

ARTS IMPACT PROJECT BASED LEARNING UNIT PLAN

Visual Arts and STEM Infused PBL Unit

Bee Friendly

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Project Idea: Students will investigate bees and their habitat in order to design ways to protect bees and their habitats. Students will use different art media to display, demonstrate, and model the habitat, parts of the bee, pollination cycle, and life cycle. They will learn the parts of the bee and parts of the flower and understand the function of the bees and the structure of flowers. *Possible idea to redesign a deserted flower bed into a bee-friendly flower garden.

Driving Question:

How can we help protect honey bees and their habitats in our community?

Unit Summary (Completed at end of project. Use for sharing out public product.)

Students will learn about bees and habitats with a goal of protecting them.

Learning Targets and Assessment Criteria

Target: Identifies the honey bee and its habitat.

Criteria: Communicates, draws, sculpts, and labels the parts of a honey bee and where it lives.

Target: Explores and investigates the importance of honey bees and their habitats.

Criteria: Designs a visual product to show the importance of the bee.

Target: Researches, identifies and effectively communicates ways to protect bees and their habitats.

Criteria: Presents their findings using a media of their choice.

Vocabulary

Arts:

2D

3D

Arts Infused:

Model

STEM:

Abdomen

Antennae

Cycle

Habitat

Head

Hive

Honey and Honeycomb

Leaves

Legs

Neonicotinoids

Petal

Pistil and Stamen

Pollen and Pollen Basket

Roots

Stem

Stigma

Thorax

Wing

Materials

Resources (Websites, experts, texts)

Teacherspayteachers- readers theater about the life of a butterfly in English and Spanish

Articles about the decline of bees-realalia

www.nrdc.org article on bees

PebbleGo, National Geo for Kids

Project GLAD unit about bees:

<http://swcontent.spokaneschools.org/cms/lib/WA01000970/Centricity/Domain/625/Complete%20GLAD%20Units/bee%20unit.pdf>

Arts impact website for observational drawing, the cycle lesson, intentionally calling out important art skills. (page 152)

Museum Artworks or Performance

Materials

Paper, 3D materials, paint, brushes, markers, glue, collage materials, pastels, colored pencils, hot glue.

Class assessment worksheet

Standards to Drive the Inquiry

Arts

WA Arts Learning Standards

For the full description of each anchor standard and the grade level performance standards, see:

<http://www.k12.wa.us/Arts/Standards>

Anchor Standard 1: Generate and conceptualize artistic ideas and work.

Performance Standard (VA:Cr1.1.2): a. Brainstorm collaboratively multiple approaches to an art or design problem.

Anchor Standard 2: Organize and develop artistic ideas and work.

Performance Standard (VA:Cr2.1.3): a. Create personally satisfying artwork, using a variety of artistic processes and materials.

Anchor Standard 5: Develop and refine artistic techniques and work for presentation.

Performance Standard (VA:Pr5.1.2): a. Distinguish between different materials or artistic techniques for preparing artwork for presentation.

Science, Technology, Engineering

Next Generation Science Standards

<http://www.nextgenscience.org/search-standards>

2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Scientific and Engineering Practices

Developing and Using Models

21st Century Skills

<http://www.p21.org/our-work/resources/for-educators>

- Creative Thinking: *Gathers ideas; considers and tries multiple solutions; and makes artistic choices*
- Critical Thinking: *Asks clarifying questions; uses evidence to question or explain creative choices; constructs meaning*
- Collaboration: *Communicates ideas to others; makes compromises; and incorporates input/feedback*
- Perseverance: *Persists in adapting ideas to work through challenges*
- Growth Mindset: *Takes risks; embraces alternative possibilities; work develops over time*

Teacher Project Planning

(Questions for teachers.)

1. What will the entry event be to launch this unit?

Teacher will prepare a feast for the class, and kids can eat anything that wasn't made possible by bees. (They can't eat anything).

There is a beekeeper in her gear and she asks them for their help.

2. What resources might we need?

(Experts, fieldtrips, texts, websites, data, equipment, materials)

Beekeeper

Trip to Butterfly Garden

3. What is the duration of this unit?

Six weeks

4. What will be group work?

Sample different kinds of honey, view real honey comb with honey in it.

What will each individual student do?

Create scientific drawings with labeled parts of the bee and habitat. Research, interview, create a bee poem, mono prints, clay, paint, 3D sculpture.

5. What will the formative assessments/moments for reflection be?

Scientific drawings with labeled parts of the bee and habitat. Research, interview, create a bee poem, mono prints, clay, paint, and/or 3D sculpture.

6. What will the summative assessment/ public product be?

(Performance, exhibition, publication, public presentation, website, installation)

Written pamphlet.

The public product: poster, model, poem, dance, play, or video.

Conferring with students to assess individual understanding.

Facilitating Student Understanding of the Problem

(Questions to guide student inquiry.)

1. *What do we know about this problem before we begin?*
2. *What do we need to learn in order to solve it?*
3. *Where will we look for resources?*
4. *Who is our audience? Who will be helped by our solution?*
5. *How will we share our solution?*
6. *How will we assess our own learning?*

PBL Unit Outline of Inquiry

(Begin each step with a question. Follow that with a brief description of what students do to address the question.)

1. What is a honey bee and how do they function as a system?

- The students will research the parts, structure, and function of a honey bee.

Questions might include: Are bees important and why?

How many of the things we eat and need are dependent on bees?

How do flowers propagate?

What do bees need to live?

- The students will observe and draw magnified honey bees and flowers.

Student reflection and assessment: Communicates, draws, sculpts, and labels the parts of a honey bee. Peer review for scientific accuracy.

2. Why should we protect the honey bees and their habitats?

- Students will research the importance of honey bees, their function, and the implications for us and our community.
- Students will brainstorm possible solutions to help protect bees.
- Students will create a model or Visual representation showing the importance of bees

Student reflection and assessment: Shares honeybee research in some of the following ways: T-chart, group discussion, elbow partner discussion, expert conversation, bee books, GLAD observation chart. Creates a model or visual representation showing the importance of bees.

3. How can we help protect honey bees and their habitats in our community?

- The students brainstorm ideas to communicate the importance of bees to their community.
- The students might design a backyard bee habitat, create a bee dance or play, plant a community garden.

Student reflection and assessment: Student created assessment.

Public Product/Sharing

Who is our audience?

The students will decide who needs to receive this message, for example, classmates, family, whole school, PTA, Community garden, city council.

Begin with a question, followed by the description of the culminating event that shares the learning from the PBL unit.

How can we show what we have learned about bee habitat and help to motivate others to protect the bees?

Students create a model, poem, dance, play, or video to both show their knowledge of both bees and habitats and help to motivate others to protect the bees.

ARTS IMPACT LESSON PLAN Visual Arts and STEM Infused PBL Unit

Second – Third Grade: *Bee Friendly*

CLASS ASSESSMENT WORKSHEET

The following assessment checklist can be used along with other assessment tools teachers and students.

Disciplines	VISUAL ARTS AND SCIENCE	VISUAL ARTS AND SCIENCE	21 ST CENTURY SKILL	Total 3
Concept	Observation, Habitat	Interdependence	Communication	
Criteria	Communicates, draws, sculpts, and labels the parts of a honey bee and where it lives.	Designs a model or visual representation to show the importance of bees.	Presents their findings using a media of choice (could be collaborative).	
Student Name				
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26.				
27.				
28.				
29.				
30.				
Total				
Percentage				

What was effective in the unit? Why?

What do I want to consider for the next time I teach this unit?

What were the strongest connections between arts discipline and STEM?

Teacher: _____

Date: _____

ARTS AND STEM INFUSED PBL UNIT: *Bee Friendly*

Dear Family:

We are engaged a visual arts and science-infused project based learning unit in which we are trying to solve this challenge:

Driving Question:

How can we help protect honey bees and their habitats in our community?

- We asked, "Are bees important and why?"
- We discovered important information about bees, their habitats, life cycle, and the pollination cycle.
- We created works of art to show the structure of a bee and their habitats and used Visual Arts to display information and motivate people to protect bees.

At home, you could extend the learning by reading more about the importance of bees in our world.