BC Agriculture in the Classroom Foundation

Blossom's Big Job

Growing Pumpkin Sprouts in the Classroom

Students will have the chance to be busy bees like Blossom as they learn about the life cycle of a pumpkin plant through planting and sprouting their own pumpkins. Students will complete a craft activity of the life cycle of a pumpkin plant as their final Assessment of Learning.

Subject Levels/ Suggested Grade

Kinder. Science, English Language Arts (ELA), Arts

Grade 1 Science, English Language Arts (ELA), Arts

Grade 2 Science, English Language Arts (ELA), Arts

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Adaptation of a lesson found in:

https://www.simplykinder.com/planting-pumpkins-in-kindergarten/

http://www.alabamaaitc.org/uploadedFiles/File/Growing_Pumpkins_in_the_Classroom.pdf

Grade Subject	Curricular Competencies	Content Connections
K English	Use developmentally appropriate reading, listening and viewing strategies to make meaning Engage actively as listeners, viewers, and readers Use personal experience and knowledge to connect to stories and other texts to make meaning	• Structure of story • Writing processes
K Arts	Explore elements, processes, materials, movements, technologies, tools, and techniques of the arts Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play Express feelings, ideas, stories, observations, and experiences through the arts	• Elements of design: line, shape, texture, colour; principles of design: pattern, repetition
K Science	Experience and interpret the local environment Make exploratory observations using their senses Demonstrate curiosity and a sense of wonder about the world Observe objects and events in familiar contexts Ask simple questions about familiar objects and events	• Basic needs of plants and animals • Living things make changes to accommodate daily and seasonal changes
Grade 1 English	Use developmentally appropriate reading, listening and viewing strategies to make meaning Engage actively as listeners, viewers, and readers Use personal experience and knowledge to connect to stories and other texts to make meaning Identify, organize, and present ideas in a variety of forms Plan and create a variety of communication forms for different purposes and audiences	• Writing processes • Print awareness • Letter formation
Grade 1 Arts	Explore elements, processes, materials, movements, technologies, tools, and techniques of the arts Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play Express feelings, ideas, stories, observations, and experiences through the arts Reflect on creative processes and make connections to other experiences	• Elements of design: line, shape, texture, colour; principles of design: pattern, repetition • Processes, materials, techniques to support arts activities
Grade 1 Science	Demonstrate curiosity and a sense of wonder about the world Observe objects and events in familiar contexts Ask questions about familiar objects and events Experience and interpret the local environment Make simple predictions about familiar objects and events	• Names of local plants and animals • Structure of story

	Make and record observations Sort and classify data and information using drawings, pictographs and provided tables Compare observations with predictions through discussion Compare observations with those of others Communicate observations and ideas using oral or written language, drawing, or role-play	
Grade 2 English	Use developmentally appropriate reading, listening and viewing strategies to make meaning Engage actively as listeners, viewers, and readers Use personal experience and knowledge to connect to stories and other texts to make meaning Identify, organize, and present ideas in a variety of forms Plan and create a variety of communication forms for different purposes and audiences Communicate using sentences and most conventions of Canadian spelling, grammar and punctuation	• Structure of story • Writing processes • Letter formation • Sentence structure
Grade 2 Art	Explore elements, processes, materials, movements, technologies, tools, and techniques of the arts Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play Express feelings, ideas, stories, observations, and experiences through the arts Reflect on creative processes and make connections to other experiences Experience, document and share creative works in a variety of ways	• Elements of design: line, shape, texture, colour; principles of design: pattern, repetition, contrast • Processes, materials, techniques, to support arts activities
Grade 2 Science	Demonstrate curiosity and a sense of wonder about the world Observe objects and events in familiar contexts Ask questions about familiar objects and events Experience and interpret the local environment Make simple predictions about familiar objects and events Sort and classify data and information using drawings, pictographs and provided tables	• Similarities and differences between offspring and parent • Water conservation and the water cycle

Teacher Background

After reading the book “Blossom’s Big Job” as part of the Agriculture in the Classroom extension for the Spuds in Tubs program, students may have more questions about many aspects of farming, pollination, and bees. This resource has been designed to extend student’s curiosity about the growing process of plants, specifically focusing in on the pumpkin, which was Blossom’s special job to pollinate.

Pumpkins are an ideal seed to attempt growing with a primary class, as they are well suited to warm, indoor climates, are able to sprout quickly, and are large enough to be easily handled and observed. The germination of a pumpkin seed is a quick process, which can help retain interest in the project. There are several methods of planting pumpkin seeds as a class, ranging from laying the seeds on damp paper towel to planting them in the shell of a hollowed out pumpkin filled with soil. This lesson outlines specific steps to plant seeds in clear plastic cups with soil for ease of viewing and storing in a classroom setting.

As part of planting the pumpkins, students will have the opportunity to learn about the plant’s life cycle. A fill in the blank note sheet has been provided to use as a student reference. To represent this life cycle, an activity has been included at the end of the lesson for two styles of craft booklet – one that is a 3D standing model of a pumpkin, displaying images or writing of each stage, and one that is a spinner which reveals the life cycle steps one stage at a time. These activities can involve more or less writing, colouring, and cutting, depending on the age and ability levels of the students.

For more information and lessons about bees, pollination, or details on pumpkins in BC agriculture, please see the BCAITC website under the resources tab.

Materials

- Blossom’s Big Job book
- Pumpkin Planting Materials
    - 1 large mature pumpkin, with lid pre cut
    - Individual labelled cups and bags of soil
    - Paper towels and plastic sheets for easy cleanup
    - Individual bowls for collecting “guts” and seeds
    - Fertilizer
    - Watering can or cups for watering
- Student handouts:
    - The Life Cycle of a Pumpkin notes
    - Pumpkin Craft supplies and handouts

Procedure

1. Prior Knowledge → read “Blossom’s Big Job” and have a class discussion about the book. Chart any questions students may have about bees, pollination, or growing.
2. Life Cycle → Give students copies of the “Life Cycle of a Pumpkin” note page. Have students complete on their own or fill in the blank as the question is read aloud. Read completed notes as a class to ensure correct responses
3. Planting Pumpkins →
    a. Have students make observations about the fully grown pumpkin. Ask if anyone has helped carve a Jack-o-Lantern before or roasted pumpkin seeds. Explain that today we will be using the seeds to sprout our own pumpkin seedlings. You may choose to pass the pumpkin around so students can feel and observe the gourd more closely.
    b. Have students take turns scooping out the seeds and “guts” from the pumpkin into their bowls with either a scoop or their hands (1 scoop/student to start). Once the pumpkin is clean, have students separate the seeds from the pulp and count the total amount of seeds. The goal is to have more than one seed per student. If some students have far more seeds than others have them share so everyone has approximately the same amount of seeds for their cups.
    c. Give students their pre-measured baggies of soil and a small plastic cup with their name on it. Students could be given written instructions at this stage if applicable. Have students fill half of the cup with soil. Drop the seeds into the cup, placing some close to the outside edge where their growth can be more easily seen, and add the rest of the soil on top. It is ok if the soil is not perfectly divided in half as long as the seeds are covered and not right on the surface.
    d. Store seed cups in larger containers or bins for safety. If the classroom does not receive much sunlight then the bins will need to be taken outside in the morning and brought back in at the end of the day for safe keeping. This is a good job for student helpers to do!
4. Examining the Sprouts → Examine the plants once a day to note changes. These changes can be recorded individually or as a class. Plants will usually take between 5-9 days before they sprout stems large enough to be transplanted.

Activities:

3D Pumpkin Life Cycle Booklet – 6 pumpkin templates, 6 oval templates, glue sticks, scissors, colouring supplies

1. Each student starts with 6 pumpkin templates and 6 ovals; blank ovals are designed for drawings only and lined ovals are designed for writing. Have students begin by colouring the pumpkins orange with a green stem, leaving the oval in the middle blank.
2. In each oval, have students draw or write the stage of the pumpkin. If writing, students should use descriptive words to describe the stage (e.x. flower – yellow, big, full of pollen). Colour the images.
3. When all six stages are completed, have students carefully cut out the ovals and the outside of the pumpkin shapes. Younger students may need assistance with this task.
4. Glue each oval onto a pumpkin. Place each pumpkin in order on the desk starting with the seed, and label the pumpkins 1-6.
5. Carefully fold each pumpkin in half with the writing side in. Starting with pumpkin 1, put glue on the top half, and attach pumpkin 2.
6. Repeat process for remaining pumpkins. When you have a pile of folded glued pumpkins, carefully unfold the booklet and glue the last edge of pumpkin 6 to pumpkin 1. If needed, the sides can be clamped together while the glue dries.

Spinning Plate Life Cycle – two paper plates, coloring supplies, scissors, brass fastener/split pin

1. Each student will need two paper plates and a fastener to act as the spinner. Have students start by dividing their first plate into 6 or 7 sections (depending on whether you want to include the fully grown pumpkin as a stage) on the top of the plate. Fill in each section with an image and/or description of the stage in the life cycle.
2. Colour the top of the second plate in orange, adding details such as segments if desired.
3. Place the second plate directly over the first, bottom touching top (plates fit snugly together. Mark on the edges how big your spinner slot needs to be in order to view the stage and carefully cut the mark out. Do not cut all the way to the center or the fastener will not work (this slot can be cut out ahead of time for younger students).
4. Have the teacher or an adult come around and make a hole for the fastener to attach. Insert the fastener and spin the plate to view the life cycle of a pumpkin!

Extension Activities

Blossom's Big Job:

- Have students continue Blossom's story from the last page of the book, answering the question "What does she pollinate next?"
- Act out the story of Blossom's Big Job for another class

Pumpkin Growing:

- If your school has space, some of the pumpkin seedlings can be planted. Seedlings take between 100-120 days to form pumpkins, and must be planted in warm months with no chance of frost. This would involve a summer commitment to water and tend to the plants for harvest in the fall.
- After the seedling has sprouted and grown for a bit, take it out of the soil and dissect the plant. Have students label the parts on a diagram.
- Combine with activities for bees, pollination and pumpkins on the BCAITC website.

The Life Cycle of a Pumpkin

Name: _____ Date: _____

Pumpkins are _____ that grow from a seed.

The _____ is tear shaped and _____.

When the seed is planted, it starts to _____.

The tiny plant is called a _____.

The seedling needs _____ and _____ to grow.

When the seedling gets bigger, it is called a pumpkin _____.

The plant will start to sprout _____ covered in leaves.

The vines also grow _____, yellow _____.

Flowers have _____, a sweet juice that bees need to make _____.

The flowers also have a _____ powder called _____ that is spread from plant to plant by bees. This spreading is called _____.

When pumpkin flowers have been pollinated, they will grow tiny _____!

These tiny pumpkins are _____ and not ready to eat yet.

A fully grown pumpkin is _____.

We can eat the orange _____ and the beige, tear drop shaped _____.

The Life Cycle of a Pumpkin

Name: _____KEY_____ Date: _____

Pumpkins are _____plants_____ that grow from a seed.

The _____seed_____ is tear shaped and _____beige_____.

When the seed is planted, it starts to _____grow_____.

The tiny plant is called a _____seedling_____.

The seedling needs _____water_____ and _____sunshine_____ to grow.

When the seedling gets bigger, it is called a pumpkin ____plant_____.

The plant will start to sprout _____vines_____ covered in leaves.

The vines also grow _____big_____, yellow _____flowers_____.

The flowers have _____nectar_____, a sweet juice that bees need to make _____honey____.

The flowers also have a _____yellow_____ powder called _____pollen_____ that is spread from plant to plant by bees. This spreading is called _____pollination_____.

When pumpkin flowers have been pollinated, they will grow tiny _____pumpkins_____!

These tiny pumpkins are ____green_____ and not ready to eat yet.

A fully grown pumpkin is _____orange_____.

We can eat the orange ____flesh_____ and the beige, tear drop shaped ____seeds_____.