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**Important**

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**Planning the inquiry**

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| **1. What is our purpose?**  **To inquire into the following:**  **Transdisciplinary theme:**  **Sharing the Planet:** Inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and relationship within and between them; access to equal opportunities; peace and conflict resolution.  **Central idea :**  **Human interactions have an impact on Earth’s resources**  **summative assessment task(s):**  What are the possible ways of assessing students’ understanding of the central idea? What evidence, including student-initiated actions, will we look for?  **“Life Cycles Mystery Box”**  Students will create a life cycle diagram every day for each of the mystery box animals. They will also complete a prediction for each box. These will be used to assess students understanding of what a life cycle is.  **“I SEED Change”**  Close this activity with student presentations of their ideas from the EXPAND challenge. Allow students to plant seeds in soil to continue observing growth, or take them home for planting. Encourage students to make full conclusions about their plant based on evidence from their observations/measurements. Teacher may use student Seed Books and evidence from daily activities to assess learning.  **“Questioning My Environment”**  For an assessment, the students will describe to the teacher the different types of changes they observed and what could have reasonably caused each change. Use the solution activity and student collages as evidence of learning/reflection  Spanish/Garcia - Ss will make a craft activity about different ways to help our planet to stay safe. | Class/grade: Age group:7-8  School: Copeland School code:  Title:  Teacher(s): Brown, Echols, Huggins, Long, Rozier, O’Brien, Garcia  Date:  Proposed duration: number of hours over number of weeks  **2. What do we want to learn?**  What are the key concepts (form, function, causation, change, connection, perspective, responsibility, reflection) to be emphasized within this inquiry?  Change  Form  **What lines of inquiry will define the scope of the inquiry into the central idea?**  All living things have a life cycle (form)  Changes are happening everywhere in our environment and can be observed (change)  Weather, plants, animals, and humans can change our environment  Our environment is constantly changing in observable ways  Our environment can be changed by the weather (wind, rain, seasonal changes, etc), plants (new plant growth, invasive plants, etc), animals (feeding on plants/other animals, waste, etc) as well as humans  The living things around me go through a unique life cycle.  **What teacher questions/provocations will drive these inquiries?**  **Use with Life Cycles Unit:**  An ideal engagement activity for this lesson would be to present a living animal to the class for observation. Some examples could be a dog, cat, fish, butterfly, caterpillar, bird, etc. (We can ask Hanley to bring in her baby goat). Choose a set of questions to have students answer regarding the animal. Examples could include: Is the animal a baby or an adult? How can you tell? Will this animal keep growing? How does the animal move? Encourage students to then come up with their own questions about the animal that would help them understand how they grow. Teacher should record student questions and post them in the classroom to come back to as the unit unfold  **Use with Environmental Unit:**  To prep, the teacher will create a flat rectangular piece of clay about 12 inches long and 3inches wide. Make the clay smooth, but itis okay if it has some bumpy areas. Show the clay to students and allow them to pass it around. Students will make observations that should be recorded on a class chart. The teacher will discreetly use a plastic animal of some kind to create tracks across the clay. Students will pass and view the clay again, but this time they are only allowed to ask questions about what they see in order to reveal a cause and effect that created what they see. The teacher will help students see that they are starting to learn to be community change detectives! Students will need to be ready to make close observations and ask LOTS of questions about the changes they see  PE/O’Brien - Lay out 5 jump ropes and tell everyone that they each need to grab a jump rope. Use this to start a conversation about sharing when there are a set number of items.  Spanish/Garcia - Watch a video and ask about the different ways to save the Earth and the environment. What are the 3 R’s? What does Reduce, Reuse, and Recycle mean? |
| **3. How might we know what we have learned?**  *This column should be used in conjunction with “How best might we learn?”*  What are the possible ways of assessing students’ prior knowledge and skills? What evidence will we look for?  KWL Charts   * Station Assignments * Research Projects * I See, I Think, I Wonder * Gallery Walks * Seesaw * Readworks * Spanish/Garcia - Thinking routine about the video.   What are the possible ways of assessing student learning in the context of the lines of inquiry? What evidence will we look for?  **Student Sunflower Observation Sheet**: Students will observe a sunflower and write down the things they noticed.  **Carbon Footprint:**  Students will come up with a plan to use inside the classroom to reduce our carbon footprint.  **Plant Growing:** Students will have a project where they will grow their own plant.  Spanish/Garcia - Make a poster and describe different ways to save the planet. | **4. How best might we learn?**  What are the learning experiences suggested by the teacher and/or students to encourage the students to engage with the inquiries and address the driving questions?  Spanish/Garcia - Ss will make a craft activity and describe some ways to reduce, reuse and recycle.  **“Life Cycles Mystery Boxes”**  **Lesson Plan Link**  <https://www.dropbox.com/sh/uzoih0qviyj6gpr/AACu4rHVzX1EPmYYp8jhvCp4a/Life%20Cycles?dl=0&preview=s2l1-life_cycles-lesson_1.docx&subfolder_nav_tracking=1>  Mystery boxes are designed to encourage student questioning while introducing many varied life cycles. Each day, the students will view the contents of a new mystery box and work to discover through questioning which life cycle they represent. Here are examples of mystery box contents:      Each life cycle has an accompanying journal page. The teacher may choose to print these pages for students or have them copy the diagrams into their journals. Each animal connects to a different shape for their life cycle illustration. Each day, as items are revealed from the mystery box, students should ask questions to determine what animal life cycle they represent. After the class discussion, students should complete their Mystery Life Cycle prediction for the day. Students will record their guess for what the mystery life cycle is for that day with 2 supporting details.  **Closing**: The teacher will wrap up each day of learning by providing pictures representing that day’s life cycle and asking students to add the pictures to their diagrams. Students will cut and paste photos in the correct order (adding labels) to show their understanding.  **Printables can be found using the links below:**  [**https://www.dropbox.com/sh/uzoih0qviyj6gpr/AACu4rHVzX1EPmYYp8jhvCp4a/Life%20Cycles?dl=0&preview=s2l1-life\_cycles-lesson\_1-life\_cycle\_diagrams.docx&subfolder\_nav\_tracking=1**](https://www.dropbox.com/sh/uzoih0qviyj6gpr/AACu4rHVzX1EPmYYp8jhvCp4a/Life%20Cycles?dl=0&preview=s2l1-life_cycles-lesson_1-life_cycle_diagrams.docx&subfolder_nav_tracking=1)  [**https://www.dropbox.com/sh/uzoih0qviyj6gpr/AACu4rHVzX1EPmYYp8jhvCp4a/Life%20Cycles?dl=0&preview=s2l1-life\_cycles-lesson\_1-mystery\_life\_cycle\_prediction.docx&subfolder\_nav\_tracking=1**](https://www.dropbox.com/sh/uzoih0qviyj6gpr/AACu4rHVzX1EPmYYp8jhvCp4a/Life%20Cycles?dl=0&preview=s2l1-life_cycles-lesson_1-mystery_life_cycle_prediction.docx&subfolder_nav_tracking=1)  **Expand:** Each day can be expanded by asking students to brainstorm threats to each type of animal at different stages or by having students work in groups to create problem/solution models for common hindrances to survival for each species (examples include: interruption to food supply, threats from other species, and loss of habitat)  **“I SEEd Changes”**  **Lesson Plan Link**  <https://www.dropbox.com/sh/uzoih0qviyj6gpr/AACu4rHVzX1EPmYYp8jhvCp4a/Life%20Cycles?dl=0&preview=s2l1-life_cycles-lesson_2.docx&subfolder_nav_tracking=1>  Students will be working to assemble an observable plant experiment. Students will follow these steps to set up the experiment:  1.Write your name on the outside of a Ziplock bag  2.Fold your paper towel into quarters.  3.Wet the paper towel generously, but not so that it’s dripping.  4.Place a seed on the paper towel and fold the paper towel over the seed like a blanket.  5.Close the bag tightly.  6.Keep the bags near a window or grow light in between examinations.  You may choose to have the entire class plant the same type of seed, or have groups of students plant different types of seeds(vegetables, fruits, flowers, etc.)so that they can compare their growth. The teacher will lead a discussion with the class where students decide when and how they are going to observe their seeds. They will need to discuss and decide how often they will observe the seeds, will they check the outside of the bag, or open them and examine inside, how often will they measure, will they measure with flexible or static rulers, etc? It’s important for students to plan their methods for investigation with guidance from the teacher.  **Seed Observation Book (Use Link Below)**  <https://www.dropbox.com/sh/uzoih0qviyj6gpr/AACu4rHVzX1EPmYYp8jhvCp4a/Life%20Cycles?dl=0&preview=s2l1-life_cycles-lesson_2-seed_book.docx&subfolder_nav_tracking=1>  E**xpand**: After completing the seed observations, students working with different seeds should compare and contrast the shape, size, and progress of their plants using a Venn-diagram. If the entire class planted the same seeds, students should try to figure out what may have caused seeds of the same type to grow differently (different amounts of water/sunlight and initial seed health). Have students record or draw their observations on chart paper and share with the class  **“Questioning My Environment”**  **Lesson Plan Link**  <https://www.dropbox.com/sh/uzoih0qviyj6gpr/AAA09I0yLTyrIW7HqeZq3GEia/Environmental%20Changes?dl=0&preview=s2e3-environmental_changes-lesson_1.docx&subfolder_nav_tracking=1>  **Day 1**:The teacher will explain to students that as Community Change Detectives, the first thing they have to do is see, describe, and understand their community environment. Today, they are going to either draw or photograph(photography recommended) an area of their school campus! The teacher should assign an area of campus to students (playground area, front landscaping area, large field, etc). Their job is to create a class collection of photos of the details in this area. Students should spread out and either draw or photograph features in that area. Allow students to use hand lenses during their observation time. Where is it grassy? Where are the rocks/soil? Is there a pine island? Are there plants in the area? Are there man-made things in the area? Encourage students to thoroughly document. There are several options for creating a class visual of this information-if students drew their observations, allow them to build a class collage of their drawings. If students photographed the area, the photos can be printed and made into a physical collage. Encourage students to add descriptive words or statements to their work  **Day 1 Closing:** The teacher will ask students to point out things that they never noticed before about this particular area of their school environment. Students will dialogue about the interesting things that other students located on their initial search through their environment. The teacher will inform students that students should try to lock in their memories of this area, because the next time they do this activity, they will be searching high and low for things that have changed!  **Day 2**(not necessarily a consecutive day):The teacher will hide their class collage and ask students to remember as many details as they can about their first observations of their school environment. Then, reveal the collage and see what else they first observed. The teacher will ramp up this activity by letting students know that the real Community Change Detective work starts today! They must have sharp eyes and pay attention to as many details as possible! The teacher will take students outside to the exact same area and repeat the same activity that they did in Day 1, but this time, as students investigate, they are only photographing/drawing things they think have changed since day 1. The class will create a 2ndcollage, but this time, the only words that can go on the collage are questions. Students will create as many questions as they can think of to help them discover what caused the changes they observed  **Day 3:**The teacher will choose one of the following books that best corresponds the majority of the changes observed by students in their collage activities and read it to the class:    Students should be looking for ways that the plant, weather, animals, or humans change the environment-even if it’s not really obvious in the book! The teacher will compile information students obtain, evaluate, and communicate on a chart divided into 4 sections-dedicate one section to each cause of change. The teacher will ask students for ideas and lead them to coming up with several examples of how each category causes changes to the environment. The teacher should be sure to point out that some changes are positive, while others can be negative. The different parts of a community work together. Students will work to sort out which cause created the changes they observed  **Expand:** In groups of 2-3, students will predict what may happen if the changes they observed kept progressing without ever stopping. For example, if they noticed less grass in an area near the playground, would happen if there was less and less grass each time observations were made? Students should come up with at least one solution to solve the problem. Students should put their thoughts/solutions on the Solution Activity Printable.  **Printable can be found using the link below:**  <https://www.dropbox.com/sh/uzoih0qviyj6gpr/AAA09I0yLTyrIW7HqeZq3GEia/Environmental%20Changes?dl=0&preview=s2e3-environmental_changes-lesson_1-solution_activity_printable.docx&subfolder_nav_tracking=1>  **“What caused the change?”**  **Lesson Plan Link**  <https://www.dropbox.com/sh/uzoih0qviyj6gpr/AAA09I0yLTyrIW7HqeZq3GEia/Environmental%20Changes?dl=0&preview=s2e3-environmental_changes-lesson_2.docx&subfolder_nav_tracking=1>  Teacher will print the What Caused the Change? PowerPoint with 2 slides on each page to create cards. Use the cards to encourage students to brainstorm what caused the environmental change.  Option 1: Teacher will distribute one set of cards to each group of students and have them sort the cards based on what they think caused the change (weather, humans, plants, or animals)  Option 2: Teacher will distribute only one card to each group or set of partners. Students will decide what they think caused the change. Allow each group to describe the change and what they think caused it to the class.  The teacher will wrap up this activity by sharing exactly what caused each change (found in the notes section of the PowerPoint slides) and making a list of which category each change describes. Students should identify any patterns they see in the groupings of each change and cause.  **What Caused the Change PPT**  <https://www.dropbox.com/sh/uzoih0qviyj6gpr/AAA09I0yLTyrIW7HqeZq3GEia/Environmental%20Changes?dl=0&preview=s2e3-environmental_changes-lesson_2-what_caused_the_change.pptx&subfolder_nav_tracking=1>  **Literature Connections:**  One Plastic Bag: Isatou Ceesay and the Recycling Women of the Gambi Miranda Paul. Millbrook Press. 2015  The Tree Lady: The True Story of How One Tree-Loving Woman Changed A City Forever. H. Joseph Hopkins. Beach Lane Books. 2013  Bee & Me. Alison Jay. Candlewick. 2017  What opportunities will occur for transdisciplinary skills development and for the development of the attributes of the learner profile?   |  | | --- | | Thinking Skills  Research Skills  Spanish/Garcia - Caring, reflective, and good communicators. | |
| **5. What resources need to be gathered?**  What people, places, audio-visual materials, related literature, music, art, computer software, etc, will be available?   * Items for the mystery boxes * Materials for “I SEEd Changes” * Possible books for the unit:       Spanish/Garcia - Video, songs, flashcards, matching games, cardboard, and markers.  How will the classroom environment, local environment, and/or the community to use to facilitate the inquiry?  Spanis/Garcia- Display Ss work in the hall. | |
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| **6. To what extent did we achieve our purpose?**  Assess the outcome of the inquiry by providing evidence of students’ understanding of the central idea. The reflections of all teachers involved in the planning and teaching of the inquiry should be included.  Rozier- This particular unit is the unit my students enjoyed the most while being virtual. They were able to produce art work, read books, and watch videos that helped them understand the central idea. We were able to go over key terms within the central idea for more understanding as well.  Brown: During this unit my students were able to do a lot of drawing and exploring outside the classroom. We spent a lot of time outside looking at different plants and animals to understand their lifecycle a little better. We also spent time learning about how we as humans have a major impact on the earth and the resources that are important to us and why the resources are important.  Huggins: Students really enjoyed learning the life cycle of plants and animals and doing hand on activities. Students enjoyed making there chicken life cycle project as well as growing lima beans. Students were inquirers and thinkers when it came to this unit.  **Echols- Students did more hands-on activities exploring plant and animal habitats around the schoolyard. They did experiments on parts of plants and how plants grow. Life cycles of butterfly and frog and other animals. They really enjoyed this unit.**  **C. Long: Unfortunately, I didn’t get a chance to really participate in this unit. Children seemed to enjoy this unit and being able to do some hands on activities.**    How you could improve on the assessment task(s) so that you would have a more accurate picture of each student’s understanding of the central idea.  Rozier- I would have loved for my students to actually have a chance to plant flowers to see them go through the life cycle. However, they were still able to watch videos and check out plants from the outside of their homes. They were still able to question their environment and compare/contrast plants with their classmates.  Brown: I wouldn’t change anything about the assessments in this unit because they were great ways for us as teachers to assess and get a better idea of what our students did or did not understand without giving them a computer test or written test. I feel that the students were more engaged with the assessments and they grasped the concept better.  Huggins: I would have loved to grow a garden so that the students could see first-hand how various plants grow. Students were able to watch videos on plants and animals that they were interested about and explain to me the life cycle of the plant or animal they chose, as well as the plants and animals I had them learn about.  **Echols- a record notebook of their reflections of activities they did daily. Create a vegetable garden early to watch and harvest vegetable.**  **C. Long: I like the idea of a records book. Scientist keep a record of observations and I think students would have benefitted from the experience.**  What was the evidence that connections were made between the central idea and the transdisciplinary theme?  **Echols- Students explored bean seed and embryo plant as an introduction and also had a gallery walk about different environments and people ‘s effect on them. More time on environment and how we can take better care of our world.**  Rozier—Students were both introduced to the central idea and transdisciplinary theme before we started the unit. They had to draw the lifecycle of animals (butterflies and frogs), think about the life cycle of humans, and draw the lifecycle of plants. They were able to understand how sharing the planet ties into human interactions/ Earth’s resources.  Brown: My students were able to connect the central idea and the transdisciplinary theme by understanding that humans need resources to survive and live. They also connected by understanding that different species all have lifecycles they are important to the resources we need on earth. I.e. the lifecycle of bees and why bees are important to earth and resources  Huggins- students were able to understand the s w central idea and theme by understanding that everything goes through cycles. Students had fun drawing the different parts of a flower and labeling what they were and they were excited seeing what inside a lima bean looked like on the video but extremely excited when we split lima beans and they were able to see the different parts with their own eyes and tell me what the parts were.  C. Long: I would like to find a way to include the word “cycles” into the central idea for next year. Much of the unit seemed to highlight cycles of nature. | **7. To what extent did we include the elements of the PYP?**  What were the learning experiences that enabled students to:   * develop an understanding of the concepts identified in “What do we want to learn?” * demonstrate the learning and application of particular transdisciplinary skills? * develop particular attributes of the learner profile and/or attitudes?   In each case, explain your selection.  Rozier- KWL charts were very useful in this Unit. Majority of my students knew a lot about the lifecycle and plants. I was able to give them a pop quiz by showing different animals as babies and they had to guess the young with the adult animal.  Students were able to communicate with one another by comparing/contrasting some of the similar plants from outside of their homes. This allowed for each student to be reflective.  Huggins- Doing provocations where I showed I different animals and plants at the beginning of their life cycle and having them to determine what it would grow up as and showing them baby pictures of myself and kids in order to see if they could tell who we were. Students were able to understand that everything goes through a change and nothing stays the same.  Echols- Provocations led to experiments and prompted students to explore more. End of unit student reflections showed they had learned al ot from activities we did.  C. Long: Students were given a chance to wonder about the topics and then reflect on their learning. I feel that this helped deepen students understanding. |
| **8. What student-initiated inquiries arose from the learning?**  Record a range of student-initiated inquiries and student questions and highlight any that were incorporated into the teaching and learning.  Rozier**- How do plants grow? What is the process called when plants are growing? What are nutrients? Do butterflies have to live in a cocoon? What is the life cycle of frogs? What about the life cycle of humans?**  **Brown: Do all plants have life cycles? Are plants living? How long do butterflies live? Do we need bees on earth to survive? Do dogs and humans have the same life cycle?**  **Huggins- Students wanted to know if the life cycle of plants went on and on when they saw onions grow from a cut piece of onion and if it didn’t what would happen to oinions.**  **Echols- Student bean seed investigation/ sprouting bean seeds. Celery and food coloring experiment to show how plant roots carry water throughout plant. Looking at the school trees and palnts and developing understanding of how insects and animals help plants grow.**  **C. Long: Students had questions about the growing cycle of different plants.**  At this point teachers should go back to box 2 “What do we want to learn” and highlight the teacher questions/provocations that were most effective in driving the inquiries.  Rozier- What is a life cycle? What are human interactions? What make up Earth’s resources?  **Echols- How people and animals survive in different environments / People and animals dependence on each other/ Lifecycles/ conservatin**  **Brown: What is a life cycle? What makes up Earth’s resources?**  **Huggins- Same as above**  **C. Long: What is a life cycle?**  **What student-initiated actions arose from the learning?**  Record student-initiated actions taken by individuals or groups showing their ability to reflect, to choose and to act.  Rozier- Visual drawings, in class discussions, discussion posts (Canvas), and reflections after readings were all student-initiated actions.  **Brown: Visual drawings, turn and talk with peers, reflections**  **Huggins- Drawings, class discussions, etc.**  **Echols- plant experiments/ group discussions of results/ diagrams and drawings made by students and their reflections**  **C. Long: Students were eager to monitor the progress of the seeds they had hanging in the classroom window.** |  |

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