

Jay Curriculum: Unit Cover Page

Unit title: Plants **Grade Level:** 3
Content Area(s): Science **Date Created:**
Designed By: Jay Third Grade Teachers

Year 1 Map & Template Development

- Map/Matrix Completed
- Material & Resources Listed
- Draft Design Template Completed
- Initial Draft Template Document

Year 2 Piloting

- Develop:
- Performance Tasks
- Other Assessments
- Scoring Rubrics
- Piloted

Year 3 Review & Complete Assessment

- Performance Tasks Development
- Other Assessments Completed
- Scoring Rubrics Completed
- Reviewed/Revised Templates

Year 4

- Full Implementation
- Benchmarks Established

Standard(s)/Performance Indicators:

- A2 Group the same organisms in different ways using different characteristics
- B2 Explain the difference between producer (e.g. green plants), consumers (e.g. those that can eat green plants), and decomposers (e.g. bacteria that break down the “consumers” when they die), and identify examples of each
- C1 Demonstrate an understanding that a cell is the basic unit of living organisms
- D4 Describe ways in which organisms may be similar to and different from their parents and explore the possible reasons for this
- G2 Trace the sources of earth’s heat and light energy to the sun
- H1 Identify different forms of energy (e.g. light, sound, heat)
- H2 Explain ways different forms of energy can be produced
- J1 Make accurate observations using appropriate tools and units of measure
- J2 Conduct scientific investigations: make observations, collect and analyze data, and do experiments
- J5 Explain how differences in time, place, or experimenter can lead to different data
- J6 Explain how different conclusions can be derived from the same data
- K1 Give alternative explanations for observed phenomena
- K3 Draw conclusions about observations
- K4 Use various types of evidence (e.g. logical, quantitative) to support a claim
- K5 Demonstrate an understanding that ideas are more believable when supported by good reasons
- K6 Practice and apply simple logic, intuitive thinking, and brainstorming
- L1 Record results of experiments or activities (e.g. interviews, discussions, field work) and summarize and communicate what they have learned.
- L2 Ask clarifying and extending questions
- L3 Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.
- L4 Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain

procedures and ideas

- L5 Gather and effectively present information, using a variety of media including computers (e.g. spreadsheets, word processing, programming, graphics, modeling)
- L6 Cite examples of bias in information sources and question the validity of information from varied sources
- L7 Function effectively in groups within various assigned roles (e.g. reader, recorder)
- M3 Explore how technology (e.g. transportation, irrigation) has altered human settlement

Unit: Plants

Brief Summary of Unit/Topic

Summary:

Students will learn that green plants need sunlight to live. Green plants make food when sunlight and chlorophyll are present. Materials from the soil, water and air are also needed to help make food. People and animals depend upon green plants for food. Students will learn the five parts of plants: root, stem, flower and seeds.

Stage #1: Identify Desired Results

Essential Question/s:

General understanding/s (What is worth being familiar with?)

- What purpose green plants serve
- What green plants need to grow
- The parts and functions of green plants

Students will know:

- Design and system to classify plants
- Differences between producers, consumers and decomposers
- The parts of plants down to the level of the cell
- Understand the effects of differing conditions of plants
- Communicate observations and analyze data
- Availability of plants/food differs historically due to technology
- Discriminate advertising claims

Students will be able to:

- Observe and label
- Observe and record data for analysis through science logs
- Display measurement of graphs
- Design, classify, construct, observe, and hypothesize to draw conclusions about plants and their functions

Enduring Understanding/s:

- Students will understand that living things depend on plants
- Students will identify the needs of plants

Stage #2: Evidence

What evidence will students have to provide in order to demonstrate that they have developed the skills, knowledge and understanding to successfully complete this unit?

Performance Tasks/Products/other assessments Performance tasks should have a <u>scoring guide</u> .	<i>Performance Indicators</i> for this task.* Example: ELA: C- 1,2,3 Science: B- 3,5,7 SS His: H- 2	<u>Modalities</u> K =Kinesthetic O =oral V =visual W =written	Are <u>examples</u> available to students ? Y, N, or N/A	Component of Local Assessment System? Y or N (See aligned scoring guide .)
The students will be able to design & describe a classification system within a given habitat that will logically group plants according to some or all of the following examples: human use, size, habitat	A2			
Identify algae as a single cell organism through microscope observation	C1			
Cuttings from a parent plant will be placed in different conditions (soil, light, refrigeration, water, nutrients). Students will observe and record any variations from the appearance of the parent plant	D4, H1, H2			
Place a seedling in a box that places a barrier between the plant and light. Students will observe that the plant will grow around the barriers to seek the light	G2			
Students will measure and record growth of seedlings using standard and metric measurements	J1			
Students will observe germination differences of seeds in varying soil depths	J5, L5			
Students will observe and record the growth of seeds to small plants. Analyzing all they have observed, students will draw conclusions from the data they have recorded	J6			
Students will hypothesize what will happen if petroleum jelly is placed over the stomates of a leaf. Students will make observations in a science log. Students will conclude that plants need air to live.	J2, K4, K5, K6, L1, L2, L3			
Students will hypothesize what will happen if a plant is placed in the dark. Students will make observations in a science log.	J2, K4, K5, K6, L1, L2, L3			

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Students will conclude that plants need light to live.				
Plant 4 different plants. Provides a variety of fertilizers. Students will record the growth of each plant on a graph. Students will draw conclusions from the data collected and displayed	K1, K3, K4			
The students will write a story whose characters' actions exemplify the differences between producers, consumers and decomposers	B2			
Students will establish a list of foods from plants and discuss how they will acquire the food. Students will discuss and compare availability of foods in modern times versus previous centuries. Students will conclude that transportation has altered availability	M3			
Students will be presented with various plant product advertising and will read and compare and contrast advertising claims. Each groups will present an advertising claim. Other groups will ask questions that will test the validity of the advertising claim	L6, L7			
QUIZZES, TESTS, PROMPTS				
Quiz on plant parts				
Students will demonstrate their knowledge of produces, consumers and decomposers by writing a story whose characters exemplify those behaviors				
Unit – evaluation of knowledge by unit test				
OTHER				
Teachers observation of task and evaluation by rubric				
Teachers observation and evaluation of students' science log				

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Teacher evaluation of student predictions and responses in log				
Teacher evaluation of student logs				
Small group and whole group discussion of experiments and conclusions drawn. Conclusions will be shown on a computer generated graph				
Group discussion of conclusions drawn from data				
Small and whole class discussions about experiments and conclusions drawn. Students will be able to support their conclusions with evidence based upon the data collected				
Teacher evaluation of the graphs constructed, group discussions and conclusions related to collected data.				
Teacher will assess the story with a checklist				
Small group and whole class discussion				
Teacher observation of group discussion				
STUDENT SELF ASSESSMENT				
Assess roles in group interaction				
Assess science log with rubric				
Assess graph with rubric				

*Abbreviate: English Language Arts= ELA, Career Preparation=CP, Modern and Classical Languages=MCL, Social Studies=SS, Visual and Performing Arts=VPA

Stage #3: Plan learning experiences & instruction

What teaching & learning experiences may equip students to develop & demonstrate the targeted understanding(s)? (activities/plans):

*Plant kit – materials and 3-ring binder with teaching lessons and activities for teaching plant

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REFERENCES: