

Second Grade: Life Science - Insects and Plants

Content Area: **Science**
Course(s):
Time Period: **Trimester 3**
Length: **6-8 weeks**
Status: **Published**

Course Pacing Guide

This pacing guide should include the vision and mission of the course. It will be the same for all units in your course.

The simpler, the better. Pacing guide flaws come when they are too constricting, so big ideas is best (Cobb, McClain, de Silva Lamberg, & Dean, 2003; Wiggins, Wiggins, & McTighe, 2005)

	Unit	MP/Trimester	Weeks
Insects and Plans			6-8 Weeks

Unit Overview

In order to provide young students with in depth opportunities to experience the biodiversity on Earth, they will become naturalists and study insects and plants in and out of their classroom.

Enduring Understandings

Insects need air, food, water, and space.

The life cycle of the beetle is egg, larva, pupa, and adult, which produces eggs.

Insects have characteristic structures and behaviors.

Adult insects have a head, thorax, and abdomen.

Insects have predictable characteristics at different stages of development.

There are many different kinds of living things and they live in different places on land and in water.

Plants need water, air, nutrients, light, and space.

As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called a life cycle. Seeds develop into new plants that look like

the parent plant.

Animals disperse seeds, moving them from one location to another where they grow.

Bees and other insects help some plants by moving pollen from flower to flower.

Insects need air, food, water, and appropriate space including shelter; different insects meet these needs in different ways in different habitats.

The life cycle of some insects is egg, nymph stages, and adult, which produces eggs.

Variations exist within a group of related organisms.

As insects grow, they molt their exoskeleton.

There are many different kinds of living things and they live in different places on land and in water.

Insects need air, food, water, and space including shelter; different insects meet these needs in different ways.

The life cycle of some insects involves complete metamorphosis—egg, larva, pupa, and adult, which produces eggs

Some kinds of plants provide habitats for a greater diversity of insects and other small animals.

The life cycle of the butterfly involves complete metamorphosis. Butterflies construct chrysalises when they pupate.

Bees and other insects help some plants by moving pollen from flower to flower.

Life cycles are different for different animals.

There are many different kinds of living things and they live in different places on land and in water.

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Essential Questions

What is the natural history of a beetle?

What is the natural history of a flowering plant?

What is the natural history of a milkweed bug?

How does the natural history of moths compare to other insects?

How can we compare the animals that live in different habitats?

How does the natural history of butterflies compare to other insects?

How might insects pollinate schoolyard flowers?

New Jersey Student Learning Standards (No CCS)

2-LS2-2	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
2-LS2-1	Plan and conduct an investigation to determine if plants need sunlight and water to grow.
2-LS4-1	Make observations of plants and animals to compare the diversity of life in different habitats.
3-LS1-1	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Amistad Integration

Remove/replace the text in this section - this is for your reference (link -- <https://nj.gov/education/amistad/about.htm>)

Purpose:

The Amistad Commission ensures that the Department of Education and public schools of New Jersey implement materials and texts which integrate the history and contributions of African-Americans and the descendants of the African Diaspora.

Goals:

1) To infuse the history of Africans and African-Americans into the curriculum in order to provide an accurate, complete and inclusive history.

- 2) To ensure that New Jersey teachers are equipped to effectively teach the revised social studies core curriculum content standards.
- 3) To create and coordinate workshops, seminars, institutes, memorials and events which raise public awareness about the importance of the history of African-Americans to the growth and development of American society in global context.

Holocaust/Genocide Education

Remove/replace the text in this section - this is for your reference (link -- https://nj.gov/education/holocaust/about_us/mandate.html)

RE: N.J.S.A. 18A:35-28, Holocaust/Genocide Education

- a.** Every board of education shall include instruction on the Holocaust and genocides in an appropriate place in the curriculum of all elementary and secondary school pupils.
- b.** The instruction shall enable pupils to identify and analyze applicable theories concerning human nature and behavior: to understand that genocide is a consequence of prejudice and discrimination: and to understand that issues of moral dilemma and conscience have a profound impact on life. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

Interdisciplinary Connections

ELA/Literacy

- RI 1: Ask and answer questions to demonstrate understanding.
- RI 2: Identify the main topic of the text.
- RI 3: Describe the connection between scientific ideas or concepts.
- RI 4: Determine the meaning of words and phrases in the text.
- RI 5: Know and use text features.
- RI 6: Identify the main purpose of the text.
- RI 7: Explain how images contribute to and clarify text.
- RI 9: Compare and contrast two texts on the same topic.

RF 4: Read with accuracy and fluency to support comprehension.

W 1: Write opinion pieces.

W 3: Write narratives.

W 5: Strengthen writing by revising and editing.

W 8: Recall information from experiences or gather information from provided sources to answer a question.

SL 1: Participate in collaborative conversations.

SL 2: Recount or describe key ideas.

SL 3: Ask and answer questions.

SL 4: Recount an experience.

SL 5: Add drawings or other visual displays to recounts of experiences.

SL 6: Produce complete sentences.

L 1: Demonstrate command of the conventions
of standard English grammar and usage
when writing or speaking.

L 4: Determine or clarify the meaning of unknown
or multiple-meaning words and phrases.

L 6: Use acquired words and phrases.

MP.2: Reason abstractly and quantitatively. (2-LS2-1)

MP.4: Model with mathematics. (2-LS2-1),(2-LS2-2)

MP.5: Use appropriate tools strategically. (2-LS2-1)

2.MD.D.10: Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems. (2-LS2-2)

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Technology Standards

K-2-ETS1

Engineering Design

K-2-ETS1-3

Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

K-2-ETS1-2

Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

21st Century Themes/Careers

Digital media will be used incorporated in project presentations. This module will develop students' abilities to do and understand scientific inquiry. Students will identify questions, design and conduct scientific investigations to answer those questions, employ tools to gather, analyze, and interpret data. They will use data to construct reasonable explanations, develop and communicate investigations and evidence and understand that scientists use different kinds of investigations and tools to develop explanations using evidence and knowledge. This module will develop and extend students' understandings about science and technology. Students will work collaboratively in teams and use tools and scientific techniques to make better observations.

CAEP.9.2.4.A.1	Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
CAEP.9.2.4.A.2	Identify various life roles and civic and work - related activities in the school, home, and community.
CAEP.9.2.4.A.3	Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Instructional Strategies & Learning Activities

Start with review

Present new material in small steps

Think Aloud/ modeling

Guided Practice

State the objective

Use graphic organizers/ anchor charts

Concept sorting

Check for understanding

Provide feedback

Gradual release of responsibility

Student-led discussion strategies

Cooperative learning

Differentiation

Sharing, questionoing, and planning

Doing and observing

Recording, organizing, and processing

Discussing and writing explanations

Differentiated Instruction

Curriculum Map

Inquiry/Problem-Based Learning
Learning preferences integration (visual, auditory, kinesthetic)
Sentence & Discussion Stems
Tiered Learning Targets
Learning through play
Meaningful Student Voice & Choice
Relationship-Building & Team-Building
Self-Directed Learning
Goal-Setting & Learning Contracts
Game-Based Learning
Grouping
Rubrics
Jigsaws
Learning Through Workstations
Assessment Design & Backwards Planning

*Add or remove any of these you see fit!

Formative Assessments

Response Sheets
Performance Assessments
Science Notebook Entries

Summative Assessment

Investigation I-Checks

Benchmark Assessments

Investigation I-Checks
Surveys

Alternate Assessments

Verbal Responses

Resources & Technology

Smartboard

Prometheon Board

FOSS Website

BOE Approved Texts

FOSS Next Generation Investigation Guides

Closure

- Snowstorm - Students write down what they learned on a piece of scratch paper and wad it up. Given a signal, they throw their paper snowballs in the air. Then each learner picks up a nearby response and reads it aloud.
- Parent Hotline - Give students an interesting question about the lesson without further discussion. Email their guardians the answer so that the topic can be discussed over dinner.
- DJ Summary - Learners write what they learned in the form of a favorite song. Offer to let one or two sing thier summary.
- Gallery Walk - On chart paper, small groups of students write and draw what they learned. After the completed works are attached to the classroom walls, others students affix post-its to the posters to extend on the ideas, add questions.
- Sequence It - create timelines of major events discussed
- Low-Stakes Quizzes - Give a short quiz using technologies like Kahoot or a Google form.
- Have students write down three quiz questions (to ask at the beginning of the next class).
- Question Stems - Have students write questions about the lesson on cards, using [question stems framed around Bloom's Taxonomy](#). Have students exchange cards and answer the question they have acquired.
- Kids answer the following prompts: "What takeaways from the lesson will be important to know three years from now? Why?"
- Have students dramatize a real-life application of a skill.
- Ask a question. Give students ten seconds to confer with peers before you call on a random student to answer. Repeat.
- Have kids orally describe a concept, procedure, or skill in terms so simple that a child in first grade would get it.
- Direct kids to raise their hands if they can answer your questions. Classmates agree (thumbs up) or disagree (thumbs down) with the response.
- Have kids create a cheat sheet of information that would be useful for a quiz on the day's topic.

- Kids write notes to peers describing what they learned from them during class discussions.
- Ask students to summarize the main idea in under 60 seconds to another student acting as a well-known personality who works in your discipline. After summarizing, students should identify why the famous person might find the idea significant.
- Have students complete the following sentence: "The [concept, skill, word] is like _____ because _____."
- Ask students to write what they learned, and any lingering questions on an "exit ticket". Before they leave class, have them put their exit tickets in a folder or bin labeled either "Got It," "More Practice, Please," or "I Need Some Help!"
- After writing down the learning outcome, ask students to take a card, circle one of the following options, and return the card to you before they leave: "Stop (I'm totally confused. Go (I'm ready to move on.)" or "Proceed with caution (I could use some clarification on . . .)"

*Add or remove any of these you see fit!

ELL

- Alternate Responses
- Advance Notes
- Extended Time
- Teacher Modeling
- Simplified Written and Verbal Instructions
- Frequent Breaks
- E-Dictionaries
- Google Translate

*Add or remove any of these you see fit!

Special Education

- Shorten assignments to focus on mastery of key concepts.
- Shorten spelling tests to focus on mastering the most functional words.
- Substitute alternatives for written assignments (clay models, posters, panoramas, collections, etc.)
- Specify and list exactly what the student will need to learn to pass.
- Evaluate the classroom structure against the student's needs (flexible structure, firm limits, etc.).
- Keep workspaces clear of unrelated materials.
- Keep the classroom quiet during intense learning times.
- Reduce visual distractions in the classroom (mobiles, etc.).

- Provide a computer for written work.
- Seat the student close to the teacher or a positive role model.
- Use a study carrel. (Provide extras so that the student is not singled out.)
- Provide an unobstructed view of the chalkboard, teacher, movie screen, etc.
- Keep extra supplies of classroom materials (pencils, books) on hand.
- Maintain adequate space between desks.
- Give directions in small steps and in as few words as possible.
- Number and sequence the steps in a task.
- Have student repeat the directions for a task.
- Provide visual aids.
- Go over directions orally.
- Provide a vocabulary list with definitions.
- Permit as much time as needed to finish tests.
- Allow tests to be taken in a room with few distractions (e.g., the library).
- Have test materials read to the student, and allow oral responses.
- Divide tests into small sections of similar questions or problems.
- Allow the student to complete an independent project as an alternative test.
- Give progress reports instead of grades.
- Grade spelling separately from content.
- Allow take-home or open-book tests.
- Show a model of the end product of directions (e.g., a completed math problem or finished quiz).
- Stand near the student when giving directions or presenting a lesson.
- Mark the correct answers rather than the incorrect ones.
- Permit a student to rework missed problems for a better grade.
- Average grades out when assignments are reworked, or grade on corrected work.
- Use a pass-fail or an alternative grading system when the student is assessed on his or her own growth.

Interventions

*Add or remove any of these you see fit!

504

- preferential seating
- extended time on tests and assignments
- reduced homework or classwork
- verbal, visual, or technology aids
- modified textbooks or audio-video materials
- behavior management support
- adjusted class schedules or grading
- verbal testing
- excused lateness, absence, or missed classwork
- pre-approved nurse's office visits and accompaniment to visits
- occupational or physical therapy

*Add or remove any of these you see fit!

At Risk

- Use of mnemonics
- Have student restate information
- Provision of notes or outlines
- Concrete examples
- Use of a study carrel
- Assistance in maintaining uncluttered space
- Weekly home-school communication tools (notebook, daily log, phone calls or email messages)
- Peer or scribe note-taking
- Lab and math sheets with highlighted instructions
- Graph paper to assist in organizing or lining up math problems
- Use of manipulatives
- No penalty for spelling errors or sloppy handwriting
- Follow a routine/schedule
- Teach time management skills
- Verbal and visual cues regarding directions and staying on task
- Adjusted assignment timelines
- Visual daily schedule
- Immediate feedback
- Work-in-progress check
- Pace long-term projects
- Preview test procedures
- Film or video supplements in place of reading text
- Pass/no pass option
- Cue/model expected behavior
- Use de-escalating strategies
- Use peer supports and mentoring
- Have parent sign homework/behavior chart
- Chart progress and maintain data

*Add or remove any of these you see fit!

Gifted and Talented

Focus on effort and practice

Offer the Most Difficult First

Offer choice

Speak to Student Interests

Allow G/T students to work together

Encourage risk taking