Teacher Preparation Lesson Plan

Subject Area: Science
Unit Title: The Science of Gardening
Grade Level: 5th Grade
Lesson Number: 1 of 5

Duration: 45 minutes
Date: March 10, 2023
Teacher: Ms. Johnson
Room: 205

Curriculum Standards Alignment

Content Standards:

- 5.LS1.A: Structure and Function
- 5.LS2.A: Ecosystems: Interactions, Energy, and Dynamics

Skills Standards:

- Scientific and Engineering Practices
- Cross-Cutting Concepts

Cross-Curricular Links:

- Math: Measurement and Data
- English Language Arts: Reading and Writing

Essential Questions & Big Ideas

Essential Questions:

- What are the basic needs of plants?
- How do plants make their own food?

Enduring Understandings:

- Plants are living organisms that require specific conditions to survive.
- Photosynthesis is the process by which plants make their own food.

Student Context Analysis

Class Profile:

- Total Students: 25
- ELL Students: 5
- IEP/504 Plans: 3
- Gifted: 2

Learning Styles Distribution:

- Visual: 40%
- Auditory: 30%
- Kinesthetic: 30%

Teacher Preparation Lesson Plan

Pre-Lesson Preparation

Room Setup:

- Arrange desks in a U-shape
- Set up whiteboard and markers

Technology Needs:

- Computer with internet access
- Projector and screen

Materials Preparation:

- Seeds
- Soil
- Gardening tools

Safety Considerations:

- Wear gloves when handling soil
- Avoid eating plants or soil

Detailed Lesson Flow

Introduction (5 minutes)

- Introduce the unit and lesson
- Review learning objectives and success criteria

Direct Instruction (15 minutes)

- Teach the concept of photosynthesis
- Use diagrams and illustrations to support understanding

> **Engagement Strategies:**
>
> - Ask questions to promote critical thinking
> - Use real-world examples to illustrate concepts

Guided Practice (15 minutes)

- Have students work in pairs to match plant parts with their functions
- Circulate around the room to provide support and feedback

> **Scaffolding Strategies:**
>
> - Provide sentence stems to support writing
> - Offer one-on-one support for struggling students

Independent Practice (10 minutes)

- Have students create a diagram of a plant, labeling its different parts

- Allow students to work independently and circulate around the room to provide support

Closure (5 minutes)

- Review key concepts and vocabulary
- Ask students to reflect on what they learned

Differentiation & Support Strategies

For Struggling Learners:

- Provide extra support and scaffolding
- Offer one-on-one instruction

For Advanced Learners:

- Provide additional challenges and extensions
- Encourage independent research and projects

ELL Support Strategies:

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- de visual aids and graphic organizers
- Offer bilingual resources and support

Social-Emotional Learning Integration:

- Encourage self-awareness and self-regulation
- Model and teach social skills and empathy

Assessment & Feedback Plan

Formative Assessment Strategies:

- Quizzes and class discussions
- Observations and feedback

Success Criteria:

- Students can describe the basic needs of plants
- Students can identify and explain the functions of different plant parts

Feedback Methods:

- Verbal feedback
- Written feedback

Homework & Extension Activities

Homework Assignment:

Have students research and write about a type of plant or gardening technique.

Extension Activities:

- Have students create a garden plan or design a garden bed
- Encourage students to start a small garden or plant at home

Parent/Guardian Connection:

Encourage parents/guardians to support student learning by asking about their child's progress and providing opportunities for students to share their learning at home.

Teacher Reflection Space

Pre-Lesson Reflection:

- What challenges do I anticipate?
- Which students might need extra support?
- What backup plans should I have ready?

Post-Lesson Reflection:

- What went well?
- What would I change?
- Next steps for instruction?

Introduction to the Unit

Introduction:

Welcome to the Science of Gardening unit! In this unit, we will explore the fascinating world of gardening and plant biology. We will learn about the basic needs of plants, the different parts of plants, and how plants make their own food.

Learning Objectives:

- Students will be able to describe the basic needs of plants.
- Students will be able to identify and explain the functions of different plant parts.

Background Information

Background Information:

Gardening is an essential part of our daily lives, providing us with food, oxygen, and beauty. Plants are the foundation of all life on Earth, and understanding how they work is crucial for our survival.

Topics:

- Photosynthesis
- Plant anatomy
- Soil science
- Gardening techniques

Lesson 1: Photosynthesis

Introduction:

In this lesson, we will learn about the process of photosynthesis and how plants make their own food.

Learning Objectives:

- Students will be able to describe the process of photosynthesis.
- Students will be able to identify the importance of sunlight, water, and carbon dioxide in photosynthesis.

Direct Instruction

Direct Instruction:

The teacher will introduce the concept of photosynthesis and explain the process using diagrams and illustrations.

Engagement Strategies:

- Ask questions to promote critical thinking.
- Use real-world examples to illustrate concepts.

Guided Practice

Guided Practice:

Students will work in pairs to match plant parts with their functions.

Scaffolding Strategies:

- Provide sentence stems to support writing.
- Offer one-on-one support for struggling students.

Lesson 2: Plant Anatomy

Introduction:

In this lesson, we will learn about the different parts of a plant and their functions.

Learning Objectives:

- Students will be able to identify and explain the functions of different plant parts.
- Students will be able to describe the importance of each plant part.

Direct Instruction

Direct Instruction:

The teacher will introduce the different parts of a plant and explain their functions using diagrams and illustrations.

Engagement Strategies:

- Ask questions to promote critical thinking.
- Use real-world examples to illustrate concepts.

Guided Practice

Guided Practice:

Students will work in pairs to label a diagram of a plant.

Scaffolding Strategies:

- Provide sentence stems to support writing.
- Offer one-on-one support for struggling students.

Conclusion

Conclusion:

The Science of Gardening unit plan is a comprehensive and engaging way to teach students about the science of gardening and plant biology. By following the implementation steps and considering the learning objectives, success criteria, differentiation strategies, assessment opportunities, time management considerations, and student engagement factors, teachers can create a motivating learning environment that promotes student understanding and success.

Resources

Resources:

- Textbook: "The Science of Gardening" by [Author]
- Online resources: National Gardening Association, Gardening 101
- Materials: seeds, soil, gardening tools, paper, pencils

Bibliography

Bibliography:

- National Gardening Association. (2020). Gardening 101.
- [Author]. (2019). The Science of Gardening. [Publisher].