Bernite Oandasan
Professor Belgrad
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EED 480

Student Project-Based Learning Outlines

I. Title and Grade Level: Day 1

What ants eat and Kindergarten grade level

II. ***BIG IDEA:*** *What foods do ants like best in their environment?*

III. TASKS: We will

A. Read aloud the book *Ant Cities* by Arthur Dorros. It's about how the ant community works together to take care of the colony.

B. Ask students what kind of foods do the ants like to eat? I will have them think of their prior-knowledge about *where* they have seen ants eat and the *kinds* of food, they've seen them eat.

C. Finally, Students then will identify the *different* kinds of food ants have eaten, may like, or have seen for themselves at home, a park, or someone else's home.

IV. **JUSTIFICATION** This lesson series integrates ELA, Visual Arts, and Science. My ELA standard meets my lesson by allowing the students to work in cooperative learning groups to collaborate with diverse partners to discuss about *what* the know about ants, *where* they've seen ants, and *what* they've seen ants eat. The art standard I chose meets my lesson because students are to write or draw the foods, they've seen ants eat. They will also discuss why they chose the food/s to draw on their butcher paper. My NGS meet my lesson because students with think about ants and their connection to their environment. Cross Cutting standard meets students need, because they're to categorize the foods they chose to write or draw about. They are to determine which foods are blend, sweet, sour, and salty.

V. **STANDARDS: Grade Level and Subject Area: Kindergarten, Science, Language Arts, and the Arts**

CCSS.ELA-LITERACY.SL. K.1
Participate in collaborative conversations with diverse partners about *kindergarten topics and texts* with peers and adults in small and larger groups.
4.0 AESTHETIC VALUING
Make Informed Judgments
4.3 Discuss how and why they made a specific work of art.

NGS Life Science K. <u>Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment</u>

A. **Disciplinary Core Ideas:**

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

B. **Science and Engineering Practices:** Planning and Carrying Out Investigations.
C. **Cross Cutting:** <u>1. Patterns</u> Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.

VI. ENGAGING CONTEXT: Hook- Learning Science | Scientific Method Song | Lyric Video | Kid's Songs | Jack Hartmann <u>https://www.youtube.com/watch?v=ptADSmJCVwQU</u>

VII TOTAL TIME: 30

VIII. Social <u>Skills</u> and or Habits of Mind to Engage/Assess

[ ] Persistence	[ ] Problem posing
[ ] Decreasing impulsivity	[ ] Drawing on past knowledge
[ ] Empathic listening	[ ] Application to new situations
[ ] Flexibility in thinking	[ ] Precision of language and thought
[ ] Metacognitive awareness	[ ] Using all the senses
[ ] Checking for accuracy	[ ] Ingenuity, originality, insightfulness and creativity
[ ] Questioning	[ ] Inquisitiveness, curiosity
	[ ] Enjoyment of problem solving

IX. Level of Voice Appropriate for Activity: Students will work from a Top Secret Plan to a Super Team Task noise levels.

X. BSCS 5-E Framework

Engage:

A. **Formation of Groups:** Heterogeneous, students will be assigned a number from 1-6. There will be 6 groups of 4. They will find the tables labeled with their numbers they are assigned. Tables will be labeled 1-6, so students can find their cooperative learning group.
B. **Role Assignments:** Have students pick pictures out of a hat. For example, an ant's antenna will be materials manager, ant's thorax will be timekeeper, abdomen will be encourager, and legs will be travelers. This will determine the role assignments.

Materials Manager: butcher paper, graphic organizer, crayons, pencil, black marker.
Timekeeper: keeps track of timer on board, makes sure everyone is on task.
Traveler: goes to other groups, if they need help.
Encourager: motivates the other students in their group.

Explore:

Brainstorm: draw pictures on butcher paper or write about the food ants have, will, or may eat from *their experience* seeing ants eat.

Hypothesize (Predict): each group member will make a hypothesis on which food/s they *think* ants like best. Or, whole group will make a hypothesis on which food/s they *think* ants like best. Or, whole group will come up with one hypothesis on which food/s they *think* ants like best.

6 groups of 4 students

Explain: **What Do Ants Eat? - Lesson for Kids**
https://study.com/academy/lesson/what-do-ants-eats-lesson-for-kids.html

I will go over the food categories so students can sort and organize the foods into food categories. I will help students redefine their hypothesis to include the food categories which are sweet, sour, salty, and bland. I will explicitly explain that the class has two questions to answer. The big idea question and their individual/group hypothesis/prediction.

Extend/Elaborate:

Students will work in their groups to place the foods they chose to write or draw about, into the categories; sweet, sour, salty, and bland. They will discuss their hypothesis in which food/s they believe ants like best. They will redefine their hypothesis/prediction for their group or individual question.

XI. Materials List: butcher paper, graphic organizer, crayons,

pencil, black marker.

Evaluate:

Processing--Questions for groups and individual reflections: Did you think your group members were actively participating? Do you agree on your group's hypothesis? How well do you think your group participation was?

Assessment Content: Students will be assessed in drawing/writing a minimum of 4 foods ants eat. Did their hypothesis relate to the task about what ants like to eat?

Assessment of Cooperation/Collaboration and Student:
Teacher will assess students by using a Clustered Criteria Checklist.

Standard: CCSS.ELA-LITERACY.SL.K.1
Participate in collaborative conversations with diverse partners about *kindergarten topics and texts* with peers and adults in small and larger groups.
NGS Life Science K. <u>Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment</u>
Cross Cutting: <u>1. Patterns</u> Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.

Criteria/Performance Indicator	Not Yet 0	Some Evidence 1
Student is: Collaborating with group members/peers.		
Staying on task.		
Sharing ideas.		
Being active listeners and taking turnings in discussion.		
Being respectful to others ideas, or disagreement on ideas not the person.		
Thinking flexible and perseverance.		
Engage in team work.		

Students will assess each other by using an Observation Checklist
Rating: + = frequently - = sometimes 0 = not yet

Name of students	Shared ideas.	Helped in drawing.	Helped in writing.	Actively listened.	Respectful when talking
Team member 1					
Team member 2					
Team member 3					

Children's Literature that Supports the PBL: *Ant Cities* by Arthur Dorros

EED 480

Student Project-Based Learning Outlines

I. Title and Grade Level: Day 2

What Ants eat for Kindergarten grade level

BIG IDEA: *What foods do ants like best in their environment?*

II. TASKS:

A. Students will use black marker to draw lines that make four sides on the plate.

B. They will take a food sample and place it on to a quarter of the plate. They will do this for each food sample.

C. Students will take it outside onto the grass, so ants can eat the food samples. Students will begin to observe the ants.

JUSTIFICATION This lesson series integrates Science, ELA, and Math.

III. STANDARDS: Grade Level and Subject Area: Kindergarten Science, Language Arts, and Mathematics.

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

Measurement and Data K.MD

Classify objects and count the number of objects in each category.

3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.3

NGS Life Science K. <u>Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment</u>

D. Disciplinary Core Ideas:

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

E. Science and Engineering Practices: Using Mathematics and Computational Thinking.

F. Cross Cutting: 1. Patterns Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them

IV. TOTAL TIME: 30 mins

V. Social Skills and or Habits of Mind to Engage/Assess

[ ] Persistence	[ ] Problem posing
[ ] Decreasing impulsivity	[ ] Drawing on past knowledge
[ ] Empathic listening	[ ] Application to new situations
[ ] Flexibility in thinking	[ ] Precision of language and thought
[ ] Metacognitive awareness	[ ] Using all the senses
[ ] Checking for accuracy	[ ] Ingenuity, originality, insightfulness and creativity
[ ] Questioning	[ ] Inquisitiveness, curiosity
	[ ] Enjoyment of problem solving

VI. **Level of Voice Appropriate for Activity:** Students will work from a Top Secret Plan to a Super Team Task noise levels.

VIII. **BSCS 5-E Framework**

Engage:

Formation of Groups: Heterogeneous, students will be able to pick their own group of four. Groups will be formed by student's likeness of one of the symbols. Students must work collaboratively to ensure their work gets done.

Role Assignments: Have students pick pictures out of a hat. For example, an ant's antenna will be materials manager, ant's thorax will be timekeeper, abdomen will be encourager, legs will be travelers, and mandibles will be the speaker. This will determine the role assignments.

Materials Manager: distributing paper plate, graphing paper for bar graph, pencil, crayons, black marker, 3-4 food samples.
Timekeeper: keeps track of timer on board, makes sure everyone is on task.
Observer: helps recorder in counting the number of ants is eating each food sample.
Recorder: helps record the number of ants eating each food sample.
Presenter: whole group will present their findings for each food sample.

Explore

Students will record the number ants that eat each food sample. If ants take longer to come to the plate, I will bring students in to do other activity, for 30 minutes, and go back outside. While working on other activity, we will make a prediction from their hypothesis/prediction about which foods ants will eat *more*.

6 groups of 4 students

Explain

I will have students' pair-share about their hypothesis and prediction. I will prompt students in the type of food categories their samples belong to. From the data they've collected, I will help them answer the question, what foods do ants like best in their environment? Also, answer their own question. Once whole class has shared their groups question, I will model how to fill in their bar graph, to show their results about the number of ants ate each food sample.

Extend/Elaborate: Student will discuss with their whole group or partner, their hypothesis and prediction. Students share which food sample and food category their hypothesis and prediction they made about the food/s ants like best in their environment. They will answer their groups or their individual hypothesis and prediction by showing evidence to support their answer. They will answer the big idea question and their individual/groups' question, using the data from their bar graph, as evidence to their answer.

IX. Materials List

Paper plates, graphing paper for bar graph, pencil, crayons, black marker, 3-4 food samples.

Evaluate: (Assess):

Processing--Questions for groups and individual reflections: Did your group work together as a team? How do you feel about your prediction? Did you enjoy working with your team while doing the experiment?
Assessment Content: Students will color/fill in bar graph to show the number of ants ate each food sample. Answer the big idea question using their bar graph. Answer their individual/group hypothesis they made about which food sample the ants would eat more.
Assessment of Cooperation/Collaboration and Student Self-Assessment of Collaborative Performance

Peer Assessment (Rate Your Mates) 

Teacher will assess students by using a Rubric

I would like you to select images to enable your pre-literate children to easily understand this important assessment.

Criteria	Above & Beyond	On Target	Progressing	Not there yet
Used food samples for experiment	Placed four food samples on the plate.	Placed three food samples on the plate.	Placed two food samples on the plate.	Placed one food sample on the plate.
Recorded the number of ants for food samples	Recorded the number of ants on all four-food samples.	Recorded the number of ants on three food samples.	Recorded the number of ants on two food samples.	Recorded the number of ants on one food samples.
Answered the big idea using bar graph when writing a sentence.	Proficiently uses bar graph as evidence to writing their response.	Intermediately uses bar graph as evidence to writing their response.	Novicey uses bar graph as evidence to writing their response.	Very basic knowledge using bar graph to writing their response.
Answered their own individual/group hypothesis, using data, when writing a sentence.	Answered in a complete sentence with details. Response fully corresponds to data collected.	Answered in a complete sentence and response corresponds to data collected.	Answers is vague and fairly corresponds to data collected.	Answer is incomplete and does not correspond to data collected.

Students will assess each other by using an Observation Checklist

Rating: + = frequently - = sometimes 0 = not yet

Name of students	Shared ideas.	Helped in recording.	Helped in bar graph.	Active listening.	Respectful when talking
Team member 1					
Team member 2					
Team member 3					

X. Encouraging Energizer: <u>Varied: Team selected</u>