Montessori Bilingual Innovations

Prepared by:
Duhovka Institute in cooperation with Warsaw Montessori School and Duhovka Elementary School

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Content

Introduction:

This project was created through the collaboration of 3 groups working under an Erasmus grant. The purpose was to bring teachers together to create a guide for teaching bilingual education in a Montessori environment. This involved teachers from Warsaw Montessori School, in Warsaw, Poland and Duhovka Elementary School in Prague, Czech Republic. Duhovka Institute, in Prague, Czech Republic, worked and guided the teachers in planning, researching, and creating systems to support Montessori teachers in bilingual classrooms.

The work across borders in such a collaborative manner brought together teachers and school systems that now feel a deeper connection as Montessori teachers but also have developed relationships to continue collaborative work in the future.

Pre-information

Second language acquisition

This is the common term used for the name of the discipline and deals with the many areas covered in this information. In general, SLA refers to the process of learning another language after the native language has been learned. Sometimes, the term even refers to the learning of a third or fourth language. The important aspect is that SLA refers to the learning of a nonnative language after the learning of one's native or primary language. The second language is commonly referred to as the L2. As with the phrase "second language," L2 can refer to any language learned after the L1 has been learned, regardless of whether it is the second, third, fourth, or fifth language. By this term, we mean the acquisition of a second language both in a classroom situation, as well as in more "natural" exposure situations. In addition to referring to the discipline, as noted above, the term second language acquisition (not capitalized) can also refer to the process of learning another language.

Foreign language learning

Foreign language is generally differentiated from second language in that the former refers to the learning of a nonnative language in the environment of one's native language (e.g., French speakers learning English in France [EFL] or Spanish speakers learning French in Spain, Argentina, or Mexico [FFL]). This is most commonly done within the context of the classroom.

Second language, on the other hand, generally refers to the learning of a nonnative language in the environment in which that language is spoken (e.g., German speakers learning Japanese in Japan [JSL] or Punjabi speakers learning English in the United Kingdom [ESL]). This may or may not take place in a classroom setting.

The important point is that learning in a second language environment takes place with considerable access to speakers of the language being learned, whereas learning in a foreign language environment usually does not. In this project, we use the generic term SLL to assume learning in a second language in a foreign language context.

Chapter 1: Second Language Acquisition and Student Needs

OVERVIEW

The process of acquiring a second language follows a structured sequence supported by scientific research. Understanding these stages can help educators effectively guide learners through the language acquisition journey.

The Two-System Theory of Language Acquisition

Research suggests that adults have two distinct systems for acquiring a second language: subconscious language acquisition and conscious language learning. Subconscious acquisition, which occurs naturally through exposure and practice, is considered more crucial for developing language proficiency.

Stages of Second Language Acquisition

1. Pre-Production (1-3 Months)

> Student Tasks:

- Listen actively and begin recognizing sounds and words.
- Respond non-verbally (e.g., through gestures, drawings, or pointing).
- Start understanding simple commands and indicating needs.
- Risk using words, focusing on meaning.
- Utilize native language skills to aid in learning.

> Teacher Tasks:

- Create a safe environment for students to listen and absorb the language.
- Encourage, but do not force speech. Allow for a silent period.
- Use repetition and non-verbal cues to reinforce vocabulary.
- Provide opportunities for students to practice useful phrases.
- Support continued development in the student's first language.

2. Early Production (2-6 Months)

> Student Tasks:

- Begin using short phrases and memorized chunks of language.
- Expand vocabulary and start using more complex language forms.

> Teacher Tasks:

- Use questions that encourage simple responses (e.g., yes/no, either/or).
- Continue using non-verbal cues and repetition to reinforce learning.
- Adjust language complexity to match student understanding.

3. Speech Emergence

> Student Tasks:

- Increase vocabulary to approximately 3,000 words.
- Begin speaking in longer phrases and sentences.
- Engage in simple reading and writing activities.

> Teacher Tasks:

- Provide reading materials that match the learner's language level.
- Encourage students to ask questions and participate in discussions.

4. Intermediate Fluency

> Student Tasks:

- Start thinking and forming responses in the new language.
- Increase fluency in speaking, reading, and writing.
- Learn over 6,000 words and more complex grammatical structures.

> Teacher Tasks:

- Introduce more complex texts and encourage analytical thinking.
- Facilitate discussions to enhance language comprehension and expression.

5. Advanced Fluency

> Student Tasks:

- Continue expanding vocabulary and refining language skills.
- Engage in more sophisticated reading and writing tasks.
- Develop cultural competence and specialized language skills.

> Teacher Tasks:

- Provide advanced materials, including literature and academic texts.
- Encourage ongoing language maintenance and self-directed learning.

CONCLUSION

Understanding the sequence of second language acquisition allows educators to tailor instruction to the learner's current stage, ensuring a supportive and effective learning environment. As students progress, the focus shifts from basic communication skills to more advanced language use, including cultural competence and specialized vocabulary.

Resource:
Computer Systems Institute. (n.d.). Five stages of learning a new language. Retrieved from https://www.csinow.edu/blog/five-stages-learning-new-language/
Gass, S. M., & Selinker, L. (2008). Second language acquisition: An introductory course (3rd ed.). New York: Routledge.

Research-Based Elements for Meeting Students' Second Language Learning Needs

OVERVIEW

Addressing students' academic, practical, and emotional needs is important to effectively support their learning of a foreign language. Research highlights several key elements that educators should consider when designing and implementing language learning programs.

1. Academic Needs

> Effective Instruction:

- **Quality Teaching**: Instructors should be well-trained and use diverse teaching methods accommodating different learning styles.
- **Feedback**: Regular, constructive feedback helps students identify their strengths and areas for improvement.

> **Input and Exposure**:
  - **Comprehensible Input**: Students should be exposed to language that is slightly above their current proficiency level to facilitate understanding and growth.
  - **Authentic Materials**: Using real-world content like newspapers, movies, and music helps students experience the language as it is used in everyday situations.

> **Consistent Practice**:
  - Regular practice is essential for retaining language skills and developing proficiency.

> **Strategies**:
  - Teaching students effective language learning strategies enables them to overcome challenges independently.

> **Assessment and Evaluation**:
  - Fair and effective assessment methods should measure various language skills, ensuring that students' progress is accurately tracked.

2. Practical Needs

> **Interaction and Communication**:
  - Opportunities for meaningful interaction and communication in the target language promote fluency and practical language use. Activities such as group discussions and language exchanges are beneficial.

> **Plane of Development Considerations**:
  - Recognizing the impact of age on language learning is crucial. Younger learners may excel in pronunciation, while older learners might benefit from cognitive advantages.

> **Policy and Support**:
  - Supportive educational environments, including immersion programs and language-friendly communities, are vital for language learning success.

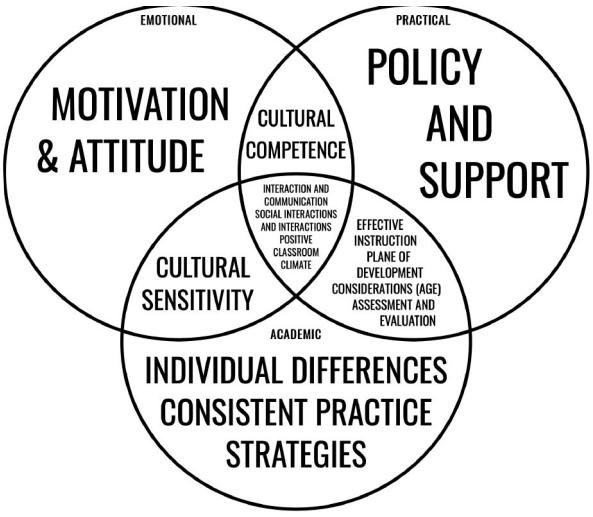
3. Emotional Needs

> **Motivation and Attitude**:
  - Motivation, which includes the learner's drive, desire to become proficient, and emotional response to learning, is crucial. A positive attitude towards the language can significantly impact motivation.

> **Social Interactions and Collaboration**:
  - Scaffolded interactions, where more knowledgeable participants support learners, are essential. These interactions allow students to achieve higher levels of competence through social learning.

> **Positive Classroom Climate**:
  - A supportive classroom environment that fosters positive relationships between teachers and students, as well as among students themselves, is critical for emotional well-being and effective learning.

> **Foreign Language Enjoyment (FLE) and Foreign Language Anxiety (FLA)**:
  - Managing language learning anxiety is crucial. Positive experiences in the classroom, personal satisfaction, and a supportive atmosphere contribute to enjoyment and reduce anxiety, leading to better learning outcomes.



CONCLUSION

Meeting students‘ academic, practical, and emotional needs in second language learning is essential for their success. By addressing these needs through effective instruction, meaningful interaction, consistent practice, and emotional support, educators can create an environment that fosters language acquisition and long-term proficiency.

Resource:
Krashen, S. D. ***(n.d.).*** *Acquisition and learning.* ***[PDF]. Retrieved from:*** *Second Language Acquisition and Second Language Learning*

Second Language Acquisition in a Montessori Bilingual Environment

While considering the various stages and methods for acquiring a second language, we must emphasize their application in a Montessori bilingual classroom. We found the need for flexibility, as students learn languages at different rates. The aim is to match effective methods with the stages of second language acquisition, providing a guide for educators working with Foreign Language Learners (FLL). Montessori environments are rich with opportunity for key language learning skills to take place continually in a natural and defined instruction manner.

Key Language Learning Skills in a Montessori Environment:

> Listening and Speaking:
- Emphasis on listening and speaking skills, essential for communication, through immersive experiences.

> Basic Vocabulary and Grammar:
- Focus on foundational vocabulary and grammar structures, often using everyday topics.

> Reading and Writing:
- Gradual introduction of reading skills, followed by writing tasks once learners are comfortable with listening, speaking, and basic reading.

> Advanced Vocabulary and Grammar:
- Expansion into complex grammar, vocabulary, and topics, building proficiency.

> Cultural Competence:
- Learners gain an understanding of cultural nuances as language proficiency increases, enhancing contextual language use.

> Specialized Language Skills:
- Depending on interests, learners may focus on business, academic, or technical language, tailoring content to specific goals.

> Fluency Development:
- Extended communication opportunities, such as discussions and presentations, improve expressive skills.

> Complex Texts and Writing:
- More sophisticated reading and writing tasks, including literature analysis and advanced compositions, develop deeper comprehension and expression.

> Self-Direction:
- Learners are encouraged to take responsibility for ongoing language maintenance, with strategies for lifelong learning.

CONCLUSION

This chapter highlights some of the stages of language acquisition and aligns them with Montessori practices to create an enriching bilingual learning environment.

Chapter 2: Language Arts

OVERVIEW:

Language arts in a Montessori classroom encompass all areas of language learning, starting with pre-reading lessons and progressing through reading, literacy, writing, word study, grammar, and mechanics. The foundation begins with an understanding of the components of reading.

When students begin reading in a second language, they are able to apply this knowledge to other areas of language development. Montessori teachers start by teaching the sounds of the second language, building on the student's native language skills. Word study and grammar skills learned in the native language serve as a bridge to mastering these elements in the second language, allowing students to connect with the content more easily and deeply.

The Montessori language curriculum is rich and incorporates students' background knowledge to facilitate learning in both their native and second languages. By focusing on what is most important for building reading skills, teachers can plan language instruction effectively. In addition, integrating language lessons, writing, and literacy with the study of cosmic education creates a meaningful, interdisciplinary learning experience. Language work is woven into cosmic education studies, as explored in later chapters.

The Five Pillars of Reading Comprehension

Reading comprehension, an essential aspect of literacy, is built on five key components known as the pillars of reading comprehension. Understanding these pillars helps educators foster strong reading abilities in their students.

1. Phonemic Awareness:

Phonemic awareness is the ability to recognize and manipulate individual sounds (phonemes) in spoken words. It is essential for decoding words and understanding how sounds relate to letters, forming the foundation for reading comprehension.

2. Phonics:

Phonics involves teaching the relationship between sounds and the letters that represent them. By mastering phonics, students can accurately decode written words, developing the essential skills for fluent reading and comprehension.

3. Fluency:

Fluency is the ability to read quickly, accurately, and with expression. Fluent readers recognize words effortlessly, which allows them to focus on the meaning of the text. Increased fluency enhances both reading comprehension and engagement with texts.

4. Vocabulary:

A strong vocabulary is crucial for reading comprehension. Readers must understand the words in a text to grasp its meaning. Vocabulary instruction should include varied word types, explicit teaching of meanings, and opportunities to practice in different contexts.

5. Comprehension:

Comprehension is the ultimate goal of reading. It involves understanding and interpreting written text, using skills in phonemic awareness, phonics, fluency, and vocabulary. Comprehension strategies and varied reading practice help students apply critical thinking to understand diverse texts.

CONCLUSION:

The five pillars of reading comprehension—phonemic awareness, phonics, fluency, vocabulary, and comprehension—are fundamental to effective literacy instruction. By addressing each pillar, educators can help students develop strong reading skills and achieve academic success across subjects and genres.

References:
National Reading Panel. *A Closer Look at the Five Essential Components of Effective Reading Instruction: A Review of Scientifically Based Reading Research for Teachers.* ***US Dept of Ed, 2004. Learning Point Associates, 2004.*** ***https://files.eric.ed.gov/fulltext/ED512569.pdf***

The Montessori elementary classroom Language curriculum

The Montessori elementary SLL is now ready to continue strengthening their literacy skills through; writing, grammar, and word study.

Writing enables SLLs to communicate their ideas and share their researched information effectively. To understand the difference between a sentence and a phrase, students are given examples of each and then asked to classify the examples into two columns: this is a phrase, this is not a phrase, this is a sentence.

The students learn the mechanics of sentence structure when they start a sentence with a capital letter and use appropriate punctuation, such as periods, question marks, or exclamation marks, to set the sentence's tone. They continue with commas, quotation marks, colons, and semicolons.

As the SLL progresses through their writing, they learn how to construct a paragraph with a topic and a conclusion sentence. Students practice this process through creative, report, narrative, biography, and fairy tale writing. They also continue deepening their understanding of writing skills by taking opportunities to peer edit and rewrite their written work.

Grammar study teaches the SLLs that words in a sentence must have a particular function and order so that the information makes sense and is fluent and understandable for the reader. Symbols are given for each of the functions of words:

- The noun is a large black triangle,
- the article is a small light blue triangle,
- the adjective a dark blue triangle,
- the verb a red sphere,
- the adverb a smaller orange sphere,
- the pronoun a green arc,
- the tall thinner purple triangle is the pronoun,
- the conjunction is a short pink rectangle, and
- the old keyhole figure is the exclamation mark

Children diagram sentences using the symbols to recognize, understand, and comprehend the correct work order in a sentence.

Word study increases the children's comprehension and verbal reasoning. By studying compound words, synonyms, antonyms, homographs, homophones, etc., SLLs can expand their vocabulary to express ideas and concepts fluently and at a more native speaker level. The activities used for this work use words with corresponding pictures, when possible, to help connect the new vocabulary with the frame of reference from their native vocabulary bank.

With all of the above activities, having books that help support the concepts learned is another way to reinforce the SLLs' opportunity for comprehension and fluency in reading, which is the ultimate goal for second language literacy. These books can be in all areas of the Montessori classroom, science, math, language, art, practical life, ect.

CONCLUSION

The Montessori Language Arts curriculum is vast and rich. The curriculum is taught by teaching the isolated concepts either independently or woven into an interconnected curriculum. When background knowledge is utilized, language learners are able to connect skills in the new language and apply them in their work in all curriculum areas.

Chapter 3: Learning Math in a Second Language

OVERVIEW

The first step in teaching math in a second language is to attach new vocabulary to the student's native language. This helps students connect their background knowledge to the new math terms they are learning. Effective strategies for teaching math in a second language include pre-teaching vocabulary, using visual aids, and employing tactile learning methods.

1. Vocabulary Building in Math

> **Pre-teaching vocabulary**:
- Before diving into math concepts, introduce the relevant vocabulary using pictures, real objects (realia), and the native language to create connections.
"A strong understanding of math terms is essential for mastering concepts—meaning strategies for building robust vocabulary are surprisingly useful." —Stephen Noonoo

> **Nomenclature teaching**:
- Use the *three-period lesson* to teach math vocabulary, which links specific words to their corresponding concepts or physical attributes. This technique, based on Dr. Montessori's adaptation of Dr. Eduard Seguin's work, is useful across various subjects.
"The nomenclature lesson presentation shows the child the relationship between specific words and their corresponding concept or physical attribute in the environment."

2. Montessori Methods for Math Instruction

> **Concrete to abstract learning**:
- Use Montessori materials, such as beads and other physical objects, to represent abstract mathematical terms (e.g., division, multiplication). This allows students to understand complex concepts through hands-on experience.

> **Experiential and tactile learning**:
- Engage students with counting songs, games, and number association activities to reinforce math concepts in a fun and interactive way.

> **Contextual and real-life examples**:
- Use everyday situations (e.g., dividing muffins among students) to explain mathematical operations in a relatable context.

3. Math as a Language

Math can be thought of as another language, complete with its own symbols, vocabulary, syntax, and grammar. Numbers and operational symbols form its alphabet, while equations are its sentences. Given this, teaching math in a second language can follow similar steps as language acquisition.

4. CLIL Methodology (Content and Language Integrated Learning)

The CLIL method is effective for teaching subjects like math in a second language. It integrates content and language learning by focusing on:

> **Content**: Progression in knowledge and skills within the curriculum.

> **Communication**: Using language to learn while learning to use language.

> **Cognition**: Developing thinking skills that link concept formation, understanding, and language.

> **Culture**: Gaining exposure to alternative perspectives and deepening cultural awareness.

CLIL lessons are neither purely language lessons nor subject lessons in a foreign language—they combine both to create a comprehensive learning experience.

5. Solving Math Problems in First and Second Languages

Studies show that the language context can influence arithmetic problem-solving. Solving math problems containing “words” or “text”in a non-native language may present additional challenges, as learners must process both the language and the math.

Refe*rences:*
Stephen Noonoo, Edutopia: Build Strong Math Vocabulary Skills
IMS Montessori: The Three-Period Lesson
Mathematics as a Second Language: Understanding Math as a Language
CLIL Methodology: Teaching and Learning Mathematics in a Non-native Language

The Importance of Montessori Materials in Teaching and Learning Math

In the Montessori classroom, especially when a child is acquiring a new language, it is vital that the teacher helps maintain and enhance the child’s current math skill level while protecting their confidence and motivation. This ensures that the development of what Montessori refers to as the „mathematical mind“—the part of the mind built on order, abstraction, imagination, and exactness—remains unhindered (Sackett, 2014).

How Montessori Materials Support Learning in Math:

> Concrete to Abstract Progression:
- Montessori materials transition from concrete representations to abstract concepts, allowing children to understand math concepts without needing extensive language.

> Sensory Engagement:
- By relying on visual and tactile learning, the materials remove the pressure of producing new language, enabling children to progress in math even as they become proficient in the new language.

For the teacher, Montessori materials provide essential tools for bridging the gap between a student’s current math abilities and their language learning goals.

For the Teacher

> Subject Literacy:
- Teachers must have a clear understanding of the lesson they are delivering, ensuring accurate and effective math instruction.

> Language Accuracy:
- When using Montessori materials, teachers should maintain rigor in mathematical language, ensuring clarity and precision, especially for students learning in a second language (L2).

> Effective Questioning:
- Rhetorical and guiding questions help children think critically while interacting with the materials, fostering deeper understanding.

> Handling Montessori Materials:
- Teachers should consistently remind students of how to use the materials properly and resist rushing the learning process, allowing students to fully grasp each concept.

For the Student

> Exploration and Discovery:
- Montessori materials encourage independent learning by allowing students to explore at their own pace. Children are free to investigate, experiment, and discover new concepts through hands-on interaction.

> Recording Work:
- Students are encouraged to keep track of their work by taking notes or recording progress, reinforcing the learning process.

> Self-Correction:
- The self-correcting nature of Montessori materials helps students receive instant feedback. This allows them to identify mistakes independently, fostering critical thinking and problem-solving skills.

Unique Features of Montessori Materials

> Child-Centered Learning:
- Montessori materials are designed to facilitate self-directed learning, promoting independence and curiosity.

> Sequence-Based Learning:
The materials follow a specific sequence that builds on previously acquired skills, ensuring that each step supports further growth.

> Sensory Experience:
- By stimulating the senses of touch, sight, and sound, the materials provide a multi-sensory learning experience that enhances engagement and comprehension.

> Multiple Learning Styles:
- Montessori materials cater to different learning styles, allowing children to learn through tactile, visual, and kinesthetic experiences.

> Problem-Solving Focus:
- The materials simplify abstract concepts, encouraging children to learn through problem-solving and repeated practice.

> Natural and Real-Life Materials:
- Montessori materials are often made from natural objects, helping children connect with real-world learning.

Types of materials:

In the Montessori environment, there are a variety of materials that have a primary purpose, and also secondary skill-building elements.

For example:

> Practical Life Materials
- These materials and activities support the development of concentration, as well as fine motoric skills.

> Sensorial Materials
- Use of these materials enhance a child's sensory skills, as well giving them learning opportunities of classifying and sorting. They also develop their language and prepares them for mathematics and geometry

> Mathematics Materials
- These materials are hands-on exploration and also help to develop their problem solving, and critical thinking skills.

> Language Materials
- **All language materials in the environment support** reading and writing, combining letters and sounds to form words, and fine motor skills.

> Cultural Materials

- The study of cosmic education and cultures creates opportunity for cross-curriculum work, and the development of research and inquiry skills (e.g. ability to ask relevant questions).

CONCLUSION

Montessori materials offer a powerful, hands-on approach to learning that supports both language acquisition and mathematical development. For teachers, these materials provide a structured and effective method for delivering lessons, while students benefit from the independence, exploration, and self-correction that the materials naturally promote.

Chapter 4:
Preparation of Cosmic Education

OVERVIEW

The **„Preparation for the 5 Great Lessons“** in a Montessori classroom is an essential phase aimed at building foundational skills and introducing key concepts that will support deeper learning in later lessons. Here's a summary of some Montessori foundation essential experiences:

1. Practical Life Skills:

Through everyday tasks, children enhance their fine and gross motor skills, concentration, coordination, and independence. Activities like pouring and buttoning lay the groundwork for more complex work.

2. Sensorial Exploration:

Engaging in sensorial activities helps children sharpen their senses and cognitive skills by sorting, matching, and exploring different materials, which improves perception and discrimination.

3. Language Development:

Promoting vocabulary, literacy, and communication is crucial. Activities enhance reading and writing skills while exposing children to rich language, fostering a love for communication.

4. Mathematical Understanding:

Basic math concepts are introduced through hands-on materials, allowing students to explore and understand mathematical principles concretely, paving the way for abstract thinking later.

5. Cultural Studies:

Children learn about geography, history, botany, and zoology through tactile and engaging activities that emphasize the interconnectedness of cultures and life on Earth.

6. Science Exploration:

Simple scientific concepts are introduced through experiments and observations, nurturing a sense of wonder about the natural world and encouraging curiosity.

7. Social and Emotional Development:

Activities focused on social skills, emotional regulation, and cooperation help promote the child's overall well-being, fostering a supportive learning community.

CONCLUSION

These foundational experiences prepare students for the deeper, more abstract lessons in the Montessori curriculum, specifically the 5 Great Lessons, by ensuring they have the necessary skills and knowledge to engage meaningfully with the material.

Basic academic skills

OVERVIEW

Before diving into more complex lessons in second language acquisition, many basic skills serve as beneficial support for learners. Here's a summary of these key components:

1. Basic Vocabulary:

- Establishing a core vocabulary in the learner's native language is essential. This includes everyday terms related to objects, actions, and experiences, forming the basis for further language development.

2. Listening and Speaking Skills:

- Proficiency in listening and speaking in the native language enhances oral communication skills, which are crucial for acquiring a second language effectively.

3. Phonemic Awareness:

- Recognizing and producing the sounds of the native language, understanding word stress, and developing rhythmic speech are vital for later pronunciation and comprehension in the second language.

4. Cultural Awareness:

- Understanding cultural concepts and practices from both the native and target languages enriches the language-learning experience. Cultural sensitivity fosters deeper connections with the language and its context.

5. Reading Readiness:

- Basic pre-reading skills, including recognizing letters, sounds, and some phonics, prepare learners for the challenges of reading in a new language.

6. Basic Grammar Concepts:

- Familiarity with simple grammatical structures in the native language helps learners grasp similar concepts in the second language, such as sentence structure and verb usage.

7. Motivation and Curiosity:

- A positive attitude toward language learning and intrinsic curiosity about the new language and its culture significantly enhance engagement and retention.

8. Cognitive Skills:

- Developing cognitive skills like problem-solving, critical thinking, and memory can support effective language acquisition, making it easier for learners to understand and use the second language.

CONCLUSION

In the context of Montessori education, these skills align well with the philosophy behind the „Five Great Lessons." These lessons provide a broad, interconnected perspective of the world, encouraging elementary students to explore, engage, and foster a deeper understanding of various subjects, including language learning. Integrating these foundational principles within the Montessori framework can help create a more holistic and effective learning environment for second language learners.

Montessori Environment

Montessori classroom requirements and tenets that create a successful environment for teaching and learning, with the Great Lessons in mind:

1. Prepared Environment:

- Create a well-organized and aesthetically pleasing learning environment. The classroom should be carefully arranged with materials that cater to the developmental needs and interests of the students.

2. Mixed-Age Grouping:

- Montessori classrooms often have mixed-age groups. This allows for peer learning, collaboration, and a sense of community among students.

3. Freedom and Responsibility:

- Emphasize the principles of freedom within limits. Students should have the freedom to choose their activities but within the boundaries set by the teacher. This fosters a sense of responsibility and self-discipline.

4. Respect for Individual Pace:

- Recognize and honor the individual learning pace of each student. Montessori education values the idea that children progress at their own speed, allowing them to delve deeper into subjects when they are ready.

5. Teacher as a Guide:

- The role of the teacher in a Montessori environment is that of a guide or facilitator rather than a traditional lecturer. The teacher observes and supports the students in their learning journey.

6. Materials and Curriculum:

- Provide a wide range of Montessori materials that cover various subject areas such as mathematics, language, science, and cultural studies. These materials should be introduced gradually and in alignment with the child's developmental stage.

7. Cultural Awareness:

- Encourage an appreciation for diversity and different cultures. Montessori education has a global perspective, and it's essential to integrate cultural studies into the curriculum.

Attributes of the Five Great Lessons Exploration

OVERVIEW

Students in the Montessori environment benefit from the opportunities presented by the Five Great Lessons. These in depth studies nurture a love of learning, enhance independence, and develop critical thinking skills that will be valuable throughout their educational journey and beyond.

1. Curiosity and Wonder:

- Encourage students to cultivate a natural curiosity about the world, prompting them to ask questions and explore topics in-depth.

2. Independence:

- Foster students' independence by allowing them to select their activities and work at their own pace, instilling a sense of responsibility for their learning journey.

3. Respect for Others:

- Promote a respectful and collaborative classroom culture. Working in mixed-age groups allows students to share ideas and support each other's learning effectively.

4. Love of Learning:

- Make learning enjoyable and relevant, ensuring that the Great Lessons captivate students' imaginations and foster a lifelong passion for knowledge.

5. Critical Thinking:

- Value independent thought and encourage critical thinking by providing opportunities for students to analyze information, draw conclusions, and express their own ideas.

6. Responsibility for the Environment:

- Instill a sense of responsibility in students for maintaining their learning environment, which promotes respect and ownership of their shared space.

7. Exploration of Interests:

- Allow students to follow their interests and passions. The Great Lessons serve as a foundation for deeper exploration of topics that resonate with them.

8. Hands-on Learning:

- Engage in tactile, interactive learning experiences with Montessori materials. This hands-on approach deepens understanding and reinforces concepts through direct manipulation.

9. Reflection:

- Encourage students to reflect on their learning experiences, whether through journaling or discussion, helping them connect new knowledge to their understanding of the world.

10. Application of Knowledge:

- Support students in applying their knowledge to real-life situations, encouraging them to relate the concepts from the Great Lessons to their daily experiences.

CONCLUSION:

In conclusion, the Five Great Lessons in Montessori education serve as a transformative framework that fosters a rich, student-centered learning experience. These lessons ignite curiosity, encourage independence, and cultivate respect, laying the foundation for both academic and personal growth. By engaging in hands-on, reflective learning, students develop critical thinking skills and a deep appreciation for knowledge. They also gain a sense of responsibility for their environment and a lasting love of learning. Through this approach, the Montessori classroom becomes a dynamic space where students can explore their interests and apply their understanding to the world around them, nurturing lifelong learners who are prepared to contribute thoughtfully to society.

Planning for Great Lessons

OVERVIEW

As a Guide plans for the Great Lessons they must consider each area of the classroom curriculum. Where will they tie in the great lesson to other areas, where can these history and geography lessons be supported with math, language, literature, the sciences, art, music, movement, and geometry. Background knowledge and vocabulary are continually supported everywhere in the environment and through pre-teaching curriculum. All of this must be planned for the most effective experience and comprehension of a SLL.

Before presenting **the First Great Lesson**, it's essential to create a foundation that prepares children for this awe-inspiring experience. Here are some steps to consider:

Build Background Knowledge:

- Introduce basic concepts related to the natural world, such as day and night, seasons, and the cycle of life. Bring up these topics in their native language or with picture guides.

Develop Vocabulary:

- Ensure that children have a rich vocabulary related to nature, the elements, and basic scientific concepts. This will help them better comprehend and engage with the content of the First Great Lesson.

Encourage Observation:

- Foster a habit of observation in children. Encourage them to notice and ask questions about the world around them. This can be done through nature walks, observing the sky, and exploring the outdoors.

Use Hands-on Activities:

- Engage children in hands-on activities that allow them to explore and manipulate materials. This could include activities related to the elements, like water play or planting seeds, to provide a tangible connection to the natural world.

Introduce Stories and Myths:

- Share age-appropriate stories and myths that introduce the themes of creation, nature, and the universe. This helps children relate to the concepts on a more personal and imaginative level.

Encourage Curiosity:

- Foster a sense of wonder and curiosity in children. Encourage them to ask questions and explore their interests. This sets the stage for the First Great Lesson, which is designed to ignite their natural curiosity.

Create a Supportive Environment:

- Ensure that the learning environment is conducive to exploration and inquiry. Provide a variety of materials that allow children to investigate and discover on their own.

Prepare for Group Activities:

- The First Great Lesson is often presented in a group setting. Help children develop skills for group activities, such as listening, taking turns, and sharing ideas. This prepares them for the collective experience of the lesson.

Establish a Positive Mindset:

- Cultivate a positive attitude towards learning and exploration. Create an atmosphere where mistakes are viewed as opportunities to learn, and curiosity is celebrated.

Connect Learning to Everyday Life:

- Relate concepts to children's daily experiences. Discuss the weather changes, the growth of plants, and other observable phenomena to ground their understanding in the context of their own lives.

The Second Great Lesson

- in the Montessori elementary curriculum focuses on the coming of life to Earth, introducing concepts related to the development of living organisms. To prepare a child for the Second Great Lesson, consider the following steps:

Introduce Basic Biology Concepts:

- Before delving into the specifics of the Second Great Lesson, introduce basic concepts related to life, living organisms, and the characteristics that define living things. Simple discussions about plants, animals, and humans can lay the groundwork.

Explore Plant Life:

- Engage children in activities that explore plant life. This could involve planting seeds, observing plant growth, and discussing the different parts of plants. Use hands-on experiences to connect theoretical concepts with tangible examples.

Study Animal Life:

- Similarly, explore the world of animals with children. Discuss different types of animals, their habitats, and their life cycles. Incorporate stories, images, and perhaps visits to a zoo or nature center to enhance their understanding.

Discuss Life Cycles:

- Introduce the concept of life cycles, focusing on the stages of growth and development in plants and animals. Use visual aids, diagrams, and age-appropriate resources to help children grasp these concepts.

Read Storybooks and Myths:

- Supplement the learning with storybooks and myths that revolve around the themes of life, growth, and development. This can help children connect emotionally and imaginatively with the concepts they are exploring.

Use Scientific Observations:

- Encourage children to make scientific observations. Set up simple experiments or observational activities that allow them to witness changes and growth in living things. This hands-on approach helps solidify their understanding.

Explore the Diversity of Life:

- Discuss the diversity of life on Earth. Explore different ecosystems, climates, and the variety of living organisms that inhabit our planet. Emphasize the interconnectedness of all living things.

Discuss the Importance of Balance:

- Introduce the idea of balance in nature. Discuss how different living organisms depend on each other and how disruptions in this balance can have consequences. This sets the stage for understanding the interdependence of life.

Prepare for Group Discussions:

- Like the First Great Lesson, the Second Great Lesson is often presented in a group setting. Prepare children for group discussions by fostering effective communication skills, active listening, and the sharing of ideas.

Encourage Questions and Curiosity:

- Create an environment where children feel comfortable asking questions and expressing curiosity about the natural world. Encourage them to wonder and inquire, setting the stage for the awe and wonder that the Second Great Lesson aims to inspire.

The **Montessori „Third Great Lesson“** often focuses on the coming of human beings and the development of language and communication. Preparing a child for the Third Great Lesson involves creating a foundation in various areas. Here are some suggestions to help prepare children before they receive the Third Great Lesson:

Introduction to Human History:

- Begin introducing basic concepts of history, emphasizing human development and the passage of time. Share simple stories or pictorial timelines that illustrate the progression from early humans to the present day.

Cultural Exploration:

- Introduce children to different cultures, customs, and traditions. Explore aspects of daily life, clothing, food, and celebrations from various parts of the world. This broadens their understanding of human diversity.

Geography Awareness:

- Foster an awareness of different geographical locations and landmarks. Introduce basic maps and globes to help children grasp the idea of different countries and continents.

Discussion of Family and Community:

- Encourage conversations about families, communities, and relationships. Discuss the roles of family members, and community helpers, and the importance of cooperation and collaboration.

Language Development:

- Emphasize language development by exposing children to a rich linguistic environment. Engage in storytelling, reading books, and exploring various forms of communication, including written language and symbols.

Introduction to Writing and Reading:

- Introduce early literacy activities to lay the groundwork for the exploration of written language. This may include letter recognition, basic writing exercises, and exposure to simple reading materials.

Encourage Social Skills:

- Promote social skills and cooperation by engaging children in group activities. Emphasize the importance of effective communication, listening, and expressing thoughts and feelings.

Explore Tools and Inventions:

- Discuss the development of tools and inventions that have played a role in human progress. Explore simple machines and their functions, helping children understand the significance of technological advancements.

Hands-on Experiments:

- Conduct simple hands-on experiments or activities related to basic scientific principles. This can include exploring cause and effect, observing changes, and understanding the scientific method.

Celebrate Achievements and Milestones:

- Celebrate personal achievements and milestones, reinforcing the idea of growth and development. This could involve recognizing progress in various skills, from physical milestones to cognitive achievements.

Field Trips and Guest Speakers:

- Plan field trips or invite guest speakers to introduce children to real-world experiences and diverse perspectives. This can enhance their understanding of the broader world and the interconnectedness of human experiences.

The 4th and the 5th Great Lessons which are about The Story of Writing and The Coming of Numbers, respectively follow the same types of suggestions which are in the previous 3 Great Lessons.

CONCLUSION

By incorporating these strategies, you can help prepare children for the 1st, 2nd, 3rd, 4th and 5th Great Lessons, setting the stage for a meaningful and impactful learning experience.

Sources:
www.lifetimemontessorischool.com
www.montessoriforeveryone.com
www.thatssomontessori.com
https://www.thekavanaughreport.com/Montessori blog

Preparing Second Language Learners for the Montessori Great Lessons

Before beginning the Montessori 5 Great Lessons, it's beneficial for second language learners to establish a solid foundation in the target language. Here are key components for language readiness:

Essential Components for Second Language Learners

> Basic Language Skills
- Second language learners should have beginner-level proficiency in listening, speaking, reading, and writing in the target language to engage with the Great Lessons' complex ideas.

> Vocabulary Building
- A foundational vocabulary is crucial for comprehension. Learners should build a word base to understand the stories and concepts presented.

> Grammar Understanding
- Knowledge of essential grammar concepts—such as verb conjugation, sentence structure, and word order—supports effective communication in the target language.

> Cultural Awareness
- Language learning is enriched by cultural understanding. Students should develop awareness of the target language's culture, including customs, traditions, and norms.

> Motivation and Engagement
- Motivation is key for language learning success. Curiosity or a desire to communicate in the target language can enhance engagement in the learning process.

> Exposure to the Language
- Exposure through native speakers, immersion experiences, classes, authentic materials (like books, music, and films), and apps aids language acquisition.

> Practice and Repetition
- Consistent practice and repetition reinforce vocabulary, grammar, and language skills. Listening, speaking, reading, and writing exercises should be routine.

> **Feedback and Correction**
  - Constructive feedback—whether from teachers, peers, or resources—helps learners improve and correct language errors.

> **Patience and Perseverance**
  - Language learning is gradual and requires resilience. Learners should anticipate challenges but stay committed to their language goals.

> **Individualized Learning Approach**
  - Language learning should cater to individual needs, interests, and styles, supporting personalized experiences that match proficiency levels and learning preferences.

Specific Aspects for Teachers and Students in the Montessori Great Lessons

For the Teacher:

> **Storytelling Mastery**
  - Master storytelling techniques—tone, language, and gestures—to capture students' attention and convey the essence of each Great Lesson.

> **Integration of Materials**
  - Utilize Montessori materials (globes, maps, timelines) to supplement the Great Lesson and foster hands-on exploration and understanding.

> **Observation Skills**
  - Develop observation skills to assess students' responses and comprehension, helping tailor follow-up activities to their needs.

> **Scaffolding Learning**
  - Offer guidance that connects Great Lesson concepts with students' prior knowledge, including prompts, discussions, and additional resources.

> **Assessment Strategies**
  - Use Montessori-aligned assessment methods like observation, documentation, and self-assessment, focusing on progress rather than traditional grades.

For the Student:

> **Active Listening**
  - Engage actively by listening, taking notes, asking questions, and participating in discussions to deepen understanding of the Great Lessons.

> **Exploration and Manipulation**
  - Use Montessori materials to explore lesson concepts hands-on, enhancing comprehension through tactile learning.

> **Independent Research**
  - Conduct independent research on topics from the Great Lessons, using libraries, databases, and other resources to satisfy curiosity.

> **Reflection and Journaling**
  - Reflect and record learning experiences in a journal to connect and consolidate concepts across lessons.

> **Collaborative Projects**
  - Collaborate with peers on projects related to Great Lesson themes, allowing shared insights and collective exploration.

> **Application to Real Life**
  - Look for real-life applications of the Great Lessons, making connections between classroom concepts and everyday experiences.

> **Creativity and Expression**
  - Express understanding creatively through artwork, storytelling, or dramatic play to convey complex ideas in innovative ways.

CONCLUSION

By focusing on these aspects, teachers and students can maximize the impact of the Montessori Great Lessons, creating a rich and meaningful learning environment.

Chapter 5: The teacher and student needs for the 5 Great Lessons

The Montessori Great Lessons introduce fundamental concepts in cosmology, geology, biology, history, and human civilization development through five interconnected stories. Here's an overview of the main aspects for teachers and students in each of these lessons:

1. The First Great Lesson: The Story of the Universe

For the Teacher:

> Tell a compelling story of the universe's creation and evolution to inspire wonder.
> Use visual aids—timelines, pictures, models—to deepen understanding.
> Encourage curiosity by framing the story in an engaging manner.
> Include hands-on materials (stars, planets, galaxies) for experiential learning.
> Invite questions and discussions about the universe's origins and interconnectedness.

For the Student:

> Listen actively, ask questions, and reflect on the universe's vastness.
> Use globes, maps, and celestial models to explore key concepts.
> Conduct independent research on cosmology topics (e.g., star formation, galaxy structures).
> Contemplate the universe's story and your place within it.
> Collaborate on projects that expand on the lesson's themes.

2. The Second Great Lesson: The Coming of Life

For the Teacher:

> Share the story of life's origins and evolution on Earth with engaging storytelling.
> Use hands-on activities and experiments to illustrate life's beginnings and evolutionary processes.
> Encourage connections between this lesson and students' observations in nature.
> Offer materials for exploring biological specimens and life studies.

For the Student:

> Participate actively in discussions and hands-on exploration of life's origins.
> Observe and experiment with the characteristics of living organisms.
> Research topics like the fossil record, natural selection, and adaptations.
> Reflect on life's interconnectedness and ethical considerations in nature.
> Work collaboratively on projects related to life's diversity and evolution.

3. The Third Great Lesson: The Coming of Human Beings

For the Teacher:

> Present the story of human evolution and the rise of civilizations.
> Use artifacts, timelines, and documents to highlight key human history events.
> Encourage discussions on language, culture, and technology's impact on society.
> Provide materials for exploring historical artifacts and primary sources.

For the Student:

> Engage with the story of human evolution, needs, and civilization development.
> Study artifacts and historical documents to understand key concepts.
> Research early civilizations, migrations, and writing system development.
> Reflect on the similarities and differences between past and present societies.
> Collaborate on projects exploring human civilization's diverse aspects.

4. The Fourth Great Lesson: The Story of Numbers

For the Teacher:

> Introduce mathematics as a universal language.
> Use storytelling and visuals to highlight numbers' historical significance.
> Engage students with hands-on activities to explore basic math operations.
> Offer opportunities to apply math concepts in real-world problem-solving.

For the Student:

> Explore the story of numbers and their importance in history and culture.
> Engage in hands-on math activities to build problem-solving skills.
> Apply math concepts to real-life situations and interdisciplinary connections.
> Research topics on famous mathematicians and mathematical discoveries.
> Collaborate on math-related projects that expand on lesson themes.

5. The Fifth Great Lesson: The Story of Language

For the Teacher:

> Explore language's origins and its role in communication and culture.
> Use storytelling, multimedia, and linguistic artifacts to illustrate language diversity.
> Discuss language's influence on identity, culture, and social interaction.
> Provide materials for exploring different languages and writing systems.

For the Student:

> Engage with the story of language's development and societal impact.
> Discover various languages and writing systems through activities and games.
> Research topics like language origins, diversity, and cultural roles.
> Reflect on language's power to shape our worldview and connections.
> Collaborate on projects exploring language and communication.

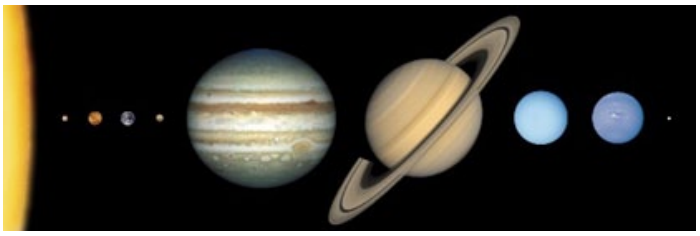
CONCLUSION

Each Great Lesson inspires curiosity, fosters collaborative learning, and offers hands-on exploration, making complex ideas accessible and engaging for students.

References:
https://alldonemonkey.com/2017/07/24/teaching-a-second-language-with-montessori/
https://www.colorincolorado.org/article/background-knowledge-and-ells-what-teachers-need-know
https://files.eric.ed.gov/fulltext/EJ1310645.pdf
https://masterthemontessorilife.com/foreign-languages-the-montessori-way
https://www.researchgate.net/publication/350026692_Task-based_Language_Learning_in_Bilingual_Montessori_Elementary_Schools_Customizing_Foreign_Language_Learning_and_Promoting_L2_Speaking_Skills
https://repository.bbg.ac.id/bitstream/588/1/Introducing_Second_Language_Acquisition_.pdf
https://www.researchgate.net/publication/270589641_Native_language_skills_as_a_foundation_for_foreign_language_learning
Dorer J. M. (2019) The Deep Well of Time, Parent Child Press.

Chapter 6: The First and Second Great Lessons with Application




First Great Lesson – Coming of the Universe

Assessing Language Proficiency and Learning Preferences in Second Language Learners

Before introducing a Great Lesson to a second language learner, it's essential to understand their current proficiency, cultural background, learning preferences, and specific challenges with language acquisition. This assessment helps tailor the lesson to the learner's needs and maximizes their engagement and comprehension.

Key Questions to Consider

Current Knowledge

> *What does the learner already know about the target language?*

Proficiency Level

> *What is their current level of understanding, speaking, reading, and writing?*

Learning Methods

> *How do they learn best? Are they familiar with specific methods from their country or culture that support their language learning?*

Language Challenges

> Identify particular areas they find challenging. For example:
- Pronunciation: Does the learner struggle with pronunciation in the target language?
- Vocabulary: Are certain words difficult to understand or remember?
- Retention: Do they find it challenging to recall words or phrases after learning them?
- Usage Frequency: How often do they have opportunities to use the language in real contexts?

By answering these questions, educators can better adapt the Montessori Great Lessons to meet the individual needs of each second language learner, creating a more effective and supportive learning environment.

Considerations for Introducing the First Great Lesson

OVERVIEW

By focusing on these steps, teachers can introduce the First Great Lesson in a way that supports language comprehension and encourages curiosity in second language learners.

Introducing the First Great Lesson to Second Language Learners: Key Considerations

1. Language Vocabulary

> Introduce essential vocabulary related to the First Great Lesson, "The Coming of the Universe."

> Key terms include: *Universe, Galaxy, Solar System, Planet, Star, Sun, Earth, Moon, Light, Energy, Asteroids, Meteor, Constellations,* and *Orbit.*

2. Vocabulary Presentation

> To help second language learners engage with these terms, use visual aids like pictures to associate words with imagery, sparking curiosity and aiding comprehension.

> Start by creating an organized and accessible learning space.

> Prepare a dedicated shelf displaying materials, images, and objects connected to the lesson theme, making the learning environment immersive.

3. Building a Rich Internal Vocabulary

> For young second language learners, it's essential to nurture a strong internal vocabulary. Techniques to reinforce language acquisition include:

- Repeating new words (e.g., "This is the universe, the universe.")
- Speaking clearly and slowly.
- Using the *three-period lesson* method to reinforce understanding.

4. Phonemic Awareness

> Develop the learner's awareness of individual sounds in the language by:

- Repeating new vocabulary.
- Articulating words slowly.
- Engaging in language-rich activities, like singing songs, to deepen sound recognition.

5. Practical Life Skills

> Practical life activities for the First Great Lesson integrate the use of basic materials like glue, scissors, cardboard, paper, paint, and markers. Activities include:

- **Creating Creation Story Charts**: Students craft charts to depict the stages of the universe's formation, connecting each part of the story.
- **Engaging with Vocabulary**: Students actively use key terms (e.g., galaxy, Big Bang, light, darkness) as they describe each stage.
- **Encouraging Creativity**: Allow students to sequence the story elements in their unique way, fostering creativity and personal engagement with the material.
- **Sensorial Exploration**
  Hands-on, sensorial exploration enhances comprehension of universal elements, using various materials to symbolize aspects of the cosmos:
- **Cotton balls** for stars
- **Glitter or sequins** for galaxies
- **Sand or soil** for Earth
- **Pebbles or rocks** for asteroids or planets

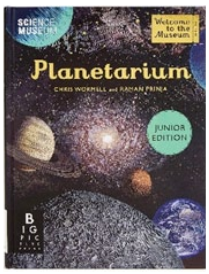
- **Model planets or globes**
- **Small mirrors** to reflect light
- **Trays or containers** to organize materials

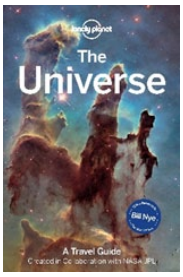
This hands-on approach makes abstract concepts tangible, deepening student understanding through sensory experiences.

6. Language Development

> Language development emphasizes vocabulary acquisition from the First Great Lesson, focusing on terms like *Big Bang, light, galaxy, universe,* and *solar system*. These foundational words help students grasp lesson concepts through books, storytelling, and imaginative exercises.

- **Books and Stories**: Use both fiction and non-fiction texts to reinforce vocabulary and concepts.





- **Creative Storytelling**: Prompt students to create their own stories inspired by the universe's creation. Encourage them with questions like: *Imagine you are traveling in space—what do you see?*

7. Mathematical Understanding

> Mathematics in the First Great Lesson introduces students to large numbers, helping them grasp the vastness of the universe, such as the quantity of galaxies, stars, or planets. Activities include:

- **Understanding Scale**: Using large numbers to convey the universe's immensity.
- **Exploring Geometry**: Observing shapes in planetary orbits and other celestial forms.

8. Cultural Studies

> Cultural studies connect students with ancient civilizations' beliefs about the universe, enhancing their understanding of how creation myths influenced human life. Activities include:

- **Mythologies and Creation Stories**: Explore how ancient cultures explained the universe's origins.
- **Artistic Representations**: Study how stars and galaxies are depicted in art across cultures.

9. Science Exploration

> Science exploration integrates subjects like physics, chemistry, geology, and mathematics, showing students the interconnected nature of cosmic education. Areas to explore include:

- **Geology**: Learning about different rock types and Earth's layers.
- **Chemistry**: Introducing states of matter (solid, liquid, gas).
- **Physics**: Examining the behavior of matter.
- **Mathematics**: Exploring concepts of distance and time in the universe.

10. Social and Emotional Development

> The First Great Lesson nurtures a sense of interconnectedness, fostering social and emotional growth. Key elements include:

- **Sense of Wonder and Awe**: Recognizing the vastness of the universe.
- **Empathy and Connection**: Discussing humanity's impact on the environment and the importance of Earth stewardship.

11. Sensorial Exploration

> Using sensory activities enriches second language learners' comprehension of topics across subjects. Key areas include:

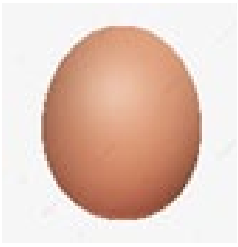
- **Sensory Experience**: Exploring textures, sights, and sounds related to the universe.
- **Practical Life Skills**: Enhancing fine motor skills and exploring textures.
- **Language Vocabulary**: Learning descriptive vocabulary through touch, sight, and smell.
- **Cultural Studies and Social Development**: Developing cultural awareness and empathy through hands-on, collaborative activities.

> **Examples of Sensorial Exploration**

- **Tray of Textures**: Use wool (soft), eggshells (smooth), and tree bark (rough) to introduce descriptive vocabulary (e.g., "It feels soft," "I smell fresh pine.").

wool, soft

tree bark, hard



egg, smooth

- **Language Vocabulary**: Reinforce terms like *touch, feel, smell,* and *see*.
- **Practical Life Skills**: Identifying items in the environment by texture, creating a shelf with materials representing *smooth, soft,* and *rough*.
- **Mathematical Understanding**: Comparing measurements, arranging sequences, and observing geometry in shapes.
- **Cultural Studies**: Exploring cultural objects, music, and food traditions.
- **Science Exploration**: Observing natural phenomena, experimenting with states of matter, and exploring cause and effect.
- **Social and Emotional Development**: Developing self-awareness, empathy, and social interaction skills through collaborative activities and emotional regulation exercises like deep breathing.

CONCLUSION

Focusing on these areas, teachers can introduce the First Great Lesson in a way that supports language comprehension and encourages curiosity in second language learners. Use nonfiction and fiction literature to support learning and establish deeper connections. The pictures and graphs are another manner we reach SLL students.

Below are some examples of literature:

Non-fiction:

Planetarium by Chris Wormell and Ramen Prinja

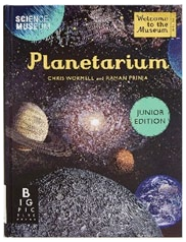
The Universe by Lonely Planet

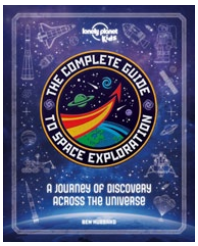
Born With a Bang by Jennifer Morgan

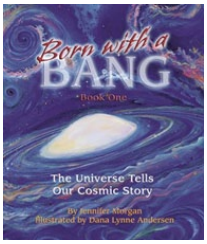
The Complete Guide to Space Exploration by Lonely Planet Kids and Ben Hubbard

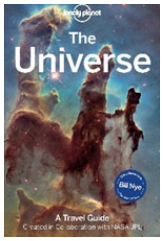
How Did it All Start? Where did we come from? By Biku Ghosh

These non-fiction books explain about the creation of the universe, the planets and other places in space which are still unknown.









Fiction:

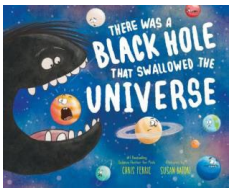
The Kid Who Came From Space by Ross Welford

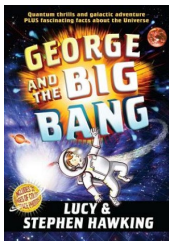
Everything Under the Sun by Molly Olfield

George and the Big Bang by Lucy and Stephan Hawking

There Was a Black Hole That Swallowed the Universe by Chris

The fiction books are written with mystery, adventure and some humor.





Basic Level Language Learners (LL): Sensory Exploration

Through hands-on experiences, basic-level students use their senses to explore their surroundings.

Activity: *Blindfolded Sensory Exploration*

Materials Needed:

> **Eye mask**

> **Touch**: soft cloth, rough sandpaper, Newtonian liquid (corn starch + water)



> **Smell**: spices, fruits, perfume



> **Hearing**: musical instruments, bells


> **Taste**: candies, lemon, orange peel



Steps to Prepare:

1. Explain sensory exploration and discuss the five senses.
2. Set up sensory stations around the classroom.
3. Divide students into small groups, taking turns to be blindfolded and explore each sense.
4. Rotate groups to experience all stations.

Discussion Questions:

> Which sense did you find most interesting?

> How would you feel if you lost one sense?

> Do you think other senses would be stronger if you lost one?

Follow-Up:

> Students draw or write about a new discovery.

> Encourage them to explore further with their senses around the classroom or school yard.

Advanced Second Language Learners (SLL): In-Depth Sensory Exploration

Advanced-level students explore sensory perception in greater depth, analyzing the complexity of human senses.

Materials Needed:

> **Sensory exploration kit** (with seasonal or complex textures and scents)
> **Record-keeping tools** (notebook, camera)
> **Sensory materials** (textures and scents)
> **Outdoor exploration** (if possible)

Steps to Prepare:

1. Discuss sensory perception complexity.
2. Introduce the sensory kit and demonstrate data recording.
3. Allow students to work individually, in pairs, or groups to challenge their senses (e.g., wearing gloves to touch or pinching the nose to taste).
4. Students record data, analyze findings, and present conclusions.

Reflection Questions:

> What insights did you gain?
> Why is accurate data recording important?
> How did you interpret and share your findings?

Sources

Discovery Education
Maitri Learning
Montessori Radmoor
Montessori NSW
Learn Libre
Intercultural Montessori

Sources:
www.discoveryeducation.com
www.maitrilearning.com
www.montessoriradmoor.org
www.montessori.nsw.edu.au
www.learnlibre.com
www.interculturalmontessori.org

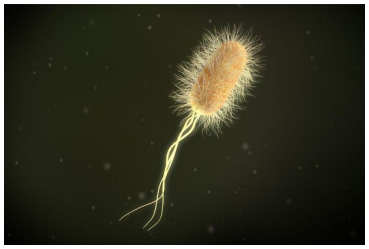
Second Great Lesson:
The Coming of Life – Preparation Plan for SLL Students

1. Language Vocabulary

> ***Key Terms*:** Era, Evolution, Oxygen, Bacteria, Species, Life Cycle, Biomes, Plants, Animals, Fungi, Trilobite, Ammonite, Fossil, Food Chain.
> **Vocabulary Presentation:**
> Introduce vocabulary with associated images to support comprehension and engagement. Visual aids bridge language gaps, fostering understanding and retention. Include labels in the students' native language for additional support.

> **Example: Label (English-Polish)**

Fossil – Skamielina



Bacteria – Bakteria

Plants - Rośliny

2. Practical Life Skills

Engage students in hands-on activities to connect with life processes:

> **Gardening and Seed Planting: P**lant and care for seeds, learning about the plant life cycle.
> **Composting:** Participate in composting to understand decomposition.
> **Animal Care:** Observe and care for animals to develop empathy.
> **Fossil Making:** Create replica fossils to explore Earth's history.
> **Nature Crafts:** Use leaves, twigs, and flowers in art projects, promoting creativity and connection to nature.

These activities cultivate practical skills and environmental stewardship.

3. Sensorial Exploration

Combine practical tasks with sensory exploration to enhance learning and language acquisition:

> **Nature Walk and Classification:** Collect and sort natural items by characteristics (color, shape, texture) using target language vocabulary.
> **Fossil Exploration:** Examine fossils with magnifiers, label parts in the target language.
> **Life Cycle Sensory Trays:** Use sensory trays to explore different life cycles and practice vocabulary.
> **Nature-Inspired Crafts:** Create crafts like leaf rubbings or pinecone paintings, describing each step in the target language.
> **Gardening and Language Learning:** Engage in gardening activities, describing plant growth and care routines.
> **Ecosystem Exploration:** Use sensory bins or simulations to explore ecosystems, describing unique features in the target language.
> **Nature Journaling:** Record observations in journals using new vocabulary.
> **Field Trip:** Visit a nature reserve or botanical garden to observe and describe the environment.

4. Language Development

Activities focus on language skills relevant to „The Coming of Life":

> **Storytelling:** Retell related stories to foster expression.
> **Vocabulary Games:** Use word matching and scavenger hunts.
> **Language Journals:** Write reflections, enhancing descriptive language.
> **Role-Play:** Enact scenes from the lesson for fluency.
> **Nature Poetry:** Compose nature-inspired poetry.
> **Science Reports:** Present research on fossils or ecosystems.
> **Story Sequencing:** Arrange picture cards in sequence.
> **Multilingual Storytime:** Share nature stories in students' native languages.

5. Mathematical Understanding

> **Timeline Creation:** Sequence Earth's history on a timeline.
> **Geological Time Scale:** Compare time periods to understand measurement and scale.
> **Comparative Anatomy Study:** Compare organism anatomy.
> **Pattern Recognition:** Identify evolutionary patterns.
> **Fossil Record Analysis:** Categorize fossils by characteristics.
> **Growth Rate Calculations:** Measure and compare growth rates of plants.

These activities link math skills with natural world exploration.

6. Cultural Studies

Explore the origins and diversity of life, covering:

> **Origins of Life:** Early theories and formation of life.
> **Continental Drift:** Understanding Earth's geological changes.
> **Evolution and Fossilization:** Study geology, fossils and paleontology.
> **Biomes and Habitats:** Explore Earth's ecosystems.
> **Biodiversity and Classification:** Emphasize diversity and classification of organisms.

7. Science Exploration

Foster curiosity with science activities related to life's origins:

> **Nature Walks:** Observe ecosystems, document findings.
> **Botany and Gardening:** Cultivate plants, learn about photosynthesis.
> **Zoology and Animal Studies:** Study animals' habitats and adaptations.
> **Water Cycle Experiment:** Demonstrate evaporation and condensation.
> **Microscopic Life Comparison:** Examine pond water or soil samples.
> **Dinosaur Dig Simulation:** Excavate replicas to learn about ancient life.
> **Terrarium Building:** Create mini-ecosystems in glass containers.

8. Social and Emotional Development

> **Connection to Nature:** Develop a sense of wonder for the natural world.
> **Empathy:** Cultivate compassion for plants, animals, and ecosystems.
> **Resilience:** Discuss adaptation and overcoming challenges.
> **Diversity Appreciation:** Recognize the value in life's various forms.
> **Curiosity:** Encourage inquiry and exploration.
> **Environmental Stewardship:** Emphasize sustainable practices.
> **Self-Reflection:** Reflect on their role in Earth's future.
> **Celebration of Life:** Express appreciation for life's diversity through art, music, writing and storytelling.
> **Gratitude and Reverence:** Foster gratitude for the interconnected web of life.

One concept: Life Cycle of a Plant

Here is one concept from the lesson that is developed as a systematic process for teaching the Second Language Learner the skill or desired learning outcome. It is important to choose a concept and go through all of the topics to show how this concept will be presented for the SLL's understanding and the teacher knowing the steps for delivering clear concepts for student learning.

Presenting Vocabulary:

> Use visual aids such as flashcards, posters, or diagrams to introduce vocabulary words related to the life cycle of a plant, including „seed," „germination," „seedling," „growth," „flowering," „pollination," „fruiting," and „seed dispersal."

> Provide opportunities for the SLL to hear and repeat the vocabulary words, emphasizing pronunciation and correct usage through modeling and repetition. Be prepared to use their native language.

Practical Life Skills:

> Incorporate practical activities such as planting seeds, watering plants, and caring for a classroom garden to reinforce the concepts of the plant life cycle in a hands-on manner.

> Guide the SLL in following step-by-step instructions for planting and nurturing plants.

Sensorial Exploration:

> Provide sensory experiences related to the plant life cycle, such as exploring different types of seeds, feeling the textures of soil and plant parts, and observing the changes in plants as they grow.

> Use sensory materials like magnifying glasses, seed pods, and plant specimens to engage the SLL in hands-on exploration and observation, enhancing their understanding of the plant life cycle through sensory input.

Language Development:

> Encourage the SLL to describe the stages of the plant life cycle using newly acquired vocabulary, both orally and in written form.

> Engage the SLL in language-rich activities such as storytelling, role-playing, and discussions about plants and their life cycles, fostering language fluency and comprehension.

Monoloque of Grass

Source: Private collection

Mathematical Understanding:

> Integrate mathematical concepts into the study of the plant life cycle, such as measuring the growth of plants, counting the number of leaves or flowers, and graphing the stages of plant development over time.

> Use mathematical manipulatives like counting cubes, rulers, and graphs to represent and analyze data related to plant growth.

Cultural Studies:

> Explore cultural traditions and practices related to plants and gardening in different cultures around the world, fostering cross-cultural awareness and appreciation.

Planting a Tree for the Earth Day - Polish Tradition.

Source: Private collection

Science Exploration:

> Conduct experiments and investigations related to plant growth and development, such as observing the effects of light, water, and soil on plant growth.

> Encourage SLL to ask questions, make predictions, and draw conclusions based on their observations.

Social and Emotional Development:

> Foster empathy and responsibility towards living organisms by caring for plants and observing their life cycles, promoting a sense of connectedness and stewardship for the natural world.

> Provide opportunities for SLL to collaborate with peers in caring for a classroom garden, sharing responsibilities, and working together.

Literature Selection and Integration in the Learning Environment

Selected Literature:

> **Basic Level**: Picture books, nomenclature cards, and poetry related to plant life and vocabulary.

> **Advanced Level**: Books with plant-focused narratives and interactive stories (e.g., *The Plants Tell a Story* by Nienhuis Montessori and *Plants „Who am I?“* from In-Print for Children).

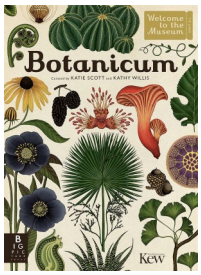
Integrated Areas:

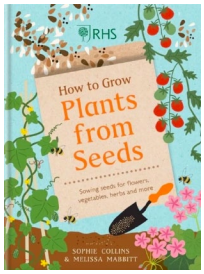
> **Language**: Vocabulary-building and pronunciation exercises.

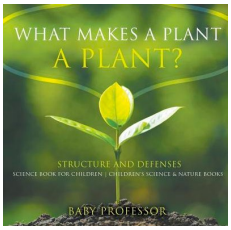
> **Practical Life**: Plant care and gardening activities.

> **Science**: Life cycle exploration and plant anatomy.

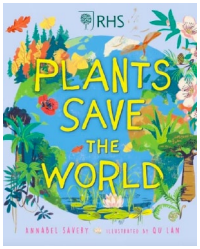
> **Cultural Studies**: Examining plants in various cultural contexts.

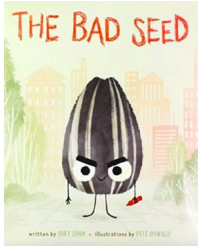






Nonfiction





Fiction

Sample Lessons for Basic Level LL and Advanced SLL

Basic Level LL

In this lesson, students focus on foundational vocabulary and reading skills related to plants.

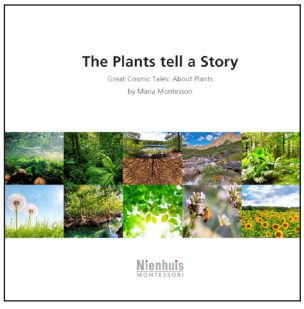
Activities

> **Nomenclature Exercise**: Arrange letters on a mat to spell plant-related words, using a moveable alphabet and writing practice to reinforce sounds and letter recognition.

> **Songs**: Incorporate plant anatomy songs, such as *„Roots, Stem, Leaves, Flower“* from Firefly Family Theatre, to reinforce terminology through rhythm and repetition.

> **Poetry Creation**: Collaborate to write simple poems.

- Example poem for reference:
  Seed in soil,
  Sun and rain,
  Plant grows tall,
  Blooms again.
  Leaves, roots, buds,
  Fruits will show,
  Life's cycle,
  Round we go.



Advanced SLL

Advanced students engage in more complex reading and comprehension activities using plant-related stories.

Activities

> **Pre-Reading Vocabulary**: Teach key vocabulary using flashcards. Ensure thorough understanding before reading.

> **Dramatic Reading**: Guide students in a dramatic reading of the story, prompting them to ask reflective questions for critical thinking.

> **Reading Comprehension**: Develop comprehension questions that assess their grasp of the text, encouraging them to analyze details and themes.

> **Monologue Preparation**: Have students create monologues based on the reading. Support creativity and adherence to vocabulary, offering feedback to improve their delivery and understanding of plant-related themes.

Source

Nienhuis Montessori USA - The Plants Tell a Story
The Plants Tell A Story | Nienhuis Montessori
Plants „Who am I?“ - Montessori Services

Flowers, Leaves, Stems, Roots | Children's Science Song With Lyrics By Singalong School Songs

2nd Great Lesson Books:

Consider the literature that supports the learning.

Literature Non-Fiction:

Murray L, Wormell Ch. (2018) *Dinosaurium.* Big Picture Press.

Murano F, Symons R, Scott K. (2017) *The Story of Life - Evolution.* Big Picture Press

Museu de Ciències Naturals in Barcelona, Bestard A. (2022) *Planet Life: The Amazing History of Earth.* Tra Publishing.

Bestard A. (2021) @How Life on Earth Began Fossils Dinosaurs The First Humans. Thames Hudson.

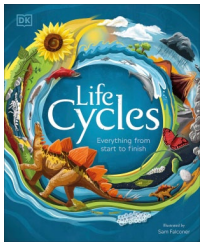
DK, Falconer S. (2020) *Life Cycles: Everything from Start to Finish.* DK Children.

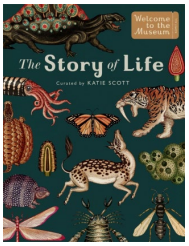
Ince M. (2018) *Continental Drift: The Evolution of Our World from the Origins of Life to the Far Future.* Blueprint Editions.

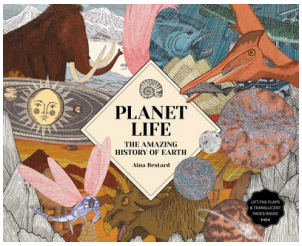
Bajerowicz K. (2021) *Od początku - Czyli powstanie i rozwój życia na ziemi*. Warszawa, Nasza Księgarnia.

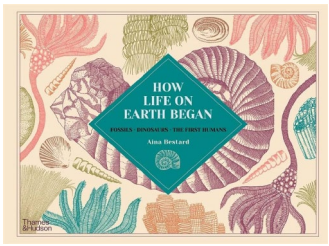
Perfect series for Montessori 1 & 2 Great Lessons - Book Series: DK Children's Anthologies

https://www.lovereading4kids.co.uk/series/DK%20Children's%20Anthologies









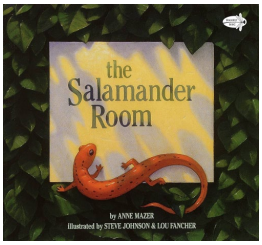
Literature Fiction:

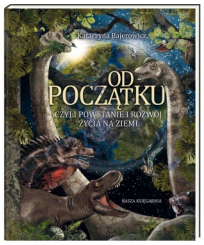
Osborne M.P. (2008) *Magic Tree House Series*. Random House Books for Young Readers.

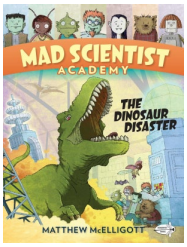
McElligott M. (2017) *Mad Scientist Academy: The Dinosaur Disaster.* Dragonfly Books.

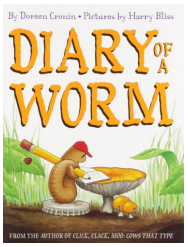
Cronin D., Bliss H. (2003) *Diary of a Worm.* HarperCollins.

Mazer A. (1994) *The Salamander Room*. Dragonfly Books.









References: Images

https://www.guelphtoday.com/around-ontario/beyond-local-a-new-fossil-discovery-may-add-hundreds-of-millions-of-years-to-the-history-of-animals-4542916

https://microbiologysociety.org/why-microbiology-matters/what-is-microbiology/bacteria.html

https://www.vecteezy.com/free-photos/tropical-plants

Chapter 7: The Third, Fourth and Fifth Great Lessons with Application for Teaching and Learning

OVERVIEW

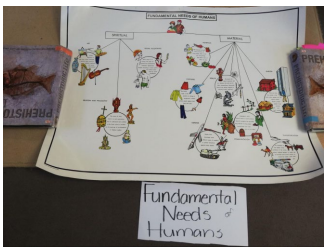
This chapter focuses on supporting SLLs in understanding key concepts, vocabulary, and skills for Great Lessons 3, 4, and 5, by designing systematic learning processes that integrate real-life applications, practical activities, and interdisciplinary connections.

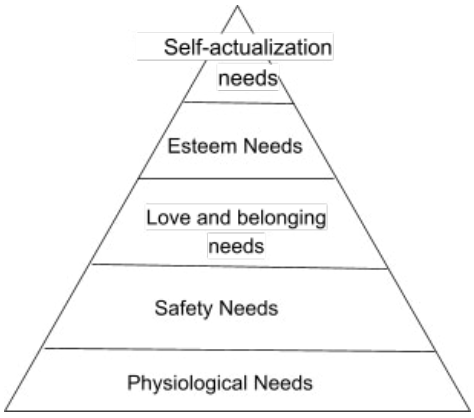
Great Lesson 3: The Coming of Humans

> **Language Vocabulary**: Introduce key terms (e.g., growth, development, hunter, tools) using pictures, pantomime, real-life connections, and native language support for essential terms.
> **Practical Life Skills**: Engage students in making tools, pottery, and teamwork activities to simulate early human tasks.
> **Sensorial Exploration**: Visit history museums, handle replicas of ancient tools, and engage in sensory-based learning prior to storytelling.
> **Language Development**: Utilize stories, fiction/non-fiction books, and videos to contextualize vocabulary.
> **Mathematical Understanding**: Practice counting, measurement, and fractions, e.g., measuring early human height and dividing food to understand resource allocation.
> **Cultural Studies**: Explore human migration, geography, and cardinal points through maps and globes.
> **Science Exploration**: Study brain development, emotions, evolution, and adaptation.
> **Social & Emotional Development**: Emphasize self-respect, empathy, and respect for the environment, with teamwork simulations to explore the importance of community.

Example Concept - Fundamental Human Needs

> **Introduction**: Present eight fundamental needs (food, shelter, love, etc.) on a mat and timeline, organizing items by need and chronology.





> **Activity**: Prepare labeled trays for each need with pictures, maps, and level-appropriate descriptions. Discuss each need and engage students in hands-on activities related to each.

Literature Suggestions:

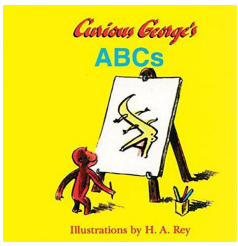
History Year by Year by DK
A Short History of the World by Ruth Brocklehurst
What Did the Tree See? by Charlotte Guillain.

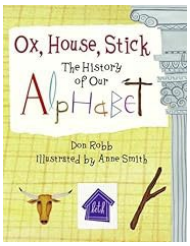
Great Lesson 4: The Story of Communication

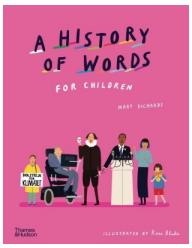
> **Language Vocabulary**: Teach terms like *alphabet, symbol, scribe*, and *printing press*, using songs, storybooks, and the 3-period lesson.
> **Practical Life Skills**: Introduce writing letters, calligraphy, bookbinding, and publishing to experience the evolution of communication.
> **Sensorial Exploration**: Engage with clay tablets, papyrus-making, and Braille, along with singing for phonetic reinforcement.
> **Language Development**: Activities include reading comprehension, creative writing, storytelling, and exploring word etymology.
> **Mathematical Understanding**: Teach historical timelines, language diversity, and commerce's role in language development.
> **Cultural Studies**: Discuss language history, interconnectedness of language and culture, and world literature.
> **Science Exploration**: Examine communication advances, from papyrus and printing presses to digital technology.
> **Social & Emotional Development**: Foster self-expression and empathy through communication-focused activities, including naming emotions and cooperative games.

Example Activity - Alphabet Introduction

> **Beginner**: Use the movable alphabet and "I Spy" games to reinforce letter sounds and names.
> **Advanced**: Read *Ox, House, Stick: The History of Our Alphabet*, followed by vocabulary review, dramatic reading, and comprehension questions.







Great Lesson 5: The Story of Numbers / Numeration

> **Language Vocabulary**: Use terms such as: *count, equal, decimal system*, introducing vocabulary with pictures, real-life applications, and native language connections.
> **Practical Life Skills**: Activities include counting, measuring, financial literacy, and sharing, along with practical applications in cooking, measuring, and using currency.
> **Sensorial Exploration**: Practice number writing in sand, weighing items, and creating handmade currency.
> **Language Development**: Teach math-related terms, interpret word problems, and develop comprehension and application skills.

> **Mathematical Understanding**: Progress from concrete to abstract by exploring isolated models, generalizations, and solution-finding.
> **Cultural Studies**: Explore global numeral variations, Roman numerals, and cultural contexts for numbers.
> **Science Exploration**: Work with graphs, interpret results, and compare data.
> **Social & Emotional Development**: Engage in cooperative math games, fostering teamwork, confidence, and problem-solving.

Example Concept - Solving Word Problems

> **Process**: Break down word problems into simple steps, ensuring comprehension of key terms. Use relatable questions (e.g., "How many dolls do you have?") and apply terms practically in counting, time, and money-related exercises.

Word/Story Problem Solving

Beginner Level

Presentation

> **Visual Task**: Simple addition represented with pictures. Students are only required to write the result.
  - Example:  +  = _____
> **Verbal Task**
  We have five cars in the yard. Two more arrive. How many cars are in the yard now?
  - Picture:  = ___

„How Many?" Card

> Present both pictures and vocabulary words to familiarize students with simple mathematical language.

Instructions

> Clear, easy-to-understand instructions guide the children. No complex comprehension is required; students focus solely on counting and recording the correct result.
> **Outcome**: Write the correct result and number accurately.

Adding Complexity

> Replace pictures with numerical symbols to encourage abstract thinking:
  3 + 1 = ___
  6 - 3 = ___

Advanced Word Problem – Reading Comprehension

1. Example Problems

> *Tomas has three cars and receives one as a present. How many cars does he have now?*
> *Emily had six flowers, but she lost three on the way. How many flowers did she bring home?*

2. Instructions for Children

> The child should carefully read and understand the problem, identify the numbers involved, and determine which operation to use (addition, subtraction, etc.). Based on the information, the child will choose the correct operation and present their answer by writing the number and solution correctly.

3. Expected Outcome

> **Understanding**: Comprehend the problem statement.

> **Operation Selection**: Decide on the correct mathematical operation.

> **Solution Presentation**: Write the correct answer, ensuring the number is properly written.

4. Increasing Complexity with Opposite Scenarios

> Introduce problems that use „reverse“ language to deepen comprehension, such as:
  - *Emily brought home six flowers. This is three fewer flowers than she had outside. How many flowers did she have outside?*

> This type of problem can be challenging, even for native speakers, as it requires well-developed reading comprehension to correctly interpret and solve the question.

Literature Suggestions:
The Very Hungry Caterpillar by Eric Carle for basic counting concepts;
teacher resources like *Maslow Before Bloom* by Dr. Bryan Pearlman.

Cross-Curricular Extensions

Advanced SLLs can expand on these lessons by:

> **Research Projects**: Investigate technology progression, hygiene, and life expectancy.

> **Practical Applications**: Try international recipes, learn world music, and create art or use instruments from various cultures.

> **Cultural Comparisons**: Analyze Maslow's hierarchy needs alongside fundamental human needs, comparing historical to present-day contexts.

References

> *The Fundamental Needs of Humans* – A Montessori lesson for elementary children.

> *Maslow's Hierarchy of Needs*: Explore emotional, safety, belonging, esteem, and self-actualization levels as part of student self-awareness and understanding of human needs.

For additional resources:

> Montessori Services - Ideas & Insights

> https://www.nienhuis.com/us/en/math-works-montessori-math-and-the-developing-brain-nienhuis-mo

Chapter 8: Planning for Successful Second Language Learning

The collaborative team hopes that this information has been helpful for all Montessori teachers that teach in bilingual environments. It is important to always remember that children have background knowledge and we, as teachers, need to remember that this knowledge is key to their success in understanding new information and gaining a deeper experience every time they work on something new in a non-native language.

Planning by the teacher is crucial to support the growth and knowledge of students. Teachers must forecast what will be taught and prepare the vocabulary support presentations well before the actual lessons with expected learning outcomes are presented. This is the best way to reach our SLL and make sure their Montessori learning experience is as meaningful as possible.

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