Pumpkin Unit
Central Iowa Christian School
Grinnell, Iowa
By Janelle Stahl k-2 multi age teacher

1. I chose the topic about pumpkins because I know it is very relatable to my age of students. I also have a garden right outside the back door of my classroom so I knew that would be a great place to plant them. I thought it would be a great opportunity for the students to help take care of their environment and appreciate it more by having a garden of pumpkins. It is also a great way to reach the learning goals about plant life and living and nonliving organisms.
2. Learning Goals:
    1. Understand and apply knowledge of the characteristics of living things and how living things are both similar to and different from each other and from non living things.
    2. Understand and apply knowledge of life cycles of plants and animals.
    3. Understand and apply knowledge of the basic needs of plants and animals and how they interact with each other and their physical environment.

3. A. This project will help me achieve these learning goals by having a garden to help students explore and discover various steps of plant life and their cycle.
   b. This project fits my learners by having a smaller area such as a garden to explore,that is on our school grounds. The project on pumpkins is great too because the town of Grinnell has a wonderful pumpkin patch to visit and explore as well.

Project Outline

Step 1: Describe the Ecosystem

It is a raised garden bed right outside the back door of the classroom. It is 6X12 feet. There is no shade it is surrounded by the school building on the west and south and the school playground on the east and north. There is a water supply near by.

Activities: Sit spot once a week to observe the pumpkins growth by drawing what they see. They can measure the pumpkins and measure the garden. They can fill out a science journal with their drawings, questions, and observations.

Step 2: Define the Problem

How do plants grow? What are the parts of the plant? How does the plant keep coming back every year? What is the purpose of the plant? What are the characteristics of the plant? Where does the plant grow best? See lesson plan Pumpkins characteristics----- engage Phase See lesson plan brainstorming ideas---- Explore phase

Step 3: Research the Problem

See lesson plan characteristics ---Explore phase and Elaborate phase and Evaluate phase
See lesson plan brainstorming—Explain phase

Step 4: Understand Stakeholders

The student is a huge stake holder because they need to be self motivated to get their project done. The students are also working in a group so their group members are stake holders too. As a teacher I will tell them my expectations to work as a group effectively through a rubric. Then at the end of the project I will have the group members come to me and we will go through the rubric together and talk about if they met the expectations.

Step 5: Determine Possible Solutions

This will be solved in the developing of the plan—see lesson plan brainstorming ideas—engage phase
And implementing the plan—see lesson plan brainstorming ideas—elaborate phase and evaluate phase

Step 6: Develop a Plan

See Lesson plan brainstorming ideas—engage phase

Step 7: Implement the Plan

See lesson plan brainstorming ideas—elaborate phase and evaluate phase

Step 8: Summarize, Evaluate and Reflect

See lesson plan brainstorming ideas--- extension phase
When the project is over I will have each group come up to my desk and we talk over the rubric together and reflect and evaluate if the group members met the expectations that the rubric stated.

Topic: How do plants grow? Focus on Pumpkins
Grade Level:k-2

Logistics Information:

Iowa Core Essential Concepts
Science as Inquiry: 1,2,3,4,5,6,7
Life Science: 1,2, 3, 4
21st Century Skills: Health 1
Mathematics: Measurement 1; Data Analysis and Probability 1,3

Skills: analysis, cause and effect, generalization, observation, organization, prediction, research, and preparing a presentation.

Background Information:

Students enjoy hands-on instruction and using real world skills to explore plants around them.

Materials Required:

Paper to draw their observations for pumpkins---Fostering outdoor observation—sit spot, pencils, different types of seed packets, pictures of the pumpkin on the seed packets, duck tape for the sock activity---Project Learning Tree— Activity 43 Have seeds, will travel, science journal--- Field investigations—Nature journal, Project Wild—Playing Lightly on the Earth

Time Period: 25 sessions of 30 minute time periods

Name of the Unit: Pumpkins

Plan of the Unit

a. Goals of the unit:
   The student can tell what is needed to grow a pumpkin.
   The student can tell the lifecycle of the pumpkin
   The student can write down the lifecycle of a pumpkin.
   The student can tell the parts of a pumpkin.
   The student can label the parts of a pumpkin.
   The student will select the topic to research on the pumpkin.
   The student will be able to present their findings.

b. How this unit related to the curriculum: Plant growth and development is part of our core curriculum.

Previous Grade/Course	Current Grade/Course	Next Grade/Course
Preschool: Science Unit (Plants)	1st Grade: Science Unit (Plant Growth and Development)	3rd Grade: Science Unit (Plant Growth and Development)

Lesson Plan: Characteristic of Pumpkins/ Seeds/ Different types of Pumpkins

Phases of the lesson: learning activities and key questions (and time allocation)	Student activities/ anticipated student reactions or responses	Teacher's response to student reactions/ Things to remember	Evidence of Student Understanding
ENGAGE: Students will go to their sit spot and draw what they see in the garden. (Fostering outdoor observation—sit spot) They will be actively engaged in this process as they work independently.	Students will be drawing the details of the pumpkin and what is around it. Students may want to finish early but encourage them to look at the details.	Teacher will need to manage student behavior during the sit spot activity. The teacher needs to remind them about respecting the school garden and not damaging it or walking on it. Encourage students during their recess to look for evidence of games that have damaged the environment on the playground.---(Project Wild Playing Lightly on the Earth.)	Students will gain knowledge of the characteristics of a pumpkin by using their senses to draw in detail of the pumpkin that is in their school garden.
EXPLORE: Students will take off their shoes and put duck tape around their socks and go walking and collecting different types of pumpkin seeds. (Project learning tree—Activity 43—Have seeds, Will travel)	Students will sort out the seeds by putting the same seeds together.	Students may have difficulty sorting out the seeds. The teacher may have to help groups get started with the sorting process. Maybe have the students put the seeds on different sheets of paper to help them organize it.	Students will understand that different type of pumpkins have different seeds
EXPLAIN: After students are finished conducting the seed find and sort experiment they share the outcome of how many groups of seeds that they had and how many of each kind.	Students may not realize that each type of seed produces a different type of pumpkin.	Teacher may need to assist with questions to develop student understanding and discussion.	Students will present requested information to their peers in an appropriate manner. Classmates will display proper listening skills

Phases of the lesson: learning activities and key questions (and time allocation)	Student activities/ anticipated student reactions or responses	Teacher's response to student reactions/ Things to remember	Evidence of Student Understanding
ELABORATE: After completing the activity, students will put the correct pumpkin picture with the correct seed.	Students may experience difficulty putting the correct picture with the correct seed due to never seeing it before.	Teacher will let the students discover and let them figure it out in group first. Then give them the correct answers and let them try again.	Students will understand the type of pumpkin that will grow from the different seed.
EVALUATE: Students complete a science journal with illustrations of a pumpkin with the correct illustration of the seed by looking at the pumpkin picture and the seed. They can also label the type of pumpkin. They can answer the question what is their favorite type of pumpkin and why??? (Field investigations—nature or science journal) **EXTENSION:** Students will compare their findings and journals with peers.	Students will be working independently on their science journal. Students may experience difficulty staying on task and may need redirected	Some students may need reminders about working quietly and working independently. Teacher may need to guide the labeling of the drawings. Teacher will help to manage student conversations and encourage them to stay on task	Student journals/illustrations will be properly completed with correct labels as is developmentally Students will share out with the whole group

Materials: Sticky notes to do brainstorming, Aquatic Wild Guide—Hints for using simulated Field trips, science journal, pencils, Iowa Supplement to Project WILD--- What's that Habitat?

Lesson Plan: Brainstorming ideas about Pumpkins/sorting ideas/Field investigation/Project/Presentation

Phases of the lesson: learning activities and key questions (and time allocation)	Student activities/ anticipated student reactions or responses	Teacher's response to student reactions/ Things to remember	Evidence of Student Understanding
ENGAGE: Students as a whole class will be making a web by brainstorm all the ideas that come to their mind about Pumpkins. The teacher will write the ideas on sticky notes. What are their characteristics, How do they grow, what are their parts, What is their purpose?	Students will take the sticky notes and sort them into categories. Texture, shape, Food, parts……	Teacher will need to help the students sort out the sticky notes by putting the categories on a piece of paper and having the students put the sticky note on the correct piece of paper.	Students will gain knowledge of all the different components of pumpkins. Student will choose a component of a pumpkin he or she wants to learn and do more research about it. The students will be working in groups by what they were interested in. For example: research on pumpkin parts, or research on pumpkin patches.
EXPLORE: Students will take a field trip to a pumpkin patch. When the students get there they can get into a sit spot that is close to the pumpkin patch. Then close their eyes and either sit or lay down and use their senses to explore and discover.(Aquatic Wild guide—Hints for using simulated field trips) Then give them their science journal to record their observations.	Students will probably finish their observations quickly. Encourage them to look for the details.	Teacher will need to encourage the students to look for the details. Let them explore for a while then bring them back and talk about every living thing has a habitat. Have them go back and look what living things are using the pumpkin for a habitat. How are they using it?—(Iowa Supplement to Project Wild—What's That Habitat?)	Students will gain knowledge about what is all involved in a pumpkin patch.
EXPLAIN: After students are finished exploring the pumpkin patch the students get the opportunity to ask questions to the pumpkin patch owner . The questions the students are asking are on the components of the pumpkin that he or she wants to know more about.	Students may have troubles coming up with great questions to ask so maybe before you go to the pumpkin patch come up with at least one question. Then when the students are there they can come up with another one by their exploration.	Teacher may need to assist with Questions. .	Students will gain more knowledge about the component of the pumpkin they wanted to know more about. Students will display proper listening skills

Phases of the lesson: learning activities and key questions (and time allocation)	Student activities/ anticipated student reactions or responses	Teacher's response to student reactions/ Things to remember	Evidence of Student Understanding
ELABORATE: The students will take the information from their exploration and answers to their questions and also looking at books to make their own project. For example a book or mobile or poster about their component of the pumpkin they want to know more about.	Students will be working in groups so it is important everyone has a job and they work together effectively.	Teacher will need to help assist groups.	Students will be gaining a lot of knowledge about how to research, how to take their information and put it into a project and write it down. The students will also learn how to effectively work with a group.
EVALUATE: Students will be following a rubric on what needs to be included in their project. **EXTENSION:** Students will share their projects to each other and also to their parents and friends	Students will need to be following the rubric to make sure they are doing what is expected of the teacher. Students may experience difficulty staying on task and may need redirected	Teacher may need to frequently remind them of what she is expecting in the project by going over the rubric often. Teacher will help to manage student conversations and encourage them to stay on task. Teacher will need to help them on how to properly present material.	Student project will be properly completed with correct information as is developmentally Students will share their project with their class, and parents.