



BAIP/Brain-targeted Teaching® Learning Module

Academic Content: Science

Learning Unit Title: What Do Plants Need?

Grade Level(s): 2nd Grade

Author(s): Kammeran Tyree Giggers & Lindsey Winand

Learning Unit Overview: (Overarching Learning Unit content; Essential questions; Expected student understandings)

The driving question for the unit is “Why are pollinators important?” for the content and for the arts-integration the driving question is “How can you use drama to express emotions and understanding?”.

BT-1: Setting the Emotional Climate for Learning

This target is reinforced daily with the setting of the day activity that is implemented at the beginning of each lesson. The students will say the “I Am A Little Seed” Poem with movements to act out. Afterwards, the teacher will facilitate learning how to express emotions with their bodies while asking the students to act how they are feeling each day. This allows students to express themselves in a dramatic way, while also allowing the teacher to informally assess where each student is emotionally before teaching the lesson.

BT-2: Creating the Physical Environment for Learning

The physical space is always an additional teacher in the classroom and can enhance learning if used correctly. The teacher will create a space in their room to designate as the performance space, where students can perform any of the drama or improvisation activities. The design challenge is emphasized during every lesson of the unit, which is for the students to build a bug hotel. Therefore, a bug hotel template will be placed in the classroom where teachers can use this to place pictures or student work as they work their way through each lesson. This reinforces the students' ownership of the space, while also emphasizing how each lesson builds on one another to help students reach their final task: to design a bug hotel.



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BT-3: Designing the Learning Experience

The concept map for the unit with the overlay of the arts integrated activities has been shared. In addition, the driving question board (DQB) will be developed as the lessons progress and the students will help add to this as they progress through. The DQB will start out as roots (where students will place what they already know), and then the leaves, stems, and flowers will be added as they progress throughout the unit and build their knowledge. Bumble bees will also be placed on the board for questions the students may have as they are learning. This will be used in conjunction with the bug hotel board listed above where students will post their work, and this ties into the big picture learning of “why are pollinators important?”.

BT-4: Teaching for Mastery of Skills, Content, and Concepts

List Objectives aligned with strategies

- Students will use the changed lyrics from “Twinkle Twinkle Little Star” to reinforce the four main requirements for living things
- Students will work in small groups to create a tableau that demonstrates the steps of pollination
- Students will use improv to demonstrate their understanding of the importance of the key organisms involved in pollination and their role in the environment

BT-5: Teaching for Extension and Application of Knowledge

List Objectives aligned with strategies

- Students will use the daily “setting of the day” activity to express their emotions with their body language and reinforce key terms of plant vocabulary
- Students will use the driving question board (DQB) to visually reinforce their learning of key concepts, while seeing the connection between the parts of the flower and adding bees as curiosity as they ask questions



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- Students will use song to help reinforce the main requirements for all living things to survive
 - Students will use tableau to act out their interpretation the steps of pollination
 - Students will use improv to role play the importance of key organisms in pollination and their role in the ecosystem
 - Students will see the bug hotel template that shows their work while building upon concepts as they are learning that they can use to build the most efficient bug hotel

BT-6: Evaluation of (and for) Learning

Students will be informally evaluated after each lesson by writing in their science notebook (already written in the SABES curriculum). The DQB board will be used to emphasize important terminology throughout the unit, but also be used as a community place to ask questions that push the students to think beyond the basics (with the bumblebee questions). Students will be evaluated on their tableaus using a rubric which will assess both the science content knowledge and the arts standards. A rubric will also be used to evaluate the students' role play with improv.

Annotated Version of BAIP BTT Template

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Learning Unit Overview: (What are the disciplines included in this Unit Plan? Ex. Math and Music; include SABES unit or appropriate academic source; Essential questions; Expected student understandings, Focus Questions)



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BT-1: Setting the Emotional Climate for Learning

Every Brain-Targeted Teaching® (BTT) Learning Unit should promote a positive learning environment and embed activities that connect students' emotions with the content they are studying. The suggested activities for the BTT Learning Unit address Culturally Relevant Pedagogy (CRP) and the infusion of the visual and performing arts as an effective way to tap into students' emotional response systems for heightened engagement and enhanced learning.

Features:

- ❖ Foster safe, emotionally positive environments
- ❖ Promote cultural inclusiveness through focus on identity, culture, and experience of all students
- ❖ Maintain personal connection between teacher and students
- ❖ Create a climate in which mistakes are opportunities for learning
- ❖ Incorporate Social Emotional Learning strategies
- ❖ Build self-direction through student choice
- ❖ Enjoy using humor (not sarcasm)
- ❖ Promote curiosity through questioning, or creative devices
- ❖ Affirm students' responses through positive language
- ❖ Plan predictability, routines, and rituals



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- ❖ Emphasize sketching and simple drawing in combination with written language
 - ❖ Build trusting family relationships by honoring family traditions

BT-2: Creating the Physical Environment for Learning

Prepare the physical learning environment by deliberately planning for novelty, order, and beauty within each learning unit.

Features:

- ❖ Group desks for varied activities including cooperative learning, group activities
- ❖ Include images of racially, ethnically, and neurodiverse individuals from present day or from history
- ❖ Display students' work and allow student choice in the displays
- ❖ Rotate/change displays to promote novelty in the environment
- ❖ Create work centers that allow for movement
- ❖ Maintain orderly and visually appealing workspace
- ❖ Create visual displays connected to current content
- ❖ Display special items relevant to teacher and student interest
- ❖ Play soft background music when appropriate during students' independent work



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- ❖ Promote times when students maintain silence to help with focus and concentration
 - ❖ Use lighting and aromas that enhance the workspace

BT-3: Designing the Learning Experience

Use pictorial representation of concepts and relationships. Brainstorm to create a thematic unit graphic organizer that will build on the *big ideas* of the learning unit that demonstrates overarching content and concepts; employ tenets of mind mapping, non-linguistic structures, and curriculum mapping.

Features:

- ❖ Create concept maps for articulation of key learning goals and objectives
- ❖ Include big picture ideas, essential questions, enduring understandings
- ❖ Promote visual notetaking
- ❖ Build lessons from relevant standards and curriculum scope and sequences
- ❖ Use for formative assessment activities to determine prior knowledge
- ❖ Encourage students to develop their own concept maps as they acquire and retrieve information



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- ❖ Ask students to develop concept maps of questions about why they are curious about related to their own experiences with the content
 - ❖ Pose questions to students about what parts of their identities they see or don't see represented in content-based concept maps
 - ❖ Decorate classroom space with murals and students' art exhibits

BT-4: Teaching for Mastery of Skills, Content, and Concepts

List Objectives aligned with strategies

Use multi-model strategies to teach content, skills, and concepts and to promote long-term memory. Provide differentiation of instruction based on students' emotional needs, academic goals, and cultural competencies. Use arts integration to promote student learning and engagement.

Features:

- ❖ Present new content and/or reinforce learned content through song, rap, poems, visual arts, theater, dance, or media
- ❖ Invite students to demonstrate their learning through the visual and performing arts
- ❖ Promote movement, including dance, tableau, or hand gestures to embed embodied cognition into learning experiences
- ❖ Use visual analysis (art as text, photography, paintings, performance, film, video) with students' own or a different culture



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- ❖ Show students how to use visual note taking for enhancing vocabulary, lecture notes, etc.
 - ❖ Illustrate concept maps with cultural symbols, icons, or student-selected images
 - ❖ Encourage visualization strategies
 - ❖ Use mixed media presentations: podcasts, blogs, digital art
 - ❖ Use dramatic arts strategies: Reader's Theater, role play, interview, improvisation, etc.
 - ❖ Encourage active retrieval rather than passive studying
 - ❖ Space learning episodes for consolidation of thinking
 - ❖ Regularly vary learning activities
 - ❖ "Chunk" learning tasks into segments and revisit earlier learning chunks

BT-5: Teaching for Extension and Application of Knowledge

List Objectives aligned with strategies

Focus on divergent thinking activities and real-world problem-solving such as conducting investigations, designing experiments, creating metaphors and analogies, examining cause and effect patterns, analyzing perspective, and engaging in creative thinking through the visual and performing arts.



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Features:

- ❖ Regularly include divergent thinking activities/questions into content presentations- encourage students to think of multiple and novel approaches to responses
- ❖ Include real-world problem-solving including investigations, experiments, comparisons, classifications, analysis
- ❖ Encourage students to find out more about what is **not** included in the curriculum, and engage students in debate on topics from minoritized perspective
- ❖ Foster students' choice of content In project-based learning activities
- ❖ Include inductive thinking-drawing general conclusions from specific, and deductive thinking – predictions based on generalizations
- ❖ Use visual metaphors and analogies
- ❖ Encourage student to reenact key ideas through dramatic role play, song writing, play writing, mix-media presentations: *podcasts, blogs, digital art*
- ❖ Allow time in the schedule for reflection of learned content (tools for reflection could be drawing, concept mapping, or quiet mindfulness moments)

Brain Target 6: Evaluation of Learning

Align learning objectives, instructional activities, and evaluation methods while considering other brain targets. In addition to using selected-response test items such as multiple-choice, matching,



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and true-false, teachers include constructed-response assessment activities such as performance tasks, exhibitions, projects, and portfolios. Constructed-response assessments measure the kind of student performance promoted by Brain-Targeted Teaching® Model that typically is not measured well by selected-response test items. And teachers use scoring rubrics, keys, checklists, self-evaluations, and reflections to measure what students know, perform, and construct to demonstrate content standards in constructed-response assessments.

Features:

- ❖ Institute the use of student journals logs to facilitate communication between the teacher and student about thought processes on new learning
- ❖ Provide immediate, frequent, relevant feedback
- ❖ Include feedback that verifies correct responses for convergent activities
- ❖ Include feedback that requires students to extend thinking in open-ended divergent thinking activities
- ❖ Use authentic performance assessment using rubrics, scoring keys, and other scoring tools
- ❖ Provide time for self-reflection and revision
- ❖ Use peer feedback using “Praise, Question, Polish” format
- ❖ Employ the arts as a record of achievement
- ❖ Role play “jobs” from real world positions. Allow for peer review acknowledging demonstrated proficiencies, assets, skills, and knowledge