Part B: Plans for Learning Segment (5 Lessons)

LEARNING EXPERIENCE - LESSON PLAN: 1

Title: Plant Life Cycle, Plants are Alive Because. . . (1 hours, 30 minutes)

Central Focus: Students can convey that there are many types of plants; they are living things and have certain needs.

5 E's of Learning Experiences

Subject / grade level: Exploring Plants: Science and Literacy / 1st Grade

Lesson objective(s):
Students will be able to express that plants are living things.
Students will observe how a plant takes up water through the stem.
Students will identify the sequence of a plant's life stages through a set of event cards.

Standards:
NGSS
LS1.B: Growth and Development of Organisms
LS1.D: Information Processing- Plants respond to some external inputs.
Common Core: English Language Arts
CCSS.ELA-Literacy.SL.1.2: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

Materials:
- Sequence of a Plant's Lifecycle Flashcards
- Document Projector for Song Lyrics
- Whiteboard / Markers
- Red and Blue Food Coloring
- Celery Stalks
- Clear Glass/Plastic Jars with Water
- Book: The Tiny Seed, by Eric Carle

Differentiation strategies to meet diverse learner needs:
For Visual and Kinesthetic learners, the teacher and peers will provide support by modeling kinesthetically a music and movement segment. The words are represented with pictures for the ELL learners.

Vocabulary: Everyday: dig, dirt, drink, straw, seed, plant, alive, living, breathe, grow, eat Academic: order, sequence, Content-Specific: soil, minerals, air, space, sunlight, water, roots, stems, leaves, flowers, seeds, bulbs, fruit, vegetable Content-Specific "million dollar words": capillaries, xylem

ENGAGEMENT: (Whole Group)
Read the Tiny Seed by Eric Carle.
The teachers asks: "How do we know that a plant is alive?" "Is it alive?" The teacher will work with the large group to generate a list what they know about plants. The "brainstorming" list will include: plant parts, the of the steps involved in the life cycle of a plant, and what a plant needs to stay alive.

EXPLORATION: (Whole Group and Individual observation)
The students will participate in an experiment to make fascinating observations about how water moves up a stem (with food coloring). Students will be called upon to help add the different colors of food coloring, stir it in, and make observation statements about what happened to the leaves and in the stem. The teacher states: "We talked about the stages of a plant's life. Now, you are going to work with a small group at your tables and put these pictures in order on this strip." The teacher divides the class into small groups to work on this activity and makes observations walking around to each pair- intervening when scaffolding may be needed.

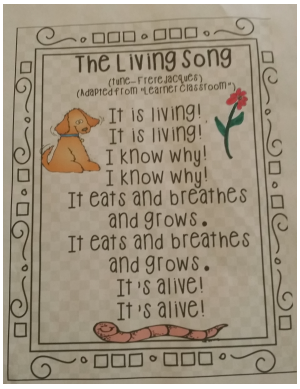
EXPLANATION: **(Whole Group)** Student explanations should precede introduction of terms or explanations by the teacher. Convey to the students that the celery stalk is essentially the stem of the plant. This is what the water travels up and where it is stored. State, "Later on, you may hear about succulent plants in the dessert that hold lots of water." Clarify that celery plants have roots in the ground when they are growing. Roots soak up water from soil and the water travels up through the stalk tubes. The science: When you water the soil of your plants, how does the water travel from the soil into the plant and out to the leaves? Tiny tubes (xylem, also called capillaries like those in your body) draw the water up from the roots like a straw. It works by a capillary action. Relate the capillaries of the celery to the children drinking out of a straw. Also, note that we have capillaries inside of us. The water molecules suck up inside the tiny tubes and move up and out to the leaves as if someone was sucking on the end of the tubes. The suction actually occurs as a result of water in the leaves evaporating very slowly.

ELABORATION: **(Individual Work)**
Aha / Huh
Write down 1 or 2 "ahas" (something you learned) and 1 or 2 "huhs" (things you still have questions about or what more do you want to explore about plants).

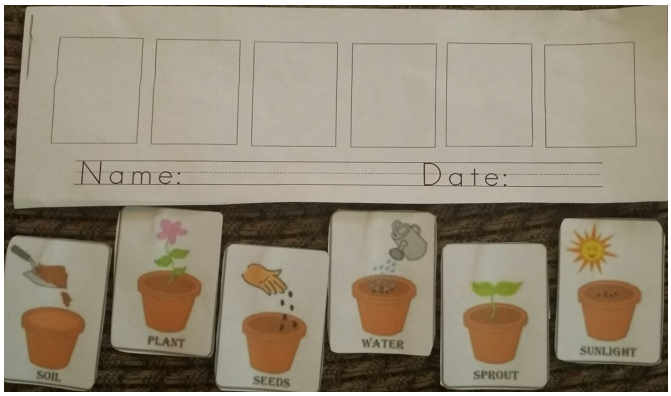
ARTS INTEGRATION:
Sing the "It is Living" song with motions on the way back to desks.
Family Connection: Ask students to share their learning (song and experiment) with their families at home.

EVALUATION: **(Collaborative and Individual Work)**
Make observations during paired activities and monitor participation. Give informal individual oral quizzes about how we know a plant is alive and about the plant life cycle. Ask the students to put life cycle pictures in the correct sequence for their assessment of topic knowledge. A visual representation of these life cycle terms will help to accommodate for our ELL student.

Arts Integration:



Assessment:



LEARNING EXPERIENCE - LESSON PLAN: 2

Title: Plant Parts / Plant Needs (1 hour, 30 minutes)

Central Focus: Students can convey that there are many types of plants; they are living things and have certain needs.

5 E's of Learning Experiences

Subject / grade level: Exploring Plants: Science and Literacy / 1st Grade

Lesson objective(s):
Students will be able to label the parts of a plant.
Students will be able to match the function of each plant part to a visual representation.
Students will be able to match the text about what plants need to a visual representation.
Students can name one example of a plant that grows from a seed and that grows from a bulb.
Students will be able to express that plants are living things.
Students will recall Lesson One information- identifying the sequence of a plant's life stages.

Standards: NGSS: LS1.A Plants have different parts (roots, stems, leaves, flowers, fruit) that help them survive and grow.
LS1.B: Growth and Development of Organisms
LS1.D Information Processing- Plants respond to some external inputs.
Common Core: English Language Arts: CCSS.ELA-Literacy.
SL.1.2: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
W.1.7 Participate in shared research and writing projects
CCSS.ELA-LITERACY.L.1.1
Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-LITERACY.L.1.2.B
Use end punctuation for sentences.

Materials: VIDEO: https://www.youtube.com/watch?v=dUBIQ1fTRzI (The Needs of a Plant)

- Craft Supplies for Artistic 'assessment –Parts of Plant Labels… Cupcake holders, green strip, brown yarn, brown paper, cutout- leaves, cloud, sun, dotted-line paper.
- Video: Time Lapse Sunflower 2:30: https://www.youtube.com/watch?annotation_id=annotation_714050539&feature=iv&src_vid=Z-iPp6yn0hw&v=dKo5IvvtnWw
- Video 1:19: Bean Seed: https://www.youtube.com/watch?v=czRUxCJwVjw
- Review/refer to the book from last lesson: The Tiny Seed- by E. Carle (Review Life Cycle of a Plant)
- Pictures – Review of our Celery experiment – See Documentation Board
- Books: From Seed to Plant by G. Gibbons, The Magic School Bus Gets Planted by Cole and Degen
- Whiteboard / Markers
- Display – Plant "research" books of the tables.

Extension PART 2 of Lesson 1

- Book: From Bulb to Seed- by Ellen Weiss
- Bulbs display: Lillies and Astillbe
- Seeds display: Corn, Green Beans, Cucumbers, Sunflowers, Zinnias, Bachelor Buttons
- Plant pictures grouped into ones that grow from bulbs versus seeds. Each picture is named for document camera display

Differentiation strategies to meet diverse learner needs: For Visual and Kinesthetic learners, the teacher and peers will provide support by modeling kinesthetically a music and movement segments. A Time Lapse Video will mirror the verbal instruction about the plant's growth. Using this, will assist our ELL student and

comply with the Universal Design for Learning where multiple means of representation is used to teach a topic.
Vocabulary: Everyday: grow, needs living, plant, breathe, eat, sugar Academic: process, function, purpose, Content-Specific: soil, minerals, air, sunlight, water, roots, stems, leaves, flowers, seeds, bulbs, fruit, vegetable, lily, daffodils, tulips, astillbe, zinnias, morning glory, carrots, corn, peas, pumpkin, radish
Content-Specific "million dollar words": oxygen, carbon dioxide, photosynthesis, chlorophyll, chloroplasts, xylem

ENGAGEMENT:
VIDEOS: (~4 minutes) (At their desks)
On the carpet- group time: "What are some of the things we know already about plants?"
Review of:
"How do we know that a plant is alive?" Sing song together at circle time. (Eats, breathes, grows)
"What are a plant's needs?" (water, soil, space, light, air) **SEE EXPLANATION by teacher section.
VIDEO: https://www.youtube.com/watch?v=dUBIQ1fTRzI (Play at circle time on my phone. Students will participate in the chant/song, stand up and "be" a plant, then go to their seats for craft instructions).

EXPLANATION: **(Whole group time on the carpet)** Teacher notes… "You mentioned that plants have: seeds, leaves, a stem, roots, petals/flower/fruit, nectar. Let's figure out where all those parts are." Ask questions the location of those parts as all parts of a flowers is drawn and labeled on the whiteboard. Explain the plant needs further: WATER: Lightly water the soil to keep the seeds moist- this softens the outer coating of a seed. Too much will drown a seed. LIGHT/TEMPERATURE: A classroom temperature from 60 to 80 degrees is satisfactory (ok) for most seeds. Seeds germinate best in the dark, but need plenty of light once they are seedlings. OXYGEN: "Where do we find oxygen?" (air) Seeds need oxygen. Soil that is compacted (smashed together) too tightly can smother the seed. (LEAVES NEED CARBON DIOXIDE- The other chemical in the air we breathe)."

The teacher connects with students' prior knowledge from the last lesson…

"Yes, we mentioned that plants "eat" along with drinking water…Last lesson I asked, 'Since plants eat, do they go to a restaurant, get a meal, or a grocery store?' We talked about the water and minerals they got from the soil, but there is a little more to it. I can talk to you more about this later if you are interested and we will read a fun Magic School Bus book about it, but it is truly amazing how plants get food--- They make it. Yes. This is a "Million Dollar Word…": Through PHOTO-SYTHESIS (Photo=Light, Synthesis= Putting Together). Leaves trap the sunlight energy and change light energy to make a sugar (chemical energy). They take the Carbon Dioxide in Air (Show Display) and Water they receive, along with CHOROPHYLL (a green pigment- like paint), and they use this to PHOTOSYNTHSIZE. PHOTOSYNTHESIS is the process of how plants make their own food." That is a very big word that you won't need to remember today, but you need to know that plants can make their own food. (The teacher refers to vocabulary words that are beyond 1st-grade level as "million dollar words") Read Magic School Bus Gets Planted .

(Extension PART 2): Explain to the students that they can refer to the whiteboard or the pictures displayed from the documents camera in order to help them remember which plants grew from bulbs versus seeds.

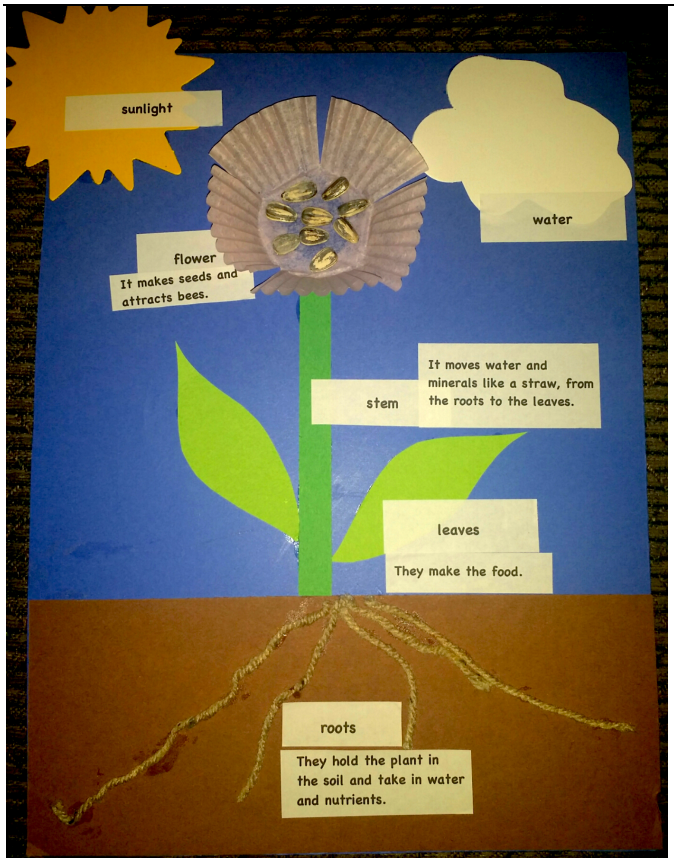
EXPLORATION: The teacher gives guidance and initial directions: "We talked about the parts of a plant and what each part does. Now, you are going to work at your desks to put together a sort of puzzle and create your own plant." The teacher makes observations by walking around to each pair- intervening when scaffolding may be needed. (Extension PART 2): Read about "Bulbs" and how plants can grow from bulbs instead of seeds. Use the book: From Bulb to Daffodil. Compile a list of flowers/vegetables that grow from each on the whiteboard, then let students do tactile exploration involving various seeds and bulbs.

ELABORATION: **(For Individual Work)** Additional research text is provided for further emergent inquiry by the individual student. New books were checked out from the library and set on display at a table. Students will research further a fact about a plant in one of the books on the table and write it down on the lines provided. Glue to the bottom of the craftwork. Students can share their new fact with the class if time permits. **(For Whole Group)** Read The Magic School Bus Gets Planted for Language Arts-Read Aloud.

(Extension PART 2): Students draw and use one sentence to describe something that grows from a bulb and something that grows from a seed.

EVALUATION:
FORMATIVE ASSESSMENT: Make observations during desk work and monitor participation. (Part 1 and 2)
SUMMATIVE ASSESSMENT: Check to see if the parts are identified and labeled correctly. (Part 1)
Check to see if students remembered/referred to list to accurately make a statement about bulbs and seeds. (Part 2)

ASSESSMENT PICTURE:
Label a plant with names and a clue to describe its function. (Part 1)
Assess the accuracy of the students' statement to describe something that grows from a bulb and something that grows from a seed. Check for appropriate capitalization and punctuation. (Part 2)



FORMATIVE ASSESSMENT: Part 1

STUDENTS: After finding something new from the book selection about plants, write your interesting research fact on plants below.
Put glue above the dotted line here and stick it at the bottom of your labeled flower.

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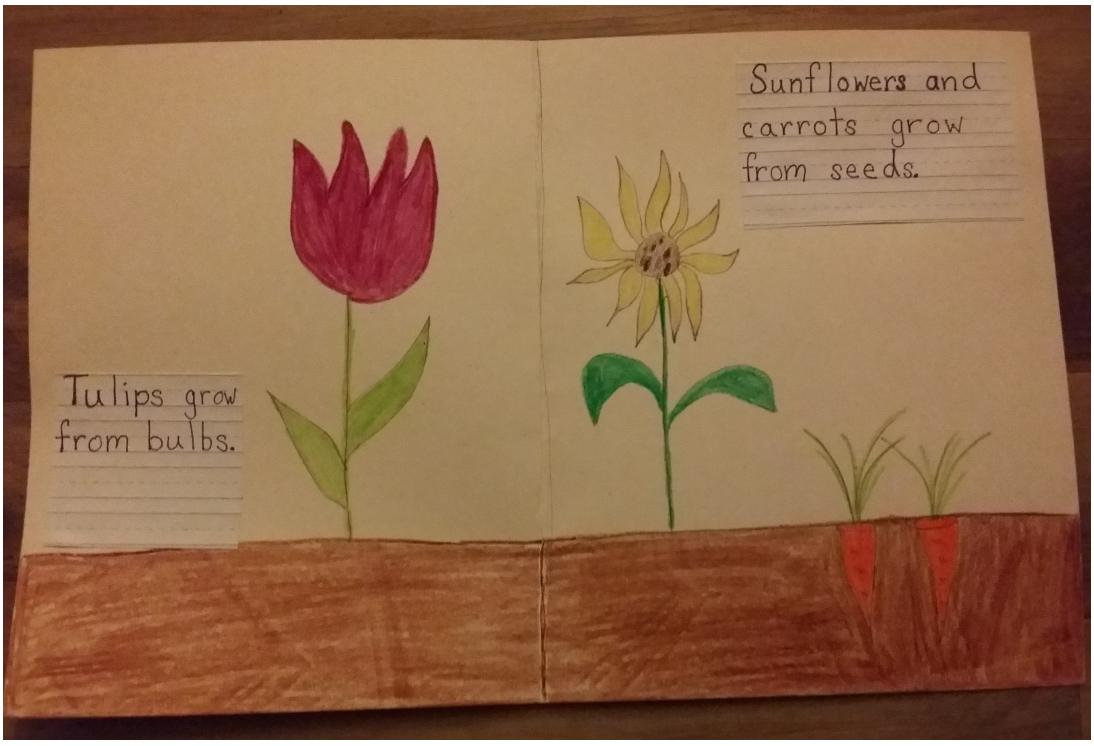
Name _____ Date _____

ASSESSMENT: Part 2 Extension:
Instructions: Recall or Choose from the list of "plants grow from… "Bulbs" or "Seeds'" category in order to write a correct statement and draw a picture of 1 plant or 2 plants that grows from each type.



LEARNING EXPERIENCE - LESSON PLAN: 3

Title: Plant "Concept Sort" (1 hour, 35 minutes)

Central Focus: Students can convey that there are many types of plants; they are living things and have certain needs.

5 E's of Learning Experiences

Subject / grade level: Exploring Plants: Science and Literacy / 1st Grade

Lesson objective(s):
Students will learn new vocabulary terms about plant concepts.
Students will gather details about a text as they read independently
Students will be able to sort words into categories through collaborative conversations.
Students will gather details about a text as they read independently

Standards:
NGSS
LS1.A Plants have different parts (roots, stems, leaves, flowers, fruit) that help them survive and grow.
LS1.B: Growth and Development of Organisms
LS1.D Information Processing- Plants respond to some external inputs.

Common Core: English Language Arts
CCSS.ELA-LITERACY.L.1.1
Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-LITERACY.L.1.5.A
Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.
CCSS.ELA-LITERACY.SL.1.1
Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and larger groups.
CCSS.ELA-LITERACY.SL.1.2: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
CCSS.ELA-LITERACY.RI.1.10
With prompting and support, read informational texts appropriately complex for grade 1.

Materials / Environment:
From this lesson and throughout the rest of the unit, arrange desks according to cooperative learning groups. (See picture, page 4

- Computer/Phone cued to "Plants need…" song
- Book: **Planting The Wild Garden** by Kathryn O. Galbraith
- Large Chart Paper: 10 pieces
- Markers
- Index Cards/Cutouts for Categories
- Post-Its for Words
- Drawing Paper
- Pencils
- Books: (Totes are filled for each group).
  Group 1: Flowers by Christine Peterson, How a Seed Grows Into a Sunflower by David Stewart, Flowers by Henry Pluckrose, From Bulb to Daffodil by Ellen Weiss, Planting a Rainbow by Lois Ehlert, Sunflowers by Cynthia Overbeck How Flowers Grow by Emma Helbrough
  Group 2: Plants We Eat by Christine Peterson, Growing Vegetable Soup by Lois Ehlert, Life Cycle of a Bean by Angela Royston, One Bean by Anne Rockwell, Seeds Go, Seeds Grow by Mark Weakland, Seeds Sprout by Mary Dodson Wade, Plant Packages: A Book About Seeds by Susan Blackaby, Seed, Soil, Sun by Chris Peterson, Corn by Gail Gibbons

Group 3: Desert Giant: The World of the Saguaro Cactus by Barbara Bash, Deserts, by Gail Gibbons, Desert Animals and Plants for Kids by Speedy Publishing, About Habitats: Deserts by Cathryn Sill, A Desert Scrapbook by Virginia Wright-Frierson
Group 4: Plants Bite Back by Richard Platt, Hungry Plants by Mary Batten, Scary Plants by Janet Lawler, Venus Flytraps by Kathleen V. Kudlinski, Sundews: A Sweet and Sticky Death by Victor Gentle, Pitcher Plants: Slippery Pits of No Escape by Victor Gentle
Group 5: The Secret Life of Trees by Chiara Chevallier, Giant Sequoia Trees by Ginger Wadsworth, Tell Me, Tree by Gail Gibbons, "Amazing Plants", Scholastic News: My Weekly Reader March 2017 Ed. 1, Vol. 73 No.6, What is a Plant by Pam Rosenberg, Trees by Andres Llamas Ruiz, A Tree is a Plant by Clyde Robert Bulla, We planted a Tree by Diane Muldrow, Be a Friend to Trees by Patricia Lauber, and Trees by Henry Pluckrose

Differentiation strategies to meet diverse learner needs:
For Visual and ELL learners, an opportunity will be able to sketch a picture to represent a concept. Grouping together advanced readers as peer tutors for struggling readers will bolster learning at both levels.

Vocabulary:
Everyday: drink, straw, seed, plant, alive, breathe, grow, eat Academic: non-fiction, order, sequence, Content-Specific: soil, minerals, air, space, sunlight, water, roots, stems, leaves, flowers, seeds, bulbs, fruit, vegetable
Content-Specific "million dollar words": capillaries, xylem, photosynthesis

ENGAGEMENT: (Whole group time on the carpet)
Essential Question: Why do we spend so much time thinking about and learning about words?
Share the **Essential Question** and gather responses by re-voicing the student questions, asking students to apply their reasoning, and prompting for further participation. (Teacher: "Just as knowing sight words now, helps you read books more easily, having more words that you know in your brain, will make future reading of bigger challenging chapter books, a lot easier).
The teacher conveys that small-group work will be done later and announces the group assignments, (5 groups of 3 or 4 per group). These are named: a) Flowers, b) Fruits/Vegetables, c) Cactus/Succulents, d) Meat-eating plants, and e)Trees.

EXPLANATION: (Whole group time on the carpet)
The Teacher describes what the students will be doing in their small groups and models a "Concept Sort": *"Today we are going to talk about 2 different strategies we are going to use to help you learn new vocabulary words, having to do with our plants unit". In today's lesson we are going to do a "Concept sort". I mentioned in our last lesson, that you will now have groups to work with for the remainder of the unit. In your groups today, you are going to sort words into categories that I created, from the book I just read. Then later, you will sort words from your "special interest" books and put them into categories about each concept. Before you go off to do that, we're going to do an example together."*

Modeling example: Students will brainstorm together on how to categories these basic words.
Word List: birds, butterflies, bats, airplanes, helicopters, bear, dog, bunny, kitten, fox, piano, harmonica, trumpet, kazoo, drum. (These would be listed on a chart out-of-order).

Categories: 1. Things that fly, 2. Animals with fur, 3. Musical instruments
The teacher states: "In our next plant lesson, I will talk about a "Jigsaw" strategy that we will use and how we need each of these "expert" groups to be scientific "researchers". Let's begin our concept sort with words from the book I just read, Planting The Wild Garden.

EXPLORATION*: (*Collaborative Work)

The teacher emphasizes that the goal is not to rush through the task and quickly put your own post-its on each category, but rather everyone needs to be talking about each word and making decisions together. "Your conversations are what is important".

Chart paper is given to each group. The teacher monitors each group as they work together to create their "concept sort" lists. She will guide their conversations. If the whole group is stuck on a word, she would pause to bring this up for a whole class mini-discussion. Each group will have a large chart paper with pre-generated lines under each category. The batch of terms that are written on post-its will be distributed out-of-order.

Places plants grow:
Fields
Yards
Garden
Meadow
Forest

How seeds travel:
Sail
Sweaters
Falls
Stream
Wind
Scatters

Foods from plants:
Peas
Carrots
Cabbages
Berries

ELABORATION: *(Independent / Collaborative Work)*

Step 1: After finishing the chart together which had been a "closed sort" where pre-determined categories were given, each student will begin reading one of their special interest books. Each individual will identify and write new and/or interesting words on one of their 5 post-its as (s)he is reading. Then, after all students finish reading, they will bring their 5 post-its to their group, where they do an "open sort". The "open sort" is where they look at all of their words from each person in the group and generate their own headings together for that batch of words. Then, they will do their second "concept sort".

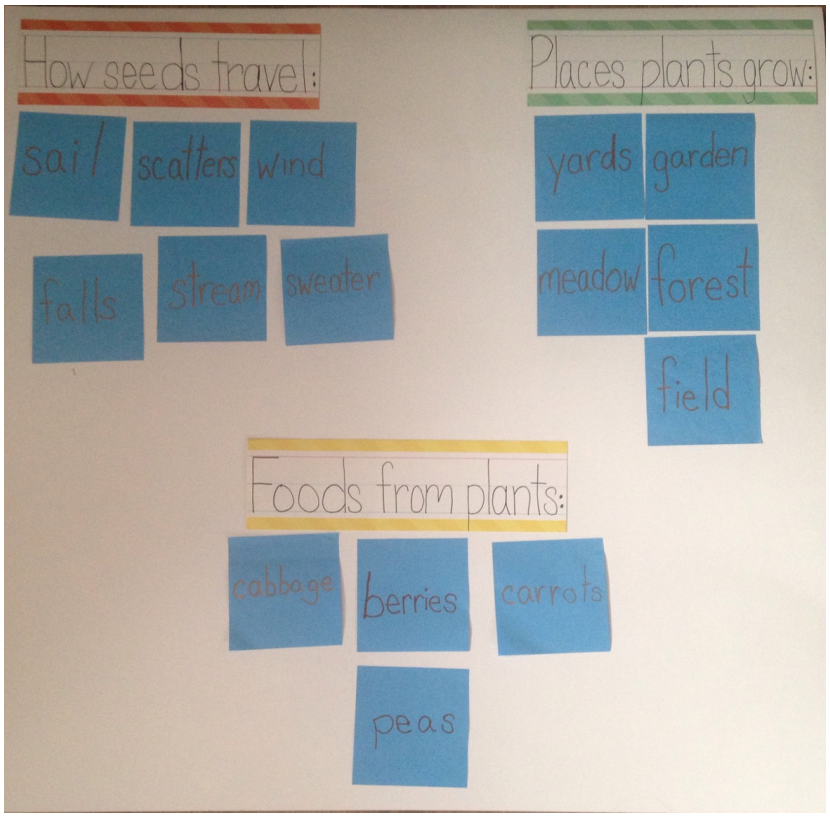
Step 2: The students can sketch a picture to represent one of their new words on their post-it. (Later on, in "Lesson 4"), These sketches will be a play a part in their further research and exploration).

Step 3: For further familiarization with vocabulary terms, the groups will work together to sort 10 "Plant" words in alphabetical order. For letters "f", "l", and "s", students will need to look to the second letter to determine the order.

EVALUATION: (Collaborative Work)

A formative evaluation will be done to check to make sure everyone is participating. The first "Concept Sort Chart" will serve as a formative evaluation. The "Alphabet sort" on plant terms will serve as another formative evaluation as well. Throughout this unit, we will build to another summative evaluation (an online quiz ("Kahoot") to obtain information on how information (on key vocabulary and concepts) is being retained.

SORTING CHART: Words from, Planting The Wild Garden by K. Galbraith



Desk Arrangement for Cooperative Learning Groups:

LEARNING EXPERIENCE - LESSON PLAN: 4

Title: Expert Plant Groups "Jigsaw" (1 hour, 40 minutes)

Central Focus: Students can convey that there are many types of plants; they are living things and have certain needs.

5 E's of Learning Experiences

Subject / grade level: Exploring Plants: Science and Literacy / 1st Grade

Lesson objective(s):

Students will read and discuss their assigned non-fiction text.
Students will explore their category of plant through hands-on observation and arts integration
Students will learn new vocabulary terms about plant concepts.
Students will be able to take notes and write terms that are unfamiliar to them within a text about a category of plant.

Standards:

NGSS

LS1.B: Growth and Development of Organisms
LS1.D Information Processing- Plants respond to some external inputs.

Common Core: English Language Arts

CCSS.ELA-LITERACY.L.1.5.A
Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.
CCSS.ELA-LITERACY.SL.1.1
Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and larger groups.
CCSS.ELA-LITERACY.SL.1.2: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
CCSS.ELA-LITERACY.RI.1.10
With prompting and support, read informational texts appropriately complex for grade 1.
CCSS.WRITING.1.7 Participate in shared research and writing projects

Materials:

- Display board (two of five puzzle pieces of the Class Poster)
- Books: (5) Expert Groups Book Bags
- Books: (in each tote bag)

  Group 1: Flowers by Christine Peterson, How a Seed Grows Into a Sunflower by David Stewart, Flowers by Henry Pluckrose, From Bulb to Daffodil by Ellen Weiss, Planting a Rainbow by Lois Ehlert, Sunflowers by Cynthia OverbeckHow Flowers Grow by Emma Helbrough

  Group 2: Plants We Eat by Christine Peterson, Growing Vegetable Soup by Lois Ehlert, Life Cycle of a Bean by Angela Royston, One Bean by Anne Rockwell, Seeds Go, Seeds Grow by Mark Weakland, Seeds Sprout by Mary Dodson Wade, Plant Packages: A Book About Seeds by Susan Blackaby, Seed, Soil, Sun by Chris Peterson, Corn by Gail Gibbons

  Group 3: Deserts, by Gail Gibbons, Desert Animals and Plants for Kids by Speedy Publishing, About Habitats: Deserts by Cathryn Sill, Desert Giant: The World of the Saguaro Cactus by Barbara Bash, A Desert Scrapbook by Virginia Wright-Frierson

  Group 4: Plants Bite Back by Richard Platt, Hungry Plants by Mary Batten, Scary Plants by Janet Lawler, Venus Flytraps by Kathleen V. Kudlinski, Sundews: A Sweet and Sticky Death by Victor Gentle, Pitcher Plants: Slippery Pits of No Escape by Victor Gentle

  Group 5: The Secret Life of Trees by Chiara Chevallier, Giant Sequoia Trees by Ginger Wadsworth, Tell Me, Tree by Gail Gibbons, "Amazing Plants", Scholastic News: My Weekly Reader March 2017 Ed. 1, Vol. 73 No.6, What is a Plant by Pam Rosenberg, Trees by Andres Llamas Ruiz, A Tree is a Plant by Clyde Robert Bulla, We planted a Tree by Diane Muldrow, Be a Friend to Trees by Patricia Lauber, and Trees by Henry Pluckrose

- Markers
- Live plants (cactus and flowers) and/or loaded Ipads with video samples for each group's concept. (See: EXPLORATION: Teacher exhibits)
- Parts from Trees: Pinecones, bark, branch, leaves
- Paints- Water Colors-(4 kits), Tempura Paints: Green, Red, Yellow, Pink, Purple, Blue
- Paint brushes
- Card stock sheets for flower stamping/painting
- Flower Stamps / Ink pads
- Flower Seeds
- Vegetables-examples of plant parts we eat: carrot, lettuce, celery or asparagus, broccoli, apples, onion, sunflower seeds
- Corn Seeds
- Printed Labels of Corn Parts
- Wikki Stix
- Paper Plates
- Wide Green Pipe Cleaners
- Bug Stickers
- Wood toothpicks
- Dark green yarn
- Brown Paper Bag
- Tissue Paper: Red, Pink, Light and Dark Green, Orange, and Yellow
- Glue
- Scissors

  Teacher Note: Arrange all supplies according to each group's project. Organize in a bag with an art example so that they can take it back and begin their group work after the lesson explanation.

Differentiation strategies to meet diverse learner needs:
For Visual and ELL learners, an opportunity will be able to sketch a picture to represent a concept. Once again, grouping together advanced readers as peer tutors for struggling readers will bolster learning at both levels.

Vocabulary: Everyday: dry, wet, colors, bumpy, rough, smooth, prickly, needles, tall, juicy Academic: presentation, display, display board, order, sequence, materials non-fiction, author's purpose Content-Specific: habitat, soil, minerals, air, space, sunlight, water, roots, stems, leaves, bark, trunk, evergreen, conifer, deciduous, cactus, succulent, flowers, seeds, bulbs, fruit, vegetable, kernel, stalk

ENGAGEMENT: (Whole group time on the carpet)
Refer back to the essential question. . .
Essential Question: Why do we spend so much time thinking about and learning about words?
Teacher states, "We talked about why we learn words, and how it is important not just to recognize them in a book, but also be able to use them. You had the chance to use these newer science word when you did a Concept Sort." Ask the class if they can connect to prior knowledge and explain how they sorted their post-its and what they did in the last lesson. Emphasize that they learned words better by using them- in that case by sorting them.

Teacher states:

"First grade, what is a jigsaw?" Collect answers. (Emphasize the collective effort and how things fit together). "What is important about the "jigsaw strategy" is that each "Expert group" is going to share their information about new words a concept with the "Home group", which in our case will be the whole class. Each group has its own work to do and special art project to go along with their concept. (Show the class the jigsaw poster pieces). So, in order for us to know about the "big puzzle", each group needs to do their part in preparing their jigsaw piece. Now I know some of you might have been very interested in your own groupings at first, but are very curious about the other ones. I want you to know that after we put our jigsaw board together with all your current groups' information, you can explore a different topic more. I may loan you one of their books or help you figure out how to do an art project at home to help you remember more about that topic too." Review the groups that were organized for the "Concept sort" and then explain the "Jigsaw" process to be used in order to increase reading comprehension and communication skills.

EXPLANATION: (Whole group time on the carpet)

The Teacher describes what the students will be doing in their expert groups.

"Today we are beginning our lesson with each group doing an artistic representation of your special plant. I could call this your "special plant" or your topic, or concept. A "topic" or "concept" is like a title. Remember how we did the "concept sort" with the post-it notes? That was a concept about "Planting a Wild Garden". You are really concentrating on your one concept to become an expert- so that you can share with the class. You were beginning to learn more about categorizing so that you can use new words better. Now we have some more work to do after your art piece. This involves how you are going to decorate your Jigsaw puzzle piece and figure out what bits of expert information that you will present to the class. Then, we will put all the pieces together for a grand display. Try and think about some things you read in your group book bag from the last lesson. As you are doing your artwork, I want to to think about what words you are using about your topic and explain to your group what you are doing."

Introduce the word, "habitat". Ask students to repeat the word back chorally and make connections to a recent field trip to a zoo where they saw animals from different habitats. "Brainstorm" as many habitats as can be generated. Teacher states, "Some of you are going to discover about where your special plants grow, as you re-read the books or other books on your special topic. I know of four habitats: Wetlands (Bogs/Marshes), Grasslands, Forests, and Deserts. These are types of habitats. In your conversations today, one thing I would like to hear you talk a little about is your plants' habitats as you think of what you are going to share with the class on your "jigsaw puzzle" piece." Have students make two other connections to prior learning. First,

EXPLORATION: *(Collaborative Work) (40 minutes)*

Teacher instructions*: "*I will hand each group a bag of their specific art materials. There is an art sample in each bag for you to model. I will come around with further instructions. Near each group I have set out something out to inspire you. It might be an actual plant to explore or a video to play when you are done with your art."

Artistic representation:

a) Flowers: Inform the group about which seeds/bulbs/stamps are available from which they can choose. This group paints one or more flowers using an ink pad, flower petal stamps, water color paint, and seeds that correspond to their flower- except in the case of the tulip. They stamp the flower, paint the petals and stems and then glue on the corresponding seeds. They also have the option to paint the flower petals free-hand. (Early finishers can paint another flower).
b) Fruits/Vegetables This group works with "Wikki Stix". They divide a paper plate into fourths, and mold the stix into the four stages of corn. They glue on corn seeds as the first stage, and then label each growth phase. (Early finishers can categorize the exhibit foods into what plant parts they are from).

c) Cactus/Succulents: This group will trace a saguaro cactus pattern, cutout and paint with green tempura paint, then glue dark green yarn for the lines, glue wooden toothpicks as the needles, and glue small wads of crinkled pink or red tissue paper on top for the flowers. (Early finishers can color a desert habitat picture).
d) Meat-eating (Carnivorous plants): This group folds and cuts their paper plates into the shape of a Venus Fly Trap. Cut the center circles out ahead of time to save time. They paint both sides green, paint a center circle red, glue the green pipe cleaner as the stem, and then put a sticker of a fly on the inside if they choose. (Early finishers can watch the exhibit video below).
e) Trees: The students will create a deciduous tree by using a brown paper bag as the base. At the opening, ~5cm strips are cut halfway up. Then, the bag is stuffed with newspaper and a rubber-band sections it off. Students twist the branches and then use crinkled shades of green tissue paper as leaves or crinkled red, orange, and yellow autumn leaves. There will also be tree stamps that they can use to stamp and color squares to add to their presentation board. (Early finishers can watch the tree video below on one of the class laptops).

Teacher exhibit for groups:

a) Flowers: Flower seed packet with seeds on display, bulbs, and a tulip in a vase along with another colorful flower.
b) Fruits/Vegetables: Large platter will contain examples of foods from plants that are either: roots, stems, leaves, fruits/vegetables, flowers, seeds or bulbs. Have examples of carrots/radish, celery/asparagus, Romaine lettuce/Spinach, blueberries/apples, broccoli, sunflower seeds/peas/corn, and an onion.
c) Cactus/Succulents: Bring in potted succulent plants such as; aloe vera, or a moon silver succulent, and a prickly pear.
d) Meat-eating (Carnivorous plants): If a Venus fly trap plant is unavailable to bring in, these students will view the video: https://illinois.pbslearningmedia.org/resource/etv08.sci.life.evo.carnplt/carnivorous-plants-of-cartwheel-bay/#.WPtXy1PytE4, (Carnivorous Plants of Cartwheel Bay) and/or http://www.arkive.org/venus-flytrap/dionaea-muscipula/video-00.html, (Wildscreen Arkive: Venus Flytrap)
e) Trees: Students will look at leaves, cherry tree blooms, bark, pinecones, pine needles (or spruce) and note differences between evergreens (conifers) and the broad-leafed trees, (deciduous). Due to student interest, the type of tree chosen to watch a video about, is a the unique mangrove tree: https://www.youtube.com/watch?v=VwaOVCHPyOc (Mangrove Forests, Jonathan Bird's Big Blue World.

ELABORATION: *(Collaborative / Teacher Guided Work) (20 minutes).*
Step 1: Students will continue to jot down full sentences to explain new vocabulary that can be associated with the group topic. They can refer back to post-it words they gathered from lesson or sketches from lesson 3. The teacher will guide them as they pull this information into a script. She spends about 4 minutes per group. She will ask about the habitat where these plants grow in order to bolster knowledge of the new term.
Step 2: Students Collaborate about how they want to display their art and text for their "jigsaw" presentation.

EVALUATION:
Part 1: A formative evaluation will be done to check to make sure everyone is participating.
Part 2: A summative evaluation will be done to check and see if appropriate grammar (Capital letters, punctuation, and grade-appropriate spelling) is correct. (After corrections, text can be displayed on the board).

LEARNING EXPERIENCE - LESSON PLAN: 5

Title: Expert Plant Groups "Jigsaw" Presentations and Evaluation (1 hour, 10 minutes)

Central Focus: Students can convey that there are many types of plants; they are living things and have certain needs.

5 E's of Learning Experiences

Subject / grade level: Exploring Plants: Science and Literacy / 1st Grade

Lesson objective(s):
Students will use vocabulary terms to talk about plant concepts.
Students will verbally explain their special their work on a shared research project.
Students will be able to take notes and write terms that are unfamiliar to them within a text about a category of plant.
Students will work collaboratively to finalize their written and group present newly acquired knowledge to their peers (whole class).

Standards:
NGSS
LS1.A Plants have different parts (roots, stems, leaves, flowers, fruit) that help them survive and grow.
LS1.B: Growth and Development of Organisms
LS1.D Information Processing- Plants respond to some external inputs.

Common Core: English Language Arts
CCSS.WRITING.1.7 Participate in shared research and writing projects.

CCSS.ELA-LITERACY.L.1.5.A
Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.

CCSS.ELA-LITERACY.SL.1.1
Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.1.2: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.RI.1.10
With prompting and support, read informational texts appropriately complex for grade 1.

Materials:

- Display board with art/text: (Five puzzle pieces from each group for the Class Poster)
- Smartboard
- Ipads
- Kahoot Quiz Questions / Alphabetizing sheet for assessment
- Plants/food/seeds/bulbs to display if students want to use those in their presentation

Differentiation strategies to meet diverse learner needs:
For Visual and ELL learners, will see the "Expert Group" displays with artwork which will help them link vocabulary.

Vocabulary: Everyday: flowers, food, dry, wet, colors, bumpy, rough, smooth, prickly, needles, tall, juicy Academic: presentation, display, display board, order, sequence, materials Content-Specific: trees, cactus (Saguaro), succulents, carnivorous, meat-eating, habitat, soil, minerals, air, space, sunlight, water, roots, stems, leaves, bark, trunk, evergreen, conifer, deciduous, seeds, bulbs, fruit, vegetable, kernel, stalk

ENGAGEMENT: (Whole group at desks, Expert groups take turns at the front of the class). Say,
"First grade, during one of our last lessons, we learned about the jigsaw strategy which helps us to use our newly-learned vocabulary. So, now it is time to share your knowledge back to your home group. I don't expect you to be experts on all of those "million dollars" words that you encountered, but you do need to be listening to other groups and not only share your information, but learn something new from them."
(Play a short example of children doing presentations: http://anconaschool.org/tag/early-childhood/ (Start at :25 and play until 1:22)). Let's get started in putting all of our pieces together." Remind students to be respectful of one another."

EXPLANATION: (Whole group time on the carpet)
Part 1: Possible wording for teacher explanation:
"Our first group will bring up their board and each person will give you some interesting information. We will go through all 5 groups. Remember to listen. You might find something similar with your special topic. I will ask questions at the end about what one group has learned from another group. For example, I may ask the "Flower" group to tell me something about the "Cactus" group. Or, I might ask the "Meat-eating plant" group to answer a question about the "Tree" group. Then, we will put our display together and I will give you an assessment on the things you learned by participating in all of the science lessons. You will not use a pencil and paper. We will be using the Ipads for this."
Part 2: Explain that after presentations are over, children will put the jigsaw puzzle poster together on the floor.

EXPLORATION:
(Collaborative Practice / Teacher Guided)
Step 1: The will have time to walk around and look at each other's display boards and ask questions of the other group members.
(Individual Practice / Teacher Guided)
Step 2: The students will have time to practice on their Ipads to become more familiar with the program and then participate in the Kahoot.it quiz.

ELABORATION: *(Collaborative / Teacher Guided Work) (20 minutes).*
Group Presentations Begin. Each expert group brings their script with their sentence or sentences to share with the "home group" (whole class). They display their large puzzle piece collage of items. The teacher may ask a question about the special topic here and then allow for about 4 or 5 questions from other students in the class.

Next, let the children put the large jigsaw puzzle together. Give them time so that they can take a few moments to have pride in their work. Congratulate the class on the positive moments during collaborative conversations. Gather back at desks for assessments.

EVALUATION: Part 1: A formative evaluation will be done to check to make sure everyone is participating and speaking about their part.
Part 2a: The teacher will use the Kahoot website to test about whether a plant is living, plant needs, and the labeling of plant parts. This is used to obtain information how key vocabulary and concepts is being retained.
Part 2b: The teacher will evaluate the students on how they can apply their alphabetizing skills learned during language arts lessons. They will be asked to alphabetize a list of vocabulary words that were generated from this unit on plants. To accomplish this alphabetizing assessment, they will use their sorting skills, prior literacy instruction, and their experience from doing a group sort on both concepts and alphabetizing to help learn "plant" vocabulary.

Name:_____ Date:_____

First Grade Unit: Plants

Put the following words in alphabetical order.

living	**stems**	**grow**
bulbs	**seeds**	**soil**
leaves	**flower**	**water**
roots	**fruit**	**habitat**

a b c d e f g h i j k l m n o p q r s t u v w x y z

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

Kahoot Quiz Questions- Plant Unit

(I created the following quiz questions and entered them into an interactive online assessment program for the class to play together).

1. These are most always underground. They hold the plant in the soil and take in water and nutrients.
   a) Stems b) Roots c) Houses d) Leaves

2. This is the part of the plant that moves water like a straw from the roots to the leaves.
   a) Stem b) Leaves c) Flower d) Sun

3. A plant . . .
   a) Is Not alive b) Is always inside a house c) Can never be a food d) Is Living

4. The needs of a plant are:
   a) water, soil, space, light, air b) air, milk, honey, bread c) dogs, cats, and people

5. Plants make food in their
   a) Feet b) Hair c) Stems d) Leaves

6. A habitat:
   a)…is a place where something lives and grows. b) is a type of candy. c) …is always blue.

7. A bulb:
   a)…hangs from a leaf b) …falls down when it rains c) …is always the color orange d)…can be planted like a seed.

8. One example of a habitat is…:
   a) The desert b) the color blue c) running d) jumping

Reference:

https://getkahoot.com/