

Meine Bohnenpflanze: Der Lebenszyklus einer Pflanze



CLIL DISCIPLINE/SUBJECT AREA: Biological Sciences

MODULE: Meine Bohnenpflanze / *My bean plant - life cycle of a plant*

YEAR LEVEL: 3 and 4

NUMBER OF LESSONS: 7

PRIOR KNOWLEDGE: Plants are an essential part of our environment and we need to care for them.

TEACHING OBJECTIVES

Content - Progression in knowledge, skills and understanding related to specific elements of a defined curriculum

➤ **Living things have life cycles (ACSSU072)**

Elaborations

- making and recording observations of living things as they develop through their life cycles
- describing the stages of life cycles of different living things such as insects, birds, frogs and flowering plants
- comparing life cycles of animals and plants
- recognising that environmental factors can affect life cycles such as fire and seed germination

➤ **Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)**

Elaborations

- recognising characteristics of living things such as growing, moving, sensitivity and reproducing
- recognising the range of different living things
- sorting living and non-living things based on characteristics
- exploring differences between living, once living and products of living things

➤ **Cognition/Thinking Skills** - Developing thinking skills which link concept formation (abstract and concrete), understanding and language

- understanding the concept of a life cycle and that it consists of different stages in a particular order
- develop an understanding of how life cycles can be affected by external factors and how living things change and behave in response
- explore different growing conditions in order to determine what factors promote healthy plant growth
- consider different ways to approach problem solving, including researching, using trial and error, experimental testing and creating models
- use labelled diagrams, including cross-sectional representations, to communicate ideas.

Culture - Exposure to alternative perspectives and shared understandings, which deepen awareness of otherness and self

- identify various plants and their purpose in the environment
- develop an understanding of the importance of plant life to humans
- discuss how people rely on plants and their produce
- discuss how sustainable plant growing can be achieved

Communication - Using language to learn whilst learning to use language

Language of learning

die Bohne, der Bohnensamen, die Bohnenpflanze, der Keim, die Erde, das Wasser, das Licht, die Sonne, das Sonnenlicht, der Becher, der Topf, pflanzen, keimen, wachsen, gießen/wässern, der Spross, der Stängel, das Blatt/die Blätter, die Samenschale, die Wurzel, groß/klein, wenig/mehr/viel, aufrecht/gebogen, der Lebenszyklus/der Lebenskreis, messen, die Schaufel, die Gießkanne.

Language for learning

- **Questions:** Kannst du mir sagen? Was denkst du? Was ist das? Was hast/brauchst du? Kann ich bitte.... ? Warum? Was ist passiert? Was siehst du?
- **Statements/Phrases:** Ich denke.... , Ich sehe..... , Das ist ein/eine..... , Ich weiß, dass
- **Additional:** colours, numbers, basic adjectives (groß, klein, gesund, krank, interessant, etc.)

Language through learning

- Requested during the teaching and learning sessions

LEARNING OUTCOMES (related to the Australian Curriculum)

Content Goals

Students will understand that living things, such as bean plants, have life cycles that consist of different stages. They will be aware that environmental factors affect the life cycles. ([ACSSU072](#))

Students will be able to describe plants as living things based on relevant characteristics. ([ACSSU044](#))

Language Goals

Students will describe the different stages of plant life cycle as well as how a variety of environmental factors can affect these cycles. This will happen both orally and in written forms.

ASSESSMENT TASKS

- **Observation sheets - Beobachtungsprotokolle (part of observation journal):** Students are consolidating and illustrating newly learnt content on a regular basis
- **Observation journal:** collection of observation sheets to document the students' progress during the unit
- Feedback through teachers and peers
- TLC for own bean plant
- Ongoing teacher feedback during the unit (formative assessment)

ACTIVITIES IN EACH LESSON

TEACHER ACTIVITY	LEARNER ACTIVITY
<p>Lesson 1</p> <p>Activation of prior knowledge in regards to content and language skills</p> <p>Using picture prompts on IWB to introduce the unit and key vocabulary as well as different types of plants (<i>PP Meine Bohnenpflanze, Bildmaterial, slides 2 and 3, Arbeitsblätter</i>)</p> <p><i>Was ist eine Bohne? Was ist ein Bohnensamen? Wie wird aus einer Bohne eine Bohnenpflanze?</i></p> <p>Giving the new project context through literature; showing and discussing the video "Jack und die Zauberbohnen" (<i>Arbeitsblätter</i>)</p> <p>Discussion of healthy growing conditions: <i>Was brauchen Bohnensamen zum Wachsen? Erde, Wasser, Licht... Was bedeuten diese Wörter? (PP Meine Bohnenpflanze, Bildmaterial, slide 4, Arbeitsblätter)</i></p>	<p>Sharing of prior knowledge</p> <p>Responding to teacher questions and asking questions for clarification</p> <p>Watching the video and answering of comprehension questions when the video is paused, collecting observations, sharing prior knowledge and exploring existing ideas and concepts about plant growths.</p> <p>Participating in class discussion and exploration of new vocabulary</p>

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<p>Modelling on how to complete “Beobachtungsprotokoll 1.Woche” and to ensure understanding: dotted writing to be traced, illustration/drawing of the sowing process, written labels for items in the drawing <i>(date to be filled in during Lesson 2, when the seeds have been sowed)</i></p> <p>- <i>Wie soll der Bohnensamen eingepflanzt werden?</i></p> <p>1. Erde, 2. Samen, 3. Erde, 4. Wasser</p> <p>Reflection: <i>Was hast du heute gelernt? (What did you learn today?) Was hast du heute erreicht? (What did you succeed in?) Was war schwierig? (What did you find challenging?) Was wird geschehen? (What are you predicting?)</i></p>	<p>Attentive listening to instructions and completing of the modeled task, responding to teacher prompts and asking of questions for clarification if needed, sharing of the finished task</p> <p>Responding to the questions and reflecting on own learning; joining in with the class discussion</p>
<p>Lesson 2</p> <p>Activation of prior knowledge in regards to content and language skills</p> <p>Revision of last lesson’s content and language patterns <i>(PP Meine Bohnenpflanze, Bildmaterial, slides 2-4)</i></p> <p>Modeling of how to sow the bean seed and on how to use the tools (die Schaufel, die Gießkanne etc.); offering support and assistance where needed.</p> <p>Reviewing “Beobachtungsprotokoll 1.Woche”: Date to be filled in, encouraging the students to check that their observation has been completed properly.</p> <p>Discussion about environmental factor “Wasser”: Was braucht mein Bohnensamen/meine Bohnenpflanze um richtig zu wachsen? Wieviel Wasser</p>	<p>Sharing of prior knowledge</p> <p>Responding to teacher questions and asking questions for clarification</p> <p>Listening to and following the instructions: students receive a paper flower pot and write their name on it, then they share the gardening tools and complete the sowing of their seeds.</p> <p>Reviewing “Beobachtungsprotokoll 1.Woche”: Adding in missing information, like sowing date (date of Lesson 2) and other details that might have been missed during Lesson 1.</p> <p>Think – Pair – Share</p> <p>Participating in discussion on “Wasser” and attempting to use as much of the</p>

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<p>braucht meine Bohnenpflanze? (PP Meine Bohnenpflanze, Bildmaterial, slide 5, Arbeitsblätter)</p> <p>Showing of soaked and dry beans in comparison, introducing concept of "Keimung" (seed germination).</p> <p>Reflection: <i>Was hast du heute gelernt? (What did you learn today?) Was hast du heute erreicht? (What did you succeed in?) Was war schwierig? (What did you find challenging?) Was denkst, wird geschehen? (What are you predicting?)</i></p>	<p>new vocabulary as possible.</p> <p>Responding to the questions and reflecting on own learning; joining in with the class discussion</p>
<p>Lesson 3</p> <p>Activation of prior knowledge in regards to content and language skills</p> <p>Observing of bean plant pots (<i>Keimung</i> - germination should have started for some) and asking students about what they notice and whether they can think of a reason for what has happened (use digital microscope via IWB to enhance the experience, if available)</p> <p>Watching and discussing of the time lapse video "Vom Bohnensamen zur Bohnenpflanze" (Epigeal germination climbing bean time lapse) (Arbeitsblätter)</p> <p>Modelling on how to complete "Beobachtungsprotokoll 2.Woche" and to ensure understanding: date to be filled in, dotted writing to be traced, illustration/drawing of the germination process, written labels for items in the drawing</p> <p>Reflection: <i>Was hast du heute gelernt? (What did you learn today?) Was hast du heute erreicht? (What did you succeed in?) Was war schwierig? (What did</i></p>	<p>Sharing of prior knowledge</p> <p>Responding to questions and trying to come up with reasons to explain observations. Students are always encouraged to ask their own questions and share ideas and experiences</p> <p>Watching and discussing of the time lapse video "Vom Bohnensamen zur Bohnenpflanze" (Epigeal germination climbing bean time lapse), completion of sequencing task</p> <p>Attentive listening to instructions and completing of the modeled task, responding to teacher prompts and asking of questions for clarification if needed, sharing of the finished task</p> <p>Responding to the questions and reflecting on own learning; joining in with</p>

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<p><i>you find challenging?) Was denkst, wird geschehen? (What are you predicting?)</i></p>	<p>the class discussion; TLC for bean plants</p>
<p>Lesson 4</p> <p>Activation of prior knowledge in regards to content and language skills</p> <p>Observing of bean plant pots and asking students about what they notice and whether they can think of a reason for what has happened (use digital microscope via IWB to enhance the experience, if available)</p> <p>Modelling on how to complete the craft task “Bastelmodell Bohnensamen” (<i>Arbeitsblätter 4.1</i>) and what it shows us about the inside of a bean seed. Questions for discussion: <i>Was ist in einem Samenkorn? Was passiert bei der Keimung?</i></p> <p>Preparing “Der Lebenszyklus der Pflanzen” (<i>Arbeitsblätter 4.2</i>) with the whole class by looking at the pictures and prompting students to describe what is happening in each picture. With assistance, a German sentence is jotted down for each picture or a sentence card is matched.</p> <p>Reflection: <i>Was hast du heute gelernt? (What did you learn today?) Was hast du heute erreicht? (What did you succeed in?) Was war schwierig? (What did you find challenging?) Was denkst, wird geschehen? (What are you predicting?)</i></p>	<p>Sharing of prior knowledge</p> <p>Responding to questions and trying to come up with reasons to explain observations. Students are always encouraged to ask their own questions and share ideas and experiences</p> <p>Attentive listening to instructions and completing of the modeled task, responding to teacher prompts and asking of questions for clarification if needed, sharing of the finished task</p> <p>Describing the picture prompts by using newly learnt vocabulary, attentive listening to instructions, responding to teacher prompts and asking of questions for clarification if needed; each students will use the second page (empty grid) to complete a life cycle for their own journal, incl. German sentences; sharing of the finished task</p> <p>Responding to the questions and reflecting on own learning; joining in with the class discussion, TLC for bean plants</p>
<p>Lesson 5</p> <p>Activation of prior knowledge in regards to content and language skills</p> <p>Observing of bean plant pots and asking students about what they notice and whether they can think of a reason for what has happened (use digital</p>	<p>Sharing of prior knowledge</p> <p>Responding to questions and trying to come up with reasons to explain</p>

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<p>microscope via IWB to enhance the experience, if available)</p> <p>Discussion about environmental factor “Licht”: Was braucht mein Bohnensamen/meine Bohnenpflanze um richtig zu wachsen? Wieviel Lichtbraucht meine Bohnenpflanze? (<i>Meine Bohnenpflanze, Bildmaterial, slide 6, Arbeitsblätter</i>) Showing three different bean plant pots that have been sowed at the same time as the students’ beans: One has been kept in darkness, one in the shade and one in sunlight. Ask students to describe what they see and what the differences are.</p> <p>Modelling on how to complete “Beobachtungsprotokoll 4.Woche” and to ensure understanding: date to be filled in, dotted writing to be traced, measuring the plant, illustration/drawing of the growing process, written labels for items in the drawing</p> <p>Reflection: <i>Was hast du heute gelernt? (What did you learn today?) Was hast du heute erreicht? (What did you succeed in?) Was war schwierig? (What did you find challenging?) Was denkst, wird geschehen? (What are you predicting?)</i></p>	<p>observations. Students are always encouraged to ask their own questions and share ideas and experiences</p> <p>Think – Pair – Share</p> <p>Participating in discussion on “Licht” and the experiment plants and attempting to use as much of the new vocabulary as possible</p> <p>Attentive listening to instructions and completing of the modeled task, responding to teacher prompts and asking of questions for clarification if needed, sharing of the finished task</p> <p>Responding to the questions and reflecting on own learning; joining in with the class discussion, TLC for bean plants</p>
<p>Lesson 6</p> <p>Activation of prior knowledge in regards to content and language skills</p> <p>Observing of bean plant pots and asking students about what they notice and whether they can think of a reason for what has happened (use digital microscope via IWB to enhance the experience, if available)</p> <p>Discussion about environmental factor “Boden”: <i>Was braucht mein Bohnensamen/meine Bohnenpflanze um richtig zu wachsen? In welcher Bodenart wächst deine Pflanze am besten? (Meine Bohnenpflanze, Bildmaterial,</i></p>	<p>Sharing of prior knowledge</p> <p>Responding to questions and trying to come up with reasons to explain observations. Students are always encouraged to ask their own questions and share ideas and experiences</p> <p>Think – Pair – Share</p> <p>Participating in discussion on “Boden” and the three experiment plants and attempting to use as much of the new vocabulary as possible.</p>

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<p><i>slide 7)</i> Showing three different bean plant pots that have been sowed at the same time as the students' beans: One has sand, one has cotton wool and one normal garden soil. Ask students to describe what they see and what the differences are.</p> <p>Assisting students on how to complete "Unsere Bohnen" Wordsearch and drawing activity.</p> <p>Reflection: <i>Was hast du heute gelernt? (What did you learn today?) Was hast du heute erreicht? (What did you succeed in?) Was war schwierig? (What did you find challenging?) Was denkst, wird geschehen? (What are you predicting?)</i></p>	<p>Attentive listening to instructions and completing of the task, responding to teacher prompts and asking of questions for clarification if needed, sharing of the finished task</p> <p>Responding to the questions and reflecting on own learning; joining in with the class discussion, TLC for bean plants</p>
<p>Lesson 7</p> <p>Activation of prior knowledge in regards to content and language skills</p> <p>Observing of bean plant pots and asking students about what they notice and whether they can think of a reason for what has happened (use digital microscope via IWB to enhance the experience, if available)</p> <p>Modelling on how to complete "Beobachtungsprotokoll 6.Woche" and to ensure understanding: date to be filled in, dotted writing to be traced, written part to be completed, measuring of the plant, illustration/drawing of the growing process, written labels for items in the drawing</p> <p>Reviewing the unit "Meine Bohnenpflanze" by completing a PMI. Students are instructed to start individually, then compare with a partner and then share</p>	<p>Sharing of prior knowledge</p> <p>Responding to questions and trying to come up with reasons to explain observations. Students are always encouraged to ask their own questions and share ideas and experiences</p> <p>Attentive listening to instructions and completing of the modeled task, responding to teacher prompts and asking of questions for clarification if needed, sharing of the finished task</p> <p>Think-Pair-Share Participating in the activity and reflecting on own experiences,</p>

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<p>with the rest of the grade.</p> <p>Reviewing the unit via picture taken during the lessons and watching of short videos that were taken during the unit</p> <p>Reflection: <i>Was hast du heute gelernt? (What did you learn today?) Was hast du heute erreicht? (What did you succeed in?) Was war schwierig? (What did you find challenging?) Was denkst, wird geschehen? (What are you predicting?)</i></p>	<p>communicating with fellow students and expressing of own opinion</p> <p>Responding to the questions and reflecting on own learning; joining in with the class discussion, students can take home their bean plants</p>
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Materials:

1x cardboard flower pot per student, garden soil, 1x bean seed per student, extra bean seeds for backup and demo plants and experiments, 2x watering cans, 4x small shovels, digital microscope with VGA adaptor, iPad for pictures and videos.

Resources:

- Arbeitsblätter
- PP Meine Bohnenpflanze - Bildmaterial