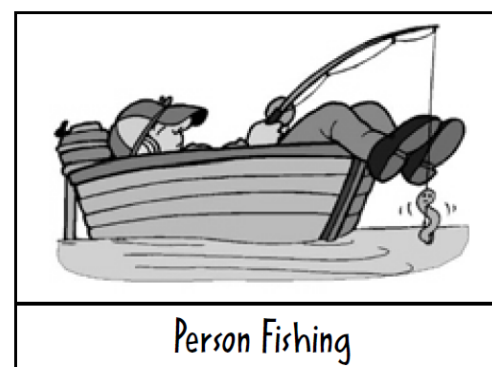
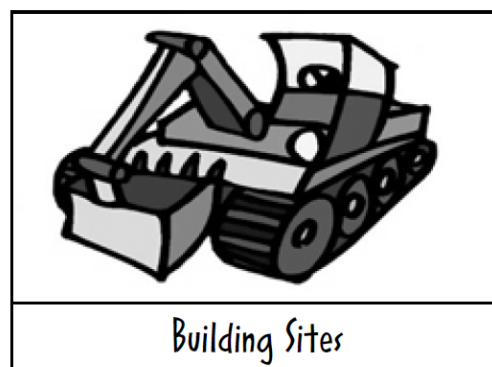
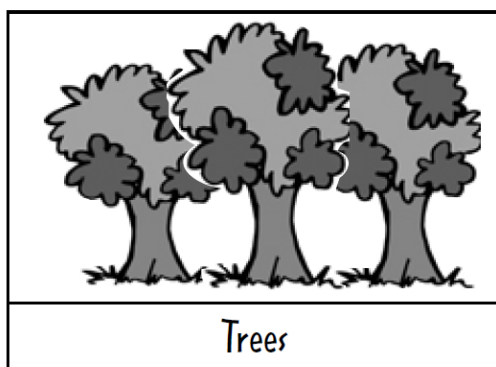


Figure 11: “Who Polluted the River?” Interactive Story and Labels, cont.
Population Connection (2013)

Unit 3- Lesson 1 Lesson Plan

Unit # 3 “How to Reduce, Reuse and Recycle Our Waste” Lesson # 1**Lesson Title: Trash Talk- What is Solid Waste and Where Does it Go?**

Description: Students will learn what solid waste is and will discuss the differently types of solid waste by analyzing the contents of a bag of garbage, as well as learning what happens to solid waste after it leaves their trashcan and will learn how the waste is disposed.

Content Standards:**Common Core- Anchor Standards- Reading**

1. Reading closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

Common Core – Anchor Standards – Speaking and Listening

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.

Science Standards for California**Investigation and Experimentation**

4. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- a. Observe common objects by using the five senses.
- d. Compare and sort common objects by one physical attribute (e.g., color, shape, texture, size, weight).

Curriculum Goals Addressed:

- To encourage students to think critically about their own energy use and how it effects the environment.
- To enhance and expand student's use of academic language in both ASL and English in regards to Science and Language Arts.
- To inspire students to discuss environmental issues with classmates, friends, and family to educate them in how they can individually make a difference to have a greener planet.

Lesson Objective: Students will analyze contents of a bag of garbage and learn how waste is disposed as measured by teacher observation of placing trash in categories on “What’s in our Garbage?” chart

Language Objective: Given ASL vocabulary, students will describe different kinds of trash and how it is disposed.

Materials/Preparation:

- Prior to teaching the lesson, the teacher will need to collect a clean bag of garbage. There should be enough items in the bag for each student plus several demonstration items. These items will need to come from a variety of origins (food, plastic, paper, glass, metal, clothing etc.) but be sure that there are no pieces in the bag that are sharp, dangerous, or could harm the students.
- Create a simple “What’s in our Garbage?” chart on chart paper with 5 categories (food, plastic, paper, glass, metal)
- “What’s in Our Trash?” graph picture
- “What Do You Put in Your Trashcan” worksheet
- “Let’s Talk Trash” assessment
- Vocab cards with English and ASL signs – WASTE, GARBAGE, TRASH, LANDFILL, INCINERATOR, FOOD, PLASTIC, PAPER, GLASS, METAL
- “Where Does the Garbage Go?” book by Paul Showers

Step by Step Guide

Introduction:

1. Engage students by showing the movie “Trash Disposal Journey into a Landfill” on youtube at <http://youtu.be/zjFBrRcTfic>. (5 mins) Discuss movie with students.

2. Then read the book, “Where Does the Garbage Go?” by Paul Showers.

3. Ask the students if they know what solid waste is. Allow students to offer their ideas, then explain that solid waste is another term for garbage or items that we throw away.

4. Display the “What Do you Put in Your Trashcan” worksheet using a doc cam and have students suggest some items that they regularly dispose of in the garbage. Have the students think about the items on the list- allow students to share any

ideas about alternative means of disposing the items (i.e. not all trash belongs in the garbage can, but some items can go elsewhere).

(CAN INTRODUCE THE 3 R's and what they mean- Reduce, Reuse, Recycle)

Procedure:

5. Introduce the “What’s in our Garbage?” chart- explaining each category.

Categories include: Food, Plastic, Paper, Glass, Metal

Then explain that the students will go through trash and see what category each item belongs in.

6. Gather students in a circle on the floor and place the clean bag of garbage in the center of the circle. Explain that each student will get a turn to take an item out of the plastic bag and name the object.

7. Students will categorize each item by taping the item on the “What’s in our Garbage?” chart in the correct section. When the sorting is complete, count how many pieces of garbage there are from each category and record the results on the board. Estimate an approximate percent of how much garbage it shows for each category so that all of the categories add up to 100% then create a pie chart listing these percentages. Ask the students if they think the amounts shows are about the same amount of each type of garbage in a typical household. Tell students that now they are actually going to compare the trash they sorted with the trash of an actual city’s garbage.

8. Display the trashcan graph and have a discussion about if the amount of trash from the picture is similar from the amount of trash that the students sorted.

9. Challenge the students to think about what happens to the garbage after it is placed in the trashcan and is then taken away by a garbage truck. Allow students to share ideas and explain that most trash is taken to landfills. (show pictures of landfills) Also some trash is taken to incinerators or mass burn facilities (show pictures of these).

Closure:

10. To elicit language, have the students tell you something that they learned about the recycle process. You can ask them, “What is one thing you learned about trash today?” or “What was the favorite part of the lesson today?” If necessary, provide sentence frames “I learned _____.”

10. Summarize the lesson by explaining that many of the items thrown away each day do not have to be placed in a garbage can and sent to a landfill or incinerator. Many of these items can be reduced, reused, recycled or composted instead.

Assessments: Give students “Let’s Talk Trash Assessment” sheet and record answers in grade book.

Unit 3- Lesson 1, Let’s Talk Trash – Assessment

Let’s Talk Trash Assessment

Name_____ Date_____

1. What are some items that were found in the garbage bag?

2. What categories did we place the items in? Name at least three of the categories.

3. Do all of the items that were in the garbage bag belong there? Why/ why not? What could we do with the items that do not belong in the garbage bag?

4. Where does garbage go after it we throw it away? Name two forms of garbage disposal.

5. Why should you care about where garbage goes after it is thrown away?

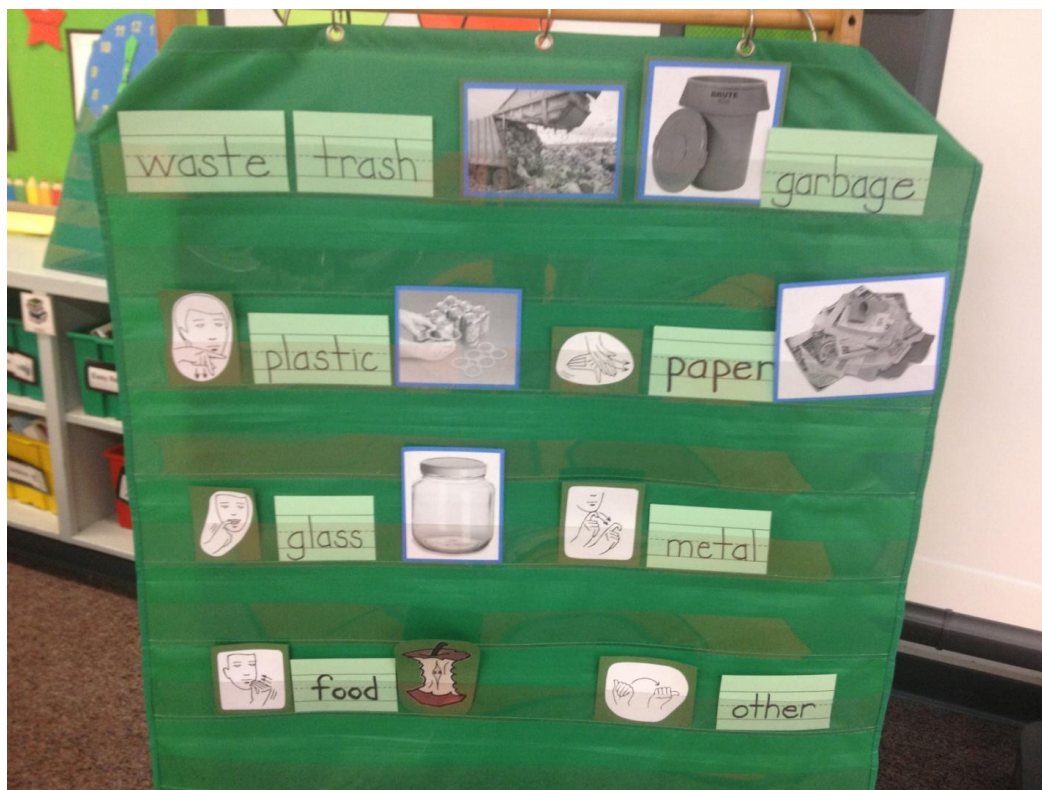


Figure 12: Unit 3, Lesson 1- ASL and English Vocabulary

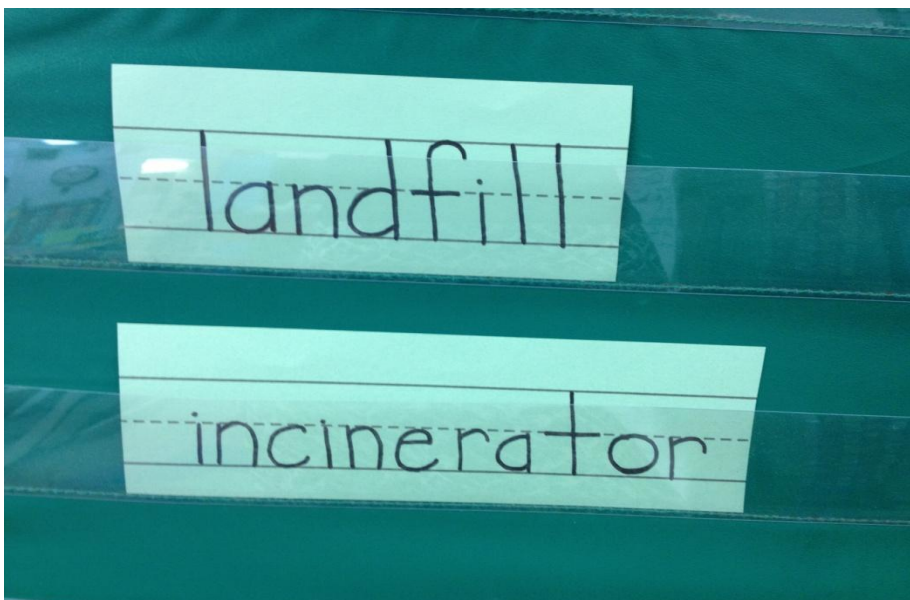


Figure 12: Unit 3, Lesson 1- ASL and English Vocabulary, cont.

Unit 3, Lesson 2 Lesson Plan

Unit # 3 “How to Reduce, Reuse, and Recycle Our Waste.” Lesson # 2**Lesson Title: The 3 R’s**

Description: Students will learn about the 3 R’s and play a game where they decide which item or activity is “greener”

Content Standards:**Common Core – Anchor Standards – Reading**

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

Anchor Standards- Writing

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

Common Core- Anchor Standards – Speaking and Listening

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.

ELA Common Core- Kindergarten

RL K 10. Actively engage in group reading activities with purpose and understanding.

Curriculum Goals Addressed:

- To enhance and expand student's use of academic language in both ASL and English in regards to Science and Language Arts.
- To encourage students to think critically about their own energy use and how it effects the environment.

Lesson Objective: Students will learn and demonstrate the differences between reducing, reusing and recycling and how they can personally incorporate the 3 R’s in their everyday lives as measured by “which is greener?” activity.

Language Objective: Given vocabulary and sentence frames, students will describe ways they can reduce, reuse and recycle as measured by teacher observation.

Materials/Preparation:

- Book “The 3 R’s”
- 3 R’s Graphic Organizer
- Various “green” items vs not green items ex.
Canvas bag and plastic bag
Travel mug and paper mug
Reusable lunch box and paper bag

Step by Step Guide

Introduction:

1. To engage students, read the book “The 3 R’s” explaining that by doing the 3 R’s- we are “going green.”

Procedure:

2. Ask the students what the 3 R’s are and what they mean.

3. Have the students do a “think-pair-share” of some examples of the different 3 R’s.

Write down students responses on graphic organizer or on board.

4. Explain to students that everyone will now be doing a fun game called “Which is the Greener Choice?”

By using props and students as actors- provide the two options to students asking them, “which is the greener choice?” These two options include-

Canvas bag or plastic bag

Reusable lunch box or paper bag

Tupperware containers or sandwich bags

Travel mug or paper coffee cup

Reusable water bottle or small plastic bottle that gets thrown away after one use

Turning off tap water while brushing teeth or brushing teeth with water running

Turning off lights when leaving the room or leaving lights on

Walking or driving

Closing the fridge when not grabbing something or staring aimlessly in the fridge

figuring out what you want

Closure:

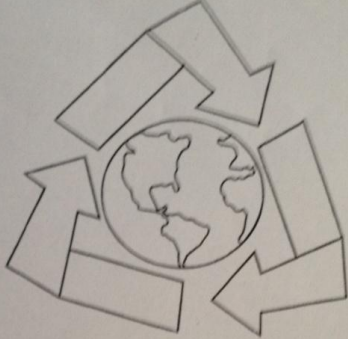
5. Bring students back as a group and ask students one thing that they can remember to do this week or tell their parents about how to implement the 3 R's.

Assessments:

Have students complete the activity page based on the 3 R's allowing them to write how they can reduce, reuse and recycle.

Write the 3 "R" words (reduce, reuse and recycle) in the arrows. Then complete the sentence below on how you can help the environment.

Name _____



Complete these sentences.....

I can reduce

I can reuse

I can recycle

©Spectrum 12

Figure 13: Unit 3, Lesson 2 Graphic Organizer

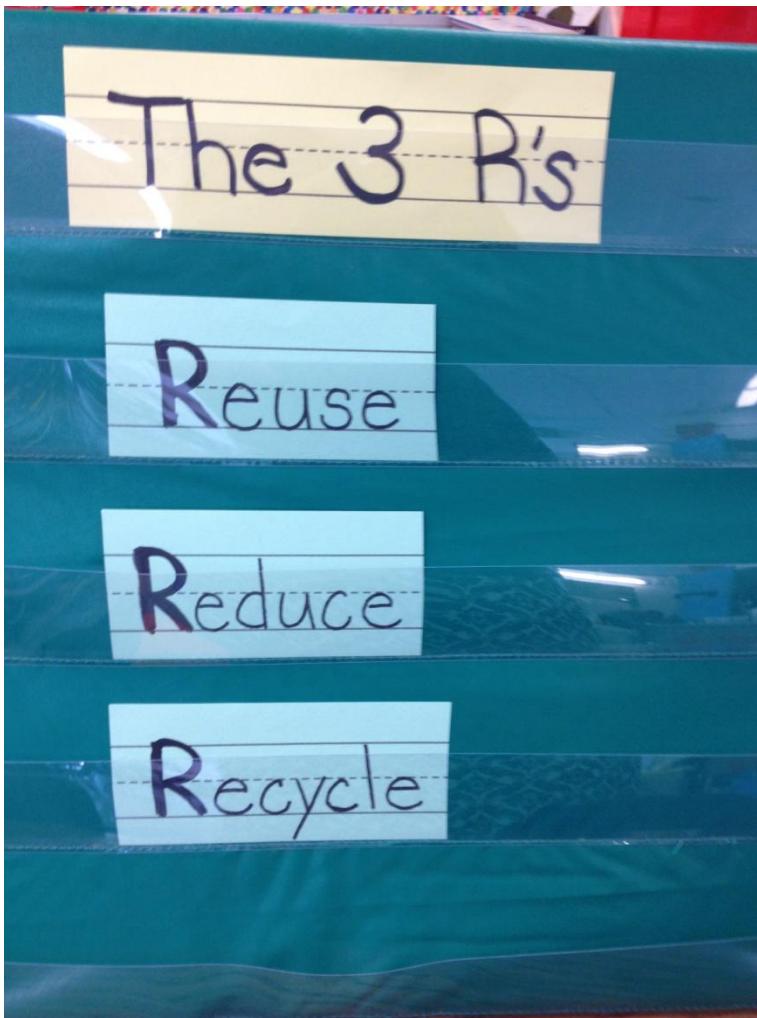


Figure 14: Unit 3 ASL and English Vocabulary

Appendix B – Student Work Samples

3/10

Name Student A

Matching Skill pre

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

	recycle	
<u>earth</u>	pollution	
	reduce	
	reuse	
	environment	
<u>landfill</u>	earth	<u>Trash</u>
	landfill	
	incinerator	
	trash	
<u>Recycle</u>	cherish	

Figure 15: Pre and Post Vocabulary Assessments

8/10

Name Student A

Matching Skill post

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

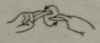
	recycle		<u>Recycle</u>
<u>earth</u>	pollution		<u>Reduce</u>
	reduce		<u>Cherish</u>
<u>incinerator</u>	reuse		<u>Trash</u>
	environment		<u>Reuse</u>
<u>Pollution</u>	earth		<u>Landfill</u>
	landfill		<u>Cherish</u>
<u>environment</u>	incinerator		<u>Recycle</u>
	trash		<u>Landfill</u>
<u>Recycle</u>	cherish		

Figure 15: Pre and Post Vocabulary Assessments, cont.

2/10

Name Student B

Matching Skill pre

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

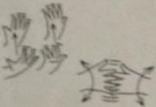
<u>Earth</u>		recycle		_____
_____		pollution		_____
_____		reduce		<u>trash</u>
_____		reuse		_____
_____		environment		<u>trash</u>
_____		earth		
_____		landfill		
_____		incinerator		
_____		trash		
_____		cherish		

Figure 15: Pre and Post Vocabulary Assessments, cont.

10/10

Name Student B

Matching Skill post

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

<u>earth</u> 	~~recycle~~	 	<u>reuse</u>
 <u>incinerator</u> 	~~pollution~~		<u>cherish</u>
<u>Pollution</u> 	~~reduce~~		<u>trash</u>
 <u>environment</u>	~~reuse~~		<u>Reduce</u>
<u>recycle</u> 	~~environment~~	  	<u>landfill</u>
	~~earth~~		
	~~landfill~~		
	~~incinerator~~		
	~~trash~~		
	~~cherish~~		

Figure 15: Pre and Post Vocabulary Assessments, cont.

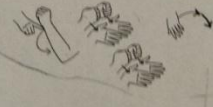
3/10

Name Student C

Matching Skill

pre

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

	recycle	
<u>earth</u>		pollution
		reduce
		reuse
		environment
		earth
		landfill
		incinerator
<u>recycle</u>		trash
		cherish

trash

trash

Figure 15: Pre and Post Vocabulary Assessments, cont.

8/10

Name Student C

Matching Skill post

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

The signs and their corresponding words are as follows:

- Sign 1: A person recycling (recycling symbol) → earth
- Sign 2: A person using a recycling bin → incinerator
- Sign 3: A person holding a trash can → pollution
- Sign 4: A person holding a recycling bin → reduce
- Sign 5: A person holding a recycling bin → recycle
- Sign 6: A person holding a recycling bin → reuse
- Sign 7: A person holding a recycling bin → cherish
- Sign 8: A person holding a recycling bin → trash
- Sign 9: A person holding a recycling bin → environment
- Sign 10: A person holding a recycling bin → landfill

Connections from central words to signs:

- recycle → Sign 5
- pollution → Sign 3
- reduce → Sign 4
- reuse → Sign 6
- environment → Sign 9
- earth → Sign 1
- landfill → Sign 10
- incinerator → Sign 2
- trash → Sign 8
- cherish → Sign 7

Blue 'X' marks are present on the following signs:

- Sign 3 (pollution)
- Sign 4 (reduce)
- Sign 8 (trash)
- Sign 10 (landfill)

Figure 15: Pre and Post Vocabulary Assessments, cont.

2/10

Name Student D

Matching Skill

pre

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

	recycle	
<u>earth</u>		pollution
		reduce
		reuse
<u>landfill</u>		environment
		earth
		landfill
		incinerator
<u>recycle</u>		trash
		cherish

Figure 15: Pre and Post Vocabulary Assessments, cont.

8/10

Name Student D

Matching Skill post

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

recycle

pollution

reduce

reuse

environment

earth

landfill

incinerator

trash

cherish

Figure 15: Pre and Post Vocabulary Assessments, cont.

2/10

Name Student E

Matching Skill

pre

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

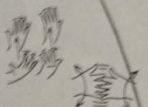
<u>earth</u>	recycle		_____
	pollution		_____
_____	reduce		_____
	reuse		_____
_____	environment		_____
	earth		_____
_____	landfill		_____
	incinerator		_____
<u>Recycle</u>	trash		_____
	cherish		_____

Figure 15: Pre and Post Vocabulary Assessments, cont.

5/10

Name Student E

Matching Skill

post

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

<u>recycle</u>	recycle		_____
<u>pollution</u>	pollution		_____
<u>reduce</u>	reduce		_____
<u>reuse</u>	reuse		_____
<u>environment</u>	environment		_____
<u>earth</u>	earth		_____
<u>landfill</u>	landfill		_____
<u>incinerator</u>	incinerator		_____
<u>trash</u>	trash		_____
<u>cherish</u>	cherish		_____

Handwritten notes on the left side of the page include "recycle" and "incinerator" written next to lines, and a blue "X" next to a drawing of a person's face.

Figure 15: Pre and Post Vocabulary Assessments, cont.

2/10

Name Student F

Matching Skill

pre

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

<u>earth</u>		recycle		_____
_____		pollution		_____
_____		reduce		_____
_____		reuse		_____
_____		environment		_____
_____		earth		_____
_____		landfill		_____
_____		incinerator		_____
_____		trash		<u>trash</u>
_____		cherish		_____

Figure 15: Pre and Post Vocabulary Assessments, cont.

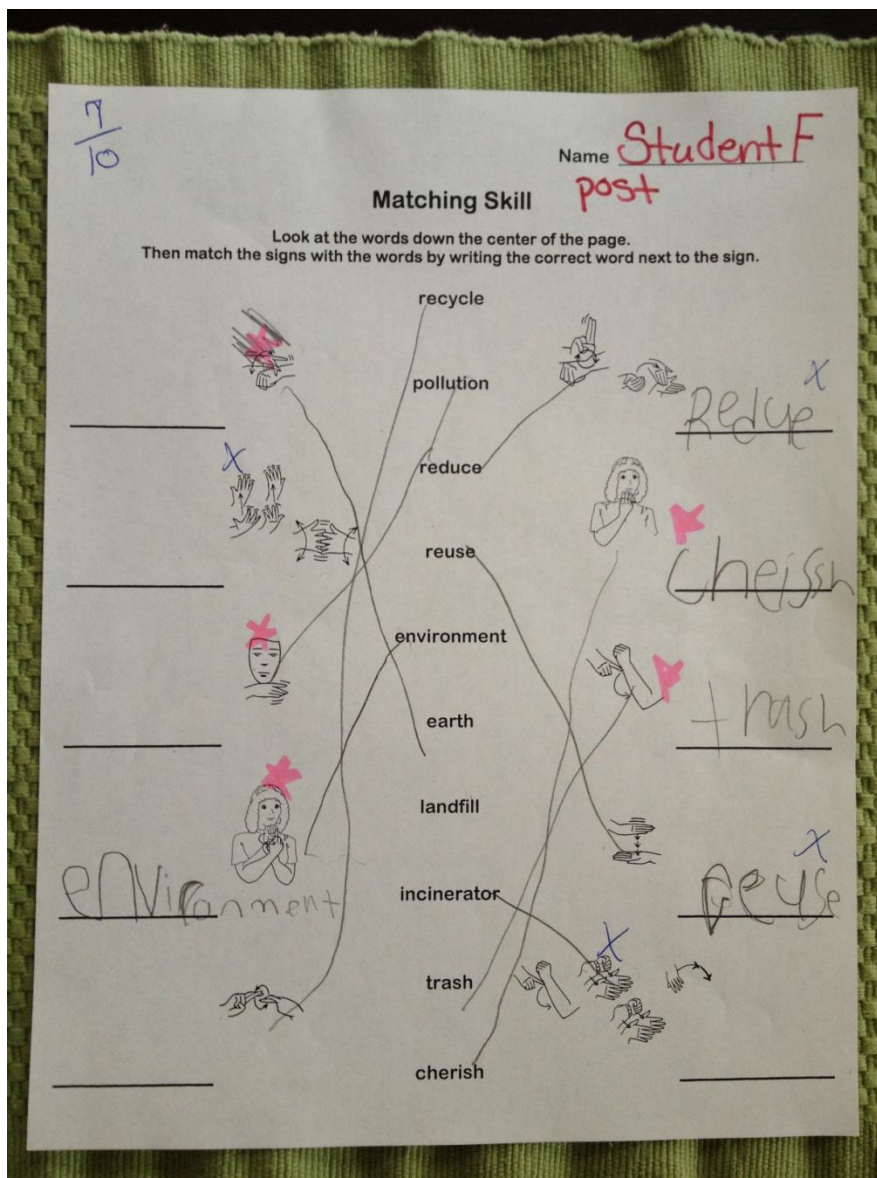


Figure 15: Pre and Post Vocabulary Assessments, cont.

3/10

Name Student G

Matching Skill

pre

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

<u>earth</u>		recycle	
		pollution	
		reduce	
		reuse	
		environment	
		earth	<u>Trash</u>
		landfill	
<u>recycle</u>		incinerator	
		trash	
		cherish	

Figure 15: Pre and Post Vocabulary Assessments, cont.

8/10

Name Student G

Matching Skill

post

Look at the words down the center of the page.
Then match the signs with the words by writing the correct word next to the sign.

recycle

pollution

reduce

reuse

environment

earth

landfill

incinerator

trash

cherish

earth

incinerator

pollution

environment

recycle

reduce

cherish

Trash

reves

Landfill

Figure 15: Pre and Post Vocabulary Assessments, cont.

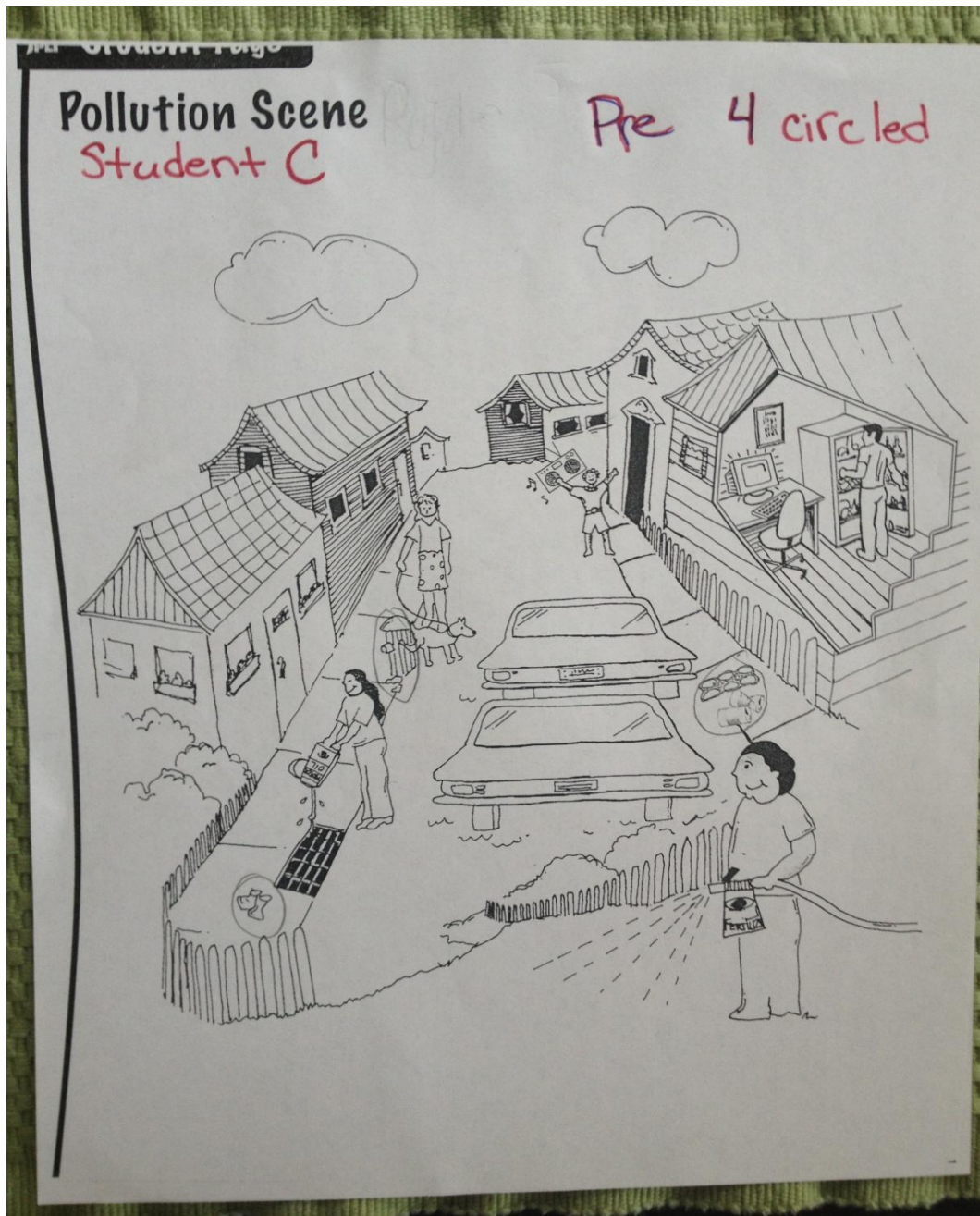


Figure 16: Pre and Post Pollution Search Student Work Sample
Project Learning Tree (2009)

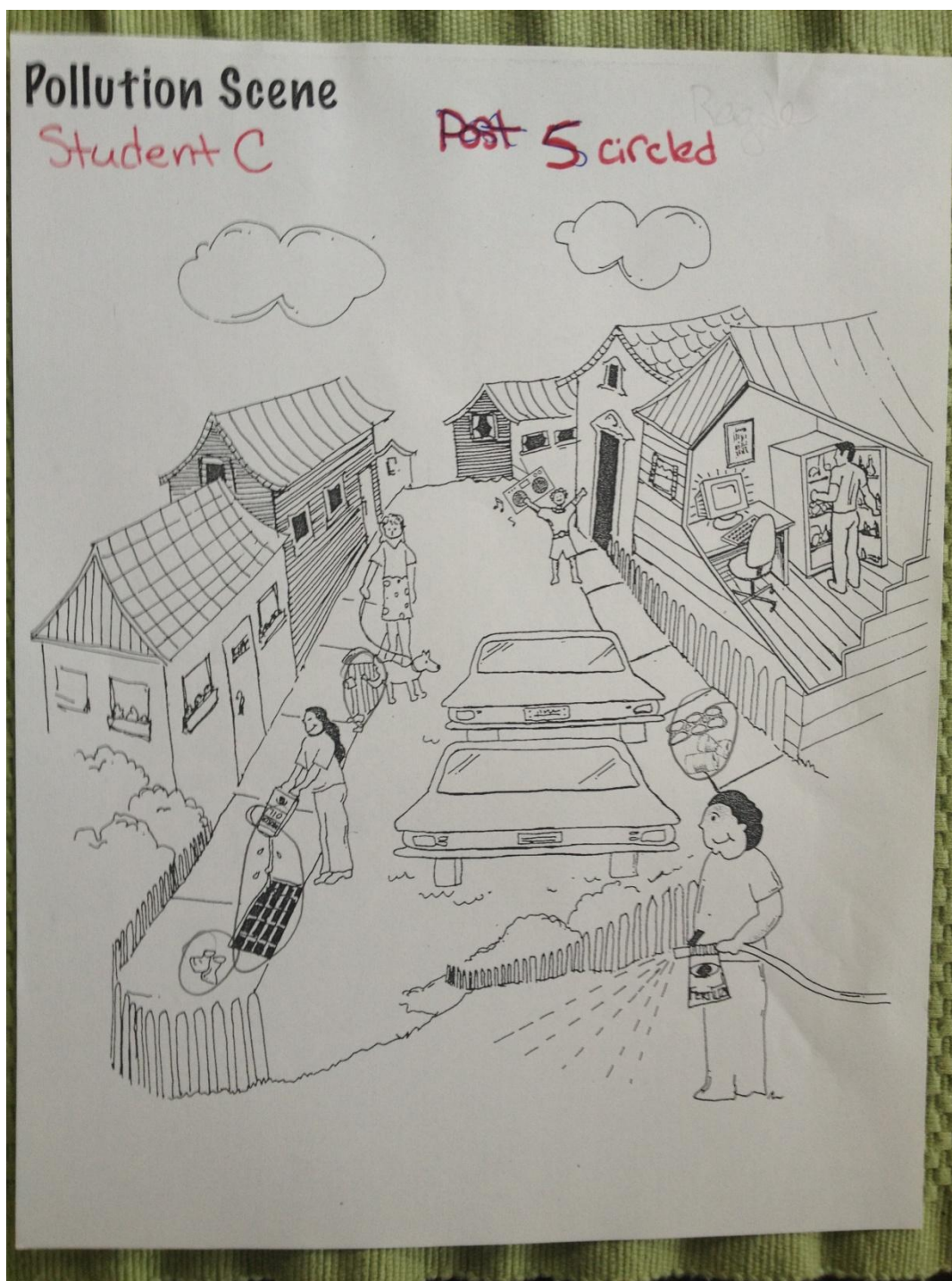


Figure 16: Pre and Post Pollution Search Student Work Sample, cont.
Project Learning Tree (2009)

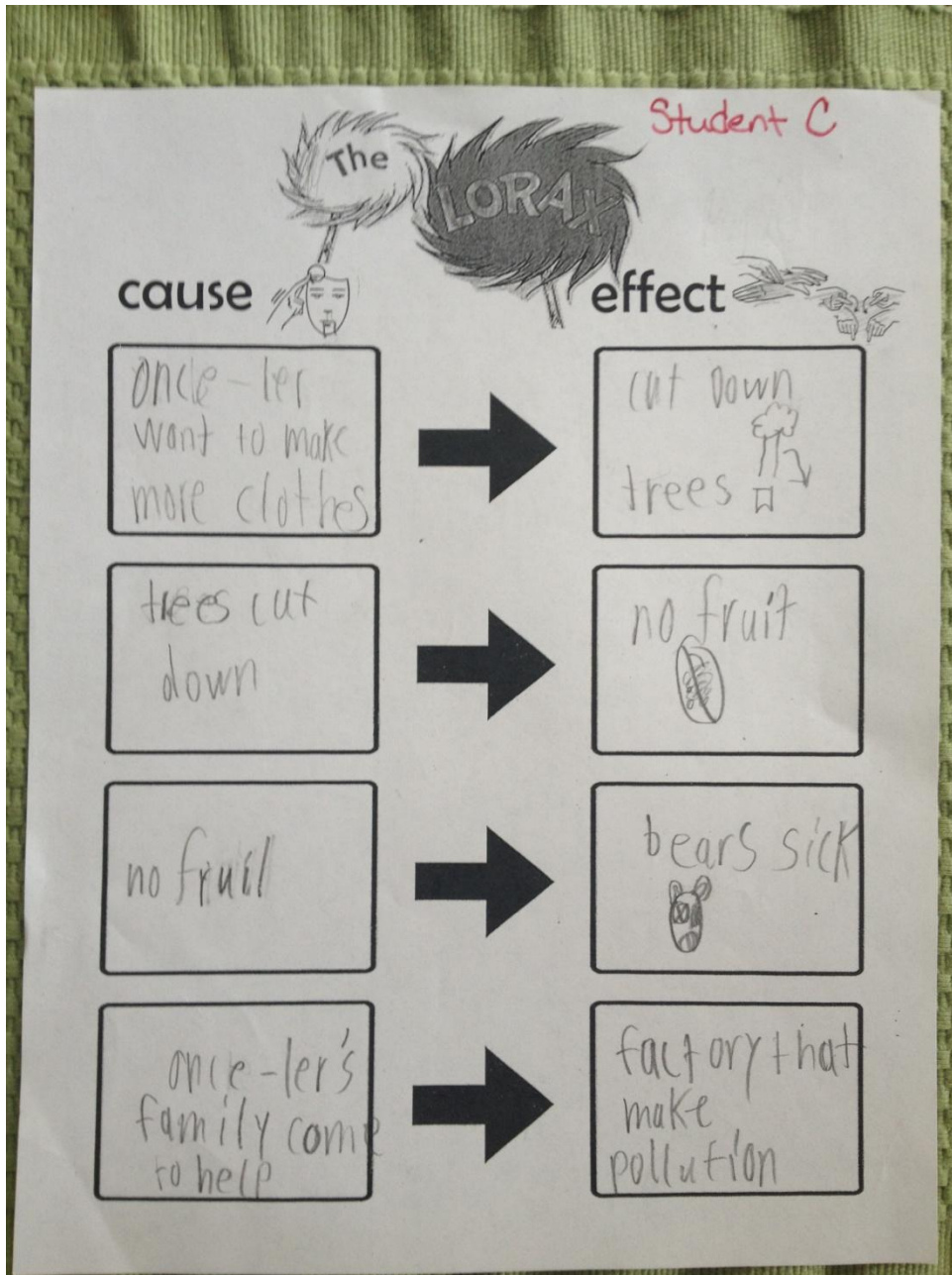


Figure 17: “Cause and Effect” Graphic Organizer Student Work Sample



Figure 18: Venn Diagram Student Work Sample

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